



Greater Wellington - Regional Pest Management Strategy

Operational Plan Report 2006 - 2007

Quality for Life



greater WELLINGTON
REGIONAL COUNCIL

Biosecurity



Regional Pest Management Strategy 2002 - 2022

Pest Plants and Pest Animals

Operational Plan Report 2006 - 2007

Biosecurity Department

FOR FURTHER INFORMATION

Greater Wellington
Regional Council
Masterton 5840
P O Box 41

T 06 378 2484
F 06 378 7994
W www.gw.govt.nz

Greater Wellington
Regional Council
Upper Hutt 5140
P O Box 40847

T 04 526 4133
F 04 526 4171
W www.gw.govt.nz

WB/01/11/01

Contents

1.	Introduction	5
	Part One	7
	PEST PLANTS	7
2.	Performance targets and measures	7
2.1	Vigilance species	7
2.2	Eradication species	8
2.3	Containment species	10
2.4	Suppression species	13
2.5	Site Led species	14
2.6	Key Native Ecosystems	15
3.	Highlights	17
4.	Client response	18
5.	Publicity	19
5.1	Aquatic weeds awareness	19
6.	Financial summary	20

Part Two	21
PEST ANIMALS	21
7. Performance targets and measures	21
7.1 Containment species – rooks	21
7.2 Suppression species – rabbits	24
7.3 Site Led species – magpies	26
7.4 Site Led Mt Bruce (Pukaha) predator buffer	27
7.5 Feral and unwanted cats as a threat to Biodiversity	27
7.6 Site Led - Key Native Ecosystem Management	28
8. Client response	31
9. Biodiversity support programmes	31
9.1 Predator control	31
9.2 KNE operations	32
9.2.1 Maintenance operations	33
9.2.2 Initial operations	33
9.3 Tauherenikau integrated pest management	34
9.4 Rewanui Bush integrated pest management	34
9.5 Other Wairarapa Key Native Ecosystems	35
9.6 Mustelid control in the Western Zone	35
9.7 Biodiversity assistance for private landowners	36
9.8 Volunteer and care groups	36
10. Ecological outcomes	37
10.1 Monitoring	37
10.2 Native bird monitoring	38
10.3 Trend monitoring for possums	39
10.4 Rabbit densities	39
10.5 Results of rabbit trend monitoring to 2007	40
11. Rodent populations	40
12. Public relations	42
13. Magpie survey 2007	42
14. Wasps	42
15. Feral ungulates	43
16. Information brochures	43
17. Retailer inspections	44
18. Pest Animal management	44
19. Financial Summary	45

1. Introduction

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

1. To minimise the actual and potential adverse and unintended effects of pests on the environment and the community; and
2. To maximise the effectiveness of individual pest management programmes through a regionally coordinated response.

Effective implementation of the strategy will assist Greater Wellington 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 thrust of the strategy is about mitigating pest threats to society, to farming and agriculture in general, and supporting biodiversity (variety of biological life) and ecological health.

This report is the fifth since the implementation of our strategy. We believe that we are making considerable headway in meeting most of the objectives contained within the strategy. However, we realise that management of some pests will take considerable time, particularly if we are seeking to eradicate them from the region. Unfortunately, the outcome of field surveys over the past few years have highlighted that, in some cases, we are unlikely to achieve our objectives within the stated timeframes. Conversely, we have made great strides in effectively managing a number of pests and in enhancing biodiversity over large parts of the region, with support from landowners, care groups, and Local Authorities.

Implementation of the strategy requires resources. Our obligation to the community is to ensure these resources are used as efficiently and effectively as possible. This report provides some detail of how and where those resources were applied in the 2006/07 year.

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

Part One

PEST PLANTS

2. Performance targets and measures

2.1 Vigilance species

Aim: To determine the extent of specific plant species within the Wellington region at a cost of \$60,000.

Annual cost: The cost of managing Vigilance plants throughout the region during 2006/07 was \$31,328¹.

Means of achievement

- (i) Undertake inspections of all random sample points to determine the presence of these species.
- (ii) Document all actual and reported sightings outside of the random sample points.

Actual performance

A total of 54 inspections were done specifically for vigilance species.

Vigilance species were included in 3,901 inspections completed for delimiting eradication species sites found. A total of 145 sites were visited following enquires.

A total of 226 plant outlets and markets were inspected during the year. The database was updated for new and closed outlets. New information was delivered to all outlets and market stalls inspected. Two pest plant species were discovered in the inspections; cape sun dew (prior to its inclusion in the reviewed National Pest Plant Accord (NPPA) list), and water hyacinth. The plants were removed and destroyed and MAF Biosecurity New Zealand (MAF BNZ) was notified. The retailers were unaware of the status of the plant species.



Chilean flame creeper

New sites were found during current delimit surveys for eradication species sites. Species sites found included Asiatic knotweed (five), bomarea (three), and chocolate vine (two).

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

New sites were found during current delimit surveys for eradication species sites. Species sites found included Asiatic knotweed (five), bomarea (three), and chocolate vine (two).

Current contracts with MAF BNZ controlling sites of cape tulip (nine) and water hyacinth (two) were inspected and controlled. MAF BNZ audited the entire operation and made no suggestions for improvement.

The list of current Vigilance species was reviewed for inclusion into the revised Regional Pest Management Strategy (RPMS) Surveillance classification.

Staff received plant identification training on specimens found within the region or within neighbouring regions for Asiatic knotweed, bomarea, Chilean flame creeper, chocolate vine, egeria, sagittaria, nussella tussock and Chilean needlegrass.

Weed articles were published for targeted vigilant species in local papers, Greater Wellington publications and information boards used at shows and presentations.

2.2 Eradication species

Aim: To eradicate specific pest plants from the Wellington region at a cost of \$380,000.

Annual cost: The cost of managing Eradication plants throughout the region during 2006/07 was \$497,285¹.

Means of achievement

- (i) Undertake direct control by service delivery.
- (ii) Identify new sites of eradication species through incidental reports and programmed surveys by Greater Wellington staff, the public and through the vigilance surveillance programme.
- (iii) Provide information and publicity to enhance public awareness of Eradication species.
- (iv) Ensure all known infestations of African feather grass, Bathurst bur, blue passion flower, eelgrass, Madeira vine, perennial nettle and saffron thistle receive at least two inspections annually. Initial inspections of all species are to be undertaken prior to December 2006.
- (v) Ensure all sites of climbing spindleberry, Manchurian rice grass, moth plant, smilax, sweet pea shrub and woolly nightshade are inspected on an annual basis. Inspections on all species are to be undertaken prior to December 2006.
- (vi) Where new infestations are reported, inspections of these infestations will be undertaken as soon as practicable.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

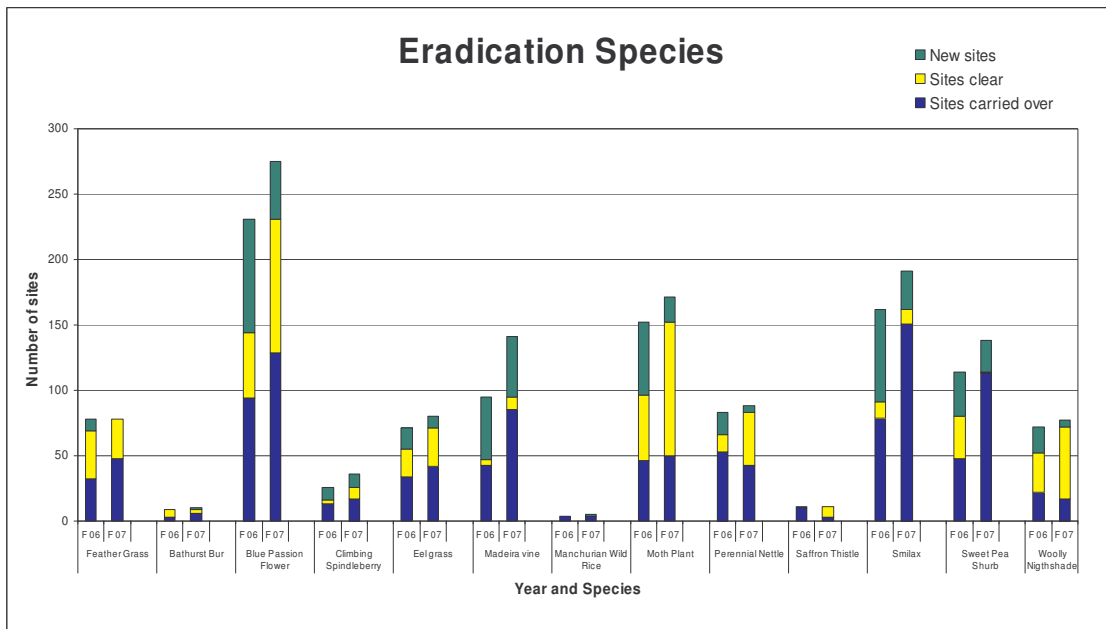
- (vii) All known sites of Eradication species will be controlled on an annual basis prior to seeding to prevent further spread.

Actual performance

A total of 2,005 known Eradication sites were inspected and control work undertaken.

Delimiting surveys were undertaken around the known Eradication species sites. Vigilant species were found during these surveys also. During the year and additional 3,901 inspections were completed in the survey compared with 4,208 in 2006 and 4,107 in 2005. This focused effort gave invaluable information for the Regional Pest Management review. To date 70% of all known Eradication sites have now been delimited, revealing 516 new sites.

Greater Wellington provided identification brochures and enhanced awareness through shows, displays, presentations, and articles and responded to all enquiries from the public.



Regular articles featured in the Greater Wellington newsletter *Elements* and the *Wairarapa Midweek*. Several new sites of Eradication species were reported by the public as a result of these articles. These included blue passion flower, moth plant, Madeira vine, woolly nightshade and perennial nettle.

The continued control effort prior to plants reaching maturity has seen a decline in the number of mature plants found and increase in the number of sites clear of weeds. Better knowledge of seasonal affect on each species within a range of site variables, coupled with an increase in site inspections to ensure seedlings do not mature, has helped reduce overall successive control activities.

Means of achievement

- (viii) Annually inspect all plant outlets in the region.

Actual performance

Eradication species are included on the plant list when undertaking NPPA inspections of commercial plant outlets and markets. No Eradication species were found this year. A total of 226 outlets were inspected with a selection of markets visited throughout the Wellington region. No action was required.



Pest Plant Officers placing weedmat over eelgrass in the Kapiti District of Otaihangā

2.3 Containment species

Aim: To reduce the adverse environmental impacts of specific pest plants within defined areas of the Wellington region at a cost of \$250,000.

Annual cost: The cost to manage Containment pest plants throughout the region during 2006/07 was \$270,327¹.

Means of achievement

- (i) Undertake direct control by service delivery.
- (ii) Undertake inspections within containment zones to ensure occupier control of specific species.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

- (iii) Provide information and publicity to enhance public awareness of Containment species.
- (iv) Control all sites of climbing asparagus, Darwin's barberry, evergreen buckthorn, mistflower, nodding thistle outside of the Containment zones on an annual basis.
- (v) Reduce the densities of boneseed outside of the Containment zones.
- (vi) Ensure specific species within the Containment zones are controlled by occupiers on an annual basis.
- (vii) Subject to the availability of Endothall, initiate control of hornwort outside of the Containment zone.
- (viii) Continue control programmes on recorded sites outside the Containment zones.

Actual performance

Greater Wellington provided identification brochures and enhanced awareness through shows, displays, presentations, and articles and responded to all enquiries from the public.

Two hundred and twenty six plant outlets and selected markets were visited to ensure no Containment species were on sale. No compliance breaches were recorded.

- **Boneseed**

The control programme on boneseed through coastal Wairarapa and parts of Porirua and Kapiti continued. A change to using contract hourly labour as opposed to fixed-rate worked very efficiently, with higher numbers of juvenile plants removed and new mature plant sites found.



The area of control was extended. Abseilers were used again in Titahi Bay and Ngawi. An aerial survey from Makara to Titahi Bay showed no plants south of Green Point. The escarpment beyond the area controlled at Ngawi by abseilers, was treated by helicopter with gun spray during October 2006.

The biological control agent "boneseed leaf roller", was ordered for release south of Wellington. The delivery was delayed for 2007 and carried into 2008, due to insufficient growth of the required population at Landcare's Research facility.

- **Climbing asparagus**

Seven new sites were found during delimiting surveys in Wellington.

- **Darwin's barberry**

One new site found in Wellington. Plants removed from Masterton urban areas.

- **Hornwort**

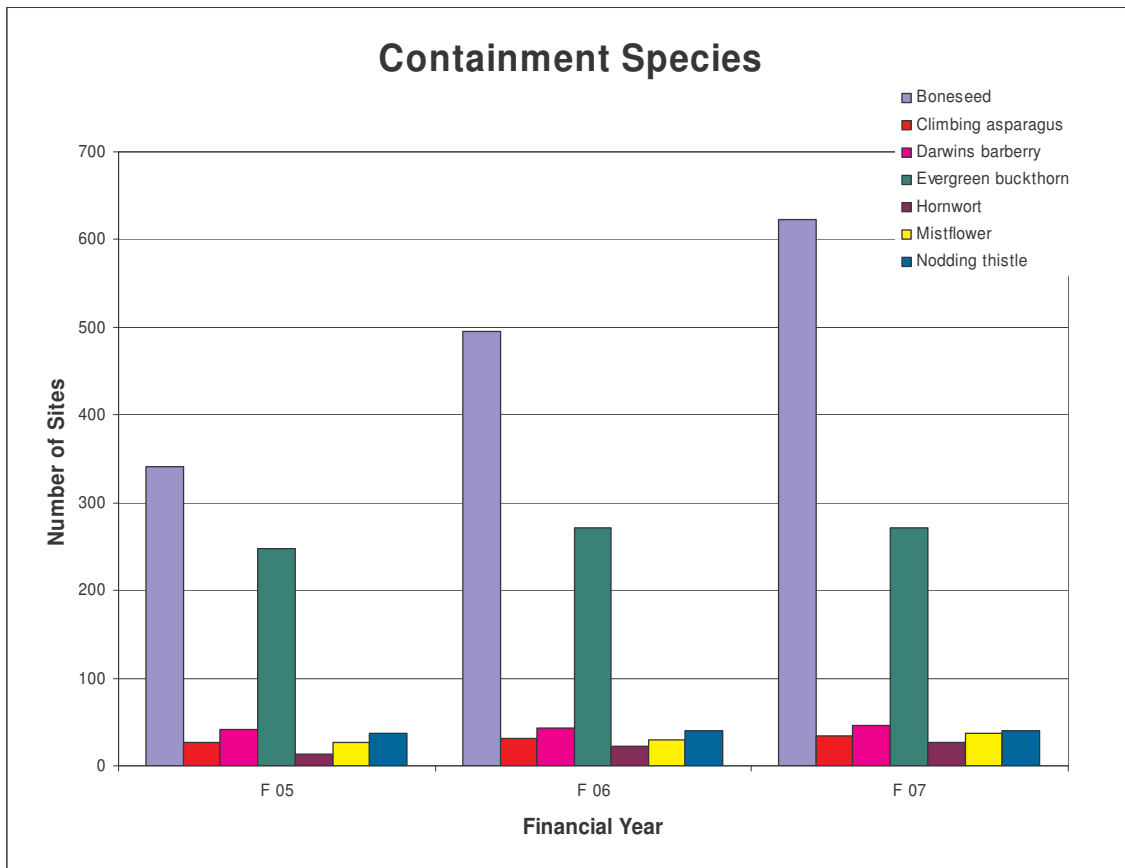
A trial, partly funded by the Endothall Registration Group (Regional Councils, Department of Conservation (DoC), and two energy companies), was completed during March 2007. The results, although variable, have provided a better understanding of chemical use on this species. Further refined trials are planned in the 2007/08 year.

- **Mistflower**

Sites were inspected and controlled in the Hutt Valley and Wellington. This species is proposed to be reclassified into the Site Led Key Native Ecosystem (KNE) category in the revised Strategy.

- **Nodding thistle**

No work on this species during the year with resources prioritised elsewhere. This species is proposed to be reclassified into Site Led Boundary Control in the revised Strategy.



2.4 Suppression species

Aim: To minimise the adverse impacts of specific pest plants throughout the Wellington region at a cost of \$100,000.

Annual cost: The cost to manage Suppression plants throughout the region during 2006/07 was \$58,635¹.

Means of achievement

- (i) Annually inspect a selection of known infestations throughout the region to determine levels of control by landowners.
- (ii) Respond to all queries and complaints relating to these species.
- (iii) Where required, ensure occupier control is undertaken.
- (iv) Provide information and publicity to enhance public awareness of suppression species.
- (v) Where it is considered practical, use biological control agents to assist with the management of these species.
- (vi) Provide information and publicity to enhance public awareness of the threat Suppression species pose.
- (vii) Where practical, require occupier control of sites of banana passionfruit, wild ginger, old man's beard and cathedral bells.

Actual performance

Greater Wellington provided identification brochures and enhanced awareness through shows, displays, presentations, and articles and responded to all enquiries from the public.

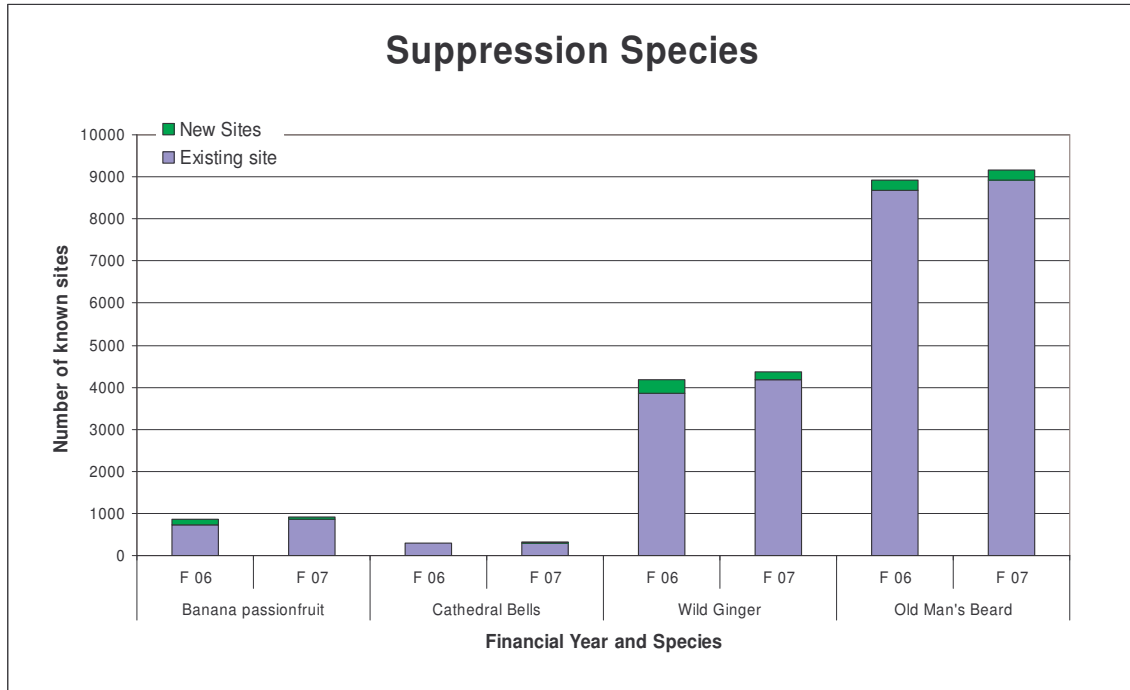
Staff responded to 139 complaints and 23 requests for site inspections of pest plants during the year, across all species.

The contract for Greater Wellington's Flood Protection Department on old man's beard was completed once again during the year. A report was completed outlining the current area to treat and level of control being achieved for budget. In summary the amount spent is not sufficient to regain a satisfactory level of control of this pest plant within the area managed by the Flood Protection Department. Options to change the current control programme were discussed.

All plant outlets and a selection of markets were inspected (226) for Suppression species. No unwanted plants were found.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

A high proportion of the 162 notified sites were small infestations at initial inspection. These were treated onsite and instruction and information left with the owners. A large number of Suppression plants were also found during surveys. Small infestations were treated whilst the officer was onsite.



2.5 Site Led species

Aim: To minimise the externality impacts of specific pest plants on land that is clear or being cleared of the pest plant at a cost of \$30,000

Annual cost: The cost to manage Site Led pest plants throughout the region during 2005/06 totalled \$46,791¹.

Means of achievement

- (i) Where a complaint has been received from an adjoining occupier, that complaint shall be investigated in accordance with strategy rules.
- (ii) Where it is considered practical, biological control agents will be used to assist with the management of Site Led species in these areas.

Actual performance

Provided identification brochures and enhanced awareness through shows, displays, presentations and articles. Responded to all enquiries and complaints from the public.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

Staff visited Blenheim to gather “gorse soft shoot moth” and distributed to four Wellington and five Wairarapa sites.

Scotch thistle gall fly was transferred from Kawakawa Station to Paekakariki Hills.

The 2006 gorse thrips release sites were inspected and very few were found after two visits.

Broom physillid was collected and redistributed to ten Wairarapa sites.

Broom seed beetle is now on host plants over most of the Wairarapa.

Old man’s beard complaints required 76 inspections that led to 13 ‘Notice of Directions’ being issued and five ‘Default Actions’.

Gorse complaints required three ‘Notice of Directions’ being issued and two ‘Default Actions’.

Articles were published in the Wairarapa Midweek, Rural Services Newsletter, Elements newsletter, MAF BNZ and Protect magazines. The Riparian Weeds booklet was rewritten

2.6 Key Native Ecosystems and Territorial Authorities Memorandum of Understanding

Aim: To protect indigenous biodiversity in a comprehensive selection of Key Native Ecosystems at a cost of \$140,000

Annual cost: The cost to Greater Wellington to manage KNE species was \$189,000. The total expenditure including TLA contributions and the ‘Department of Conservation Biodiversity Condition Fund’ allocation was \$213,544¹.

Means of achievement

- (i) Maintain holistic management in existing Key Native Ecosystem (KNE) areas.
- (ii) Establish and implement integrated pest management plans for specific KNEs.
- (iii) Undertake direct control by service delivery of pests identified in integrated pest management plans.
- (iv) Monitor site recovery using a range of ecological indicators.
- (v) Facilitate the involvement of community groups where appropriate.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

Actual performance

A total of 50 pest plant contracts were completed across the Wellington region controlling the entire range of pest plants. Approximately 40 hectares of climbers (Japanese honeysuckle, banana passionfruit, old man's beard), have been released from native canopies. Thousands of woody weeds (sycamore, wattle, wilding pine, willows etc) have been felled, ring barked or drilled for chemical application. Hectares of ground cover species (tradescantia, montbretia, periwinkle etc) have been sprayed for initial knockdown and second year maintenance prior to handing over for planting.

The effort has currently focused on 20 of the best KNEs in the region. The plan to date is to ensure that as many ecosystem types are covered in each TLA (see table below).

Ecosystems with pest plant/ restoration work in the Wellington region 2006/ 07 * reserves not in KNE programme

Ecosystem types	Districts/ Cities				
	Kapiti	Hutt Valley	Porirua	Wairarapa	Wellington City
Lowland/ Coastal Forest	Waikanae Reserves (3 Reserves)	Flux covenant	Raroa Reserve	Greytown Memorial Park	Trellisick Park*
		Galbraiths Gully	Porirua Park	Rewanui	
		Keith George	Porirua Scenic	Tauherenikau	
Wetlands/ Riparian	O-Te-Pua swamp	Hulls Creek*	No coverage	No coverage	Glenside stream*
	Te Hapua	Moehau Stream*			
	Te Harekeke	Akatarawa River*			
Escarpments	Raumati	No coverage	Pukerua Bay	No coverage	No coverage
	Paekakariki				
Dunelands	Waitohu dunes	Petone foreshore*	No coverage	No coverage	Island Bay*
	Waikanae*	Eastbourne*			Princess/Houghton*
	Paraparaumu*	Pencarrow			
Estuaries	Waikanae	No coverage	Pauatahanui*	No coverage	Makara

Staff have provided support and advice to "Take Care" coordinators and groups on nine projects outside the KNE programme, as well as doing presentations to many on weed control pre and post planting.

The relationships between regional staff is improving as well as a unified approach from TLAs to jointly achieve good community and conservation outcomes.

Sites that have received pest plant control for more than two years are showing a good response, with natural species regeneration occurring in treated areas.

Some sites have been replanted in the 2006/07 year by staff in some of the more challenging areas and schools participated in weeding and planting on more accessible areas. Other sites have received countless hours of volunteer work



Porirua Scenic Reserve, Ngahue Street.
Old man's beard cut, removed and sprayed.

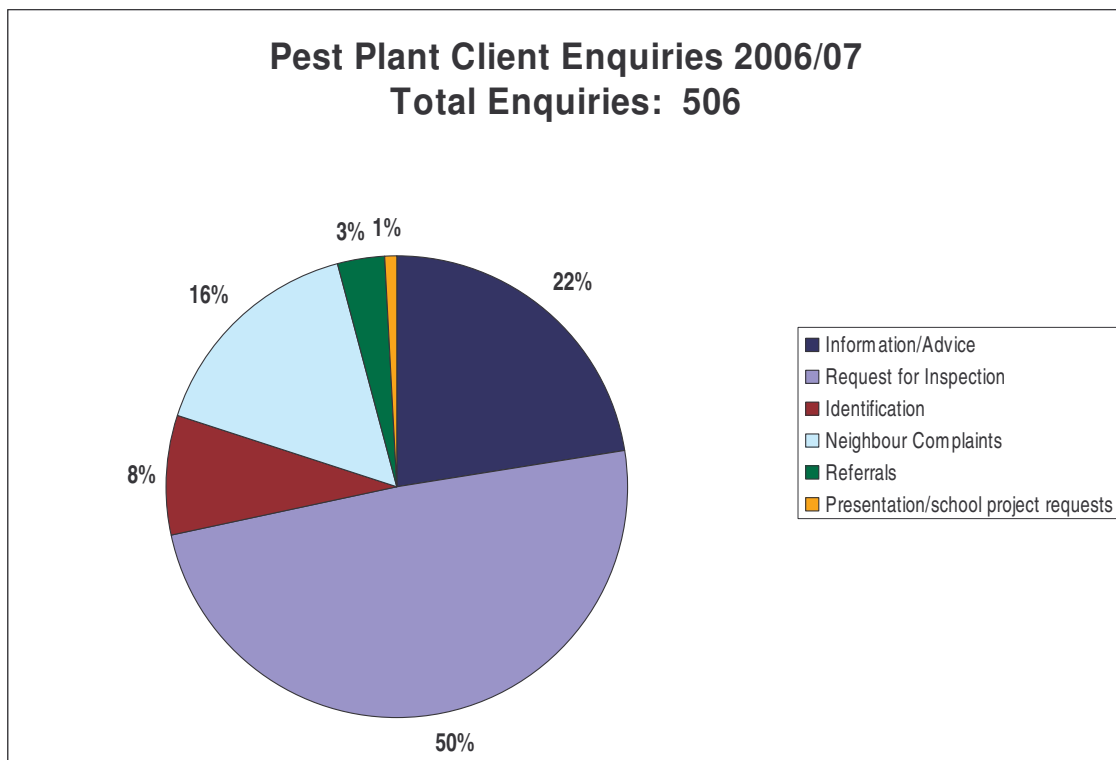
3. Highlights

A sample of highlights for the 2006/07 financial year includes:

1. The team has worked well to complete all required inspections and control work. A better understanding of individual species growth in relation to site and environmental variables has resulted in a lot more sites being controlled prior to the pest plants reaching maturity. More visits (up to five) above the current guidelines for annual inspections have been done to ensure successive years work is reduced due to removal of plants before seed set or vegetative spread.
2. The ongoing survey work by the Pest Plant team continues to provide high quality data on pest plant infestations. Quality data of this kind allows realistic and accountable strategies to be developed and accurate budget forecasting. The Greater Wellington survey initiative is creating a lot of interest from other Councils.
3. Momentum continues to build through TAs and community groups to restore KNE and reserves. Through well coordinated work by many, we are seeing a positive turnaround in KNE sites through natural regeneration as well as restoration planting and infrastructure development.
4. Releases of new biological control agents plus gathering of established agents to extend coverage is encouraging. Continued support of the Bio Control Collective is providing a more cost effective, rapid and coordinated approach for members. Landcare Research are providing very good services to Greater Wellington, supporting our staff and initiatives. **The cost to the region across all species was \$80,259.**
5. The initial trial to control hornwort using Endothall was completed and has provided more focused options to trial and offer operational guidelines to MAF BNZ and other councils.

6. Members of the Pest Plant team have prepared and attended numerous presentations, shows, group activities and weed swaps. Publications for newspapers, Greater Wellington ratepayer newsletters, magazines and information displays have been completed regularly. The benefits of this work are improved quality of work by volunteers, more notification of pest plants to Greater Wellington and better educated youth for the future.
7. The Wellington region hosted the NZ Biosecurity Institutes NETS2007 (National Education and Training Seminar) in August 2007. The Biosecurity Department from Greater Wellington and Horizons Regional Council organised an extremely informative seminar attended by over 250 members. The Wellington venue enabled a range of Government and international speakers to attend, elaborating on key Biosecurity issues.

4. Client response



A significant component of the RPMS involves providing information and publicity to enhance public awareness. It is Greater Wellington's aim to respond to all queries within 10 working days. However, this is not always achievable. During 2006/07, 78% of queries were responded to within the specific time.

Five hundred and six enquiries were recorded. These included requests for inspections, presentations, information for student projects, plant identification, control measures, complaints and information relating to infestations of specific plants.

Identification requests from occupiers was slightly up on the 2005/06 percentage. This may be due to more customer awareness of pest plants as a result of media articles.

However, queries did not always relate specifically to RPMS pest plants and information provided covered many other weed species.

5. Publicity

Publicity and education activities were undertaken in all RPMS operations. Staff worked to improve Greater Wellington's pest plant education presentations and publication material for information delivery. All staff attended presentations, shows and community group working days. **The cost for all publicity activities was \$55,864.**

Activities included:

- PowerPoint presentations to schools, clubs and community groups.
- Attending working bees and school field trips to deliver practical information on weed species and control.
- Provided articles to Wairarapa Midweek, Elements, Rural Services Newsletter, BNZ and Protect magazines.
- Supplied information on target pest plants in mail drops prior to property surveys.
- Actively promoted 'Weedbusters' programme as a forum for schools and community groups (including the public), to use to gain information.
- Attended shows and field days to show Strategy initiatives and provide publication and verbal information with live pest plant specimens.
- Supported DoC during "Weed Swap" days throughout the Wellington region and 'Plant Me Instead' booklets promotion.



Kevin Stevens Biosecurity Officer (Plants) with St Teresa's students weeding in Featherston

- Pedro Jensen (Biosecurity Officer) presented a paper on "*Promoting Weedbusters in Schools*" and won the Rob McGuiness 'Stook' award for best presentation at the annual New Zealand Biosecurity Institute NETS2006 conference.

5.1 Aquatic weeds awareness

The 2006/07 year was noticeable for the national attention applied to a number of relatively new biosecurity incursions in New Zealand -

- Considerable efforts were applied to keeping the varroa bee mite out of the South Island (SI). Unfortunately, these were unsuccessful.

- Control work was initiated on the aquatic pest plant hornwort in an attempt to eradicate new infestations that occurred in waterbodies at the top of the SI. This work is ongoing.
- Various efforts were made to manage new infestations of the sea squirts *Styela carva* and *Didemnum vexillum*, including using plastic wrap on jetties and wharves and removing infested boats from the sea for hull cleaning. Whilst there has been considerable success with these operations it has become clear that pest management in the marine environment is a major task requiring significant ongoing investment.

The most widely publicised incursion response concerned the increasing presence of the freshwater alga Didymo (*Didymosphenia geminata*) throughout large catchments of the SI. Biosecurity NZ has worked closely with a range of stakeholder groups (regional councils, DoC, Fish & Game NZ, electricity generators) to reduce the spread of Didymo, raise public awareness, and undertake control trials. A major focus of these groups has been to prevent spread to the North Island (NI).

A NI incursion will be treated as a new incursion and, therefore, will become the responsibility of MAF BNZ to manage. However, based on SI events it is likely that eradication of a new infestation will not be completely successful. For longer term management, NI regional councils are being asked to develop and implement plans that involve a range of stakeholder groups. Some funding assistance will be available from central government. There is no mandatory obligation on regional councils to be involved in this response. Each council will need to determine its long term role as it will involve the commitment of new resources.

6. Financial summary

	\$ (000's)
Rates and Levies	1,240.8
External Revenue	21.1
Internal Revenue	

Total Operating Revenue	1,261.9
Total Direct Expenditure	966.7
Divisional / Corporate Overheads	275.6

Total Operating Expenditure	1,242.2
Operating surplus	19.7

Part Two

PEST ANIMALS

7. Performance targets and measures

7.1 Containment species – rooks

Aim: To manage rooks as a Containment category pest to levels that protect production systems at a cost of \$57,120.

Annual Cost: The cost of rook management (surveys, research, compliance, education) for the region was \$69,154¹.

Means of achievement

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

Actual performance

In the 2006/07 year, aerial nest baiting was carried out at 18 breeding rookeries within the Wairarapa region.

The 18 rookeries represented all known breeding rookeries that were on Greater Wellington's database. A total of 168 nests were baited in the Wairarapa.

The number of nests treated this year remains similar to the number that were treated in the 2005/06 year, which was 178 nests.

Rooks were present in the Ohariu Valley in the Western Zone during the breeding season but there was no evidence of nesting taking place. Biosecurity staff contacted landowners in the area to try and gather information on where these birds were frequenting and asking them to report any suspicious activities that may indicate nesting attempts. Nothing of significance was reported.

There was no ground baiting of rooks carried out during the year. One report of crop damage was reported and investigated but no evidence of damage could be found. It has now been four years since ground baiting was carried out to control rooks damaging crops. The nest baiting programme continues to achieve a reduction in rook numbers.

Means of achievement

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

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

Actual performance

In the 2006/07 year, all new and historical sites were visited to determine the presence or absence of rooks. Only aerial surveys were utilised. Ground surveys cannot indicate the state of a rookery (state of incubation). Knowing this is important as it assists with planning timeframes to undertake control.

A record is kept of all nests baited at each breeding rookery. The total number of nests baited is used to estimate the region's total rook population. With this calculation, one nest is deemed equivalent to four and a half rooks.

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

Comprehensive rook awareness articles were published in the Wairarapa Midweek newspaper, the Kapiti News and the Rural Services Newsletter to raise the profile of rooks as a pest. A plea was made for all rookeries or sightings of rooks to be reported to Greater Wellington. There were 21 calls received from the public notifying us of the presence of rooks or new rookeries.

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 for rooks, nor does there seem much likelihood of this occurring in the near future.

Means of achievement

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

Actual performance

A display about rooks was presented at the Wairarapa Agricultural and Pastoral Show, The Lifestyle Farmers Otaki field day, and at libraries throughout the region. Information about rooks was freely available to the public.

The feature articles in the Rural Services Newsletter, Wairarapa Midweek newspaper and the Kapiti News made it plain that it is an offence under the Regional Pest Management Strategy (RPMS) for landowners to attempt any form of rook control, or disturb rookeries in any way.

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

A professional photographer was utilised to secure quality aerial photos of rooks' nests at various incubation stages from eggs to fledging young. These high resolution photos will be invaluable for future publicity purposes promoting advice and education.



Means of achievement

- (v) Encourage Horizons Regional Council to actively pursue management of rooks within their region that complements Greater Wellington's rook containment programme.

Actual performance

Horizons Regional Council was actively involved with aerial nest baiting in the 2006/07 year. Both Greater Wellington and Horizons were involved in a joint nest baiting programme on either side of the regional boundary that was designed to stem the southward migration of rooks to Wairarapa.

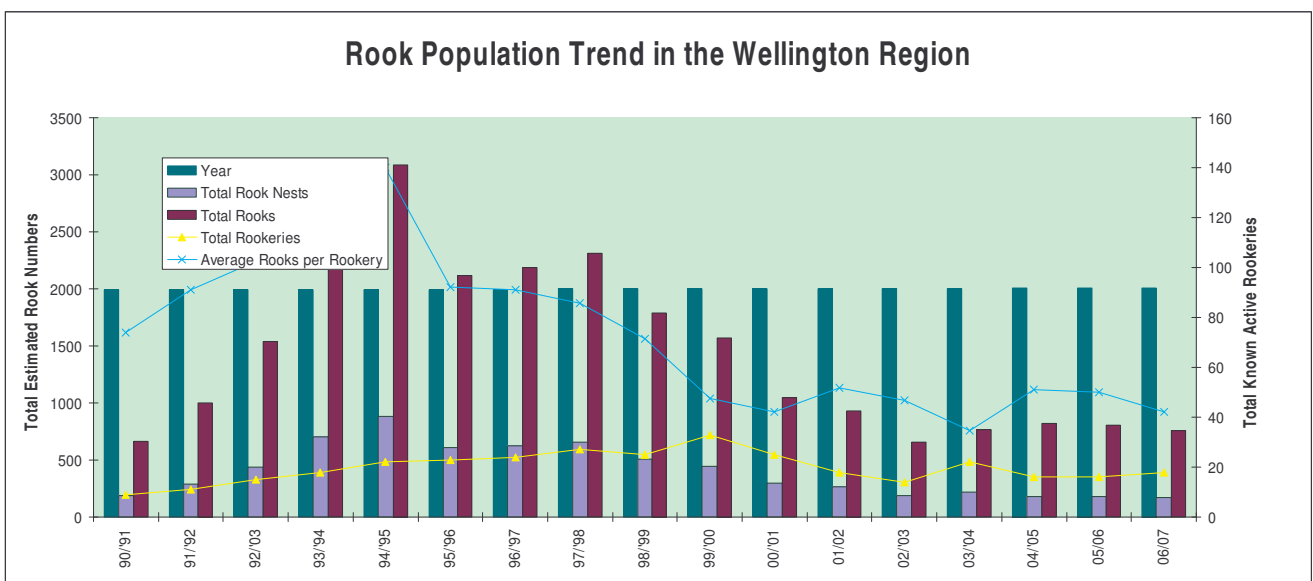
Greater Wellington staff met with Horizons Regional Council staff to discuss the forthcoming season's control. The purpose of the meeting was to co-ordinate the control work along each Council's boundary and to share our results from work completed last season.

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.



7.2 Suppression species – rabbits

Aim: To minimise the adverse impacts of feral rabbits throughout the region at a cost of \$71,400.

Annual Cost: The cost of rabbit management (surveys, service delivery, biological control, compliance, education and research) for the region was \$130,618¹

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

Monitoring throughout rabbit prone areas of the region did not disclose any areas of rabbit densities at/or above Level 5. Rabbits continue to be a nuisance in many beach communities but did not trigger density levels that required the regulatory intervention of Greater Wellington. Rabbit numbers reached the usual peak in December/January, but calls for control assistance were low.

Control operations were undertaken at the Waikanae Estuary Scientific and Recreation Reserve, situated at the mouth of the Waikanae River, and at the Waitohu Estuary at Otaki. 75 hectares were treated with Pindone carrot bait over a three week period. This operation was undertaken by Greater Wellington staff for the Department of Conservation (DoC) and Kapiti Coast District Council to protect existing and planned restoration plantings.

Means of achievement

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

Actual Performance

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

Means of achievement

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

¹Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

Actual Performance

In the 2006/07 year random properties with a previous history of high rabbit numbers were selected in the Wairarapa (Eastern Zone) for surveillance. These properties tended to be a cross-section from the Tararua to the East Coast and provided a general snapshot of the current rabbit trend for the region.

From the five properties that were inspected, the infestation level ranged between 2 and 3. Level 5 on the Modified McLean Scale is the trigger for remedial control to take place.

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

Actual Performance

RCD immunity surveys were undertaken at Industrial Research Ltd in Seaview (Hutt City Council), Whitireia Park (Porirua City Council), Pekapeka (Kapiti Coast District Council) and at Ian Galloway Park (Wellington City Council). An attempt was made to secure samples from Queen Elizabeth Park (Paekakariki) but no rabbits were seen. 70% of rabbits showed RCD immunity at the Pekapeka sample site, and RCD immunity was found at low levels at Whitireia Park. Biosecurity staff had difficulties in finding sufficient rabbit numbers to undertake sampling. This low population is evidence that the virus is continuing to cycle in rabbit populations.

Means of achievement

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

Actual Performance

Biosecurity Pest Animals staff conducted unannounced visits to pet shops across the region during the year. One retailer was spoken to about selling feral rabbits after suspicions were raised that they were available for sale. 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 Pest Management Strategy.

7.3 Site Led species – magpies

Aim: To manage magpies to minimise adverse environmental and human health impacts in the Wellington region at a cost of \$26,775.

Annual Cost: The cost of magpie management to minimise adverse environmental and health impacts for the region was \$57,760¹.

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 17 urgent complaints logged regarding attacking magpies with all 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

One hundred and seventy-nine nuisance calls were received. One hundred and twelve of these were to Wairarapa staff and sixty-seven to Upper Hutt staff. One percent of calls in the Wairarapa and fifty two percent of calls in the Western Zone had response times over 10 days. All requests for information or assistance from the public is entered onto Greater Wellington's 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. There are regular trap shortages, as more and more people become concerned about the negative impacts of magpies. As traps become available, staff deliver these and demonstrate best practice trapping techniques to maximise results.

Refer Section 13 for further details on magpies.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

7.4 Site Led Mt Bruce (Pukaha) predator buffer

Aim: Complement the native flora and fauna restoration programme undertaken by the Department of Conservation, Rangitaane o Wairarapa and the National Wildlife Trust at the Mount Bruce Scenic Reserve at a cost of \$37,485.

Annual Cost: The cost for the predator control programme within the buffer for the 2005/06 financial year was \$49,218¹.

The main objective of this project is to reduce and maintain all predator numbers to very low levels and to restrict or negate completely any reinfestation into the Mt Bruce Reserve. These predators include possums, cats, ferrets, stoats, weasels, hedgehogs, ship rats and Norway rats. For the period 1 July 2006 to 30 June 2007 a total of 18 cats, 315 rats, 252 hedgehogs, 8 ferrets, 1 stoat, 13 magpies and 8 rabbits were destroyed. Possums, rats and mice were also destroyed, but not physically counted, through the use of 85 kilograms of Brodifacoum pellet bait and 56 kilograms of Contrac rat blocks.

The Pukaha predator programme was carried out by a prescriptive Service Provision Contract during the 2006/07 year. The total 2,223 hectare buffer was controlled by contractors.

The Pukaha 'mainland island' concept is a continuing success story. Currently there hasn't been any recorded loss of released species such as kiwi and kaka by predation since integrated pest control was implemented there. Both kiwi and kaka are breeding unassisted within the confines of the Reserve.

7.5 Feral and unwanted cats as a threat to Biodiversity

Aim: Raise public awareness of feral and unwanted cats as a threat to biodiversity at a cost of \$35,700.

Annual Cost: The cost for the public awareness programme in relation to feral and unwanted cats as a threat to biodiversity for the 2006/07 year was \$35,767¹.

The cat desexing campaigns this year was limited to the Wairarapa because of a lack of discretionary funding. The campaigns were conducted during April and May, with Greater Wellington providing financial support to subsidise the cost to cat owners and to share some responsibility for advertising and promotion. One programme was organised by Vetcare Ltd and the other by the Wairarapa SPCA with the support of local veterinarians.

A total of 285 cats were treated at an average cost to Greater Wellington of \$37.43. This is a similar outcome to the campaigns of the past two years which created an interim shortage of kittens and hopefully a marked decline in the amount of cats being abandoned in the countryside. Abandoned cats are a threat to our native birds and lizards and left uncontrolled, impact adversely on Greater Wellington's biodiversity enhancement programmes. They also spread disease.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

7.6 Site Led - Key Native Ecosystem Management

Aim: To protect indigenous biodiversity in a comprehensive selection of Key Native Ecosystems at a cost of \$612,168 (Pest Animals \$472,168; Pest Plants \$140,000).

Annual Cost: The cost to achieve a measurable improvement in the ecological health and diversity of Key Native Ecosystems through pest animal control was \$744,555¹.

Means of Achievement

- (i) Maintain holistic management in existing Key Native Ecosystem (KNE) areas.

Actual Performance

All KNE and other biodiversity support programmes that have had possum control undertaken by Greater Wellington are being maintained. More commitment is given to maintaining existing programmes, than taking on new works. Most areas are maintained on a three monthly cycle by Greater Wellington staff or service providers. Service providers have been contracted to maintain most of the KNE in Wellington, Porirua and the Kapiti Coast on three monthly bait station fills. In the Wairarapa, contractors service the Waihora, Sulphur Wells and Mount Bruce/Pukaha Buffer KNE on a monthly basis as predators in addition to possums and rats are being targeted. Greater Wellington staff provide the balance of the servicing requirements. The shortage of trained staff within the industry severely impacted on the KNE programme this year. The three month cycles were extended up to six months and longer, and jobs were tendered by Greater Wellington for which no offers were received. Greater Wellington Biosecurity is reorganising its resources so that a larger amount of projects previously contracted are now going to be undertaken internally..

Means of Achievement

- (ii) Prioritise and select additional Key Native Ecosystems.

Actual Performance

A prioritisation process has been carried out, with sites ground truthed to better ascertain the intrinsic values such as the presence of rare or threatened species, community value or ecological benefits of linkage to other such sites. A 'Top 100 Site' database has been built with all data from the ground truthing surveys entered.

Means of Achievement

- (iii) Establish and implement integrated pest management plans for all Key Native Ecosystems.

Actual Performance

This is a long-term objective. Fully integrated pest management is expensive.

¹ Original budget figures in the Operational Plan for 2006-2007 were based on net costs excluding overheads. Annual costs in this Operational Plan Report include all corporate and administration overheads.

All Wairarapa sites have integrated management regimes. All sites in the Western Zone are set up to control rats and possums with mustelid control being added to the top priority sites as funds become available. See section 9.6 'Mustelid Control in the Western Zone' for more detail.

Means of Achievement

- (iv) Ensure Key Native Ecosystems are legally protected into perpetuity.

Actual Performance

All of the KNE's treated during 2006/07 were legally protected (Territorial Authority Reserves, QE II Covenants, or at the very least, contained legally protected sites within the management area).

Means of Achievement

- (v) Undertake direct control by service delivery of pests identified in the management plan for each Key Native Ecosystem.

Actual Performance

Pest animal operations were conducted in 32 private land KNE and 51 Territorial Authority reserves within the region. All Territorial reserve work was jointly funded with the affected Authorities.

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. This is described in detail in Section 10 'Ecological outcomes'. This section covers both outcome and performance monitoring.

Means of Achievement

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

Actual Performance

Greater Wellington has been involved with community groups for many years. This is described in detail in Section 9.8 'Volunteer and care groups'.

Means of Achievement

- (viii) Where Key Native Ecosystems are identified on Territorial Local Authority land, seek funding from the relevant authority to form financial partnerships.

Actual Performance

Greater Wellington has sought to maintain an excellent rapport with all of the regional TLA's on matters concerning pest management.

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

The work programmes are agreed between the parties and regular liaison is maintained. The TLA's were invoiced monthly for their share of costs and contributed \$115,000 (from an original budget of \$121,500).

A MOU is prepared and agreed annually between Greater Wellington and the western TLA's. 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, mainly due to the fact that they own a minimal amount of land prioritised for biodiversity support.

Means of Achievement

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

Actual Performance

Pest animal and plant control is being undertaken concurrently with various ecological based objectives of a number of care groups. This has been implemented at several sites including Waimeha Lagoon (Waikanae), Fensham Reserve (Carterton), Trelissick Park (Wellington City Council), Waitohu Estuary (Otaki), Paekakariki Escarpment (Kapiti Coast), Redwood Bush and Wilf Mexted Reserve (both at Tawa).

Means of Achievement

- (x) Liaise with DoC to determine the distribution of, and appropriate control methods for, coarse fish, catfish and mosquito fish.

Actual Performance

Liaison with DoC regarding pest fish issues continues to be regularly maintained. Joint initiatives are actioned wherever possible. The pest fish of most concern to Greater Wellington are koi carp, gambusia, rudd, brown bullhead catfish and goldfish.

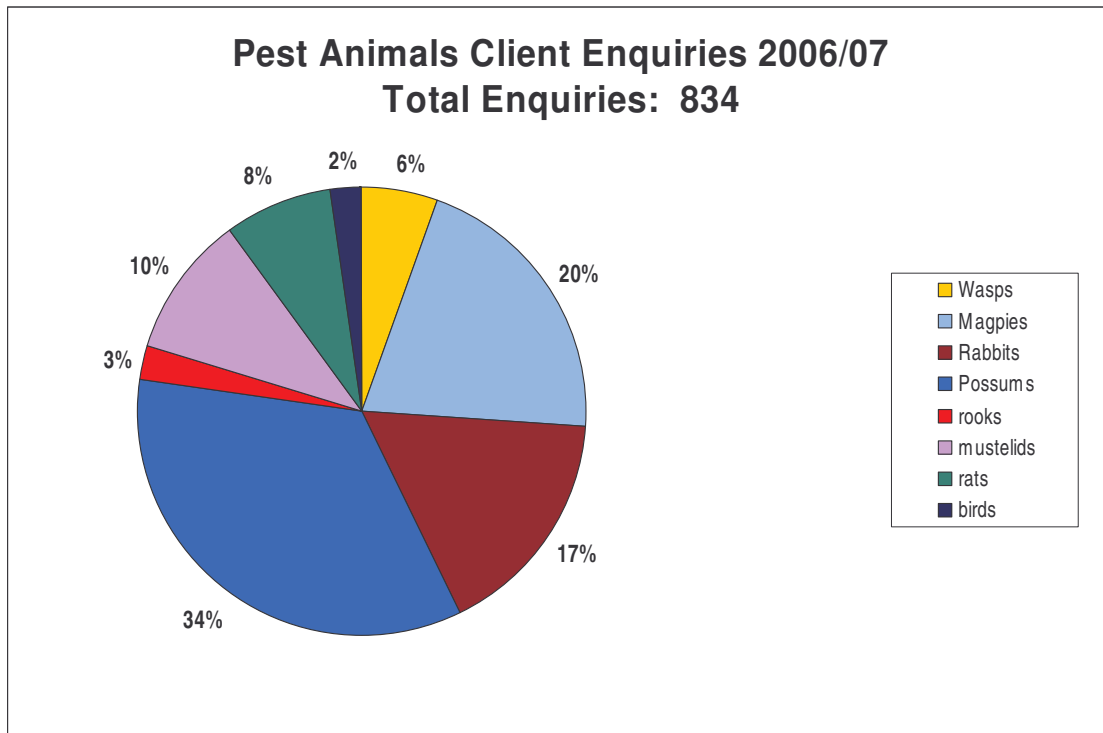
Means of Achievement

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. Greater Wellington provides a list of information literature, attends forums and field days with ecological themes and meets with groups or individuals to convey information. New and updated brochures from all Greater Wellington divisions involved in biodiversity management have been produced.

8. Client response



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

Overall there were 834 enquiries for the 2006/07 financial year.

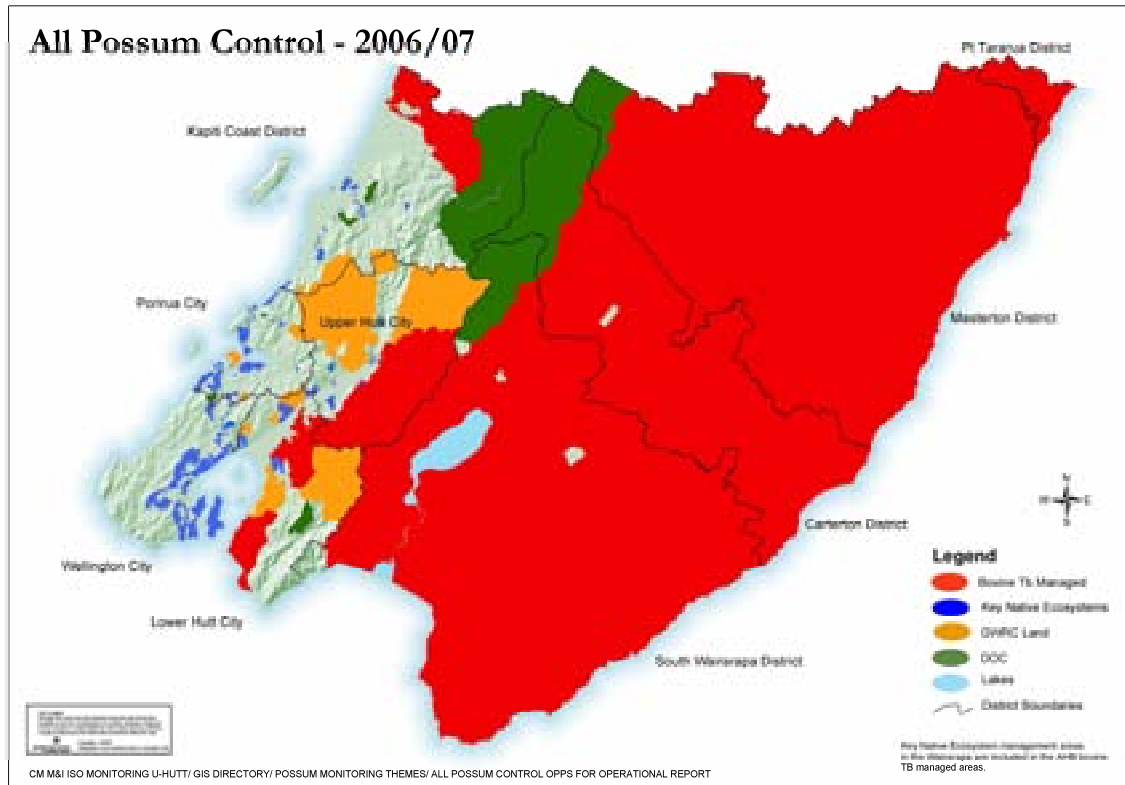
9. Biodiversity support programmes

9.1 Predator control

The biodiversity support programmes for the Wellington region includes native forest, wetlands, dunelands, coastal escarpments and other sites with regionally significant conservation values, but excludes areas administered by DoC. A large portion of the region is subject to ongoing possum control, principally for Bovine Tb purposes. The Parks Department of Greater Wellington and DoC continue to carry out possum control in a significant portion of their estates.

Bovine Tb possum control continues over much of the Wellington region. Bovine Tb infected cattle and deer herds have continued to decrease in the region, with the first stages of vector control roll back due to occur in 2009 in the north of the region. Greater Wellington is investigating management and funding regimes for on-going possum control to continue the environmental gains of the Tb vector control work.

At 30 June 2007, there were 10 infected cattle herds and no infected deer herds in the region, a testament to the effective Bovine Tb vector control programme. Ten years earlier there were 198 infected cattle herds and 10 infected deer herds.



9.2 KNE operations

During the 2006/07 year, 18,406 hectares of either possum and/or predator control was undertaken. This comprised of 67 sites in the Western Zone and 16 sites in the Eastern Zone.

9.2.1 Maintenance operations

Western Zone	Hectares
Kapiti	465
Porirua	1,236
Wellington	4,349
Lower Hutt	869
Upper Hutt	463
Total	7,382
Eastern Zone	Hectares
Masterton	3,780
Carterton	223
South Wairarapa	6,040
Total	10,043

9.2.2 Initial operations

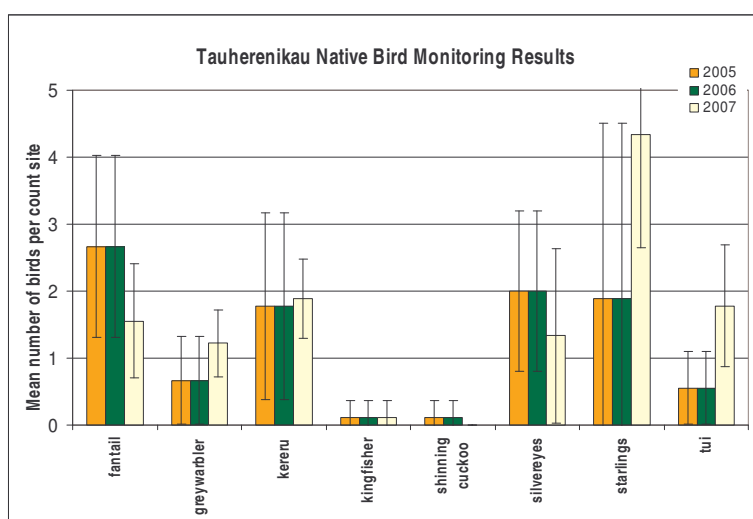
Western Zone	Hectares
Kapiti	91
Porirua	84
Wellington	181
Lower Hutt	249
Upper Hutt	40
Total	645
Eastern Zone	Hectares
Masterton	336
Carterton	0
South Wairarapa	0
Total	336
Grand Total	18,406

Past years operational hectares are:

Years		Hectares
2005/2006	-	17,763
2004/2005	-	17,089
2003/2004	-	17,664
2002/2003	-	16,274
2001/2002	-	10,840
2000/2001	-	16,012
1999/2000	-	15,681
1998/1999	-	9,390
1997/1998	-	18,000

9.3 Tauherenikau integrated pest management

Biosecurity Pest Animals and Pest Plants teams are currently working collaboratively to undertake a long term control programme to rid the Tauherenikau Racecourse bush and adjoining Donald's Bush of invasive plants and predator pests. The area is a multi use facility and being centrally located in the Wairarapa, it is ideally suited for future use as an educational venue for the promotion of biodiversity values to local school groups and various other interest groups.



A further planting of natives took place at Tauherenikau, expanding on the previous planting of the 2006/07 year. This work was carried out by Pest Plants staff from Masterton and Upper Hutt.

While rabbit numbers have remained at moderate levels, there has not been any obvious damage occurring to the plantings. Protective sleeves placed over the plants have largely prevented any losses.

9.4 Rewanui Bush integrated pest management

Biosecurity Pest Animals completed the first year of predator control at Rewanui which is a 334 hectare property situated on the Masterton-Castlepoint Road, and which is owned by the Montford Trimble Foundation.

The property has areas of native bush, open grasslands and sites suitable for growing both native and exotic species. The Foundation intends to develop the property as a forest park.



Rewanui is one of 49 'Category One Recommended Areas for Protection' identified by DoC in the eastern Wairarapa. Rewanui is described as one of the best remaining examples of lowland forest in the ecological district, with high species diversity (flora and fauna) and occupying a wide altitudinal range.

Predators controlled for the 2006/07 year were:

Cats	14
Hedgehogs	123
Ferrets	7
Stoats	1
Magpies	5
Rats	146
Weasels	5

Possum control is undertaken under the Bovine Tb vector control programme.

9.5 Other Wairarapa Key Native Ecosystems

Predator or possum control maintenance has been ongoing at all other KNE operational areas across the Wairarapa during the 2006/07 year. There are 16 KNE operations that are worked annually in the Wairarapa.

J G McCaslin Trappers Ltd undertook predator control at Waihora and Sulphur Wells on a prescriptive contract.

9.6 Mustelid control in the Western Zone

Mustelid control is gradually being increased in the Western Zone of the region. The pest animal management programmes in the Wairarapa target all predators, while the Western Zone has primarily focused on possums and rats in the past. More mustelid control is being introduced into the Western Zone, with active trapping programmes at the following sites:

- Porirua Scenic Reserve
- Denton Park/Polhill Reserve
- Wrights Hill
- Redwood Bush
- Wainuiomata Mainland Island
- Pikarere Farm
- Keith George Memorial Park

Four new sites in the Western Zone for the 2006/07 year were:

- Tarakena Bay
- Oku Street Reserve
- Otari Bush
- Paekakariki Escarpment



Sixty DoC 200 traps have been installed at Otari Bush, operated by volunteers. The Tarakena Bay site is located at the southern end of Miramar Peninsula, and links in with the possum eradication work undertaken on the peninsula.

A number of private landowners with large properties in Ohariu Valley have installed mustelid and feral cat traps. These were installed to protect pheasants which have been released for game shooting, but will prove beneficial for indigenous wildlife in the area.

Greater Wellington has produced a new fact sheet on “Best Practice Use of the DoC Mustelid Trap Range”.

9.7 Biodiversity assistance for private landowners

Biosecurity, Environment and Land Management Departments of Greater Wellington all have programmes to assist private landowners with biodiversity protection work. The level of assistance varies depending on the legal protection and biodiversity value of the land. To commit funding towards management of an area, the protection of the site must be guaranteed into the future.

Biosecurity Pest Animals staff assisted 32 covenant owners with pest animal control in the 2006/07 year. The initial control and materials are supplied by Greater Wellington, followed by materials, such as bait, for on going maintenance.

9.8 Volunteer and care groups

Care groups and individual volunteers undertake pest animal control in many areas of TLA Reserve and private land within the Wellington region. Volunteers are involved in pest control in 21 of the 92 Key Native Ecosystems in the region, covering 2,258 hectares of forest, wetland, estuary and coastal ecosystems. All volunteer groups carry out combined possum and rodent control, and some groups target mustelids through trapping.

The following volunteer groups undertake pest animal control:

Site	Care Group	Hectares
Fensham Reserve	Forest and Bird	30
Greytown Park Bush	Friends of Greytown Park Bush	4
Waihora Stream	Waihora Stream Care Group	1,089
Linkwood Bush	YMCA	5
Tora Coast Bush	YMCA	15
Waimeha Lagoon	Waimeha Lagoon Care Group	8
Paekakariki Escarpment	Nga Uruora	117
Kaitawa Reserve	Resident	12
Karehana Bay	Resident	170
Grays Bush	Resident	2
Sargent Covenant	Resident	40
Mexted Bush	Friends of Tawa Bush Reserves	34

Volunteer groups continued:

Site	Care Group	Hectares
Woodburn Drive	Friends of Tawa Bush Reserves	13
Redwood Bush	Friends of Tawa Bush Reserves	47
Emerald Hill	Forest and Bird	52
Maidstone Park	Forest and Bird	30
Keith George Memorial	Forest and Bird	147
Wi Tako	Forest and Bird	147
Percy's Reserve	Resident	40
Amesbury Reserve	Residents	4
Makara Peak MTB Park	Mountain Bike Park Supporters	252
Total		2,258

Several volunteer groups have grown considerably since their establishment, and as they successfully control one area, have moved into managing further sites. For example, "Friends of Tawa Bush Reserves" was established in 2000. They began controlling 47 hectares of Redwood Bush, undertaking monthly fills with Brodifacoum bait. In 2004 they extended to control 34 hectares of Mexted Bush, and in 2006, 13 hectares of Woodburn Drive Bush. The volunteers now service 94 hectares of bush, undertaking possum and rodent control on a monthly basis.

Successful, dedicated volunteer groups like this are vital to pest animal control in these parts of the region.

10. Ecological outcomes

10.1 Monitoring

Monitoring is undertaken in a number of selected KNE sites throughout the Wellington region. This monitoring has three primary aims:

- To determine whether environmental outcomes and objectives have been achieved.
- To determine the direction of maintenance programmes and to enable the modification of management priorities and control methodologies.
- To provide an operational and performance measure.

Presently, monitoring programmes are undertaken for rodents, possums, mustelids and native birds. Possum, rodent and mustelid monitoring is useful for comparing populations before and after control, and native bird monitoring indicates relative abundance before and after animal control.

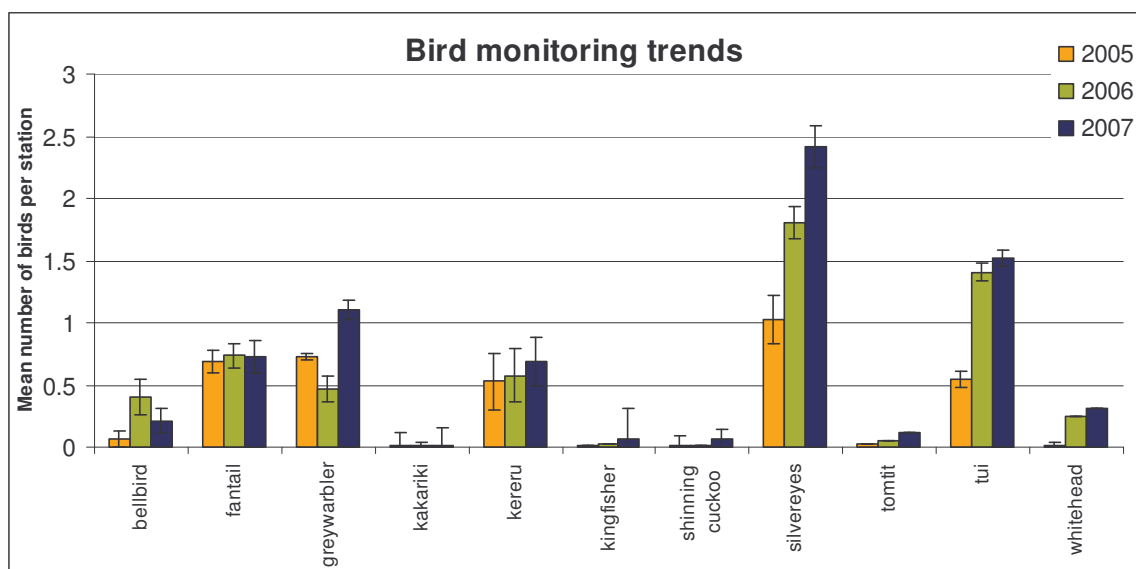
10.2 Native bird monitoring

The 2007 bird monitoring programme was undertaken in February and March of 2007. Monitored sites increased to 13, up from nine sites in 2006. Monitoring sites were selected because they have been either assigned ‘high priority’ using an ecological prioritisation model, or because there was interest from volunteer groups or authorities.

The 13 sites monitored this year were:

- Cloustonville – started 2007 (Upper Hutt)
- Emerald Hill – started 2006 (Upper Hutt)
- Greytown Park – started 2007 (South Wairarapa)
- Keith George Memorial Park – started 2005 (Upper Hutt)
- Maidstone Park – started 2006 (Upper Hutt)
- Riverstone – started 2007 (Upper Hutt)
- Porirua – started 2005 (Porirua)
- Pounui – started 2005 (South Wairarapa)
- Sulphur Wells – started 2006 (Masterton District)
- Tauherenikau – started 2005 (South Wairarap)
- Trentham Memorial Park – started 2007 (Upper Hutt)
- Waikanae River – started 2007 (Kapiti)
- Witako – started 2006 (Upper Hutt)

Five minute bird counts were used to determine the relative abundance and distribution of native bird species at these sites.



Data was collected using point-transect or random point sampling and analysed with confidence intervals calculated. Predictably, the larger reserves showed greater bird abundance than did the smaller sites, however, the overall diversity of native species present remained similar in both small and large reserves. Larger reserves, or those connected to larger bush blocks, recorded significantly higher average numbers of tui, bellbird, silvereye and whitehead. Smaller or isolated blocks recorded a high proportion of exotic birds, in particular blackbirds, starlings, finches and magpies. This is an

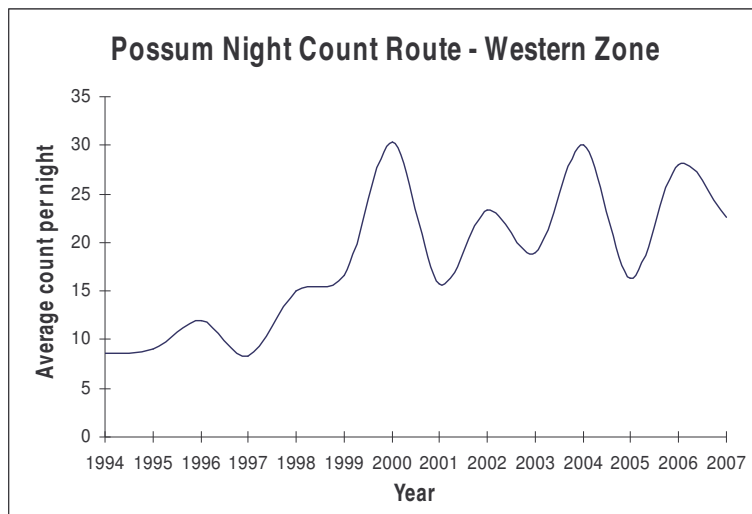
important finding for the management of these blocks supporting the designation of large blocks as higher priority than small ones.

Most reserves recorded a mix of indigenous bird species. Significantly the monitoring has identified sites with populations of locally rare or range restricted species such as whiteheads, kākāriki, bellbirds, tomtits and stitchbird. Silvereyes and tui were the most abundant bird species. Fantails and greywarblers were the most widespread and were present in all reserves. Waikanae was the most abundant and diverse reserve with a total of 360 birds from 28 different species, including our first observation of a stitchbird. A surprising result given the relatively small size of the reserve. Keith George still retains the largest populations of whitehead and tomtits in the region, and Pounui boasts largest the largest populations of greywarbler, silvereye and tui.

Pest control is carried out in all but four of the monitored sites as part of integrated pest management programmes. It appears that fantails, tomtits and whitehead benefit most from pest control. Pest control is most likely to support an increase in bird abundance and improve the viability of already present populations. Pest control reduces competition and predation pressures on bird populations, and rare species have a better chance of establishing sustainable populations. Native bird abundance and diversity has become an important indicator of ecosystem health because many species require a relatively unmodified ecosystem to persist.

10.3 Trend monitoring for possums

Trend monitoring for the possum population in the absence of formal control has been undertaken at Belmont Regional Park since 1994. The possum numbers in Belmont tend to have increased since 1998 and fluctuate around a mean of about 23. Fluctuations are not unexpectedly large so no dramatic changes in population levels are evident.



10.4 Rabbit densities

Rabbits remained at low levels in the Wellington region for the 2006/07 year. Problem areas are continuing to occur on lighter soil types in coastal zones and on newly developed lifestyle blocks.

Rabbit monitoring was undertaken in both the Eastern and Western Zones of the Wellington region. Night monitoring was undertaken in QE II Park on the Kapiti Coast and in the Tauherenikau riverbed in the Wairarapa. Rabbit numbers have remained stable in the Wairarapa, and have dropped to low levels on the Kapiti Coast.

No areas within the region exceeded level four on the Modified McLean Scale, and no letters of warning for rabbit control requirements were sent out for the 2006/07 year. It seems unlikely numbers will rise significantly within the next few years due to the continued presence of RCD and the population trend analysis over the last five years.

The anticoagulant rabbit bait Pindone carrot remains a popular tool for rabbit control in urban and rural situations. This toxin is at most demand during the breeding season and drier months of summer. Biosecurity staff continue to undertake nightshooting on request, particularly in urban parks and reserves where baiting is an unsuitable control method.

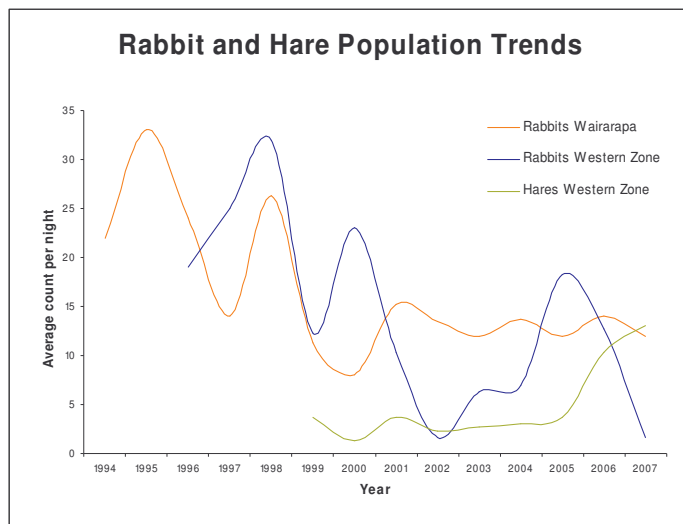
Rabbit Calicivirus Disease (RCD) continues to cycle in the Wellington region. Biosecurity staff undertook RCD monitoring in the late summer of 2007, with RCD immunity as high as 40% in some areas. Despite these relatively high levels of immunity, the virus continues to suppress rabbit populations across the region.

10.5 Results of rabbit trend monitoring to 2007

Permanent night count lines for rabbits are monitored for fluctuations in abundance in the absence of formal control.

Sites were selected to the following criteria:

- No control of feral animals envisaged in the foreseeable future;
- reasonably high and established population of the target animals.



Each count line consists of 25 individual and permanently marked sites, accessed by motorcycle and spotlight counted for three consecutive nights annually in May/June.

Night monitoring for rabbits and hares has been ongoing since 1996 at QEII Park (Western Zone), and since 1994 on the Tora Coast (Wairarapa).

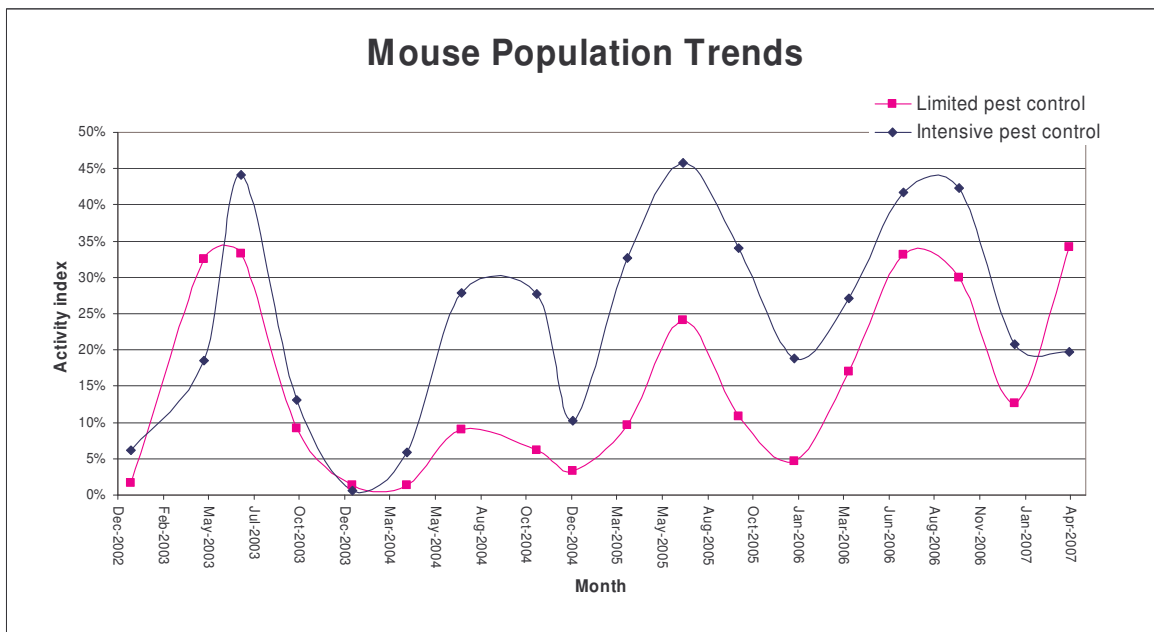
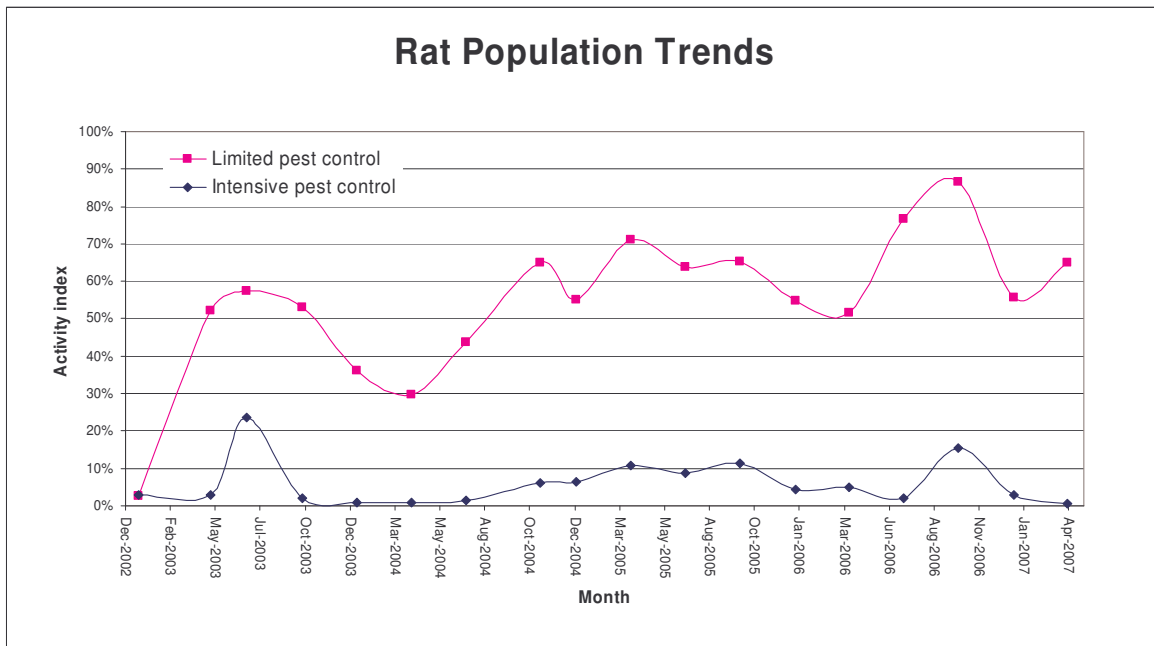
Since 2005 the rabbit numbers in QEII Park have decreased and are now equal to the lowest count (recorded in 2002). Conversely, hare numbers have continued to climb. Rabbits and hares tend to exclude one another when either species is numerous (Parks, 2001).

11. Rodent populations

Rat numbers were found to be particularly high in the late summer and autumn of 2007. Autumn is the traditional time for a peak in rat numbers, but this was exacerbated by an unusually dry period from February to April. Many drains and creeks dried up, forcing rats to seek water closer to human habitation. One client reported rats chewing through

water pipes under her house in search of water, the first time this had occurred in fifteen years.

Rats are controlled as a by-kill in areas where Brodifacoum poison is applied, and reports of rat infestations in urban areas reduced following the usual 3 month fill of bait stations. Rats are only targeted under the Regional Pest Management Strategy in Key Native Ecosystem areas. Domestic rat problems need to be controlled by the occupier. Rats that are a human health concern are reported to an Environmental Health Officer.



12. Public relations

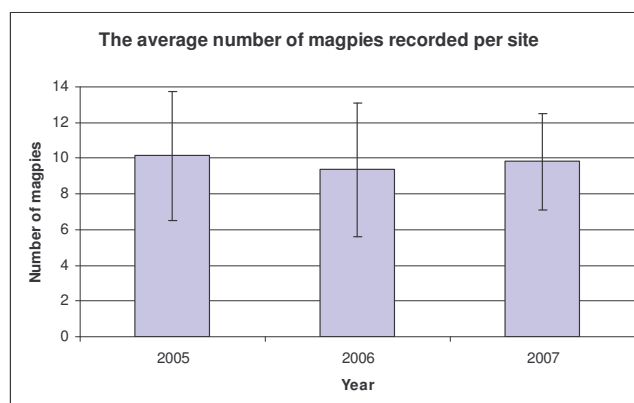
The following events were attended and the opportunity taken to promote the aims and objectives of Greater Wellington in relation to pest plants and animals.

Public relations and education events July 2006 to June 2007:

Group or Event	Date	Topic
Pataka Museum Porirua	July 2006	Conservation week
Otari Open Day	September 2006	Biodiversity
Rook display Ohariu Valley Golf Club	October 2006	Rooks
Otaki Field Days	May 2007	Pest control
Evans Bay Intermediate School	February/May 2007	Conservation
Forest and Bird (Upper Hutt)	June 2007	Pest control Wellington

13. Magpie survey 2007

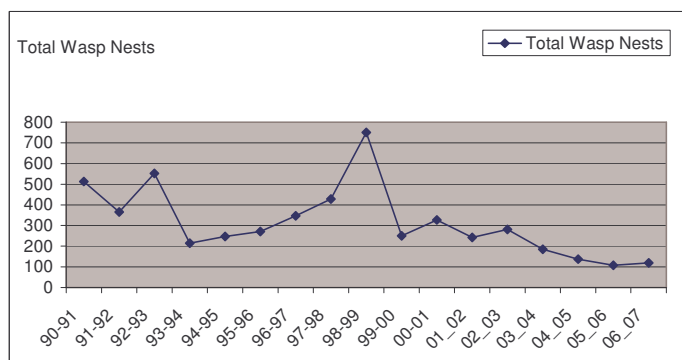
Greater Wellington undertakes annual magpie surveys in the Wairarapa to determine the dynamics of magpie populations in the absence of formal control. Twenty sites were monitored and a total of 196 birds were recorded (at an average of 9.35 birds per site). Although this figure is slightly up



from the 2006 figure of 187 birds, the change is minimal. The stability of the average magpie trend indicates that magpies may have reached carrying capacity in the Wellington region. Continuation of the monitoring programme will confirm this trend.

14. Wasps

Over the summer months of 2006/07 Biosecurity staff in both Masterton and Wellington regularly received calls from the public seeking advice and assistance for problem wasp nests. The majority of cases were referred to a registered



insect pest control company, but nests that presented a human health hazard in public places were treated. 2006/07 saw some high profile wasp attacks, with a Masterton woman hospitalised in January after disturbing a wasp nest.

Wasp numbers reached their peak in March, but the overall population was still only slightly higher than 2005/06. Entomologists linked the spate of attacks this year to both wasps and people becoming more active in the fine, dry months of late summer and autumn. Scientists warn that if climatic and food source conditions are suitable, a boom year for wasps, such as 1999/2000 could readily occur again.

15. Feral ungulates

Feral ungulate numbers are on the increase in the Wellington region. The pest animal's team in the Western Zone have received an increasing number of calls requesting goat control in the 2006/07 year. In early 2007, Biosecurity staff destroyed 51 goats in Carey's Gully on Wellington's south coast that were creating a human nuisance. An increasing number of goats have been shot around roads and public reserves, particularly in western and southern Wellington. Wellington City Council currently have a annual hunting programme on their land using professional goat hunters, which they will continue with in 2007/08.



Deer and pigs have been noted in sites close to suburban Wellington, including Karori, Wrights Hill, Grenada North, Hayward's Hill, Whiteman's Valley and Pauatahanui. These populations are largely the result of illegal releases. Deer and pigs in urban areas are relatively safe from hunting pressure, as was displayed by the Dominion Post photo of a fallow buck walking on a Karori street during the rut of 2007. Anecdotal reports show deer and pig numbers are rising in the region, particularly on private land in the Wairarapa.

16. Information brochures

Greater Wellington has developed a new brochure which provides information on the biology and adverse environmental impacts of feral deer, pigs and goats.

Information sheets and brochures are one of the most important tools in imparting advice and education to the regions constituents. The Biosecurity Department has built a significant resource in this regard. However, information becomes dated especially with new legislative requirements or shifts in internal policy. A review of the information available for pest animal management has been carried out, shortfalls identified, and updates planned. New brochures will be written for rodenticide baits and for integrated multi-species pest animal management. These will be of particular benefit to occupiers wanting to undertake their own control.

17. Retailer inspections

Two authorised Biosecurity staff members conducted these inspections pursuant to sections 52 and 53 of the Biosecurity Act 1993. The Biosecurity staff visited 187 retail outlets, pet shops, SPCA centres, stock and station outlets and veterinary clinics throughout the region. 126 more retail shops were inspected than in the 2005/06 year. The initial inspections were undertaken in the months October through November 2006. 20 retailers were re-visited in March and April 2007.

One veterinarian was found to be holding feral rabbits, but these were not for sale.

Shop staff and managers were helpful and courteous to the inspecting staff. The majority of retailers had a responsible attitude towards the illegal sale, distribution and breeding of pest plants and animals. An information brochure was left at each outlet which explained the following:

- Why it is illegal to sell pest plants and animals;
- What pest plants and animals are banned from sale;
- Which pest plants and animals are not recommended for sale;
- The possible penalties for illegal trading;
- How traders can help with minimising the risk of unwanted organisms invading ecosystems.

18. Pest Animal management for Greater Wellington Parks Department

The Biosecurity Department carried out and managed ground pest animal operations for the Parks Department on approximately 4,600 hectares of Greater Wellington owned land. Control work was carried out by Pest Animal staff, contractors and volunteers targeting a range of pests such as possums, rats, mustelids and goats.

The areas of Cannon Point, Dry Creek and Tunnel Gully had initial possum and rat control work completed while Speedys Reserve, Korokoro Valley, East Harbour Regional Park (Northern Forest Block), Wainuiomata Mainland Island, Whitireia Park received maintenance possum and rat control work. Control work was achieved through kill traps and permanent bait stations.

Goats were controlled in Dry Creek and mustelids were targeted within Wainuiomata Mainland Island.

19. Financial Summary

The year end result for the Pest Animals Section was an unfavourable variance of \$19,100 (1.4%). Revenue was down by \$107,300 (7.8%) with operating expenditure down by \$88,300 (8%).

Income from TLA's was \$115,000 against a budget of \$121,500.

	\$ (000's)
Rates and Levies	1,004.4
External Revenue	115.0
Internal Revenue	141.2
	<hr/>
Total Operating Revenue	1,260.6
Total Direct Expenditure	1,018.4
Divisional/Corporate Overheads	261.2
	<hr/>
Total Operating Expenditure	1,279.6
Deficit	(19.1)
	<hr/>

Water, air, earth and energy – elements in Greater Wellington’s logo that combine to create and sustain life. Greater Wellington promotes **Quality for Life** by ensuring our environment is protected while meeting the economic, cultural and social needs of the community

For more information, contact Greater Wellington:

Masterton office
34 Chapel Street
PO Box 41
Masterton 5840
T06 378 2484
F06 378 7994

Upper Hutt office
1056 Fergusson Drive
PO Box 40847
Upper Hutt 5140
T04 526 4133
F04 526 4171

pest.plants@gw.govt.nz
pest.animals@gw.govt.nz
www.gw.govt.nz

All photographs are
copyright Greater
Wellington unless
otherwise credited

COVER PHOTOGRAPHS:
Feral cat, photo:Rex Williams
Madeira vine
Rabbit, photo:Rob Suisted
Saffron thistle
African feather grass
Rook, photo:Rob Suisted
Woolly nightshade
Possum

Publication date November 2007
Publication GW/BIO-G-07/286