Regional Pest Management Strategy 2002 - 2022

Pest Plants and Pest Animals

Operational Plan Report 2007 - 2008

Biosecurity Department

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Contents

1. Introduction

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

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

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

Effective implementation of the strategy will assist Greater Wellington 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 and ecological health.

This report is the sixth since the implementation of our strategy. Since 2002 we have made great strides in effectively managing a number of pests and enhancing biodiversity over large parts of the region, with support from landowners, care groups, and Local Authorities. We are continuing to work toward achieving the appropriate objectives within the current strategy. During the course of the current strategy information collected has led to changes for the ongoing management of various pest species. This has led to a number of proposed changes in the objectives and focus of the document. Management may take a different form, or have a longer timeframe for some species in the new proposed strategy.

The 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 2007/08 year.

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

Part One

PEST PLANTS

2. Performance targets and measures

2.1 Surveillance species

Aim: **To determine the extent of specific plant species within the Wellington region at a cost of $52,300**

Annual cost: **The cost of managing Surveillance plants throughout the region during 2007/08 was $81,653**

Means of achievement

(i) Undertake inspections of all random sample points to determine the presence of these species.

(ii) Include surveillance species in all site inspections or surveys.

(iii) Document all actual and reported sightings outside of the random sample points.

Actual performance

A total of 3,460 inspections were completed for selected surveillance species and other pest plants.

Overall inspections Results 2008

Total of Known Sites	Surveillance	Eradication	Containment	Suppression	Combined Total
Year End Total	190	7,978	1,087	24,729	33,984
2007/08 new sites	56	94	67	360	577
New sites as % of surveys completed	1.62%	2.72%	1.94%	10.41%	16.68%

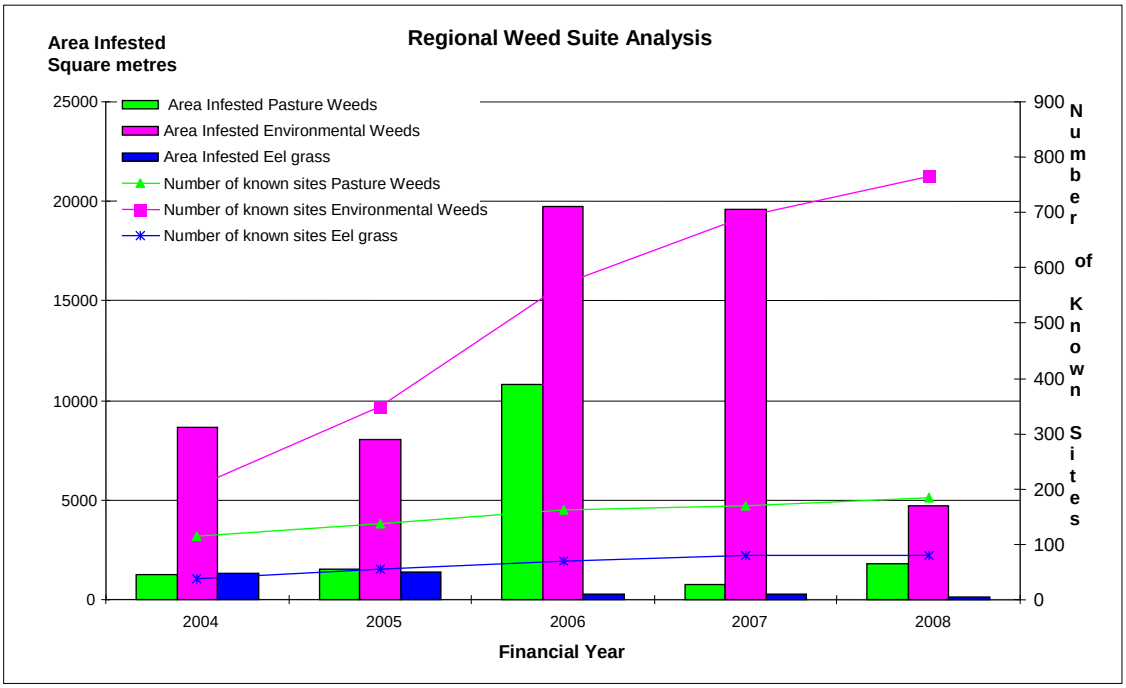
Overview

A study was completed in Porirua, to compare the "Survey of 100 randomly selected high risk sites", with the "General Surveillance of 100 properties" within the same area. The random high risk site survey found one Site-Led KNE aquatic species (Egeria densa) and the General Surveillance revealed three new Eradication sites, plus four Site-led boundary control species. This comparison confirmed the success of the current "general survey" and delimiting programme.

A total of 22 new sites were recorded following enquires (407) from a range of sources including, public enquiry, response to paper articles, weed swaps, contractor sightings, Parks & Forest staff and Biosecurity Officers after-hours activities.

In general the average size of new sites requiring initial control is decreasing. This corresponds to a reduction in control costs.

The chart below shows the current area infested and number of sites for the three categories of weeds (pastoral, environmental and aquatic). Note the area infested is decreasing with control work, but overall numbers of sites are increasing. This is due to sites still being in the monitor phase for a period of years until eradication is confirmed.



The current status of Surveillance species:

Species, (NIPP) = MAFBNZ led National Interest Pest Programme	2007 known sites	2008 new sites	Current Total Number of sites infested
Alligator weed	0	0	0
African fountain grass	0	0	0
Apple of Sodom	0	0	0
Asiatic knotweed	8	1	9
Australian sedge	3 suspected	0	3
Bomarea, B caldasii, B multiflora	29	7	36
Californian arrowhead	0	0	0
Californian bulrush	0	0	0
Cape tulip (NIPP)	9	0	9
Chilean flame creeper	19	1	20
Chilean needle grass	0	0	0
Chinese pennisetum	0	0	0
Chocolate vine	50	45	95
Delta arrowhead	0	0	0
Didymo	0	0	0
Giant knotweed	0	0	0
Hawaiian arrowhead	0	0	0
Hornwort	25	0	25
Houttuynia	0	0	0
Hydrilla (NIPP)	0	0	0
Johnson grass (NIPP)	0	0	0
Nassella tussock	3	0	3
Noogoora bur	0	0	0
Phragmites (NIPP)	0	0	0
Polydodium, common Polypody	0	1	1
Purple loosestrife	2	1	3
Pyp grass (NIPP)	0	0	0
Salvinia (NIPP)	2	0	2
Senegal tea	1	1	2
Spartina	2	0	2
Water hyacinth (NIPP)	2	0	2
White bryony (NIPP)	0	0	0
White edged nightshade	2	0	2

Retailer inspections

All known (185) plant outlets and a selection of 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. Three outlets had banned species on sale. These were:

- *Akebia quinata (chocolate vine) had only been banned in July 2007. The residual stock was destroyed by the outlet.*

- *Zantedeschia (green goddess lily) was supplied from a grower in Tauranga. Stock was recalled and destroyed.*

- *Jasminum humile (Italian jasmine) was removed from stock and destroyed by the outlet.*

Some outlets still had banned species growing in view of customers so were deemed to be on display. Staff requested their removal and destruction.

A second round of random assessments was completed on 41 outlets. Weekend markets across the region were also inspected and stall owners given information on National Pest Plant Accord (NPPA) and RPMS species.

MAF Biosecurity New Zealand contracts

The Biosecurity Department currently contracts to MAF Biosecurity New Zealand (MAFBNZ) to control known sites of cape tulip (nine), water hyacinth (two), and Manchurian wild rice (one). These were inspected and controlled if necessary two to three times during the year. MAFBNZ made full payment for resources required to complete the control operation. Surveillance and advocacy work for Didymo (water sampling and summer awareness campaign) was undertaken on contract to MAFBNZ.

Two officers received plant identification training for the NPPA and gained authority to inspect plant outlets and markets. The training enabled Greater Wellington to have four officers authorised to undertake inspections. Two staff were also involved in assisting development of the MAFBNZ NPPA database and testing performance.

Communications

Pest Plant articles were published for targeted species in local papers, Greater Wellington publications and information boards used at shows and presentations. All publications have been reviewed in anticipation of changes proposed in the RPMS review. These will be made available as soon as the RPMS review is completed. This includes pest plant species, fact sheets, booklets, field guides, posters for print, a suite of pest plant articles and web site information.

Trials

Greater Wellington contributed funds ($5000) to support Hawkes Bay Regional Council and Marlborough District Council trial chemicals for Chilean needle grass and nassella tussock, in preparation to apply for chemical registration with ERMA. Initial control results are positive.

The National Biological Control Collective is currently working on projects to control some of our surveillance species. These include Chilean needle grass/nassella tussock and Chilean flame creeper.

2.2 Eradication species

Aim: **To eradicate specific pest plants from the Wellington region at a cost of $575,300**

Annual cost: **The cost of managing Eradication plants throughout the region during 2007/08 was $410,541**

Means of achievement

(i) Undertake direct control by service delivery.

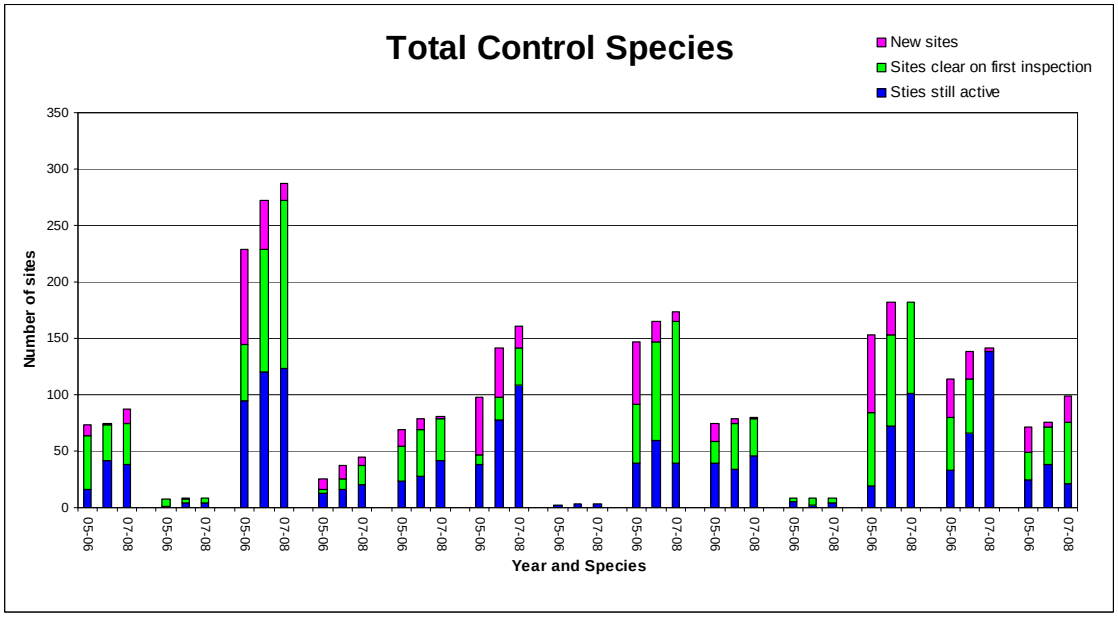
(ii) Identify new sites of Eradication species through incidental reports and programmed surveys by Greater Wellington staff, the public and through the surveillance programme.

(iii) Provide information and publicity to enhance public awareness of Eradication species.

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

(v) Annually inspect all plant outlets in the region.

Actual performance



Overview

All active Eradication sites were inspected and controlled by Biosecurity staff or contractors. Biosecurity staff inspected each site up to five times during the year depending on each species growth habit and seasonal trends. The schedule is developed during the year to ensure plants do not reach maturity.

The strategy to visit and control sites prior to plants reaching maturity has resulted in a decline in the number of mature plants located, plus an increase in the number of clear sites.

Delimiting surveys were undertaken around new Eradication species sites. Other pest species are also recorded during these surveys. During the year 3,460 inspections were completed. This focused effort resulted in 94 new Eradication species sites being registered. At the close of the year the residual number of sites to delimit was 84. The continued surveillance and delimiting focus will continue. The current discovery rate from surveillance is 2.72% of properties inspected.

Communications

Greater Wellington provided enhanced awareness through identification brochures, attendance at shows, displays, presentations, published articles and public enquiry. Regular articles featured in the Greater Wellington newsletter "Our Region" and local papers. New sites of Eradication species were reported by the public as a result of these articles. Activity included:

- *Attending A&P and lifestyle shows.*
- *Partnering with Department of Conservation (DoC) and local Councils to sponsor and provide expertise at weed swap days.*
- *Attended requests to deliver presentations to groups interested in gardening and biodiversity restoration.*
- *Revised the entire suite of publications used to inform the public.*
- *Responded to 407 public enquiries.*

MAF Biosecurity New Zealand contracts

Eradication species are included in the NPPA inspections of plant outlets and markets. No Eradication species were found this year. A total of 185 outlets were inspected, together with a selection of public markets.

Trials

The National Biological Control Collective is currently working on projects for woolly nightshade (2) and moth plant (2).

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 2007/08 was $219,625**

Means of achievement

(i) Undertake direct control by service delivery.

(ii) Undertake inspections within Containment zones to ensure occupier control of specific species.

(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.

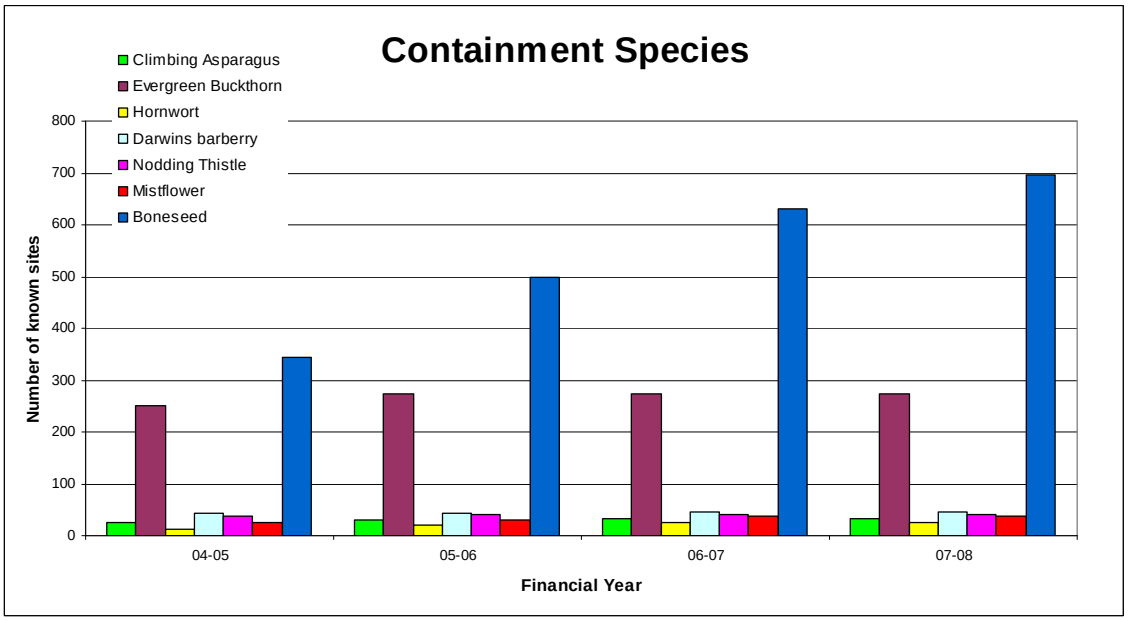
(v) Reduce the densities of boneseed outside of the Containment zones.

(vi) Ensure specific species within the Containment zones are controlled by occupiers on an annual basis.

(vii) Subject to the availability of the herbicide Endothall, initiate control of hornwort outside of the Containment zone.

(viii) Continue control programmes on recorded sites outside the Containment zones.

Actual performance



Overview

- **Boneseed**

The control programme on boneseed through coastal Wairarapa and parts of Porirua and Kapiti continued to expand the control area seeking out the infestation perimeters from coastal settlements. The areas of control were greatly extended within each control area. Higher numbers of juvenile plants were removed and many new mature plant sites found.

Helicopter spot gun-spray on northern Ngawi escarpment spring 2007

Ground crews worked in the coastal settlements, plus associated accessible areas of steep escarpments and highly eroded coastal faces. Abseilers then worked concurrently with Biosecurity staff and contractors on steep escarpments. The ground team targeted lower slopes and marked areas ahead of the abseilers. The aim and result was that abseilers maximised their time "on rope" and the marking ensured no confusion occurred as to whether an area had been completed.

Abseiling operation at Ngawi escarpment spring 2007

The escarpment at Ngawi, beyond the area controlled by abseilers, was controlled by helicopter gun-spray to treat isolated plants. The helicopter was more efficient than abseilers at covering a large area of very scattered isolated plants.

Biological control

The biological control agent, "boneseed leaf roller" was ordered for release within Wellington harbour, southern bays and Porirua. The delivery was delayed for 2007 and carried into early 2008. This agent will be used to suppress this species on very steep urban bluffs on the coast and allow natural regeneration and eventual shading of areas currently dominated by this species. The National Biological Control Collective has a project underway to host test a rust to compliment the leaf roller. It is known that ants will predate the leaf roller and Argentine ants more so if they become naturalised.

Memorandum of Understanding agreements

Collaborative operations with Hutt City Council and DoC, guided by an MOU agreement, on the Petone to Pencarrow coastline are targeting control of boneseed along the coastal zone to an area up to 20m behind the mean high tide line.

- **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.

- **Evergreen buckthorn**

No work occurred on this species during the year. The containment area has greatly reduced.

The National Biological Control Collective is investing in a project to investigate potential agents for this species.

- **Hornwort**

A trial, funded by a consortium of Regional Councils, was completed during March 2007. The results, although variable, have provided better understanding of chemical use on this species. Further refined trials are planned in the coming year, in collaboration with DoC.

NIWA is working on a promising mycoherbicide for a range of aquatic species including hornwort.

- **Mistflower**

Sites inspected and controlled in the Hutt Valley and Wellington areas. This species is proposed for reclassification into the Site-Led Key Native Ecosystem (KNE) category in the revised RPMS.

Sites were inspected for Biological control agent activity including fungus and gall fly. Staff moved agents into infested areas not yet showing agent activity. Chemical spray operations are halted until agent establishment and success can be evaluated.

- **Nodding thistle**

No work on this species occurred during the year with resources prioritised elsewhere. This species is proposed for movement into Site-Led Boundary Control in the revised RPMS.

The Biological Control agent, nodding thistle crown weevil, has been very successful at controlling this species in the region.

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 2007/08 was $118,976**

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.

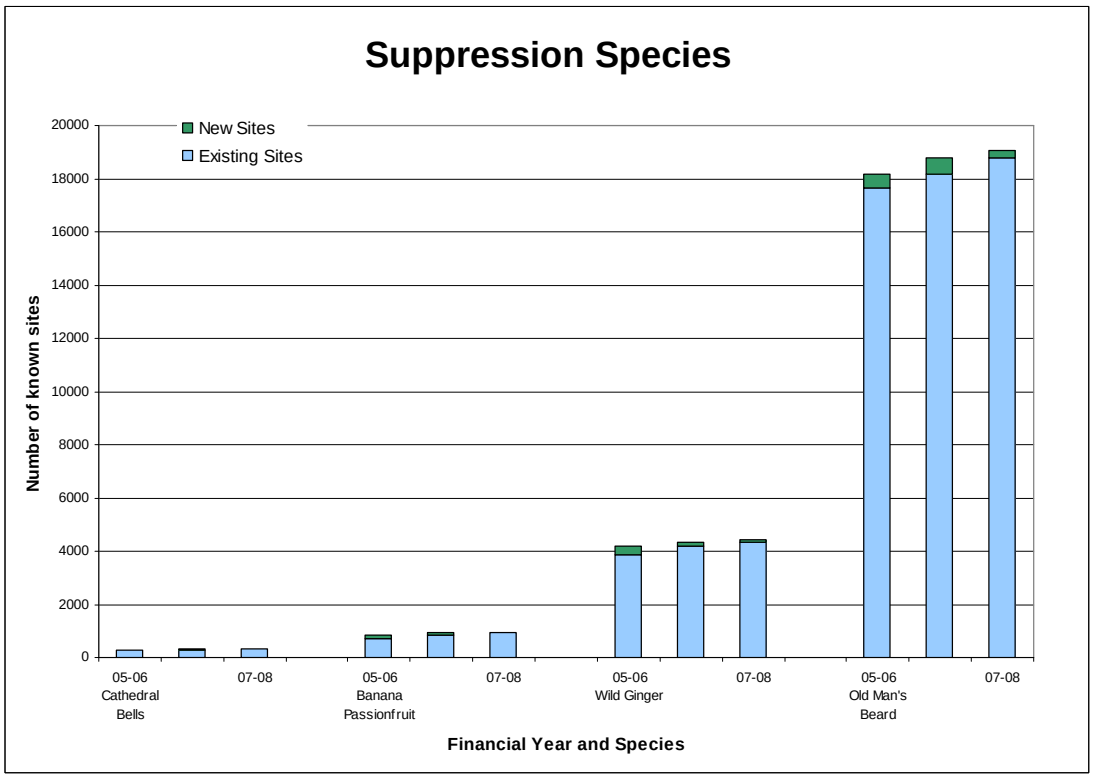
(iv) Provide information and publicity to enhance public awareness of suppression species.

(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 passion fruit, wild ginger, old man's beard and cathedral bells.

Actual performance



Overview

A high proportion of notified sites were small infestations located during property inspections. These were treated onsite by staff and follow up instruction and information left with the owners.

All plant outlets and a selection of markets were inspected (185) for suppression species. Some plants on the NPPA register were found and destroyed by the owners. Some retailer publications were found to have banned plant and flower pictures still in circulation and were removed on request.

The National Biological Control Collective has agreed to invest in international projects that will investigate and report on natural pathogens of wild ginger and alternative options for old man's beard. Banana passionfruit stem boring and foliage feeding agents are currently being tested offshore against species endemic to New Zealand.

Communications

Greater Wellington provided identification brochures and enhanced awareness through shows, displays, presentations, and articles and responded to all enquiries from the public. Attendance included the Masterton & Carterton A&P shows, Ohariu Valley Lifestyle Field Day, Kapiti Coast Sustainable Living Show, Restoration Day at Victoria University, DoC Weed Swaps in Wellington and Kapiti and Greytown "Greentown" display. Presentations were given to Horticultural growers, Weltec Horticulture students, community gardeners groups, and schools, on request. Articles were published in community papers, Elements magazine, Rural Services Newsletters, and the Biosecurity Institute's "Protect Magazine" for species of interest.

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 2007/08 totalled $71,705**

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

Staff responded to all boundary complaints and requests for site inspections of pest plants during the year, across all species. Thirteen 'Notices of Direction' (NOD) were required to be served on owners. One NOD required work to be completed in Default and a Statutory Land Charge registered on the Title.

Biological control

The 2006 gorse thrips release sites were inspected with positive identification at one site early in the season.

Broom physillid was collected and redistributed to various sites in the Wairarapa and Hutt Valley.

Scotch thistle gall fly is being relocated through the region from successful established populations.

Green thistle beetle has been purchased for release into the upper Wairarapa. This agent is a multi thistle species pathogen.

Communications

Articles were published in the Wairarapa Midweek, Rural Services Newsletter, Elements newsletter and BNZ Protect magazine.

Staff provided identification brochures and enhanced awareness through shows, displays, presentations and articles, as outlined in the Suppression section above.

2.6 Key Native Ecosystems and Territorial Authorities Reserves

Aim: **To protect indigenous biodiversity in a comprehensive selection of Key Native Ecosystems and TA Reserves at a cost of $196,100**

Annual cost: **The cost to Greater Wellington to manage KNE species was $189,000. Total expenditure including TLA contributions and the 'Department of Conservation Biodiversity Condition Fund' contributions was $387,100**

Means of achievement

(i) Maintain holistic management in existing KNE and TA Reserve areas.

(ii) Establish and implement integrated pest management plans for specific Key Native Ecosystems (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.

Actual performance

The Department began a review of the KNE programme to coincide with the RPMS review. The KNE review aims to give clear future direction to the programme, aligning with the objectives of the Regional Biodiversity Plan.

A total of 65 pest plant contracts were completed across the region. Approximately 210 ha of climbers (Japanese honeysuckle, banana passionfruit and, old man's beard etc), 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 planting.

The programme is currently focused on the best KNE sites and TA Reserves. The plan is to ensure that as many ecosystem types are managed.

Ecosystems with pest plant/ restoration work in the Wellington region 2007/ 08. * = Community/Care Group

	Districts/ Cities				
Ecosystem types	**Kapiti**	**Hutt Valley**	**Porirua**	**Wairarapa**	**Wellington City**
Lowland/ Coastal Forest	Waikanae Reserves (3 Reserves)	Flux covenant	Raroa reserve	Greytown Memorial Park*	Trelissick Park*
		Galbraiths gully	Porirua park	Rewanui	Paekawakawa Reserve*
		Haywards Reserve			Khandallah / Johnsonville Park*
		Keith George	Porirua Scenic	Tauherenikau	Waipahihi Stream*
		Moehau Stream & Akatarawa Esplanade	Karehana Scenic Reserve		Owhiro Stream*
		Hulls Creek*			Glenside*
					Albemarle Stream*
					Churton Park*
					Tarakena Bay / Ringitahu reserve
Wetlands/ Riparian	O-Te-Pua swamp	Hulls creek*			Glenside stream*
	Te Hapua Swamp	Moehau stream*			
	Te Harekeke Swamp	Akatarawa River*			
	Waimiha Lagoon				
	Nga Manu Wetland				
Escarpments	Raumati		Pukerua Bay		
	Paekakariki				
Dunelands	Waitohu dunes	Petone foreshore*		Riversdale*	Island Bay*
	Otaki Dunes			Flat Point	
	Waikanae*	Eastbourne*			Princess/ Houghton*
	Paraparaumu*	Pencarrow			
Estuaries	Waikanae*		Pauatahanui*		Makara

Staff have provided support and advice to "Take Care" coordinators and groups on 22 projects outside the KNE programme.

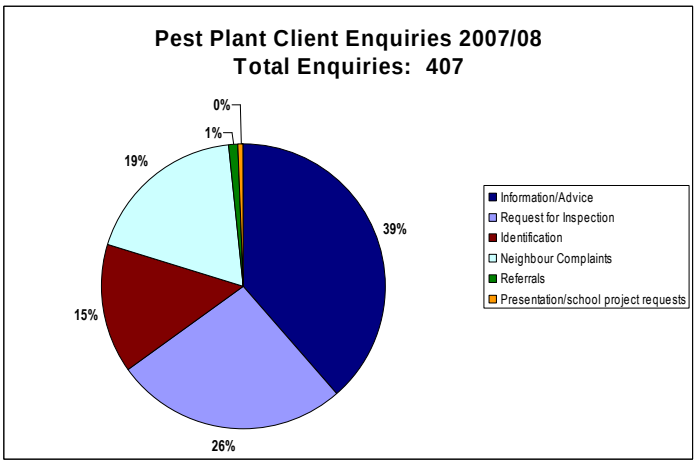
The programme is achieving good coordination between Greater Wellington departments, TA and DoC to jointly produce good community and conservation outcomes. Efforts by community groups and schools have been outstanding.

The priority for restoration is to firstly control canopy climbers, then ground covers and finally woody weeds. The area is then assessed for natural restoration or restoration planting if necessary.

Sites that have received pest plant control for more than two years are showing a very good recovery response. Extensive native seedling growth will reduce the necessity and expense of restoration planting.

3. 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.



During 2007/08, 90% of queries were responded to within the specific time.

Four hundred and seven 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.

There was a marked rise involving requests for identification of plants. Queries did not always relate specifically to RPMS plants.

4. Public relations

Staff worked to improve Greater Wellington's pest education presentations and publication material for information delivery.

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 2007 to June 2008:

Group or Event	Date	Topic
Biosecurity Institute NETS conference (co-host)	July 2007	Biodiversity/pest control
Otari Open Day	July 2007	Biodiversity
Ohariu Valley Field Day	September 2007	Biodiversity
School talk, Evan's Bay Intermediate	October 2007	Pest control
Miro meeting	October 2007	Biodiversity
Akatarawa Valley	January 2008	Pest control
Councillor presentation	February 2008	Pest control Wellington
Hosted Hawkes Bay Regional Council	February 2008	Pest control Wellington
Masterton A&P show	February 2008	Biodiversity
Maungaraki school talk	March 2008	Pest control
Normandale school talk	March 2008	Pest control
Te Aro Community Gardeners	March 2008	Biodiversity/pest control
Miro meeting	April 2008	Pest control
School talk, Onslow College	April 2008	Pest control
School talk, Plateau School	April 2008	Pest control
Miramar Community Group	May 2008	Pest control
Otaki Field Days	May 2008	Biodiversity
Restoration Day, Victoria University	May 2008	Biodiversity/pest control
'Greentown' month	June 2008	Biodiversity/pest control
Tauherenikau Bush	June 2008	Tree planting with local schools

4.1 Aquatic weeds awareness

- **Didymo**

The Department was successful in applying for funds ($20K) from MAFBNZ for a summer public awareness programme for Didymo. Three students were employed for eight weeks to gather information of all clubs and businesses in the region that impact on fresh water. They also visited rivers to engage with water users and provide information packages. Signs were erected at key locations. Staff worked in collaboration with DoC and Fish & Game to ensure each organisation's funds were used efficiently. This included attending events and shows with the other agencies. The Parks Department also actively educated river users and those entering the Parks. Internal training to staff in other sections/departments was delivered by MAFBNZ.

- **Hornwort**

The control trial at Lake Wairarapa was monitored through the year. At 18 months post initial control the hornwort has almost completely recovered. Influencing factors could have included:

- density and effect of other species present;
- water temperature; and/or
- variable water flows and sedimentation.

The lessons from this trial and others will be used to assess future options.

Meetings were initiated with DoC and our Parks Dept to discuss this pest species and its relationship to the proposed restoration activities for the lake. Staff are working in collaboration with DoC and NIWA to develop practical long term operational activities.

- **Manchurian wild rice and water hyacinth**

MAFBNZ as part of its National Interest Pest Response programme has provided funds ($9.8K) to control Manchurian wild rice at our only infestation site in Kapiti. They also continue to support the control programme for water hyacinth.

5. Financial summary

The year end result for pest plant management under the RPMS was an operating surplus of $84,900 (6.2%). Revenue was up by $67,000 with operating expenditure down by $17,900 (1.4%).

	$ (000's)
Rates and Levies	1,307.6
External Revenue	62.9
Internal Revenue	4.1
Total Operating Revenue	**1,374.6**
Total Direct Expenditure	**1,004.1**
Divisional / Corporate Overheads	285.6
Total Operating Expenditure	**1289.6**
Operating surplus	84.9

Part Two

PEST ANIMALS

6. Performance targets and measures

6.1 Containment species – rooks

Aim: **To manage rooks as a Containment category pest to levels that protects production systems at a cost of $46,550.**

Annual Cost: **The cost of rook management (surveys, research, compliance, education and control) for the region was $33,990.**

Means of achievement

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

Actual performance

In the 2007/08 year, aerial nest baiting was carried out at 12 breeding rookeries within the Wairarapa region.

The 12 rookeries represented all known breeding rookeries that were on Greater Wellington's database. A total of 130 nests were baited in the Wairarapa. Fresh but unused nests were also baited and these were factored into the 130 nest total. Gale winds destroyed one sizeable rookery in the southern zone and caused varying degrees of damage at other exposed rookery sites, resulting in a fragmented breeding season. Accordingly some fledglings survived and were missed from the late baiting thereby compromising control outcomes for the year.

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. They were also asked to report any suspicious activities that may indicate nesting attempts, but nothing further was reported.

There was one autumn ground baiting operation undertaken for rooks during the year. A report of crop damage was reported and investigated but no real evidence of damage could be found. After baiting, an undisclosed number of rooks were destroyed. This is the first ground baiting of rooks in five years. The nest baiting programme still appears to be achieving the desired results.

Means of achievement

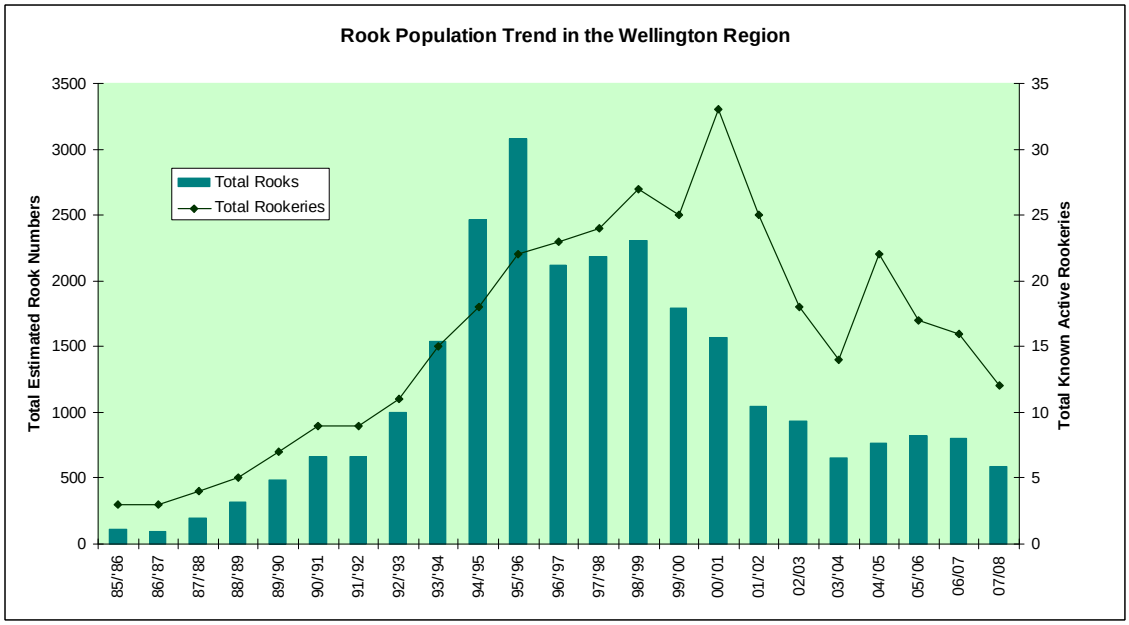
(ii) Survey rook populations annually in areas where they are known to exist, and where new infestations are reported.

Actual performance

In the 2007/08 year all new, old or historical sites were visited to determine the presence or absence of rooks. Aerial surveys were utilised. Ground surveys cannot tell us the state of a rookery (state of incubation). Knowing the state of incubation is important as it assists with planning the right time to carry out control.

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

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



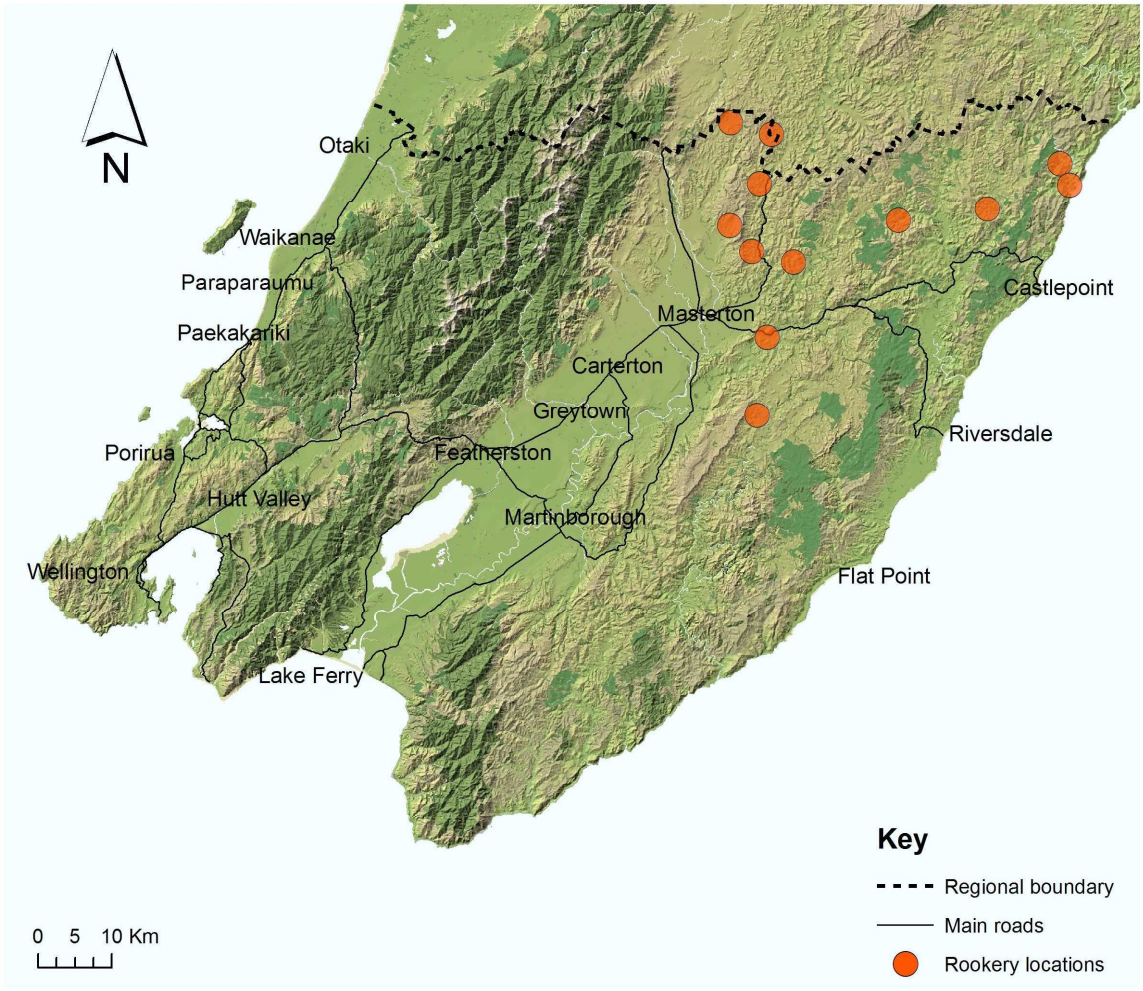
Means of achievement

(iii) 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 and at the Otaki Lifestyle Farmers Field Day. Information about rooks was freely available to the public.

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



Location of rookeries for 2007/08

Means of achievement

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

Actual performance

Horizons Regional Council was actively involved with aerial nest baiting in the 2007/08 year. Both Greater Wellington and Horizons were involved in the annual joint nest baiting programme on either side of the regional boundary that was designed to stem the southward migration of rooks to the Wairarapa.

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 results from work completed last season.

6.2 Suppression species – rabbits

Aim: **To minimise the adverse impacts of feral rabbits throughout the region at a cost of $84,525.**

Annual Cost: **The cost of rabbit management (surveys, service delivery, biological control, compliance, education and research) for the region was $96,170**

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 of the rabbit prone Tauherenikau River and four adjacent properties in the Eastern Zone did not disclose any areas of rabbit densities at/or above Level 5. Level 3 was the highest level recorded on the Tauherenikau River. Cross blading of the river channel to control water flow has removed much of the old rabbit habitat. The surveyed areas on the four adjoining properties disclosed levels between 3 and 4 on the Modified McLean Scale.

Rabbits have continued to be a nuisance around the Riversdale Beach Resort on the East Coast but did not reach the trigger level that required the regulatory intervention of Greater Wellington.

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 the Strategy rules.

Means of achievement

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

Actual Performance

In the 2007/08 year random properties were selected in the Wairarapa (Eastern Zone) for surveillance that have previously had a history of high rabbit numbers. These properties tended to be a cross section from the Tararuas to the East Coast and provided a general snapshot of the current rabbit trend for the region. Infestation levels were well below the Level 5 trigger for enforcement.

Rabbits were also blood sampled to test for calicivirus immunity levels in the Wairarapa. These samples were obtained from 10 geographically spread properties with a rabbit prone history. Only 134 samples were collected which reflects the scarcity of rabbits. The range of immunity was as low as 7% for Owahanga Station (Mataikona) through to 76% for Western Lake Wairarapa. Fifty-seven of the serum samples were negative which translates to an average RHD immunity of 42.50%. The last sampling was in 2006 and disclosed immunity levels of 48%. This has to be a heartening sign that the calicivirus will continue to cycle and cull rabbits to low levels for some time yet.

Blood sampling of rabbits was undertaken by Western Zone Biosecurity staff in April and May 2008. Only one sample site was able to gain 30 rabbits, which is the recommended number for RCD testing. This site was Kaitoke Regional Park which had a high level of immunity. To have so few rabbits to sample indicated that rabbits are still being suppressed by the virus in most areas across the region.

Results	**% immunity**
Ataturk Park, Miramar Peninsula	14
Berhampore Golf Course, Berhampore	0
Dog exercise area above Newtown Hockey Stadium, Newtown	0
Whitireia Park, Porirua	100
Trentham Golf Course, Trentham	15.7
Kaitoke Regional Park, Kaitoke	73
Ron Trotter farm, Pekapeka	42
Queen Elisabeth Park, Paekakariki	0

Taking a blood serum sample from a wild rabbit

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

Blood sampling of rabbits from rabbit prone properties throughout the region during April/May 2008 indicated that the RCD immunity levels remain at reasonably high levels. There are no plans to re introduce the RCD virus into the region as a result of these findings. Additionally, the strict controls for use would outweigh any real benefits.

Means of achievement

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

Actual Performance

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

6.3 Site Led species – magpies

Aim: **To manage magpies to minimise adverse environmental and human health impacts in the Wellington region at a cost of $36,750.**

Annual Cost: **The cost of magpie management to minimise adverse environmental and health impacts for the region was $33,990.**

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 eight urgent complaints logged regarding attacking magpies with all attended to before the 10 day deadline.

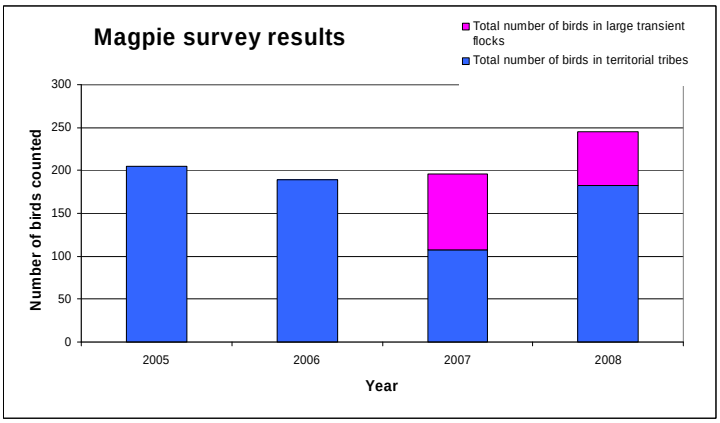
Means of achievement

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

Actual Performance

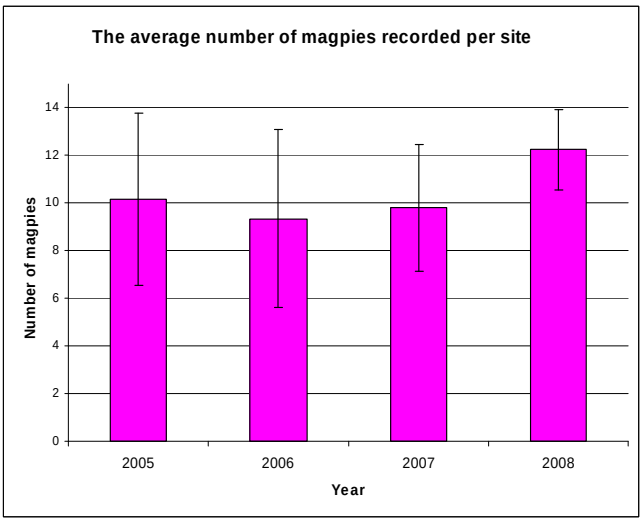
One hundred and twenty-five nuisance calls were received. Sixty-nine of these were to Wairarapa staff and fifty-six to Upper Hutt staff. All requests for information or assistance from the public is entered onto Greater Wellington's database and every effort is made to attend to these within 10 working 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 delivers these and demonstrates best practice trapping techniques to maximise results.

Magpie population trend survey



Magpie populations have been surveyed annually since 2005, at 20 randomly selected sites in the Wairarapa. The sites receive no formal magpie control. The aim is to assess magpie density at these sites and track changes over time. This ongoing survey will give some insight into the population trends for territory holding magpies, as well as any long term change in the frequency of non-territorial flocks of roaming juveniles. In this way Greater Wellington may gain more knowledge about magpie population dynamics to better manage magpies. This information will also assist in performing a cost benefit analysis of region wide magpie control when the RPMS is reviewed.

Distance sampling was used to determine the numbers and densities of magpies at the survey sites. The survey points are greater than 7km apart because the average juvenile dispersal rate is approximately 7km. Each survey point was given a GPS coordinate accurate to five metres. Refer section 11 'Magpie survey 2007' on page 42 for further details on magpies.



6.4 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 $34,300.**

Annual Cost: **The cost for the predator control programme within the buffer for the 2007/08 financial year was $22,215.**

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 2007 to 30 June 2008 a total of 43 cats, 198 rats, 186 hedgehogs and 13 ferrets were destroyed. Possums, rats and mice were also destroyed (but not physically counted) through the use of 28 kgs of Contrac rat blocks.

The Mt Bruce (Pukaha) predator programme was carried out by a prescriptive Service Provision Contract during the 2007/08 year. The total 2,223 hectare buffer was controlled by contractors.

The Pukaha 'mainland island' concept is a continuing success story. However, the breeding programme met with a series of setbacks this year when it was discovered over time, that five kiwi had been predated by a rogue ferret that was later trapped within the Reserve. Department of Conservation staff later brought in their predator control expert for a debrief meeting that included Greater Wellington and Horizon Regional Council staff, to review their trapping methods and procedures after this tragedy. DoC staff from the "Boundary Stream Kiwi Project" also attended. It was concluded that generally Greater Wellington's trapping programme is being carried out to a high standard but all involved should be open to trying new traps and ideas as they become available. The predator control expert reminded everyone to expect some losses to predators where there are no predator proof fences in place.

Adjacent landowners expressed concerns over the lift in rabbit populations around parts of the Reserve. Predator trapping was being blamed for this incidence arising. Several properties inspected by Greater Wellington staff certainly had higher than normal rabbit densities. To date, recreational shooters have been cropping rabbits from these effected properties. The situation will be reviewed in the spring to determine whether Greater Wellington intervention will be required to address this situation.

6.5 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 $36,750.**

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 $24,650.**

The cat desexing campaign this year was once again limited to the Wairarapa. In spite of having some funding available to target areas within Wellington City, not one of the veterinary businesses approached were interested in a collaborative approach. Wellington City Council had also put aside some funding for subsidisation. This situation is very disappointing and suggests that either more aggressive marketing or a novel approach is needed.

The Wairarapa 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 354 cats were treated at an average cost to Greater Wellington of $34.24 for 2007/08 ($37.23 for 2006/07). This is a far better outcome compared to the campaigns of the past two years. In addition more than 40% of the cats were female which generally cost more to treat. This should create 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.

6.6 Site Led - Key Native Ecosystem Management

Aim: **To protect indigenous biodiversity in a comprehensive selection of Key Native Ecosystems at a cost of $653,435 (Pest Plants $196,100; Pest Animals $457,335).**

Annual Cost: **The cost to achieve a measurable improvement in the ecological health and diversity of Key Native Ecosystems through pest animal control was $536,450.**

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 KNEs 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 on a monthly basis as predators in addition to possums and rats are being targeted.

Means of Achievement

(ii) Prioritise and select additional KNEs.

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 KNEs.

Actual Performance

This is a long-term objective.

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. Priority is being given to sites where rare birds immigrating from the Karori Sanctuary are establishing themselves.

Means of Achievement

(iv) Ensure KNEs are legally protected into perpetuity.

Actual Performance

All of the KNEs treated during 2007/08 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 KNE.

Actual Performance

Pest animal operations were conducted in 34 private land KNE and 55 Territorial Authority reserves within the region. All territorial reserve work was jointly funded with the relevant 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 9 'Ecological outcomes' on page 37. 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 involvement continued this year with over 20 groups being involved.

Means of Achievement

(viii) Where KNEs are identified on TA 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 TLAs on matters concerning pest management.

A formal pest management programme has been agreed with Wellington, Lower Hutt, Upper Hutt and Porirua City Councils and with the Kapiti Coast District Council. The direct costs for work undertaken on their land are equally shared between Greater Wellington 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 $111,300 (from an original budget of $143,010).

A Memorandum of Understanding (MOU) is prepared and agreed annually between Greater Wellington 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 due to the fact they own little high biodiversity value land.

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 care groups to assist them achieve a range of ecological based objectives. This has been implemented at several sites including Otari (Wellington), Fensham Reserve (Carterton), Trelissick Park (Wellington City Council), Porirua Scenic Reserve and Porirua Park (both in Porirua City), 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 occurs regularly. 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.

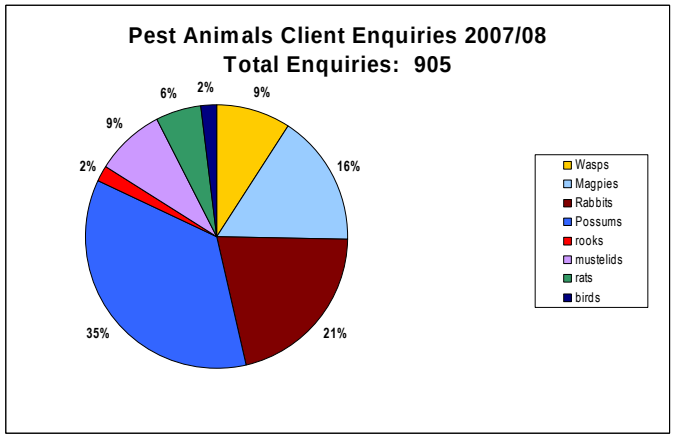
Means of Achievement

(xi) 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.

7. 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 905 enquiries for the 2007/08 financial year.

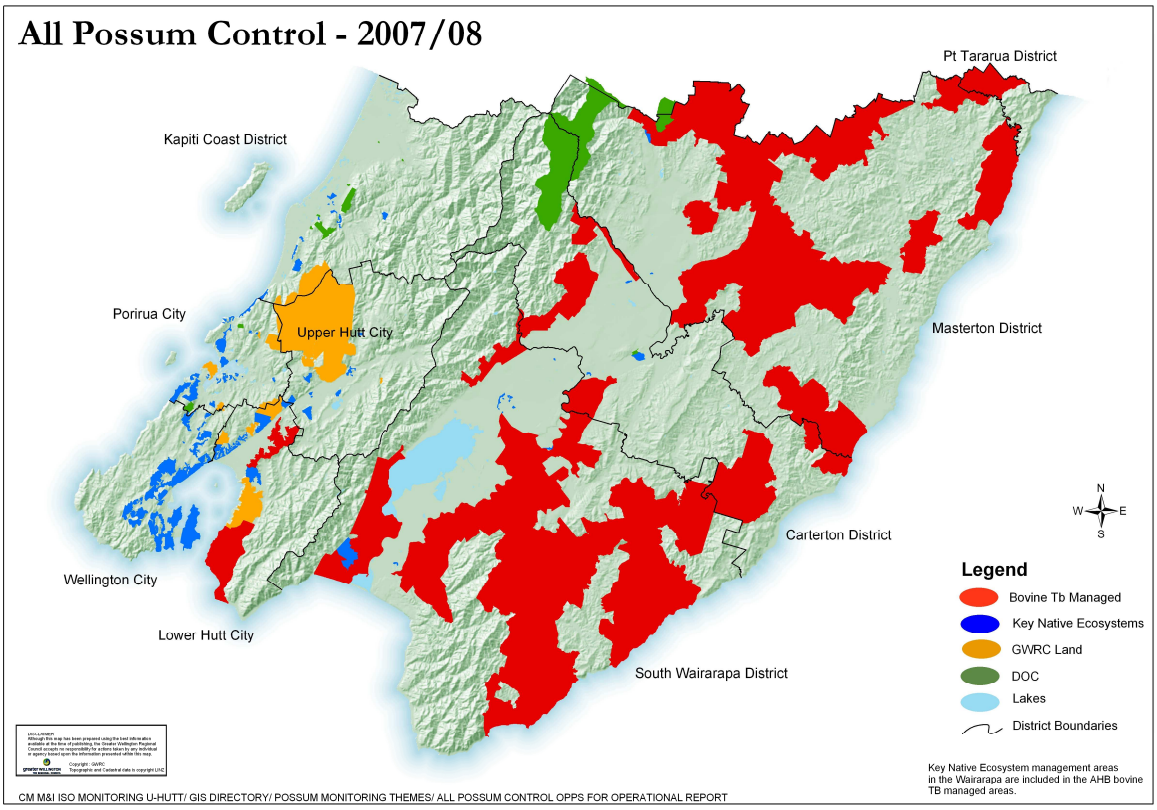
8. Biodiversity support programmes

8.1 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 and Forest 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 rollback due to occur in the north of the region. Greater Wellington is investigating management and funding regimes for ongoing possum control to continue the environmental gains of the Tb vector control work.

At 30 June 2008, there were nine infected cattle herds and no infected deer herds in the region, a testament to the effective Bovine Tb vector control programme. Ten years ago there were 149 infected cattle herds and 10 infected deer herds.



8.2 KNE operations

During the 2007/08 year, 18,800 ha of either possum or predator control was undertaken.

8.2.1 Maintenance operations

Western Zone	Hectares
Kapiti	556
Porirua	1,320
Wellington	4,530
Lower Hutt	1,118
Upper Hutt	503
Total	**8,027**
Eastern Zone	**Hectares**
Masterton	4,116
Carterton	223
South Wairarapa	6,040
Total	**10,379**

8.2.2 Initial operations

Western Zone	Hectares
Kapiti	0
Porirua	55
Wellington	225
Lower Hutt	120
Upper Hutt	0
Total	**400**
Eastern Zone	**Hectares**
Masterton	0
Carterton	0
South Wairarapa	0
Total	**0**
Grand Total	**18,806**

Past years operational hectares are:

Years		Hectares
2006/2007	-	18,406
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

8.3 Rewanui Bush integrated pest management

Biosecurity staff completed the second year of predator control at Rewanui which is a 334 ha property situated on the Masterton/Castlepoint Road owned by the Montfort 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 the Department of Conservation in 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.

Greater Wellington's Biosecurity Monitoring and Investigations Section is contracted by the Montfort Trimble Foundation to monitor biodiversity within Rewanui. For further information refer to section 9.2 'Rewanui' on page 38.

8.4 Hutt Western Hills

Hutt Western Hills possum and rodent control operation consists of a number of small bush reserves and private properties, stretching over five Hutt Valley suburbs from Korokoro to Belmont.

Possum and rodent control was established in this area to help connect existing native flora and fauna corridors between Wellington and Upper Hutt. The intention is to provide native birds a larger area to migrate through and hopefully breed in.

Poison was not used in all areas. One landowner was opposed to using chemicals or poisons on their property and was supplied with possum and rat traps as an alternative. The family has taken to servicing the traps regularly and have extended their control area into a neighbours large bush block.

Possum Timms traps have also been used on a number of private properties as part of the 'possum buster' program run by Hutt City Council.

Pre-wax tag monitoring index showed averages of 11% possums and 13% rodents throughout the operational area. As these levels were moderately low, it provided a good opportunity to 'knock down' the existing population and maintain them within a short period of time.

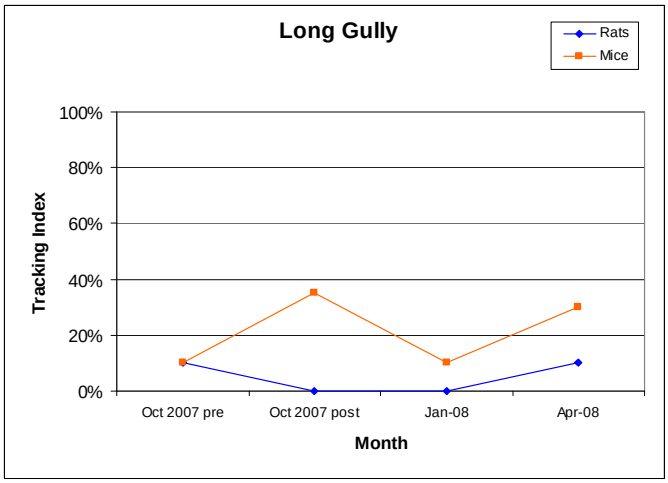
8.5 Long Gully – 'No Possums' cholecalciferol gel

In late 2007 staff trialled a new cholecalciferol gel bait released by Kiwicare products. The Long Gully Wellington Natural Heritage Trust covenant provided an ideal environment to test the new bait and stations.

Pre-control possum numbers recorded a residual trap catch of 25.3%. Rodent tracking tunnel monitoring recorded a 10% prevalence. Following pre-operational monitoring, bait station lines were cut at 150 metre spacing by the Wellington Natural Heritage Trust. Biosecurity staff installed Kiwicare gel bait stations at 75 metre spacing along these lines, giving an approximate grid of 75 x 150m. This pattern was selected as it is the same spacing as for Decal (a cereal pellet cholecalciferol bait) that Biosecurity has used extensively.

Prefeed gel (500 grams) was added to each Kiwicare gel bait station and left for two weeks. Then 500 grams of cholecalciferol gel bait was added to each of the bait stations. Three weeks after the cholecalciferol gel was installed, a post control RTC of 11. 4% was achieved, well above the 5% target, with the tracking rate for rats down to 0%.

Problems were identified with the bait station. Clips holding the bait station face plate closed failed, causing bait to fall out onto the ground. The bait tub was also able to be pulled out by the possums and carried or blown by the wind some distance from the bait station site.



Greater Wellington together with other regional councils provided feedback to Kiwicare about the issues with the bait station. Kiwicare have subsequently designed a new bait station for use with cholecalciferol gel.

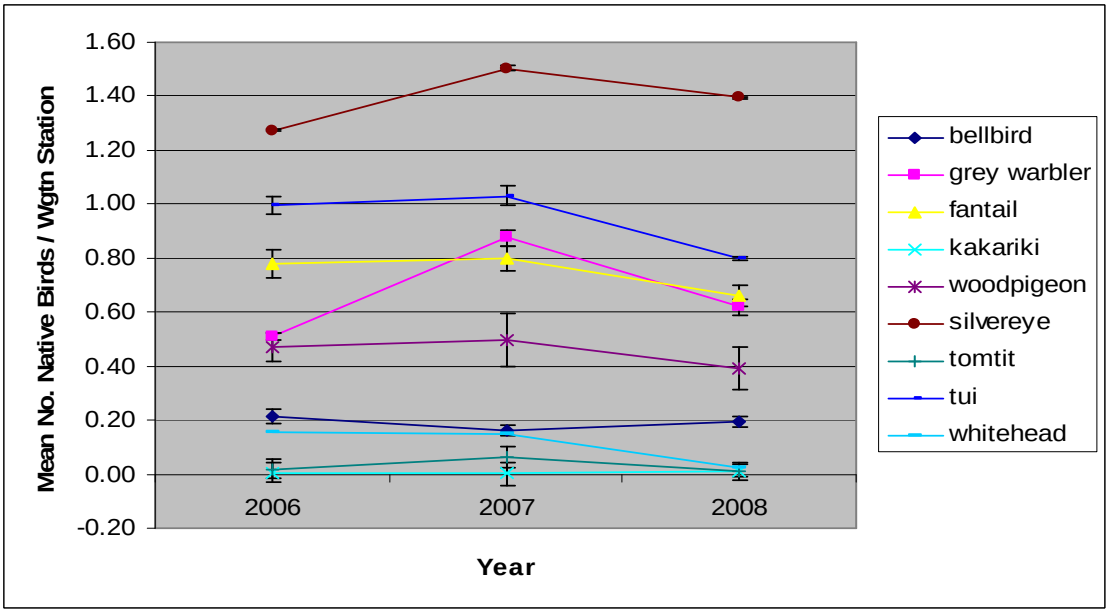
9. Ecological outcomes

9.1 Native bird monitoring

Five minute bird count monitoring was conducted in 14 reserves in the Wellington region in February and March 2008. The majority of these reserves are Key Native Ecosystems and have pest control performed by Greater Wellington. Nine native forest bird species are monitored for long-term trends and observations of any particularly rare birds are also discussed. The most abundant bird species was the silvereye. Tui was the second most abundant with fantail and grey warbler respectively the third and fourth. Woodpigeon (kereru) were more abundant than bellbirds, käkäriki, tomtits and whitehead but all species were consistently recorded in the surveys from 2006 to 2008.

Monitoring is scheduled on an annual basis and any significant population trends should be detected in this long-term project. It is predicted that birds will respond positively to rodent and possum control performed by Greater Wellington in the reserves studied.

Mean number of native forest birds in Wellington reserves



9.2 Rewanui

Greater Wellington is contracted by the Montfort Trimble Foundation to monitor biodiversity within Rewanui property, a Key Native Ecosystem in the eastern Wairarapa. This project is funded for three years by a Sustainable Farming Fund grant with intensive monitoring scheduled to be phased in gradually for the different indicator species in the first year from July 2008 to June 2009.

Monitoring methods

The species and monitoring methods chosen are selected as the most appropriate indicators of both 'Operational' success (degree of pest suppression), and 'Outcome' success (degree of recovery of native species) for this type of property. Operational monitoring for Rewanui by Greater Wellington will focus on the success of possum, rat, mice, mustelid (stoats, ferrets and weasels), rabbit, hare, ungulate (i.e. escaped sheep, goat, deer or pigs) and weed control programmes. The 'Outcome' monitoring will focus on native birds, native invertebrates, native lizards and native vegetation as indicators of positive outcomes on biodiversity from pest control.

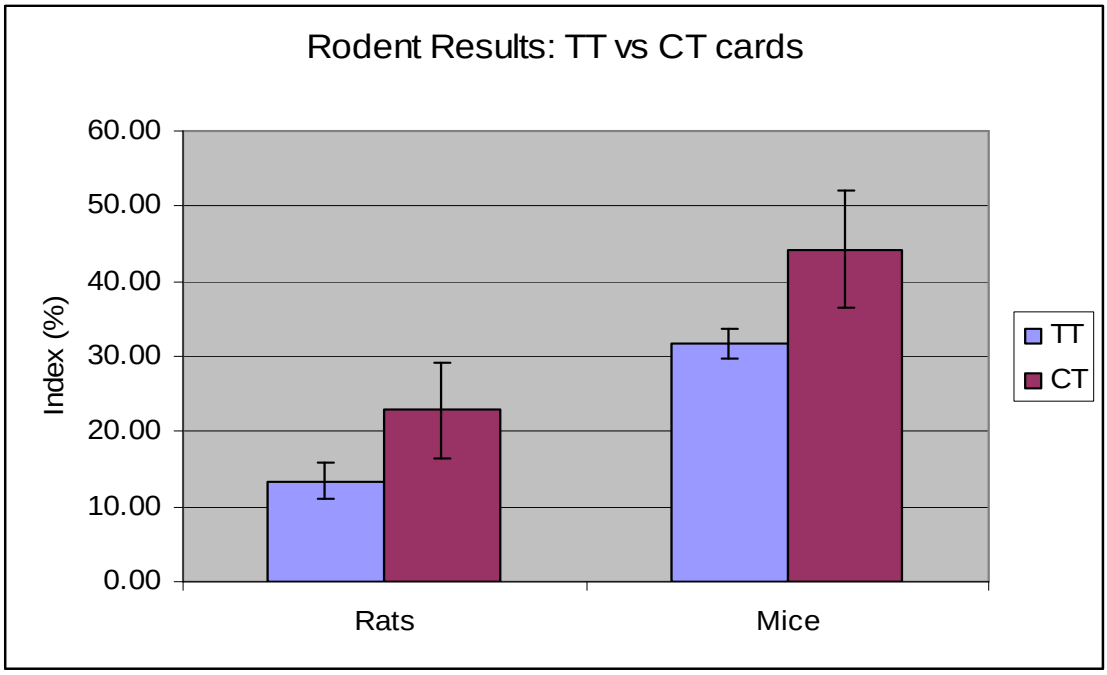
A fundamental stage of this monitoring programme is the identification of initial levels of pest animal species in the reserve which will be useful in determining the overall health of the property at the beginning of the Greater Wellington monitoring programme.

Comparative trials

Greater Wellington ran comparative trials in July 2008 between three techniques for monitoring rodents and possums to effectively determine initial levels of pest animals in Rewanui at the beginning of the Greater Wellington monitoring programme. To be consistent with national monitoring methods, tracking

tunnels were used for rodents and mustelids. This method was compared with a new, systematic technique, the ChewTrack card monitor, to compare sensitivity of these two different rodent survey methods. The ChewTrack cards are also useful for monitoring possums and this technique was compared to the national protocol for possum monitoring, the Residual Trap-Catch monitor (RTC).

Comparison of results for rodent tracking tunnels (TT) and ChewTrack cards (CT)



Comparative results for the different survey methods

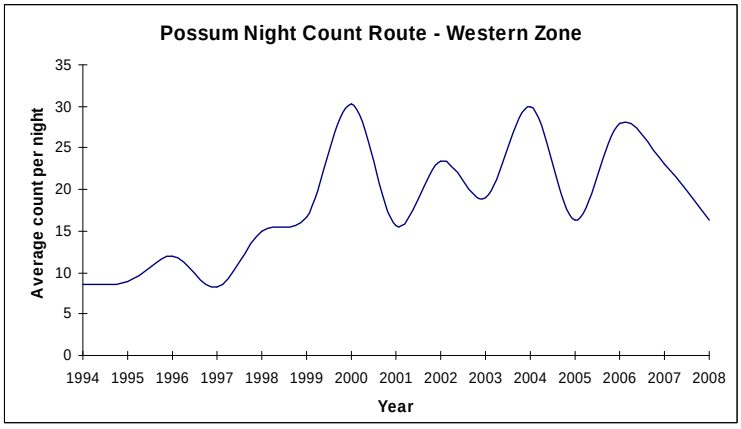
	CT Rats	CT Mice	CT Possum	TT Rats	TT Mice	RTC Possum
Actual Index (%)	22.83	44.23	4.44	13.33	31.62	0.70

The outcome of this comparative trial indicated that the ChewTrack (CT) cards registered contact by a higher percentage of the resident rodent population suggesting that the ChewTrack system is more proficient than the Tunnel Tracking (TT) system.

Rodents and other small mammals can be identified by their unique teeth imprints on the CT cards and by their unique paw prints within the tracking tunnels.

9.3 Trend monitoring for possums

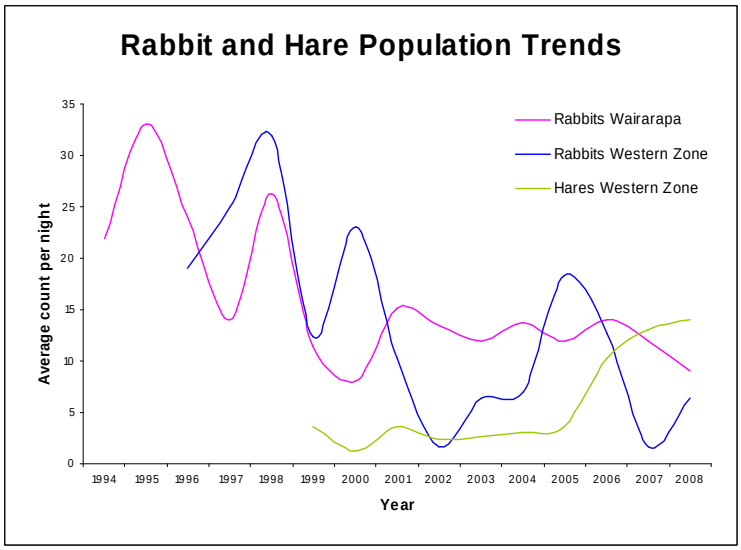
Trend monitoring for possums in the absence of formal control has been undertaken at Belmont Regional



Park since 1994. The possum numbers in Belmont tend to have increased since 1998 and fluctuate around a mean of about 23. Although on a downward trend, fluctuations are not unexpectedly large, and correspond with previous years. No dramatic changes in population levels are evident from this data. No possums were sighted from the night count points closest to the Korokoro control work; indicating the success of the on-going control. This and other expanding control operations may influence the night count results over time.

9.4 Rabbit densities

Rabbits remained at relatively low levels in the Wellington region for the 2007/08 year. Because of the long dry summer, breeding conditions for rabbits were good. Some areas such as Mt Bruce produced high numbers, and other coastal and areas with lighter soil types reported problem pockets of rabbits.



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 on the night count route continued to drop in the Wairarapa and produced a slight increase in the Western Zone.

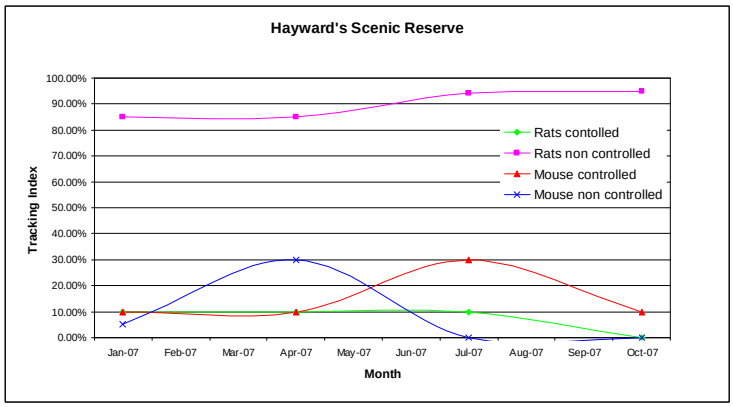
Night monitoring for rabbits and hares has been ongoing since 1996 at QEII Park (Western Zone) and since 1994 on the Tora Coast (Wairarapa).

Rabbit numbers at QEII Park have decreased and are now equal to population levels in 2003. The increase in hare numbers has slowed, but remains at the highest levels recorded since records began. Rabbits and hares tend to exclude one another when either species is numerous (Parks, 2001).

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 2007/08 year. It seems unlikely numbers will rise significantly within the next few years due to the continued presence of RCD. This is supported by the population trend analysis over the last five years.

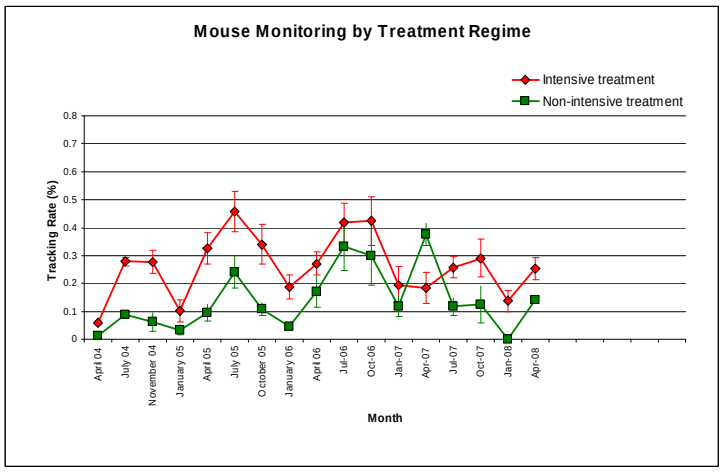
10. Rodent populations

Rats continue to be controlled to 10% tracking index or less where established baiting for possum control also targets rats. In sites where there is no anticoagulant baiting, rat numbers continue to exceed 40%. The effect of the current baiting regimes on mouse populations is limited. There are 10 sites where rodent monitoring was conducted. Two of these sites had limited or irregular pest control. Therefore it was decided to cease monitoring at Pounui, and continue to monitor Haywards Scenic Reserve as this monitoring provides unique information on control efficacy.



In January 2007, parts of Haywards Scenic Reserve received possum control with bait stations under the Animal Health Board programme. In this area the rodent tracking index showed a reduction in rats to low levels. However, rats remained at a high level in the area that did not receive bait and was only trapped. The baiting regime continued for a year with bait and hardware removed in January 2008 as per Animal Health Board procedure. To date the rat tracking indices on the line in the baited area remain low, 10% or less, while on the lines where there was no baiting, rats track 80-100% of all tunnels.

Long Gully came under management this year and rodent monitoring was established at this site. A monitor was conducted before and after the area was baited with Pindone. Following control rats where reduced from 10% to 0% tracking index. However, since March 2008 no baiting has been done and the rodent tracking index has risen to 10%.

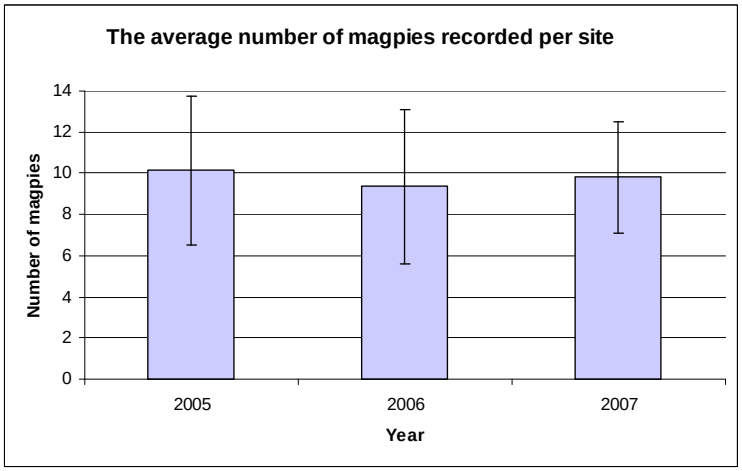


This graph indicates that regimented control is effective at keeping rats at levels that allow improvements to the ecological health of any targeted area.
The mouse monitoring trends indicate that the current possum/ predator/ rat treatment methods have little adverse effect on

naturally occurring mice populations. It is generally recognised that mice have lesser adverse impacts on native flora and fauna than the other larger mammals such as possums, cats and rats.

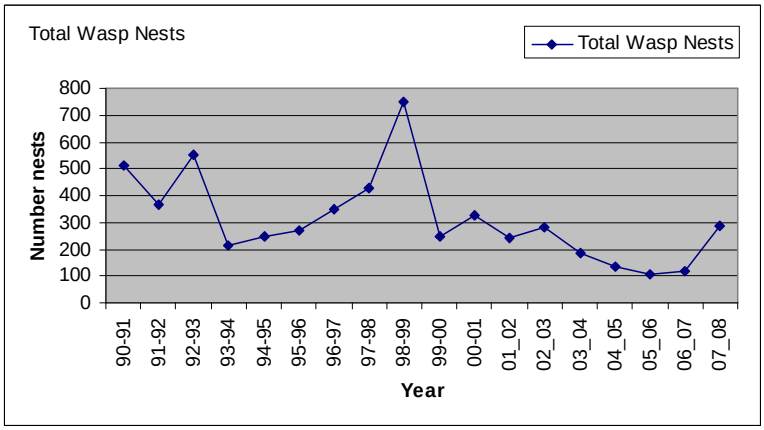
11. Magpie survey 2007

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.



12. Wasps

Territorial Authorities, Department of Conservation and Greater Wellington have supplied data for the annual Wasp Nest Register for 18 years now covering the 12 month period to the end of June. Data collected includes wasp nest type, frequency of occurrence, location and time of year.



By monitoring wasps on a regional basis we hope to monitor the effectiveness of the wasp biological control programme, and understand the seasonal influences on wasp population dynamics.

The 2007/08 wasp season was significantly higher than the previous five years even though the minimum mean temperatures for November 2007 were below or about average for most areas in the Wellington region.

Warmer temperatures during November can affect the initiation of hibernating queen wasps, and although cooler or about average in most places, Masterton did have a very low minimum mean temperature this year. Wasps seem to have also done extremely well in the hot dry summer experienced in the Wellington region.

Although there was a significant increase for 2007/08, wasp nest incidences are not at the 1996 to 1999 levels. Scientists confirm that the peak periods in the early 1990s were due to initial wasp plagues colonising fresh ecosystems. The scientists did however warn that if climate and food source conditions are suitable, a boom year could occur at any time. With the hot dry conditions this year it has been a lot busier than the previous year.

13. Feral pig trap trial

Pig damage to residential properties is becoming an increasing problem in parts of Wellington. Some areas are difficult to ground hunt using dogs, due to traffic hazards, difficult terrain, dense bush and public perception.

Due to this increasing problem staff are trialling a large live capture pig trap and leg holding snare, used in conjunction with a number of baits to attract pigs to the traps. These traps have been used on farms and forests both in New Zealand and internationally.

- **Location**

A live capture trap was placed in the Wainuiomata Mainland Island where large pig numbers were present. This had limited success with only two boars being caught. Both were caught using fresh possum carcasses as bait. Greater Wellington staff believes the limited success could be due to the continual hunting pressure with dogs in this area, forcing the pigs to move on.

The large holding trap is now being trialled on a private property in Brooklyn where pigs have been visiting.

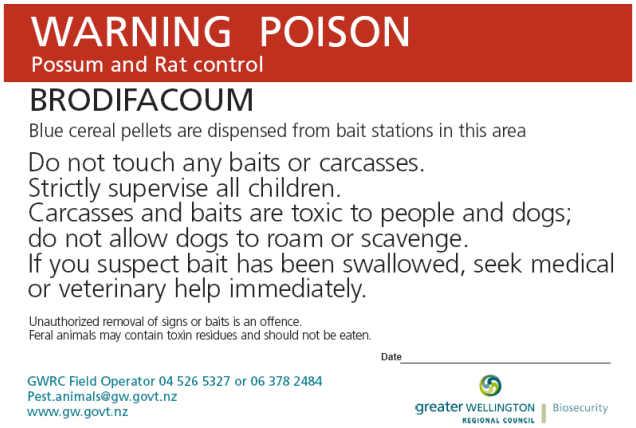
The leg hold snare has been used in various places where pigs are present. The success has also been limited with only one boar being caught. It seems to work well where pigs are frequenting daily without dog activity.

- **Conclusion**

1. Both the live capture trap and snare work well in urban areas.
2. More trials needed for bait/lures to attract pigs.
3. Pre-feeding is required for long periods where pig activity is low.

14. Warning signage update and testing

Greater Wellington Regional Council designed new warning signs for pest control operations using toxins within the Wellington Region. This review of signage was a legal requirement of the HSNO and ACVM Acts and the Hazardous Substances (Identification) Regulations 2001. Although warning signs were currently in place, they did not meet the requirements of the Act. Staff and a designer worked on several styles and formats until a final layout was agreed on.



The comprehensibility of the new signage was then tested on three classes of Year Nine students from Onslow College, Johnsonville. The test followed a 40 minute talk on pest control. The students were presented with an A3 version of the sign, with the various aspects of the sign read through, followed by the students answering four written questions. This was repeated for all three separate signs, with students answering 12 questions in total. Four questions were formulated for three different signs; Brodifacoum, potassium cyanide and 1080. The base formulation for each sign is the same, but the warnings vary depending on the toxin.

The signage now meets the requirement to be 'readily understandable' of the Hazardous Substances (Identification) Regulations 2001, and is being installed at all Greater Wellington toxin locations throughout the region.

15. Retailer inspections

Most veterinary clinics in the metropolitan areas also trade in pets and pet supplies, as do some in the Wairarapa. During May 2008, 21 retailers were visited again in the Western Zone which included the Kapiti Coast, Porirua, Wellington City and the Hutt Valley. A further six random visits were made to retail outlets in the Wairarapa.

As with previous pet shop visits, Biosecurity staff reported that shop staff and managers were courteous and helpful. All establishments were well presented and professionally run. The officers concluded that almost all retailers they spoke to have a responsible attitude towards the illegal sale, distribution and breeding of pest plants and animals. An information brochure was left at each retail outlet, which explains:

- 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.

No outlets were found to be selling or distributing pest animal or aquatic weeds that are banned under the Strategy.

16. Financial Summary

The year end result for pest animal management under the RPMS was an operating surplus of $13,000 (1.0%). Revenue was down by $278,800 (17.3%) with operating expenditure down by $291,800 (18.13%).

	$ (000's)
Rates and Levies	1,082.3
External Revenue	148.6
Internal Revenue	99.3
Total Operating Revenue	**1,330.3**
Total Direct Expenditure	**1,037.8**
Divisional/Corporate Overheads	279.5
Total Operating Expenditure	**1,317.3**
Surplus	(13.0)