



Summer 2007 Newsletter

Welcome to the summer edition of MIRO's newsletter, as we head toward the end of another busy year, in which excellent progress has been made on a number of projects in the East Harbour Regional Park (EHRP), Wellington.

Three years ago MIRO was little more than the Committee itself. Now it has expanded to include some 30 possum trappers; 11 people monitoring birds, rodents and mustelids, insects and vegetation; and a further 16 supporting the Nursery. All volunteers!

As it has been some time since our last newsletter we review the objectives of MIRO, and look at a brief history of our beginnings in the Park. We report on results of all the hard work being done by a dedicated team of volunteers working in all kinds of weather. A special thanks to all these volunteers, and for the cooperation of Greater Wellington Regional Council (GWRC) the managers of the Park, who MIRO work closely in partnership with.

MIRO's Objectives

MIRO is a community group of volunteers who are committed to:

- **protect and restore the natural forest and lakes ecosystems of EHRP for future generations**
- **see vulnerable trees, birds, insects and fish flourish again**
- **the elimination of pests both plant and animal**
- **the reintroduction of native species lost to the Park, using local sources of flora and fauna where possible**

MIRO's Beginnings

In the early 1990's the Leisure Services Division of the Hutt City Council, the Eastbourne Forest Rangers and locals set up possum control measures using Timms kill traps along the edge of urban areas and the western sea face of the Park in Eastbourne. These were the 'Possum Busters'.

A Landcare Research survey in 1996 showed the extent of the damage on vegetation being caused by possums, particularly on the northern rata forest. As a result MIRO was established soon after, with the initial focus being on helping to control possums further into the



Northern Rata (Metrosideros robusta)

Park using kill traps around the Hawtrey and Middle Ridge area. Some rat trapping was also done in this area.

MIRO approached the Wellington Branch of the Ornithological Society of NZ (OSNZ) in early 1999 about starting bird counts in the Northern Forest Block. As a result, a quarterly bird count survey began in mid-October 1999 using a set of ten count stations in three distinct areas of the forest.

In late 2003 volunteers from MIRO, with funding from GWRC, marked out some 50km of tracks throughout the Park with positions approximately every 200m for possum traps and rat poison bait stations, making a fixed network across the entire Park. These traps and bait stations came in to full use in April 2004.

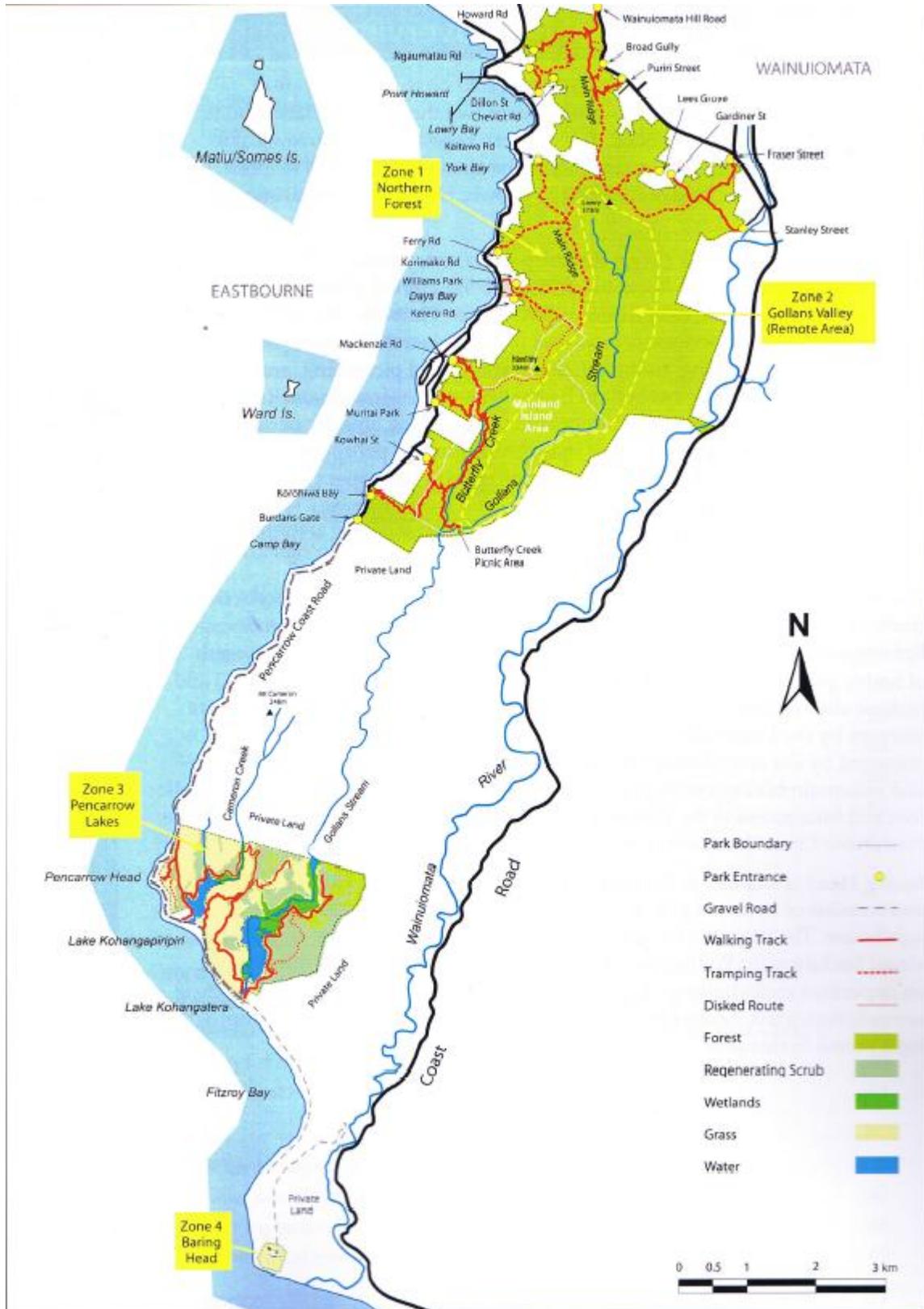
In 2005 GWRC put in approximately 250 rat poison bait stations, placed at 100m intervals in lines 150m apart, forming a grid across the upper catchment of Butterfly Creek and mid-Gollans catchment effectively creating a 350ha 'Mainland Island' (an area on the mainland isolated by means of a fence, geographical feature, or in our case by intensive pest control). This is funded by GWRC and maintained by contractors.

Today, MIRO works in partnership with GWRC in two main areas, the Northern Forest Block and the Lakes Block of EHRP, specifically on:

- Possum control

- Control of predators, particularly rats at this stage, but stoats will be trapped at a later date
- Monitoring under GWRC guidance of rats, mustelids, mice; and seed counts
- A native plant nursery
- Lakes Block plant restoration

- Bird counts in the Northern Forest Block
- Rata mapping and health study
- Re-introduction of bird species to the Northern Forest Block
- Pest plant eradication
- Advocacy, publicity and recruitment



The Northern Forest Block

- This is a significant area of lowland beech forest which has mostly disappeared elsewhere within the Wellington region
- Northern rata grows both epiphytically (from up in the host tree down) and terrestrially (from the ground up), and is the only place in Wellington where this occurs
- There are 264 known species of native vascular plants, including 1 endemic; 8 regionally threatened; and 9 of local conservation significance because of their rarity elsewhere in the Wellington region



Emergent rimu in regenerating lowland forest, Gollans Valley. Photo: MIRO

- 33 species of native orchid (50% of species found in the entire Wellington Conservancy); 86 species of moss; and 105 species of fungi are found here
- 33 species of forest birds, including the regionally uncommon yellow-crowned kakariki, tomtit, whitehead, rifleman, and falcon have been recorded
- A native carnivorous land snail *Wainuia urnula* occurs here

The Lakes Block

- ❖ The most significant and least modified coastal freshwater wetlands in the lower North Island



Lake Kaitangata, Pencarrow Lakes Block

- ❖ The rich wetlands vegetation is almost exclusively native, with very few exotic weeds, and includes 16 regionally endangered or uncommon species
- ❖ Provide breeding habitat for 4 regionally uncommon bird species, black shag, Australian bittern, NZ dabchick and spotless crane
- ❖ Fresh water fish include longfin and shortfin eel, banded and giant kokopu, and the common bully

Possum Control Work

Possums eat leaves, seeds, fruit and seedlings of plants, and are responsible for a huge amount of damage to the native forest, particularly on preferred food sources such as rata and mistletoe. It has been estimated that a single possum can eat 160g of vegetation each night. They also predate native birds and eggs, lizards and insects. Recently, a juvenile possum was caught in a stoat trap baited with a chicken egg.

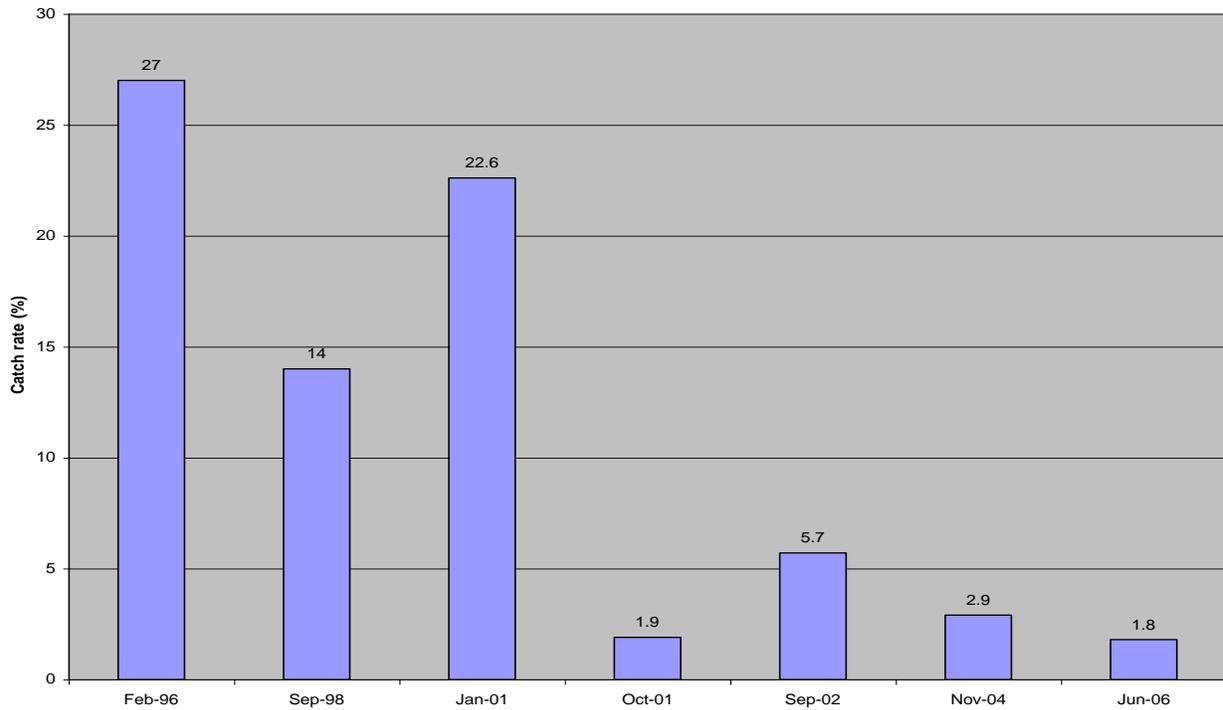
Before the start of any intensive trapping in February 1996 the number of possums caught in the Park per 100 traps (the Residual Trap Catch rate or RTC) was a massive 27%!

In 2001 contractors for GWRC carried out an intensive blitz on possums over four months using leg-hold traps, removing almost **9000** possums from the Park! This obviously had a huge effect on the numbers of animals reducing the RTC from 22.6% to **1.9%** in October 2001, but by September 2002 possum numbers were already on the increase again with an RTC of 5.7%.



In the last three and a half years, MIRO volunteers have maintained a fixed network of approximately 400 possum kill traps over some 50 kilometres of tracks across the entire Northern Forest Block. This has involved volunteers regularly (at least monthly) going out, baiting and setting traps, and often removing smelly decomposing carcasses (with gloves and a nose peg). Trapping has removed 1632 possums over this time. One possum can eat up to 160g of vegetation each night, so removal of these possums is saving a whopping 260kg of native vegetation every night! With results like this we can expect to see the flora of the forest start to regenerate. By June 2006 the RTC had dropped to its lowest level of **1.8%**!

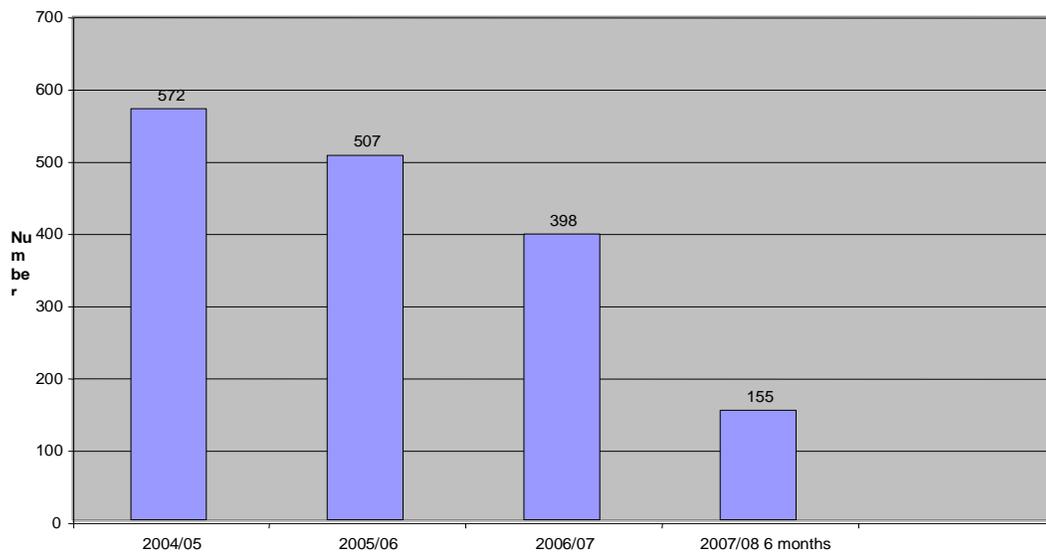
East Harbour Possum Monitoring Trend



The graph below also shows a drop in numbers of possums caught in each successive year since 2004, even though there has been more effort put in by MIRO volunteers with an extra three lines and traps being added in the last six months. Although it can be daunting at times to spend a few hours checking a line of traps and

not catching a single possum, it is important that the pressure on possums is kept going. We have shown that we can keep the RTC down below the target of 5% for the past three and half years, but more effort from more volunteers is still required in the north and east of the Park where re-invasion of possums continues to occur.

Possum Catch EHRP



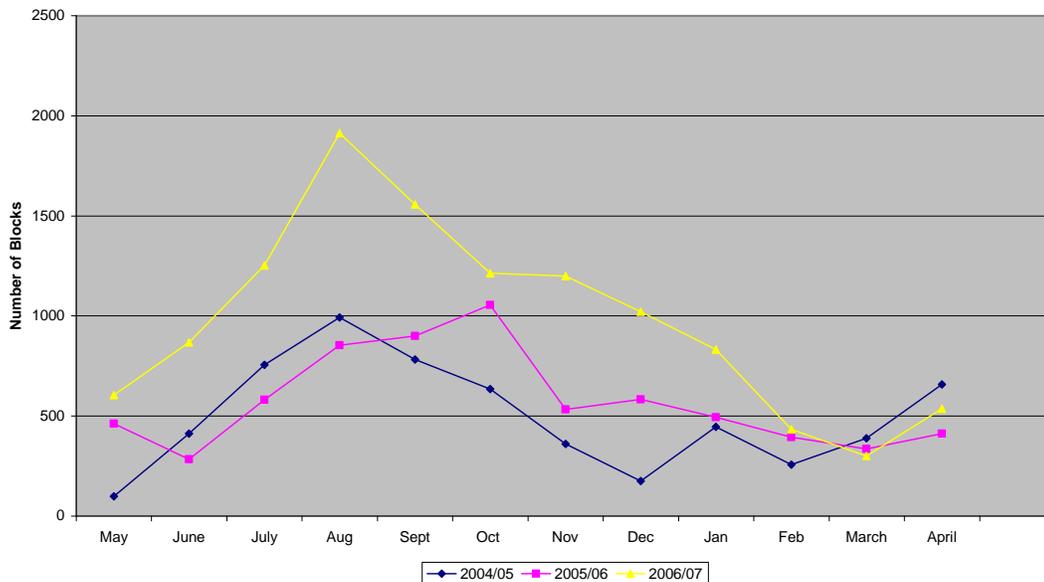
Rodent Control Work

Rats are a serious problem in most natural ecosystems in New Zealand, where they prey on birds and insects, and slow native forest regeneration by eating seeds. Birds are particularly susceptible at nesting time when

rats will eat eggs and the incubating bird, resulting in species such as tomtit and bellbird having a relatively low number of females to males.

MIRO began targeting rats and stoats in some localised areas of the Park during the late 1990's.

Rat Bait Taken at Possum Traps



Since 2004, when the fixed network of possum kill traps were put in, rat poisons such as bromadiolone have been used in bait stations on an ongoing basis to target rats near possum kill traps. These bait stations are kept filled by MIRO volunteers whilst checking their possum lines.

Around August to October is the time when there is a peak in baits taken by rats, which is the start of the bird breeding season, so we have to be especially vigilant with keeping bait stations full at this time. This is an area where more volunteers are much appreciated.

Intensive rat control began in late 2005 in an area of approximately 300ha of forest in the upper catchment of Butterfly Creek and mid-Gollans catchment. Here, rat poison bait stations have been placed at 100m intervals in lines 150m apart forming a grid. This effectively creates a 'mainland island', an area where it is hoped that the expected lower rat numbers will allow the re-introduction of native birds, such as robins, that have been lost to the Park. Some 250 stations are maintained by contractors for GWRC. The results of this control work can be seen in the monitoring results below.

Rat predating a fantail nest

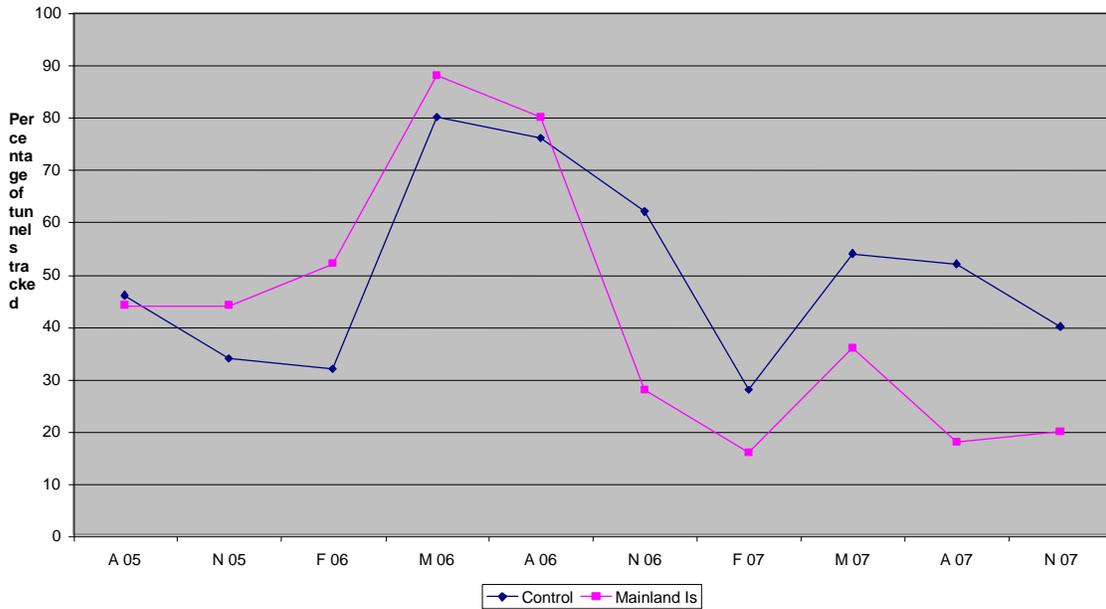


Rodent and Mustelid Monitoring

A monitoring program began in August 2005 to compare the presence of rats, mice, stoats, weasels, and hedgehogs on the Mainland Island with outside in the surrounding forest. Tracking tunnels were installed by GWRC along 10 lines each of 10 tunnels. There are 5 lines in the Mainland Island area, where rat bait/poison is intensively used, and 5 lines in an area where there is no rat bait/ poison being used. All lines are monitored every three months by GWRC and volunteers from MIRO. Pre-inked cards are put in tracking tunnels and baited with peanut butter for monitoring rats, and rabbit meat for monitoring stoats. By then identifying footprints left on the card, we can record the kinds of animals that have entered the tunnels. Using a non-poisoned area for comparison, the data provides us with information about the relative abundance of rodents in EHRP and the effect of intensive bait/poison stations on the rodent population.

When intensive rat control began on the mainland island in late 2005, the percentage of tunnels that showed rat tracking in the mainland island area and the non-poisoned area (no rat control) was similar, as expected, at around 45% (August 2005). Tracking increased to 80% in the non-poisoned area and 88% in the mainland island area in May 2006. May is the time of year when we can expect a peak in tracking activity, but the similar percentage tracking showed that the bait/poison was having no effect on the Mainland Island. A new bait/poison, Contrac (0.05g bromadiolone per kg bait), was therefore used from June 2006 until today, with excellent results.

EHRP Rat Tracking

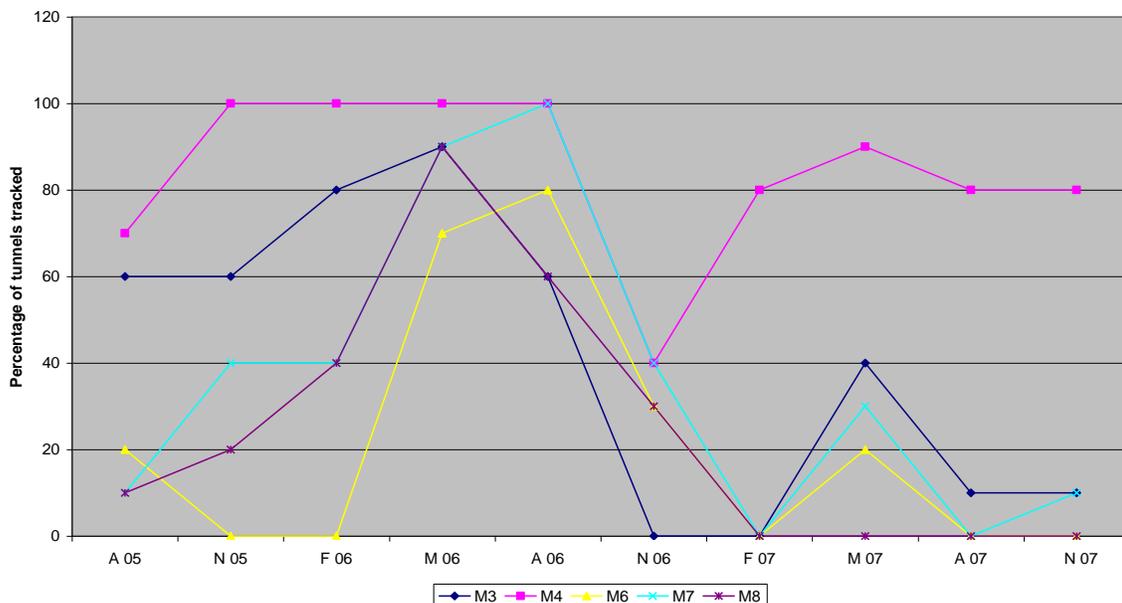


Since October 2006, the use of Contrac to control rats on the mainland island has consistently kept numbers at much lower levels than in the surrounding forest, as evidenced by the lower tracking percentages above. The pink line is the percentage tracking in the mainland island, and the blue line is the percentage tracking outside of the mainland island where there is little or no rat control. The results of the last tracking tunnel exercise in November 2007 showed a big difference between that in the mainland island, being under 20%, and that outside in the surrounding forest area where tracking was more than twice as high, at over 40%.

If we look at the five monitoring lines on the mainland island individually (M3, M4, M6, M7 & M8) below we get an even better picture of how effective the rat control is. The percentage tracking since November 2006 has been

high on only one of the five lines M4, which runs parallel to the main ridge top close to Hawtrey and just inside the mainland island. Lines M3, M6, M7 and M8 in August 2007 gave a combined tracking percentage of only 2.5%, but M4 was 80%, thereby increasing the total tracking percentage to 18% for all five lines! The reason for the much higher tracking in M4, other than the line running close to the north-western boundary of the mainland island, was not known. This created a problem in that we needed to reach an overall target of less than 10% to satisfy requirements for helping bird-life recover from the effects of rat predation, and for re-introducing birds such as North Island Robin. As a result new bait/poison stations were put in mid-May 2007 extending the area of control around Hawtrey, and brodifacoum was put out in these stations in mid-December to try and knock back the high numbers of rats quickly.

EHRP Rat Tracking Mainland Island Lines



Bird Counts

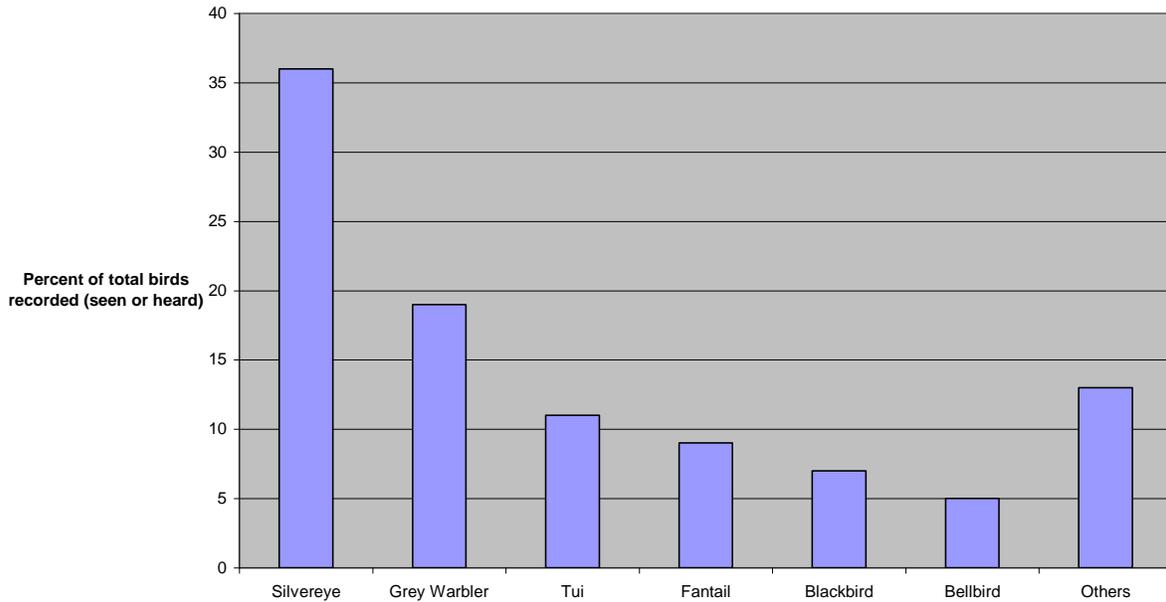
Bird count surveys began in mid-October 1999 with the assistance of the Wellington Branch of the Ornithological Society of NZ (OSNZ). MIRO installed 30 bird count stations on three lines, each of 10 stations, being in three distinctly different parts of the Park. Counts are done four times a year, in spring, summer, autumn, and winter. The method is simply to stop at each station and count all birds seen and heard within a 5-minute period.

abundance of each bird species. From this we can see that the silvereye is by far the most noticeable bird in the forest, followed by the grey warbler, and then the tui.

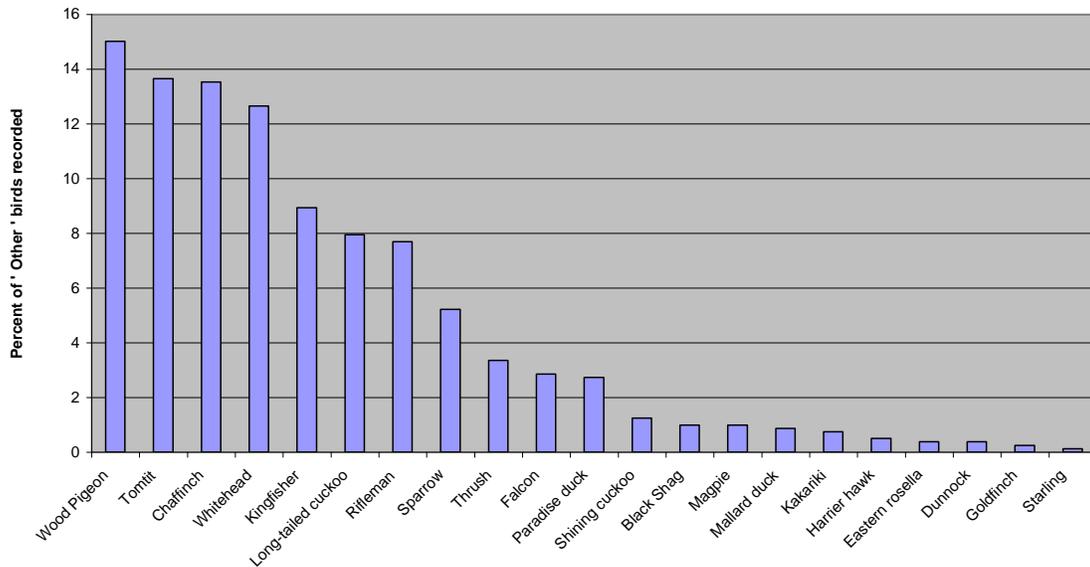
It is too early for the data to show the positive effects of possum or rat control, with any increase in numbers recorded so far being due to silvereyes. There is some anecdotal evidence however that some of the smaller birds such as tomtits and rifleman are becoming more noticeable particularly around Hawtrey.

The data collected provides information on the relative

GRAPH 1 : PREDOMINANT SPECIES : 1999/00, 2000/01, 2001/02 (3 years data combined)



GRAPH 2 : OTHER SPECIES - species which each account for less than 5 percent of total birds recorded 1999/00, 2000/01, 2001/02 (3 years data combined)



Eastbourne Nursery

The Nursery began in November 2004, when MIRO entered into an agreement with the Eastbourne Sports and Services Club to lease / use the eastern strip of land identified in a plan submitted to ESSC, for the express purpose of producing native plants, primarily for re-vegetating areas around the Lakes Kohangapiripiri and Kohangatera.

Lower Hutt Forest & Bird have assisted MIRO volunteers in the project with expertise from their vegetation projects at Matiu/Somes Island and Pauatahanui Wildlife Reserve. Work parties are held on the first Friday of every month at the Nursery in Oroua St, Eastbourne, where new members can learn how to grow native trees from seed, as well as potting and tending to seedlings.

The nursery produced its first 800 eco-sourced plants this winter. 100 plants were planted on the edges of the McKenzie Track by GWRC and Global Volunteers where track realignment had left track edges bare. 700 plants went in to the first of the plots in the Lakes Block (see below). It is hoped that there will be over 1000 trees available next winter for planting.

There are now some 3000 native plants growing, and with space at a premium, all of the available space in the Nursery will need to be utilised to provide enough plants to satisfy the requirements of the Restoration Plan for the Lakes Block.

MIRO appreciates the generous support of the Eastbourne Community Trust, the Hutt City Council, and the Lion Foundation, among others, in providing finance for rent, materials and equipment, and the ESSC in providing the lease agreement.

First Planting at the Lakes Block

GWRC included provision for planting at Lakes Kohangatera and Kohangapiripiri in the East Harbour Regional Park Management Plan, to assist the natural



regeneration of the pasture following the removal of cattle. Without planting regeneration was likely to be slow due to limited natural seed sources, the forested areas of the Park being some distance and separated by private farmland.

Geoff Park was commissioned to prepare a restoration plan, which has now been released. Rather than wide-scale planting, a number of sites have been selected, which it is hoped once planted will attract native birds which will disperse seed, and therefore increase the rate of return to native forest and scrub cover.

The first planting took place on the 17th August of this year in a plot 25 x 25m, fenced to keep out rabbits, below the lighthouse track to Kohangapiripiri. Ten people from MIRO & Lower Hutt Forest & Bird, and ten from GWRC planted some 700 plants: 42 taupata, 152 karamu, 80 manuka / kanuka, 60 mahoe, 48 cabbage tree, 28 ngaio, 20 *Hebe stricta*, 25 poroporo, 104 kawakawa, 22 pigeonwood, 5 matai, 6 *Olearia paniculata*, 13 five-finger, 7 black beech, 6 nikau & 1 pukatea.

Bird Re-Introductions

I am sure many of you will be familiar with the 'cheeky' nature of the robin, having watched a bird flit to the ground to find bugs in the litter disturbed by your feet



when walking in forest on Kapiti Island, Matiu Somes Island or Karori Wildlife Sanctuary. Well now it is our turn to see robin in EHRP.

A preliminary proposal has been submitted to the Department of Conservation to release up to 20 pairs of North Island Robin (*Petroica australis longipes*) into the 350ha Mainland Island in the Butterfly Creek area. Birds will likely be taken from the Waitotara Valley, Wanganui. We already have DoC's support in principle for the project, and acknowledge the tremendous help that their staff in Wellington and Wanganui have given so far. Iwi, both local and from the Nga Rauru in Wanganui, have been consulted and given their approval. A letter has been sent to GWRC stating we have DoC approval and seeking their permission as the Park managers to proceed. We now wait for this approval to come from a meeting of the new councillors of GWRC on December 6,

after which a full standard operating procedure (SOP) proposal is to be prepared for DoC. The intention is to aim for a May 2008 introduction of robins all going well.

Robins were once common in most wooded parts of the country, but are now found naturally on the mainland only in isolated patches some distance from Wellington. It is generally assumed they were wiped out by rats and stoats. Robins have been successfully re-introduced to a number of predator-free offshore islands, and mainland island areas where predators have been intensively controlled. In the Wellington Region successful transfers have been done from Kapiti Island to Mana and Somes Islands, and to Karori Wildlife Sanctuary, but this will be the first time robins will be seen on the mainland without a fence.

An intensive program of predator (rat) control has been underway for the past two years over the Mainland Island area as discussed above. There is also some measure of control over the remainder of the 1300ha Northern Forest Block by MIRO volunteers using bait stations spread throughout the Park at roughly 200m intervals on most walking tracks. Pest control at the release site needs to be less than 10% tracking for rats, especially from August to December when most birds are breeding. Sourcing robins from a mainland site such as Wanganui where predators are present will ensure birds are "predator-wise" and therefore have some ability to cope with the low levels of predator numbers at the release site. It is hoped to establish a self-sustaining population of robins within EHRP, returning the species to part of its former range.

The Great Rata Journey

A group of 30 members of the public met at 9.00am at the Duck Pond in Williams Park for this year's GWRC Rata Walk on Saturday 20 January, accompanied by MIRO volunteers & Gareth Cooper from GWRC.

The route was the same as last year, a fair amount of puffing up to the top of the Main Ridge for morning tea,



along to the big Northern rata on Middle Ridge, and down to birdcount 16 for lunch, before continuing down Middle

Ridge to Birdcount 20 and back via the McKenzie Track, arriving back in Day's Bay around 3pm. This route gives people the opportunity to walk through the Mainland Island area, past the possum and rat bait lines, and the bird count stations. A great time was had by all, and judging by all the questions asked most of us learned something new about the biodiversity in the Park.

Possum Trappers Fish & Chip / Pizza Night

A mid-winter get together was held on Friday 15 June 2007 at the Eastbourne Library sponsored by GWRC to celebrate completing three years with the fixed possum trapping network across the Park at the end of April.

East Harbour Regional Park Management Plan Launch

GWRC launched the new Management Plan for the Park on Saturday 11 August 2007 at a breakfast in the Pavilion, Williams Park, Days Bay.

The Plan provides a guide for GWRC when managing EHRP and making decisions about land use, development and activities within the Park. It sets out the policies and expectations that GWRC has for others wishing to use the Park or its facilities.

MIRO had previously made submissions to the draft plan, in general supporting it, stating that the Plan recognises the unique natural features of EHRP, and allows recreational opportunities which complement these, such as walking, cycling and enjoying nature. However, there has been no change to the status of the Lakes Block, MIRO supporting a change from the existing recreation reserve to a scenic reserve to give greater protection.

A Landscape Restoration Plan for the Kohanga Lakes Block

Geoff Park prepared a restoration plan in February 2007 for GWRC for the Lakes Block. In it he gives list of recommended species and estimates of numbers of plants required over the next five years. He notes most of the species are already being raised in the MIRO Nursery in Eastbourne from seed sources within the lakes catchment. We will need 5000 to 6000 plants for the six restoration planting sites recommended. If the planting proposed is to be undertaken within the next five years, the Nursery stock needs to be established within the next two years. Some species such as kahikatea, matai, miro, totara, and rimu will need to be planted as four to five year old plants if they are to survive in the exposed lake conditions so will need to be housed for longer.

This emphasises the need to utilise every centimetre of space within the Nursery if we are to succeed in our plan to restore native vegetation to the Lakes Block.

Pencarrow Lakes Fish Passage Investigation

The passage of native fish ('whitebait' species and eels) between the freshwater of the lakes and the sea is restricted by the ocean depositing gravel, making a 'beach dam', which blocks flows at the outlet of each lake. Wave action keeps the barriers closed for long periods, forcing the water to drain gradually through the gravel. The barriers may be breached, especially at times of high water, thereby providing an opportunity for migratory fish to begin or complete their journey. The natural hydrological system has also been modified in both lakes by the presence of a road that passes between the lakes and the sea.

Kohangatera is known to have breached in 2003, 2005 and 2006. Kohangapiripiri having a smaller catchment, stream flows are smaller, and the barrier bar is breached less often, occurring in 2005 and 2006, but not for many years prior.



Observations by George Gibbs sum up the current situation: "...during the winter and spring periods last year, the Pencarrow lake outlet streams have been experiencing a lot more opportunities to reach Cook Strait than in a normal year. Hopefully, this will mean that there has been a notable influx of larval freshwater fish this season. Kohangatera has regularly been flowing across the beach during the fish entry season, on one occasion the volume of water looked more like the estuary of the Hutt River. All this is excellent news for eels, several of the bully species and the whitebait group which includes inanga and the banded and giant kokopu. Unfortunately, the same cannot be said for Kohangapiripiri, where the outlet culvert is set too high for fish to swim in, unless the lake is over-flowing the roadway. I recently saw a whole school of inanga swimming up and down, trapped within a dwindling pond below the road, with no escape either to sea or into the lake, despite the fact that the pipe was discharging into the pond above their heads..."

An investigation of the hydraulic conditions at Kohangapiripiri and Kohangatera has been completed for GWRC by engineers Sinclair Knight Merz, resulting in a report on the 28 June 2007.

The investigation looked at the dynamics of this natural process, and whether the roadway with concrete culverts built across the outlet of each lake could be responsible for reducing fish passage further.

The conclusion of the report was that the culverts could be improved to enhance fish passage, particularly by increasing their size. This would increase peak discharge rates from the Lakes in large storms, increasing the frequency in which the beach dam is breached. This in turn would increase the time there is a connection with the sea, and therefore increasing the window of time when fish can access the Lake catchment. The cost of doing the necessary work to the culverts was in the order of \$100,000.

A water level monitoring system was in place for both lakes, and levels could be accessed from the GWRC web site.

Call for Volunteers

Without the help of volunteers much of the work being done in restoration and protection of the East Harbour Regional Park could not be done. It has been calculated that if all the volunteer hours put in over the year were added up that it would probably be equivalent to two full-time workers. Our thanks to the many volunteers, including locals, Global Volunteers, Lower Hutt Forest and Bird, and to Gail Abel in training new volunteers and getting them started.

MIRO is always on the lookout for new recruits. This is your Park to be enjoyed, so if you can lend a hand perhaps in looking after a possum trapping line, assisting with monitoring work, or planting of trees please call Gail Abel on 04 5627023 or e-mail Kevin Bateman at kbateman@paradise.net.nz.

End of Year Barbeque 2007

Once again Greater Wellington Regional Council is sponsoring a BBQ for all MIRO volunteers to thank you for the huge amount of work put in over 2007. This will be held on Sunday 25 November at the Days Bay Playcentre from 11.30am to 1.30pm.

Future Newsletters

It is hoped that we will be able to produce a quarterly newsletter to keep you informed on things MIRO. Kevin will be looking for contributions from members and volunteers, so if you have any interesting stories, such as a day in the life of a possum trapper, news or unusual (or usual) observations please get in touch with Kevin Bateman at kbateman@paradise.net.nz.

Also look out for our new website in the near future.