

Number 42  
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# RARE BITS

THE NEWSLETTER ABOUT THREATENED SPECIES WORK

*This newsletter is produced primarily as a vehicle for information exchange between departmental staff involved in threatened species recovery and ecological restoration programmes. In recognition of wider interest, however, "Rare Bits" is also provided to non-departmental groups on request. The newsletter's informal style may occasionally lead to misunderstandings for some of those readers. Views expressed by the authors are not necessarily those of the Department of Conservation.*

## The threat of collection to our gecko populations

From Lynn Adams

In recent years there has been an increasing demand for reptiles on the international black market. New Zealand's unique geckos are in high demand overseas, and although none can be taken out of the country legally without wildlife permits, some unscrupulous dealers have targeted New Zealand gecko populations. There is increasing concerns illegal collection is placing an additional pressure on vulnerable populations.

In 1998 a German national resident in New Zealand was prosecuted pursuant to the Wildlife Act 1953; following upon a lengthy investigation by the Wildlife Enforcement Unit (WEG), for illegally exporting *Naultinus grayii* to Germany. This person was convicted and fined NZ\$1000 (At that time the maximum penalty was a fine of NZ\$1500.) In February 2001, another German national, this time a visitor to New Zealand, was convicted and fined NZ\$12000 for attempting to illegally export *N. grayii* to Germany (the infamous Crown vs. Mr gecko in the Yfronts case!). Fortunately the penalties for such crimes had increased.

Other species such as *Naultinus elegans*, *N. gemmeus* and *Hoplodactylus rakiurae* are already available on the European and US markets. Some, if not all, of these individuals were obtained from illegal stock, and fetch high prices on the black market.

CITES staff will be working with WEG and gecko experts to write a proposal to list geckos as CITES Appendix Two species. Its hoped that this will assist wildlife crime agents internationally in the detection of movement of illegally collected animals, and further reduce illegal collection in New Zealand.

There are additional measures DOC staff can do to further protect the species. To reduce the chance of illegal collection DOC staff can:

- Be aware the offenders may be using DOC publications to locate animals. Avoid using geographical features or grid references in publications or reports. Where it is necessary to publish locations, keep control of document distribution. Take care when discussing gecko locations with anybody.

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- When doing news or media releases, take care not to reveal the locations of gecko populations.
- Its import to raise community awareness of the issues and threats of collection, the need for protection, and help at reporting suspicious activity.
- Take note of suspicious activity, especially when in remote locations where DOC workers are often the only visitors. Raise the awareness of this issue with other colleagues.

## Conservancy news

### Northland

*From Andrea Booth, Richard Parrish, Steve McManus and Lisa Forester*

#### ***Te Paki flax snails***

Kaitaia Area staff have been busy setting up a new project to protect the Te Paki flax snail (*Placostylus ambagiosus*) populations from rodent predation. Rodents at these sites were previously controlled with bromadiolone, but due to changes in the DOC pest control QCM process, the high level of recreational pig hunting in the area, and iwi concerns about poison use, we had to come up with an alternative method. This year we received Biodiversity funding for *Placostylus* protection, so we now have the resources to trap rodents at the priority *Placostylus* sites. There will be four treatment sites to start with; two where rats and mice will be trapped, and two where we will trap only rats. If time and resources allow, the trapping will be extended to more sites.

#### ***Lizards***

Lizard monitoring on the Chickens Islands was carried out in March. The traps used to monitor pre- and post-kiore eradication lizard abundance were lifted after 9 years and, will probably be continued on a 5-year cycle. The 9 years work showed that there was no significant change in total numbers on rocky beach sites. There were, however, significant increases in lizard captures in forest sites, and considerable differences in the response of different species. Species more frequently caught include ornate skinks, Duvaucel's gecko and Suter's skinks. All are crepuscular or nocturnal species. The diurnal lizards did not change much.

In Rarebits 40 it was reported that transfers of Mokohinau skinks to Coppermine Island were on hold until the fate of those released onto Lady Alice and Whatupuke islands was determined. Those on Whatupuke (beach release) were captured easily in March while there still has been no sign of those released on Lady Alice (forest release). The recommendation, therefore, has been made to proceed with the Coppermine release into a beach site. This will commence in December.

#### ***Tuatara***

As part of the same trip, Graham Ussher carried out a survey of tuatara on Lady Alice Island. He found 43% of the animals he caught were juveniles. These were born either immediately prior to the kiore eradication or since. This indicates a substantial improvement in the status of tuatara on the island.

#### ***Brown teal***

Emma Neil is now working permanently in Northland Conservancy to help save this teal from extinction (see Rarebits 40). Her main focus will be at Mimiwhangata.

### ***Dactylanthus***

DOC staff from the Kerikeri Area were excited to find that the recently caged *Dactylanthus* plants at Puketi Forest had not only flowered well, but had also produced a significant display of fruit. Since the plants were discovered in March 2001, 33 cages were constructed to cover and protect the majority of the population from possums. The cages have a 50 mm mesh size to allow the estimated 112 plants to be visited and pollinated by short-tailed bats, mice, rats or invertebrates. It is extremely pleasing to see that this population is able to continue to reproduce as a result of this protection work. Monitoring of the population confirmed that 34% of the caged clumps had heavy fruit set which is similar to the upper scale of averages nationally. Staff will now be interested to learn what is visiting the plants to feed on the nectar and pollinate them. They hope that a time lapse night vision camera, to be set up on the site during the next flowering period, will identify our able assistants.

### ***Asplenium pauperequitum***

A recent check on Poor Knights spleenwort (*Asplenium pauperequitum*) on Tawhiti Rahi Island found several healthy colonies, allaying fears that the plant is suffering another cycle of dieback, and allowing a few more fertile fronds to be collected. Mid-winter is late for an *Asplenium* to have ripe spores, so it was a bonus to be able to add to the small amount of material collected earlier this year. Fern expert Dr Barbara Parris and Doug Shaw are using specialist techniques to attempt to grow the spores. Dr Parris reports that some of the spores collected earlier have now germinated. If the plant can be grown in cultivation through to the sporophyte stage, it will be a huge step forward for safeguarding this critically endangered species, as all attempts to grow it so far have been unsuccessful.

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## **Auckland**

*From Bec Stanley, Rosalie Stamp and Chris Green*

### ***Kiwi***

Our kiwi crèche on Motuora Island is keeping staff busy. Eggs taken from the wild in Northland are hatched in captivity at Auckland Zoo, and then the chicks are released into artificial burrows on predator free Motuora until they weigh 1200 grams. They are then taken back to Northland, released into the Kiwi sanctuary and monitored post release.

### ***Coastal cress***

We re-visited our *Lepidium flexicaule* transfer sites on Rangitoto Island and found that five plants reported previously as having survived from the translocated population of 150, have died. However, seven seedlings were located, having germinated from the seed produced by the now deceased adult plants. Exotic annual plants seem to be out-competing this native cress there.

### ***Mistletoe***

Monitoring and survey has revealed six *Tupeia antarctica* plants on Fanal Island. This population was discovered last year and remains the only population of this mistletoe in our Conservancy.

A new *Ileostylus micranthus* mistletoe site was recently found on private land near Wellsford. This brings the number of known sites on the mainland in Auckland Conservancy to five. Over 100 mistletoe plants exist at this site, on at least 25 totara hosts. Our largest site in the Conservancy remains that currently earmarked for destruction by the future extension of State Highway 1. Let Auckland act as a cautionary tale! Even though this mistletoe is

regarded as 'the most common' one in the country we have only five sites on the mainland in Auckland Conservancy (three of these are on private land, and thus unprotected). That's not many left to lose.

We are doing all we can for our Miranda *Ileostylus* population by planting future hosts and associated plants for the second year at the site. The mistletoes here are restricted to a handful of roadside shrubs, the bulk of which are on the small scrambling pohuehue (*Muehlenbeckia complexa*) and *Coprosma propinqua*. There has been a good strike rate and growth from last year's plantings, with flax, manuka and the ribbonwood doing especially well.

### ***Argentine ants***

The five-year program to eradicate Argentine ant from Tiritiri Matangi Island began in earnest during January – February. Two teams of ant baiters, 14 in the first and 11 in the second, visited the island and spread special ant bait over the 11 hectares of the island infested with the ant. The program is a joint effort with Landcare Research (Nelson) who manufactures the bait under licence from Western Australia. The bait is laced with 0.01% Fipronil that is currently also the insecticide of choice to control exotic wasps in Nelson.

The bait is prepared as a paste formulation and applied using mastic guns. The entire area was covered with 1.8 gram baits every 2–3 metres, in grid fashion. The baits were, if possible, placed in the shade at the base of trees and covered with litter to avoid exposure to the sun. If exposed to the sun for long the bait tended to dry out and become less palatable. Tests carried out on the birds on Tiritiri indicated there was no risk to them, however, just to be on the safe side, two takahe, which sometimes frequent the target zone, were removed to a pen. Eventually, after these birds had taken full advantage of a couple of holes in the fence, they were confined on the correct side of the enclosure! In order to prevent pukeko from eating the bait all open areas such as mowed pasture and roads were baited at night. Argentine ants forage for food 24 hours a day so night baiting is an option.

A range of invertebrates could potentially be killed if they fed on the bait. However, these invertebrates would be the species that suffer most through competition with Argentine ants so, if the ants had been allowed to take over the habitat these others would have mostly died out anyway. This was already evident in Argentine ant infested areas where no other species of ants could be found. Elsewhere on Tiritiri 12 other species of ants have so far been recorded.

Argentine ants were quick to utilise the bait and activity began to decline within 48 hours. The poison was still killing ants two weeks later. Monitoring through March and April has shown a 99.98% kill with only very small nests or groups of ants remaining. While impossible to calculate actual numbers we are confident that billions of ants would have died.

The plan is to treat the infested parts of the island again next season, and hopefully achieve eradication. There will be the standard two year monitoring period to determine the success of the program overall.

Argentine ant has an international reputation as one of the most invasive pest ant species and has been present in Auckland for about ten years. See [Rare Bits No.37](#) June 2000 for more background on this pest.

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## Waikato

*From Jason Roxburgh*

### ***Threatened Plants***

Auckland Botanical Gardens have grown *Carmichaelia williamsii* plants from seed collected from the Alderman Islands. In the next month or so these will be planted back onto the Alderman Islands, and also at a mainland site.

Kikuyu grass control on the Matariki Islands has been undertaken to protect the Cook's scurvy grass population occurring there. This population appears to be expanding. Seed is to be collected and propagated for transfers to nearby islands.

### ***Invertebrates***

The transfers of Middle Island tusked weta from the captive population to Red Mercury and Double Islands were a major success. We are able to find weta regularly, and have learnt a lot about their habitat preferences and behaviour. Extra biodiversity funding this year means that both the captive rearing and research programmes will be expanded.

### ***Kiwi Zone***

From the 4,000 hectares under a trapping regime at Moehau so far, we have killed nearly 100 stoats. August saw Tommy Herbert welcomed to the team, and he reports a number of kiwi nests already close to hatching. A possum hunter handed in a young kiwi caught in a ground-set trap near Coromandel town. This bird is being rehabilitated by Auckland Zoo (thanks to Richard Jacob-Hoff), and we are doing some public relations work relating to setting traps off the ground to protect kiwi

### ***New Zealand Dotterel***

Work on NZ Dotterel on the Coromandel has expanded, with help from Waihi Gold's generous sponsorship and logistical assistance. Part of this consists of a "hazing fence" at Opoutere, the Peninsula's largest producer of Dottie chicks. Over recent years egg predation, from as yet unknown terrestrial predator(s) is a significant problem. The hazing fence spans the base of the nesting area (a large sand spit), and is designed to funnel predators into heavily trapped areas where we have a better chance of catching them. This will compliment the ongoing Ranger's work, which includes wide scale predator trapping, advocacy, and community involvement.

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## Bay Of Plenty

*From Paul Cashmore and Keith Owen*

### ***New discovery - Sicyos australis (mawhai, native cucumber)***

A new mawhai population was discovered in Otamarakau near Matata. The plant was discovered by a weed contractor in a young *Pinus radiata* block a few kilometres inland from the coast. Initially it was thought to be an invasive climbing weed, until identified by Environment BoP plant pest staff as mawhai. A survey of the site revealed at least 50 mawhai plants scrambling over inkweed and young pine trees in a localised area. Another site was also found within the pine forest and on a neighbouring farm. Further surveys are planned within the immediate area to determine the extent of the population, as this is the only mainland population in the BoP.

### ***Moutohora (Whale Island) threatened plants***

The threatened plant restoration programme, as part of a wider restoration programme for the island, is now into its third year. This project is a joint initiative between Wildland Consultants Ltd, Naturally Native NZ Plants Ltd and Ngati Awa. On a recent trip in September, we planted a further 120 individuals of the ten species previously reintroduced to the island over the last two years, and continued to monitor the survival and growth rates of the existing plantings. These include NZ spinach, NZ cress *Rorippa divaricata*, pingao, hinarepe (sand tussock, *Austrofestuca littoralis*), tawapou, Cook's scurvy grass, sea spurge and mawhai. Results to date suggest that tawapou, parapara, sea spurge, NZ spinach, hinarepe, pingao and *Pimelea tomentosa* are likely to establish long term viable populations.

### ***Mistletoes***

This year was an excellent fruiting season for *Ileostylus micranthus* at our Lake Ngahewa site, where hosts were banded and planted several years ago in an attempt to maintain the ailing population. After waiting patiently for several years we can finally confirm the project was a success. Seven young *Ileostylus* plants were found growing on some of the planted tree lucerne hosts, and other *Ileostylus* seed is germinating as well. A further part of the picnic area was fenced off and planted with potential *Ileostylus* host species by volunteers in August.

### ***Mokoia Island mouse eradication attempt***

A second application of Pestoff 20R (12mm diameter, 2-4 gram) Wanganui No. 7 cereal pellets containing 20ppm brodifacoum was dropped onto Mokoia Island (135.5 ha) by helicopter on 18 September. This will hopefully remove mice from the island. The first drop, undertaken in August reduced mouse numbers significantly, however we know from previous experience that they will increase again without control. It will be a challenge to remove them completely, as earlier attempts to remove them (Sept 1996) were unsuccessful.

As part of the project, 25 North Island weka were captured from the island and transferred to Equine Farms, near Rotorua as a safeguard against the loss of this population. These birds will be returned to the island once the operation is completed, and post-operational monitoring of the weka population left on the island is planned.

### ***Mokaihaha Ecological Area kokako***

Next month, an 848 ha block within the 2,136 ha Mokaihaha E.A. is to be treated to reduce possum and rat numbers impacting on kokako, other forest fauna and forest health. This is the first time the Mokaihaha has ever been treated, and the 30-50 kokako remaining there are well overdue for protection.

Ground treatment is planned, with bait stations laid out on a 100-metre grid. Each station will have two pulses of non-toxic pre-feed, and then be followed up with 1080-impregnated cereal baits (Wanganui No.7). Six weeks later, a top up of pindone and feratox is planned to ensure that kokako juveniles fledge before rat numbers rise substantially. The plan is to manage the forest to ensure that kokako numbers become sustainable in the long term.

### ***Kaharoa Forest kokako***

Work carried out by the Kaharoa Kokako Trust with assistance from DOC continues to be successful with further fledglings appearing this year. The Trust intends to extend their treatment area to include the adjoining Onaia E.A.

### ***Moutohora Island/Ohope Scenic Reserve/Whakatane kiwi***

The two sub-adult female kiwi released on the island earlier this year have settled in well and continue to put on weight.

At Ohope S.R., two of the four kiwi pairs residing in the reserve are known to be incubating eggs. A Management and Advocacy Strategy was written to guide staff, and monitoring and stoat trapping continues accordingly.

In the Whakatane District, kiwi surveys undertaken by staff/contractors show that there are a number of isolated groups of birds in several of the reserves. The future of these has yet to be decided, and some may possibly join the Moutohora birds.

#### ***Whirinaki Forest kiwi***

The kiwi population in the Tuwatawata E.A continues to be managed by Rangitaiki Area staff. They monitor nine pairs and run a stoat-trapping regime around and through the block.

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## East Coast/Hawke's Bay

*From Steve Cranwell and Pete Shaw*

### Boundary Stream Mainland Island

#### ***Kiwi***

Since March 2001 an additional five North Island brown kiwi, raised at Rainbow and Fairy Springs, have been released into Boundary Stream Scenic Reserve. All new arrivals are doing well. The total released is now ten with eight being monitored (five females and three males). One was lost to hypothermia and the another to predation in late August 2001. This bird (1100 grams) was found dead down a deep burrow just outside the Reserve. The culprit appears to be a ferret, although this is yet to be confirmed.

The oldest kiwi in Boundary Stream are now approximately 17 months and still wandering. Raina (female) was retrieved from Waitere Kiwi Conservation Area recently, almost 6 km away. She is now back and weighs 1750 grams. Kohu (male) has settled after his long distance escapades in March, and is also around 1750 grams .

#### ***Kokako***

The first step in the reintroduction of North Island kokako to Boundary Stream has now taken place with the transfer of five pairs from the Otamatuna study site in Northern Te Urewera to five aviaries in the Reserve. Six birds were caught on 26 May and transferred by helicopter to Boundary Stream where they were gifted and welcomed by Iwi from the Waimana Valley and local Iwi Ngati Tu, Ngati Pahauwera and Ngati Hineuru. A further four kokako were caught and transferred on 24 July. The birds all appear to have adapted well to aviary life, and are maintaining healthy weights, singing, and some even appear to be showing signs of courtship. They are fed daily a diet of jam water, wombaroo mix, peas, corn, chopped apples, pears, grapes, bananas, oranges and branches of natural fruit such as mahoe. Members of Forest and Bird, OSNZ and other volunteers have been instrumental (financially and physically) in the progress so far of the project helping with aviary construction and participating in the regular kokako feeding roster.

#### ***Alepis***

Recent surveys for yellow flowered mistletoe (*Alepis flavida*) have identified 39 new plants. This brings the total known population to 43 mistletoe on 18 hosts.

### ***Kowhai ngutukaka***

With assistance from volunteers from the DOC nursery in Ahuriri there have also been approximately 100 new plantings of kakabeak (*Clianthus puniceus*) along the new 'Interpretation Track' and other areas of the Reserve.

### ***Mistletoes - Te Urewera National Park Mainland Island***

This was the fifth season of monitoring pirirangi (red mistletoe, *Peraxilla tetrapetala*) hosted on *Quintinia* at the Otamatuna Core Area. Pirirangi numbers have continued to increase, since intensive management of pests commenced in 1996. The flowering period was slightly longer in length, than previous seasons. Flowering started later than the past two seasons and was more akin to the initial two seasons of monitoring. Surveys were not conducted for pirirangi hosted on tawai (red beech), as five out of six known plants did not flower.

A survey was conducted for pirirangi hosted on *Quintinia* in the ranges between the Whakatane and Waimana (Matahi) Valleys, and a suitable site for the long-term monitoring of trends over time was located in the possum controlled Background Area. A total of 34 pirirangi were found here, on 22 hosts. Monitoring will begin here in the 2001/2002 season.

The Category B yellow mistletoe *Alepis flavida* has recently been found at four sites in northern Te Urewera. Results from a survey north of Te Waiiti River indicate that this area is likely to be important for mistletoe conservation.

### ***Kiwi - Kaweka Range***

Nest monitoring in the Kaweka Range for this season began in June. Five eggs from three nests have been transferred to Rainbow and Fairy Springs with the first egg hatching 5 September. Another three males in the Kaweka Range are currently sitting.

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## **Wanganui**

*From Graeme La Cock and Nick Peet*

### ***Foreigners coming and going***

Tim Holmes was recently replaced by another British ornithologist, Nick Peet; however the number of foreigners has decreased because Graeme is now a New Zealand citizen. We welcome Nick to the team.

### ***Dactylanthus***

We had a great recovery group meeting in the conservancy, followed by a fruitful visit to the original Taylor site. Since the visit, about 20 cages have been installed and the site has been mapped. It was great to have Northland back!

### ***Olearia gardneri***

Our retired CAS did a survey for *Olearia gardneri* in late June. Plants were quite easy to pick up at this time of year, because they had lost their leaves. The yellowish to brownish stems and growth pattern stood out amongst other vegetation, so a late survey worked well. There are now 88 adults and 58 known juveniles (compared with 58 and 12 in 1996). It was a wonderful surprise to discover that the Ngawaka Stream contained 16 adults and 15 juveniles, whereas only three adults were previously known there.

The Palmerston North Area staff have also planted out plenty of plants, which were grown at Percy's Reserve.



### ***Paengaroa and the snow***

The recent heavy snowfalls in central North Island took their toll on the trees at Paengaroa. A lot of branches came down, trees have toppled over, and the undergrowth has been trashed in some areas. Our *Korthalsella clavata* monitoring on a *Coprosma wallii* is now well and truly over, with the tree having broken. Some new canopy gaps in the forest have been created, and there is a lot more light. It may well be events like this that drive the system. The last similar event may have been the heavy storm in 1939. We will continue with our monitoring and set up some new plots to try and determine how the vegetation responds.

### ***New Zealand robin***

Twenty-eight NZ robins were transferred to Bushy Park from an area of pine plantation at Waimarino, which is soon to be milled. A team of DOC staff and members of Bushy Park Trust spent 4 days (25-28 August) catching the birds using clap-traps baited with mealworms. The birds were colour-banded and transferred to Bushy Park, a privately run reserve which has undertaken a successful predator control campaign in recent years. Robins were historically present in the Park but the real value of the transfer is that the reserve is extensively used as education resource by local schools.

### ***Skinks***

Captive striped skinks *Oligosoma striatum* have been transferred from the Stratford Area Office to the National Wildlife Centre at Mt. Bruce. The striped skink captive management plan is largely completed and will be coordinated by the National Wildlife Centre. If breeding is successful, the maximum population required is about 20 animals. The object of the breeding will be to have a self-sustaining population in captivity. In the short term, animals will be used for palatability trials for baits in various trap designs. Further attempts will be made over the spring and summer to locate a wild population.

The Palmerston North Area Office recently completed a report on small-scaled skink (*Oligosoma microlepis*) surveys carried out in the summer of 2000/2001. The initial survey covered four areas, Ngamatea Station, Ohinewairua Station, Otupae Range and Springvale Bridge. Several populations were found on Ngamatea Station, Ohinewairua Station and at Springvale Bridge, but only small numbers were found on the Otupae Range. Subsequently, monitoring plots were established at four sites in the Springvale Bridge area with two of these, Springvale Quarry and Springvale Hut, recommended as long-term monitoring sites. All sightings of skinks were made at air temperatures above 16C° and at rock temperatures above 23.5C°. Skinks were found amongst loose, angled greywacke rocks scattered in pasture and on rock outcrops with crevices. All individuals were found in north-facing sites and on slopes of 15-20°.

Populations of small-scaled skinks have so far been found only on private land and generally in highly modified habitat. The status of these populations is unclear. The next step will be to attempt to locate populations on land administered by DOC and to determine the biology and status of known populations.

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## Wellington

### National Wildlife Centre

*From Karen Barlow*

#### ***Kokako***

Only one of the two Taranaki males left, and the captive-bred female produced one male chick last season. This juvenile was transferred to another captive institute to pair with their single female. Any offspring produced from these two pairs will be released onto Tiritiri Matangi to maintain the Taranaki line.

Five kokako caught from Mangatutu were brought into captivity in beginning of August. These birds, plus our resident single male, make up the three pairs to be used in the “breed on site and release” into Mount Bruce forest project.

#### ***Hihi***

The installation of nest-cam and temperature probes will provide us with more information about hihi incubation and brooding. We will be attempting to hand-rear chicks from six days, and if further information is obtained, also from the egg. Due to some adult mortality over winter, and for genetic diversity, more birds are required for future seasons. Young chicks taken from Tiritiri Matangi nests will be transferred to Mount Bruce to be hand-reared. Hand-reared birds are easier to manage and provide better viewing opportunities for the public, as they are less wary. Juveniles produced this season will be released onto Kapiti Island.

#### ***New Zealand shore plover***

Seven pairs of NZ Shore Plover are held for breeding this season. Their offspring will continue to be released onto a predator-free (privately owned) island in the North Island. Thirteen juveniles from last season were released in May 2001 with at least nine still present in September.

#### ***Kaka***

The wild kaka population consists of 21 birds (10 females, 11 males). Nest protection will continue and more artificial nest boxes will be erected. Of the four successful clutches last season, three females (all captive bred) chose to nest in the predator-proof artificial boxes. Last season, nine juveniles were produced (of which, seven survived - the biggest season so far).

#### ***Striped skink***

Six striped skinks (1 pair and 4 males) have recently arrived for research purposes. The research will involve trialing bait types and trap designs for use in the field. Striped skinks have rarely been seen in the wild and it is thought they are arboreal and current trapping methods are insufficient.

The Mount Bruce forest (1000 ha) restoration project is underway. Track cutting has commenced and predator control will begin once completed. Possums, rats, mustelids, cats, goats will all be targeted.

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## Nelson/Marlborough

*From Tim Shaw, Bill Cash, Jan Clayton-Greene, Paul Gasson, Shannel Courtney and Ian Millar*

### ***Moths***

During the drought, large numbers of *Raoulia* mats died on the Cloudy Bay Foreshore, which meant that when staff came to survey for the recently discovered mat daisy jumper moth, *Kiwaia*, none could be found. We will have to wait until next April to see if this is a long-term problem (e.g. extinction) or a seasonal variation.

Late summer surveys produced a couple of new invertebrate records, for the rare moths *Gingidiobora nebulosa* and *Bityla sericea* in the Marlborough Hill Country. In addition a moth taken in the Canaan area in Abel Tasman National Park may be *Eudonia linealis*, presently known from only the damaged type specimen.

### ***Carex inopinata***

Following on from last report, the rohutu (*Neomyrtus pedunculata*) growing over the *Carex inopinata*, that dropped it's leaves during the drought, followed this by shedding it's bark, but then regrew a new canopy of leaves. The *Carex inopinata* has come through the drought, in fact the 600 plants that were planted out last spring have a high survivorship, given the dramatic conditions they have endured. So far we are looking at 50-70 % survival. A further 300 *Carex inopinata* plants have been added to the best of the insurance sites.

A survey of the upper Awatere river terraces failed to find any further population of *Luzula celata*. So far in Marlborough, *Luzula* is only known from one location.

### ***Glenhope tree daisy update***

St Arnaud staff endured sub-zero temperatures, frozen ground and hoarfrost in July to erect an 880m-long fence around a population of the endangered Glenhope tree daisy (*Olearia polita*) a gully near Glenhope. The fence protects around 800 plants on about four hectares of mostly protected land administered by DOC. The Glenhope tree daisy only grows in Nelson and there are only around 1800 individual plants of it known to exist. It was discovered in 1975 when a passing botanist saw an unusual-looking shrub on the Glenhope roadside. For many years, the original eight plants were the only ones known but others have since been found in the Glenhope area and in the Wangapeka Valley (see Rarebits 41). Its main habitat is swampy valley floors under open-canopied silver beech forest.

### ***Frogs***

It has been a couple of years, and a drought, since the *Leiopelma pakeka* transferred from Maud Island to Motuara Island have been checked, so in August a team of two visited Motuara Island. They were to spend ten days on the island but returned after just five, having monitored their quota of frogs. Things are looking very positive on the island for frogs, as they seem to be both increasing and spreading. The habitat must be suitable for them as very few were in poor condition as a result of the drought.

### ***Eradication projects***

Motueka Area Office is half-way through the planning required to start killing stoats on Adele Island and along the Flora Stream. These initiatives are being funded through the community relations bidding round. The Adele Island project is being done in association with local Iwi and tourist operators at Marahau, and will protect a large colony of little blue penguin and kereru. Flora stream is being done with the help of a bunch of keen locals who have banded together as an incorporated society, Friends of Flora, and will help out a host of bush birds and whio.

### ***Kiwi***

Every year we seem to get a clutch of kiwi call reports in the Sounds. This year we have made a concerted effort to follow up those that seem the most positive, and a couple do look very promising. As yet nothing definite but a few more nights on the hill may finally get a positive result.

### ***Hutton's shearwater***

Staff in Kaikoura are gearing up for a busy few weeks on the Hutton's Shearwater colony. A concerted effort is going to be made to determine the flight paths of the shearwater to the colony. Transmitters will be put on birds and their routes tracked each evening. Further dye trials will also be undertaken at the same time.

### ***Takahe***

After a brief hiccup with the takahe transmitters all the female takahe on Maud Island have working back packs. This will enable us to monitor more closely the nesting and especially the very early chick stage, when the greatest loss occurs.

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## **West Coast**

*From Megan Hieatt, Chris Rickard, Jo Crofton, and Phil Knightbridge*

### ***Coprosma wallii***

A survey of the mid Haast - lower Landsborough Valley in September located a significant population of the nationally declining shrub *Coprosma wallii*. Several hundred plants were located in patches of lowland ribbonwood-*Coprosma-Rubus* shrubland along the silver beech forest margin. Most of the *Coprosma wallii* found were adult, but there were some saplings and seedlings present. This is the most significant West Coast population of this species outside the Maruia Valley. Further survey is needed in the Haast-Landsborough area to confirm the distribution. Six *Coprosma wallii* were located in the Kokatahi Valley (central Westland) in January, which filled in a large gap in the distribution of this species on the West Coast. Browsing and competition with adventive grasses appear to be the main threats to this species on the West Coast.

### ***Mohua protection, Landsborough Valley***

The Landsborough Valley near Haast holds the best remnant population of mohua on the West Coast. Beech seedfall counts indicated that a beech mast event would occur during the summer of 2000-2001. In response to this, South Westland Area established a stoat control line through the core mohua habitat in the valley during November 2000. The trapline consists of 93 timber tunnels with double set Mark IV Fenn traps, baited with a single hen egg. The line was checked monthly from November 2000 to April 2001, and again in July 2001.

Over this period, a total of 91 stoats, three ship rats and one mouse were caught. Of the stoats caught, 41% were female, 49% were male, and 10% were of unknown sex (too decomposed to sex accurately). Approximately 60% of the animals caught were classed as juveniles (less than four months old) and the remaining c. 40% adults. This trapping regime will continue throughout the year.

### ***Rowi/Okarito brown kiwi management***

The start of another rowi breeding season is upon us. As always this is a busy time of year, however this year it is even busier than usual. The advent of the kiwi zones has resulted in a major increase of scale of the rowi program

This is also our first breeding season with the increased project, and as such we are looking forward to the results with much anticipation.

The aim this year is to monitor the survival of 30 rowi chicks in South Okarito Forest in conjunction with a stoat trapping program. To enable us to get the target of 30 chicks, we had to catch 20 new pairs of kiwi. This was completed just prior to the breeding season, bringing the total number of wild rowi pairs monitored to just over 50. To date, we have detected 25 eggs, and the first of these are due to begin hatching in about mid September. Twelve of the twenty new pairs have already produced eggs. This is more than we would have initially expected, which will increase our chances for reaching our target of 30 chicks. Extrapolating from last year's results suggests we will be slightly ahead of target.

The decision to leave the chicks in the forest represents a major turning point in the rowi program. Previously we have been concentrating on reversing decline and ensuring the survival of rowi using Operation Nest Egg techniques. This method has shown great potential and has almost certainly resulted in the first significant increase in rowi numbers for many years. This, teamed with the extra funding from the kiwi zones, has given us the freedom to pursue our ultimate goal of kiwi protection in the wild.

The stoat trapping program, which covers an area of 10,000+ ha, is now completely installed and has been running since early June. It was a mammoth task, involving the installation of 200 km of cut tracks and 1500 tunnels and fenn traps. The results in terms of dead stoats are certainly impressive. The first two checks yielded about 170 stoats. We are yet to see what this translates to in term of kiwi survival but we are certainly pleased with the progress to date.

Fifteen young juveniles from last years breeding season are still doing well on Motuara Island, and are scheduled for return to Okarito in January. The 30 'ONE' juveniles monitored in Okarito Forest (from previous releases) are all doing well. One pair of 'ONE' birds, both aged just under five, have just produced our most exciting news for some time by laying an egg. The egg was found yesterday afternoon so we have about 75 days of anticipation before it hatches, if successful. This egg represents a significant milestone for the program as it is the first time a 'ONE' female has produced an egg (she is one of the oldest birds) and only the second time that a male has been part of a breeding pair. All this certainly bodes well for the 40 younger birds that are waiting in the ranks.

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## Otago

*From John Barkla and Bruce McKinlay*

### ***Cromwell chafer beetle***

Otago Conservancy has initiated a new project with Barbara Barrett from AgResearch to investigate the sub-adult life cycle of the Cromwell chafer. The first stage of the project was to core sample the Cromwell Chafer Beetle Reserve in July to determine where on the Reserve the beetle lives. Unfortunately the larvae were buried too deeply to be common in the cores obtained, however the weather was spectacular with hoarfrosts and frozen solid ground making coring interesting to say the least.

### ***New plant finds***

We've had a couple of significant finds by non-DOC people. Ingrid Gruner, a PhD student working on *Carmichaelia* discovered *Carex inopinata* from Blackstone Hill in central Otago. This critically endangered sedge had previously been recorded from Bendigo in Otago but had not been seen for many years. Dr Kelvin Lloyd from Landcare

Research turned up a new population of the vulnerable sedge *Uncinia strictissima* from Awakiki Bush Scenic Reserve in South Otago. This is only the third record for Otago Conservancy.

New sites have also been found for the mistletoe *Tupeia antarctica* and tree daisy *Olearia fragrantissima*.

### ***Yellow-eyed Penguin***

The annual YEP symposium was held in Dunedin in early August. This was a chance for community groups and DOC staff to get together and catch up on the year's activities. Of interest to the group was the report from Wynston Cooper about YEP numbers on the Southland Coast and the Foveaux Strait Islands. Also Kath Widdowson talked about ongoing issues with visitors at Nugget Point. The existing hide is too small to fit all the people who want to see YEP in the evening.

Also in August, Otago Conservancy convened a YEP Recovery Group Meeting. It has been about two years since the last meeting, and now that the new recovery plan has been published, it is time to get on and implement it. Key issues from the meeting were: continuing efforts to get some baseline data for the Auckland Islands Group; and making some progress on the use of the dog legislation along the Otago Coast.

### ***Wharekakahu Island***

A fine winters day in June allowed Dean Nelson (Coastal Otago Area), Paul Scofield (Otago University) and John Barkla (Otago Conservancy) to visit Wharekakahu Island, a small 2.4 ha rock stack close to the Otago Peninsula. This infrequently visited stack supports breeding colonies of Stewart Island shag, spotted shag, fairy prion and sooty shearwaters. The flat summit plateau was found to be virtually devoid of the *Hebe elliptica* shrubland and *Poa astonii* tussockland previously recorded there. Stewart Island shags seem to be the most likely culprits. Other vegetation had fared better with about 500 plants of threatened Cook's scurvy grass noted. A few *Hoplodactylus maculatus* sens. lat. geckos were recorded and a small collection of invertebrates made.

### ***Tenure Review***

Tenure Review is again going to be a big work commitment in Otago this summer, with 18 properties on the list. Some really interesting places in the Wakatipu Basin and Hawkdun Ranges need to be looked at. Getting support from outside contractors has taken time to organise.

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## **Southland**

*Murray Willans*

### ***Eglinton Stoat/Rat monitoring***

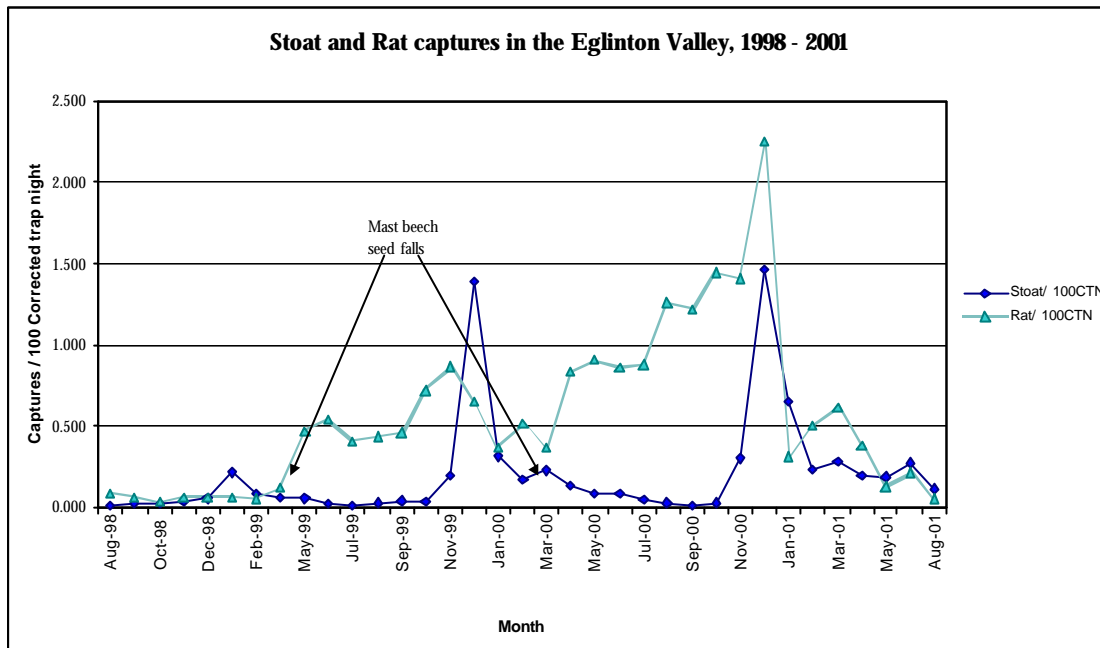
An experimental stoat control programme began in the Eglinton Valley during December 1997. The aim was to determine if low intensity, continuous stoat control could protect mohua and kaka from stoat predation.

Consecutive beech mast events have produced consecutive stoat plagues. Ship rat numbers have also reached very high numbers following these two beech mast events.

Science and research staff (Peter Dilks and co) have been monitoring kaka and mohua in the Eglinton Valley over the last few years. During the first stoat and rat plague (1999/00 summer) they recorded little if any predation of nesting mohua or kaka by stoats, however they recorded rats preying upon approximately 30% of nesting mohua.

There was some concern that controlling stoats to low levels over an extended period in beech forest was contributing to this increase in rat numbers. If this is the case, it has serious implications for many of our stoat control programmes in beech forest.

The graph below demonstrates relative stoat and rat indices from the Eglinton Valley over the last three years.



Graph 1. Stoat and Rat Captures/100 CTN.

The graph shows that rat numbers are now back down to pre-mast beech seed levels, and it is thought that they will remain so, until at least the next beech mast.

Historical information confirms that rat numbers have reached similar levels to those at Dec 1999 after previous beech masts, but that they do not always follow this pattern. A possible explanation for this is that the rat plagues are linked to the species of seed that are shed in the mast. The table below records the species of seeds collected from the previous four beech masts in the Eglinton Valley and the effect this had on the rat population. This table demonstrates the composition of the total seeds/m<sup>2</sup>. As can be seen for 1990 when there were very few rats recorded in the Eglinton Valley, there were also less seeds measured in grams/m<sup>2</sup> than in the other three years when rat plagues were recorded.

Table 1. Total number of Seeds/m<sup>2</sup> and mass (g/m<sup>2</sup>) during the last four mast beech seed years in the Eglinton Valley.

Year	Red beech	Number of seeds /m <sup>2</sup> Mountain beech	Silver beech	Total seeds /m <sup>2</sup>	Mass g/m <sup>2</sup>	Rat plague
1990	89	311	3774	4174	<b>8.36</b>	<b>No</b>
1995	2558	122	1628	4308	<b>19.70</b>	<b>Yes</b>
1999	1820	43	1508	3371	<b>14.55</b>	<b>Yes</b>
2000	4631	181	363	5175	<b>30.78</b>	<b>Yes</b>

Rat, stoat and mohua numbers will continue to be monitored in the Eglinton Valley and we hope to see an increase in mohua numbers again.

Rat numbers have been monitored in other valley systems in fiordland (Murchison Mountains, Clinton Valley, Arthur Valley, Tutoko Valley and Great Island) during the last 12 months and have only been recorded in similar numbers as the Eglinton in the Hollyford Valley.

Although some of these locations are geographically very close to the Eglinton, what has happened in the Eglinton and Hollyford Valley does not seem to be widespread in Fiordland.

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## Island Roundup

### *Tiritiri Matangi Island*

*From*

An update on our Tiritiri translocated populations: we have 33 adult and 66 juvenile hihi and all 10 kokako have been sighted recently with last years successful breeding pair chasing their fledglings out of their territory.

### *Marlborough Sounds Islands*

*From*

Once again we have had volunteers assisting us with tree planting on Stephens Island. So far 7,000 of this year's quota of 10,000 trees have been planted. After ten plus years of planting we now almost have a "new forest".

The drought has affected the vegetation on a number of islands. The most noticeable effects are on The Brothers where a number of large *Hebe elliptica* on Little (northern) Brother, the largest shrubs on the island, have died. There are also noticeable areas of die back on both Long Island and Motuara Island. The severity of this drought can be seen on Motuara Island, where the waterhole has dried up for the first time in over thirty years. This is the only permanent natural water on the island and it has been dry now for four months. What the long term effects of this drought will be on both the islands and many mainland sites, we will have to wait and see.



## ***Campbell Island eradication update***

*From Pete McClelland*

After years of planning, the Campbell Island rat eradication finally got under way in full on the 26 June when the five helicopters left from Invercargill. Two ship loads of gear and personnel (19 in total) had already gone. The equipment included 120 tonnes of bait and 210 drums of chopper fuel as well as enough food and supplies for three months.

After unloading the Jenka (which carried all the bait and most of the other gear), one of the choppers returned to the mainland, leaving three Jet Rangers to drop the bait and a Squirrel to ferry bait and personnel around. After four days setting up, the first bait was dropped on 2 July. From past weather records, it had been estimated that even if the team stayed on the island for three months, there was a significant chance that we still wouldn't have had enough suitable weather to drop all the bait. It was truly amazing therefore when on the 22 July, only three weeks after starting, the last bucket load of bait went on the hill. That the operation went so smoothly and quickly is largely due to the skill of the pilots, who were willing and able to utilise every suitable flying hour. Even the cliffs at up to 1000ft high did not deter the team, who simply did them with an onshore wind to help blow the bait onto the many ledges.

Prior to starting the operation, one of the greatest concerns was the extent that rats would move across the bait front, i.e., the risk of rats moving from unbaited areas into areas where the resident rats may have been poisoned, but the bait may have all dissolved. Having the greatest period between dropping bait of only three days, meant that this was not an issue as it takes at least three days for the rats to start to die.

Radio transmitters were put on four rats, which all died within 5 days of having accessed bait. While there were some non-target deaths, (gulls and mallard ducks), there appears to have been no noticeable effect at the population level for any non-target species. Finishing early also meant that the skua, which were the greatest non-target concern, had not returned from their annual winter sojourn out to sea, and so were not affected.

The weather prevented the helicopters leaving until 27 July, and the last of the team and equipment came off on 22 August. The whole project has been a team effort from the start, with everybody having the same goal and working towards it.

Now it is a case of sit back and wait for two years, to give any rats that may have survived a chance to breed to detectable numbers, before a check using dogs and traps can hopefully declare the operation a success.

## **Anchor Island (Pukenui)**

The Anchor Island project is part of the "Evaluating a low intensity stoat control regime on large inshore islands" project. The objective is to determine if stoats can be eradicated from an island within stoat swimming range and then managed to a low enough level to allow threatened species to thrive.

The eradication technique used was similar to that used on Te Kakahu but with less tracks and traps per hectare and less follow up checks. If this reduced level of effort is successful then it will be realistic to use this technique on much larger islands such as Secretary.

Anchor Island lies at the mouth of Dusky Sound and is 1130 ha in size. The western end of the island is all reasonably low rolling country with some large tussock areas near the higher points. There is a high point rising to just over 400m at the eastern end of the island. Vegetation comprises of mixed podocarp and beech forest. No sign of rodents have been recorded on the island.

Anchor Island is 1250 metres from Resolution Island, which also has stoats. However there are a number of small stepping stone islands between both Resolution, the mainland, and Anchor Island. All of these islands have permanent stoat traps in place, making it very difficult for stoats to re-invade Anchor. Although long-term stoat free status is not the sole aim of this project, if achieved it does give us more confidence in the eradication technique. The next phase of the research project will involve attempted eradication of stoats from an island much closer to the mainland (possibly Secretary) followed by introduction of a stoat-vulnerable species.

Trapping began mid July to take advantage of the time of the year when stoats are most hungry. Tracks were cut on Anchor during May and June. A combination of aluminium, wire, and wooden trap tunnels were placed at 150m intervals along tracks, and pre-baited twice during June and July. Set Fenn traps with their safety catches on were placed in one quarter of these tunnels during the pre-baiting period to ensure that stoats were comfortable using the tunnels and would begin associating them with easy food.

Traps were set in all tunnels on the 21 and 22 July, and were baited with meat or eggs. Eighteen stoats were captured in total, with seventeen of these captured after the first two nights. Stoat captures were spread evenly across the island. Of the eighteen stoats, twelve were females and six were males.

At the end of this initial trapping session, all traps were left set and baited with eggs both inside and outside. A piece of beef was also left inside each tunnel.

Traps were also left set on most of the large islands surrounding Anchor to ensure any animals living there are captured.

The most significant difference between Anchor and Te Kakahu is the number of follow up trips. During the first year, traps on Anchor and the surrounding islands will be checked only twice (November and February), compared with every second month on Te Kakahu. The next check on Anchor will be November, when five tracking tunnel lines and trained stoat-detection dogs will be used to check for stoat presence.

The results so far are very encouraging and a conclusive result should be available by February 2002.

Although this project was primarily a research project, if successful it will provide another very valuable island, on which to restore some of Fiordland's wildlife. It will also have been achieved at a very minimal cost.

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*Rare Bits* is issued four times a year by the Biodiversity Recovery Unit (BRU), Department of Conservation, Wellington.

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Articles about threatened species management issues are welcome from anyone. Send them to:

the Editor, *Rare Bits*, BRU, Department of Conservation, PO Box 10-420, Wellington, in Word, on a floppy disk, or as an Email attachment (internet mail: [atownsend@doc.govt.nz](mailto:atownsend@doc.govt.nz)).

Please follow these word limits: Conservancy News 800 words, Restoration Resumé 500 words, Island Roundup 1000 words, Other Bits 900 words, Feature Article 800 words.

Articles should be clean (i.e., free of any formatting) and any graphs or figures should be saved as TIF files.

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