

Number 52
March 2004

RARE BITS

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.

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THE NEWSLETTER ABOUT THREATENED SPECIES WORK

FEATURE ARTICLE

*From Nadine Gibbs,
Wellington Conservancy*

Chatham Island freshwater fish survey

In 1994 a new species of freshwater fish was discovered from a peat lake on the Chatham Islands. The morphological characteristics of this fish were studied and although it had some mudfish characteristics it also had many galaxiid characteristics, and was ultimately decided to be an endemic Chatham Island galaxiid (*Galaxias rekobua*).

Then in 2001, another freshwater fish survey was undertaken on the Chatham Islands and two fish were collected from a different peat lake. Preliminary examination of these fish indicated that they were similar to those found in 1994, but it was suggested that they were more likely to be a mudfish rather than a galaxiid.

Therefore, to clarify the taxonomic status and distribution of the Chatham Island galaxiid/mudfish, a survey of accessible freshwater lakes

and rivers on the Chatham Islands was undertaken by Nadine Gibbs (Wellington Conservancy), Richard Allibone (Biodiversity Recovery Unit), Adam Bester (Chatham Islands Area Office) in January 2004.

Only two peat lakes were able to be surveyed due to the majority of peat lakes on the Chatham Islands being under private ownership. A combination of fyke nets and gee minnow traps were used with a total of 78 galaxiid/mudfish caught in one trapping night. The fish ranged in size from 64-176 mm in length, which is larger than other mudfish or non-migratory galaxiids reported to date.



Lake Rakeinui (Photo: Nadine Gibbs).



Chatham Island mudfish (Photo: Adam Bester).

Because the peat lake where they were caught appeared to be isolated from any other waterbodies, the galaxiid/mudfish are likely to be non-migratory and spend their entire life in freshwater.

Some of the fish caught were kept and fixed in formalin and ethanol for morphological and genetic studies respectively. Five were kept alive and transported back to Christchurch where further examination of behaviour and morphology will be undertaken. The fish are still being examined and we await the results with anticipation.

The Chatham Islands have a relatively low freshwater fish diversity with only 11 species being recorded (Rutledge 1992). Prior to the discovery of the Chatham Island galaxiid/mudfish, all the freshwater fish previously known from the Chatham Islands were also found in New Zealand.

CONSERVANCY NEWS

NORTHLAND

Pateke/brown teal

From Emma Neill

At Mimiwhangata Coastal Park (summer paradise on Northland's east coast) the pateke population are basically flocking up, sitting on pond edges and enjoying the sun.

Monitoring staff can only follow this example. With the 2003 breeding season finally over, records show that staff and indicator dog affected the capture of 37 fledglings to band, with 20 of those having radio-transmitters attached as well. Four radio-tagged juveniles have already died, with carcasses showing mammalian sign and kahu scavenging.

A radio-tagged sample adult population (maximum 44 birds) has been monitored over the year for adult survival, mortality and breeding data. The premature failure of batteries inside the transmitter units has caused the sample size to fluctuate over the months and to never reach the set target. "Missing" birds are often identified by band combinations or dog survey in later months, carrying dead transmitters. Canadian brand 'Holohil' transmitters will soon be exclusively used in this recovery programme to achieve confidence in annual outcome monitoring.

The annual trend counts are underway at all historical pateke flock sites. Results are eagerly anticipated as an indication of the population status, and to see if we can beat last year's 10 year record!

New Zealand fairy tern breeding season

From Katrina Hansen

With a summer of fine weather, the fairy terns in Northland have had a good breeding season. Six chicks have fledged from six breeding pairs:

four pairs bred at Mangawhai (an increase from a stable three pairs since 1995) and two pairs at Waipu.

There were two birds breeding for the first time this season, both paired with an older bird. One was an older male that disappeared after the first of their two eggs hatched; unfortunately the female couldn't care for the chick on her own and it too disappeared. The other bird and her older partner fledged two chicks. Of the other ten eggs (from the total of 14): four were infertile; one chick of two that hatched at Waipu disappeared without trace, possibly taken by a black-backed gull; one fertile egg failed to hatch; and the remaining six eggs hatched and chicks fledged. These six chicks have now left their natal sites and will be flocking up with the adults and moving over to the West Coast. Overall the results were pleasing, certainly an improvement on the two chicks that fledged last year due to bad weather.

Threatened plants

From Lisa Forester & Janeen Collings

During a visit to the remote Three Kings Islands in March 2002, 21 ripe fruit were discovered on the lone surviving wild tree of *Pennantia baylisiana*. This plant sets very little seed because it is essentially a female, so this event was seen as a great opportunity to harvest and plant the seed at selected marked sites. During a visit in March 2003, two seeds were found to have germinated at damp sites in the

mouth of Tasman Valley, though one had died and the other was looking very dry and unhealthy. The tiny seedling was watered. Hopes that this might be the breakthrough that the plant needs on the island were renewed with the discovery that the seedling was still alive and starting to form two new leaves in December 2003, though the seedling was still tiny and very vulnerable. Staff caged the seedling with wire to protect it.

The Critically Endangered annual gentian *Sebaea ovata* translocated as seed from its home in Wanganui (where it is failing) to the dune wetlands at Pouto during summer 2002, surprised everyone by seeding and producing a healthy little population of wild plants in just one year. Te Uri o Hau Iwi are particularly proud because having put a lot of time and effort into the project, along with staff, the plant is growing on their land and they are now kaitiaki. Once widespread in New Zealand, *sebaea* seems to be finding its new home much to its liking in the remote and unmodified wetlands at Pouto. Jim Campbell (Wanganui Area Office) brought several more trays of seedlings grown in Wanganui north to supplement the wild plants at Pouto.

Atriplex hollowayi, the Nationally Critical annual herb, has had a bumper season. For the first time in many years it has turned up at four new sites on the two beaches it has been surviving on, and has made it's way onto a new beach in the form of three small plants. This is fantastic news and a sign that all the conservation effort going into this treasure is paying off. As at late

February 2004 there were 131 wild plants surviving, compared to 43 for the same time last year. The cultivation and translocation programme also went well this season, with a total of 1,130 plants (all of which produced abundant seed) on seven beaches. Having a large number of plants available enabled planting to maximise seed distribution into all the nooks and crannies. So it is with keen anticipation that we await next year's wild *Atriplex holowayi* searches.

AUCKLAND

From Sandra Jack, Thelma Wilson, Miriam Ritchie, David Wilson & Rosalie Stamp

All from Tiritiri Matangi Island...

Another booming year of hihi breeding has kept Sandra Jack and Su Sinclair frantic on Tiritiri Matangi, with 155 fledglings expected by the end of the season. The birds are perhaps a little too frantic, with an interesting but traumatic observation by Sandra of a female pecking her chick to death in the nest! Hihi numbers have increased from the 37 birds first translocated there in 1995 to 109 adults counted at the beginning of this season.

The two takahe chicks on Tiritiri are continuing to grow and learn their

parent's bad habits of cruising the beach looking for visitor's picnics.

There are four fledgling kokako on Tiritiri (produced from three pairs), and two of three breeding females are currently onto their second clutch. There are now six female kokako (including the two juveniles so far from this season) on Tiritiri.

A record 12 pateke ducklings have been produced on Tiritiri last season and all are still surviving!

The 60 tuatara released on Tiritiri last October continue to be seen by visitors during both the night and day. Eggs have also been found!

Hauturu

Will Scarlet has been a busy "mum" on Hauturu; 31 eggs have been laid in the tuatara enclosure and sent off to Victoria University for incubation. Seven of these were laid by one of the first babies to be produced by these captive adults 10 years ago. Unfortunately, Sue Keall (Victoria University) has reported that all of these seven have failed, possibly due to the eggs being infertile due to the female still being reproductively immature (10 years old is young for a tuatara to breed).

Black mudfish

Black mudfish (*Neochanna diversus*) have been located in a privately owned wetland Auckland - the only site we know of in the Auckland Region. The owners have been protecting their wetland and are very happy about the discovery.

Hebe breviracemosa

New self-seeded *Hebe breviracemosa* have been found at two sites on Raoul Island. Both sites are near areas where cuttings were planted in 1997, indicating this may be a successful management technique. We think the Hebe prefers open sites for seed germination, so we hope by re-planting Hebe around the island we will maximise the chances seed might naturally settle in a gap. In both these cases the seedlings are on tracks, indicating we might be right about its habitat preferences. Rats and cats were removed from Raoul last year so these early signs of recovery are exciting.

Kokako

Hazel Speed and Anna Grant have been run off their feet keeping track of a record nine pairs of kokako in the Hunuas this season, with more birds turning up all the time.

Fairy tern

Despite the hard work of the tern wardens, no fairy tern chicks were fledged in the Auckland Conservancy this summer. One promising development was a confirmed breeding attempt at Pakiri Beach, on the east coast near Leigh, the first in 38 years at this site. A pair laid one egg which, because of high predator numbers in the area, was transferred to another nest at Papakanui. Unfortunately, the chick disappeared soon after hatching. Predation by a black-backed gull is suspected. After the initial removal of their egg, the

Pakiri pair readily accepted a new wax-filled dummy egg. This is a hopeful sign, as the old wooden dummies used to date are frequently rejected by the birds. Thanks to OSNZ volunteers and Auckland Zoo for their support over the summer.

WAIKATO

From Jason Roxburgh & Leigh Marshall

Pateke

We now have 14 dead pateke from the original 38 released at Port Charles, Coromandel Peninsula. It doesn't sound that great, but this 65% survival rate (to date) is above our 50% target for the year. The breeding season is now over and we've seen a few nesting attempts. Only one of these attempts produced a fledged duckling, the rest were killed or "disappeared" before they were old enough for us to attach transmitters. We are currently re-designing our cat control regime, which should increase survival, especially after the next release of birds on 13 May this year.

Kiwi

Of the 18 chicks from the first clutch at Moehau Kiwi Sanctuary, five have been lost to predation and one to natural causes. The second clutch is due to start hatching in mid-February, and we have another 10 or so nests that should yield another 20 eggs. It's looking good so far for

reaching our targeted number of chicks monitored for the season.

A kiwi that had lost its foot in a trap was handed over to Project Kiwi contractors at Whitianga by a Coroglen resident. The bird (we think a young female) was taken to Auckland Zoo and operated on by Richard Jacob-Hoff and his team. It is doing well and should be released into Project Kiwi's predator control area in a month.

Frog photo identification

Over the last few months, Jessica Wallace (Waikato University) has been trialling the frog stage in the field. The stage was especially created to aid individual photo identification of Archey's frogs for mark-recapture and the trials have been funded by MWH. Although there are still a few problems to work through in the field (e.g. how to stop the frogs from trying to escape and leaving dirty footprints all over the mirrors), the stage will hopefully reduce the number of photos that are required to be taken of each frog. The photo identification technique has been working well during the mark-recapture pilot and will be used in monitoring the effects of rodent control on frogs.

Mahoenui weta monitoring

Nicole Sutton (Waikato University Masters student) has taken up the challenge of piloting a new monitoring technique for Mahoenui giant weta. Nicole will be working with Maniapoto Area office over the

next 6 months, trialling the use of site-occupancy to monitor weta populations in their gorse habitat. The technique involves making repeated visits to sites searching for weta, and recording presence and absence. Michael Crossland (Northern Region frog ecologist) has nearly completed a pilot using a similar technique for monitoring Hochstetter's frogs.

BAY OF PLENTY

From Paul Cashmore & Keith Owen

Mistletoe

Another attempt at translocating *Tupeia* seed to Mokoia Island was made in December. Several past attempts in recent years using *Tupeia* plants haven't established successfully to date. This latest attempt involved translocating seed onto the fivefinger hosts and covering it with a small piece of shadecloth to reduce the chances of losing the seed. A total of 483 seeds were translocated to the island. This trial will be monitored over the coming year.

Our annual summer survey in Whirinaki this year has revealed further *Peraxilla tetrapetala* and *P. colensoi* plants. More plants have been found in the Tuwatawata Ecological Area and in the Te Hoe catchment where existing plants are known. Staff have also spent a fair bit of time in Opuaki Ecological Area on

the northern Mamaku Plateau surveying for further *P. tetrapetala* plants. An aerial survey in mid-January was unsuccessful as the host tree tawheowheo was found to be scarcer than first thought. A follow-up ground survey confirmed this, and helped determine the vegetation type where tawheowheo is more common—a podocarp dominated basin which is fairly localised in this area. This will provide a basis for some more targeted survey next season, which should enable us to focus efforts on the most likely areas to locate further *P. tetrapetala* plants.

Rorippa divaricata

A check on both the Lake Rotoiti and Blue Lake Rorippa populations in December revealed several trends. At eight sites around Lake Rotoiti the monitored population has declined from approximately 57 plants in 2002 to 31 plants in 2004. Many plants were young seedlings, indicating a continual turnover of plants on these slip sites, with some sites becoming overgrown and other successional species thereby eliminating Rorippa. At Blue Lake there was a large increase from 38 Rorippa plants in 2002 to 105 plants, with two new sites also being found. Unlike at Lake Rotoiti, Rorippa populations at Blue Lake occur at the back of pumice beaches, with the seed appearing to move around by water dispersal mainly.

***Cyclosorus interruptus* in Rangitaiki Plains wetlands**

Monitoring of *Cyclosorus interruptus* in Awaiti Wildlife Management Reserve this summer has been foiled so far by high water levels which tend to kill off *Cyclosorus* populations. The wet weather has kept water levels high, resulting in *Cyclosorus* being hard to find and therefore making it difficult to monitor the impacts of a willow spraying operation undertaken last summer on the populations. At nearby Matata, staff located several very small populations of *Cyclosorus interruptus* by following up several recent and some older reports. *Cyclosorus* is present but very scattered and localised in Matata wetland, thus making it difficult to locate given the size of the wetland. Furthermore, other populations are likely to be present.

Red-bearded orchid survey

The annual survey this year has shown a concerning decline to a total of 694 plants; the lowest number recorded since 1993. There are no obvious reasons for this and hopefully numbers will bounce back as they have done in the past??

Kokako

Kaharoa/Onaia Ecological Area

Carmel Richardson reports that Kaharoa Forest was treated using feracol in bait stations for rat control, but that numbers were not reduced to the required level.

Furthermore, the kokako breeding season was very poor for a number of reasons. Onaia Ecological Area (EA) rodent results were 6% r.t.i (West Block) and 13% r.t.i (East Block). Possum numbers were kept to the 5% threshold (per 100 trap nights). To complicate matters further, the kokako started breeding late and were very sporadic, despite it being a good fruiting season.

An adult kokako census was not carried out in Kaharoa Forest (as recommended by Kokako Recovery Group) because numbers of pairs had superseded the required threshold. An adult, but no juvenile, census was carried out in the Onaia EA.

Two female chicks (sexed from pin feathers using DNA techniques) were removed in late January from nests at Kaharoa and taken to Hamilton Zoological Society to raise as part of the Puketi Forest kokako population restoration. When they are older, the two kokako will be transferred to Mauimua (Lady Alice Island) in the Marotere (Hen and Chicken) Islands group where adult males from Puketi forest will join them. The field work has been carried out by Steve McMannus, Carmel Richardson, Karen Riddell and Nigel Miller with volunteers including Tom Donavan and Athol Gardiner.

Further chick capture is unlikely this season as no recent nests have been found, but attempts will continue next breeding season.

Mokaihaba Ecological Area

The results of the rat and possum control this season using feracol in

bait stations were possum 3.4 r.t.c (per 100 trap nights) and rodent 6% r.t.i.

A census of juvenile kokako in the treatment block is planned for mid-March, after 3 years of control. If the results show adult and juvenile numbers are good and sustainable for a few years, then treatment may transfer to the unmanaged kokako population at Rotoehu Forest.

Northern New Zealand dotterel

Matakana Island

The Matakana Island dotterel protection programme continued this season for the 12th consecutive season. Gill Palmer has been monitoring 36 pairs this season, with 26 chicks fledged to date. Overall it was an average breeding season.

Witana Murray has continued to control the various predators that roam the island. Generally, the number of predators killed was down from previous years, despite stoat numbers being up. Stoats were responsible for the death of a number of dotterel and variable oystercatcher chicks and also took some dotterel eggs at Panepane Point.

Maketu

Johnny Smith (volunteer) reports that there were 30 dotterel nests on the Maketu Spit but sadly not one chick fledged. No predator control operations took place at this site due

to a lack of resources and other complications.

North Island brown kiwi

Monitoring of the four kiwi released onto Mokoia Island continues; all are doing well. There are no planned releases to the island this year, but further survey work this autumn will attempt to locate wild birds in the local district. The future of these birds will be determined after this.

TONGARIRO/TAUPO

From Nick Singers

Threatened plants

The majority of threatened plant work that has occurred recently has involved site specific monitoring and population assessment.

Mistletoe monitoring at Whakapapa

An area called the 'Whakapapa Survey Area' (first surveyed in 1998/99) was re-surveyed in January. The purpose of this area is to determine whether natural regeneration is occurring as a result of possum control. This area was re-surveyed in part by staff (Robyn Whyman, Jo Meys, Nicki Hughes) and volunteers as part of a summer nature programme trip. The outcome was highly successful; the abundance of red mistletoes has increased dramatically from 50 plants in 1999

to 97 in 2004. Of note is that most of the new plants are small and hence likely to be new recruits as a result of our ongoing possum control. Unfortunately the yellow mistletoe abundance here is still very low, with three plants now known in this area.

Ironically, a good group (39+) of yellow mistletoes was located under our noses in a small patch of beech forest near the Chateau Tongariro. This has increased the yellow mistletoe population at this location to 44 plants.

100 Acre bush

Possum control is continuing this year to protect dactylanthus at this site from browse. Additional dactylanthus clumps have been located here in order to better measure the efficacy of this control.

A good population of *Tupeia antarctica* was discovered during a recent survey and monitoring visit, with approximately 60+ plants growing on a dense grove of lemonwood. All of these plants were fairly large and healthy, and have responded from over a decade of intensive possum control. Ironically, this site had been searched for this species in the past and propagation trials had been conducted in order to establish it here (which failed).

A single *Thisma rodwayi* flower was discovered nearby when monitoring some dactylanthus.

Wetland orchids

Vegetation clearance has been occurring at Tangiwai Bog in the hope this will reduce competition and increase the abundance of *Pterostylis micromega*. All the vegetation in small areas (10 × 10 m) has been cut for the last two years. The abundance of *Pterostylis micromega* has increased annually from 43 plants in 2002, to 57 plants in 2003 and 137 plants in 2004. We have now decided to expand this work with a more scientific method at the Paramanawera Bog; three plots will be cleared and three plots will remain un-cleared.

Surveying and quantifying the abundance of *Prasophyllum* aff. *patens* at several key sites near the National Park has resulted in some major populations being discovered; just under 400 plants were recorded at each of two sites. Both are relatively pristine *Baumea rubiginosa* wetlands with water flowing gradually over them.

During this survey, several other orchids were discovered including a few plants of *Pterostylis micromega* and several patches of *Pterostylis paludosa*.

EAST COAST/HAWKE'S BAY

From Bruce Dix, Graeme Atkins, Fiona Kemp & Mike Thorsen

Kowhai-ngutu-kaka

Graeme Atkins, who is actively promoting the planting of this endangered shrub on road cuttings in the East Cape region, provided the following disturbing report. While driving to Gisborne on 30th January, Graeme stopped by one of his plantings near Anaura Bay and was pleased to see some mature specimens in good health and vigour with juveniles nearby. On his return later that day he was devastated to discover that a mob of goats had been gobbling their way through the plants and had even ring-barked the older specimens. The good news is that thanks to Graeme's tactic of dipping them in Treepel prior to planting, a number of juvenile plants were untouched. He is also confident that the surrounding area has been saturated with seed from the doomed adults. Graeme grimly reports that some of the goats paid the supreme penalty.

The lesson from this is that 'extinction events' can occur with disagreeable rapidity, and we must constantly be on our guard if we are to prevent them.

Dactylanthus taylori

Graeme Atkins reports that the Kakanui Block (near the East Cape township of Te Araroa) appears to be in for a bumper flowering year. Intensive trapping for rats and possums, and opportunistic stoat trapping, makes this locality a mainland island in all but name. Due to the absence of short-tailed bats, the pollinators of *dactylanthus* flowers are mice, which do not destroy the flowers when feeding on the nectar (unlike rats and possums).

Weka

Juvenile weka (aged between 1-3 months old) are trapped in the Whiti-kau Valley (no stoat trapping) and in the Motu Valley (stoat trapping) each season. Transmitters are attached and the weka monitored until they reach 12 months of age. Each weka is monitored weekly to determine status and causes of death. Almost all of last season's juveniles have now reached 12 months of age. Results to date show that 40% (n=10) and 8% (n=12) of monitored juveniles were killed by stoats in the Whiti-kau and Motu valleys respectively. This would suggest that trapping stoats does give juvenile weka a better chance of survival than otherwise.

Myosotis petiolata* var. *petiolata

A big surprise was re-discovering this Critically Endangered small forget-me-not in the Hawke's Bay. This is the only North Island population, and one of only two known in New

Zealand. About 100 plants were found following good detective work by Andrea Brandon and Bec Stanley on a 31 year old record of Tony Druce's.

WANGANUI

From Nic Peet, Graeme La Cock & Rosemary Miller

***Craspedia* "Otakeho"**

Jim Clarkson managed to find several more populations along the South Taranaki coastline during flowering in December/January, and it's become a weed in his pots at home.

Data Deficient survey

We had to postpone our survey of the Waiouru army country because of the bad weather recently. The army actually closed the training ground.

Ruahine corner

We did however get in to Ruahine Corner in mid-January. The *Acaena rorida* seems to be coping. We searched nearby river beds, but didn't find it. But we will. Samples were collected for DNA tests on hybrids and possible hosts. Sherman Smith and Richard Steadman found a few more *Pittosporum turneri* during their banding exercise. Richard also found another mistletoe (*Peraxilla tetrapetala*), thereby doubling the known population at Ruahine Corner.

Stoat traps in place in Egmont National Park

A major effort by the Stratford Area Office in January and February has seen the installation of 650 double set trap boxes over 4,000 ha of Egmont National Park. The project is a collaboration between the Department, the Taranaki Kiwi Trust and the Central North Island Blue Duck Conservation Charitable Trust. The new traps are mainly DOC 200s, and a trial line of Thumper traps has also been established. Over the next 4 years there will be ongoing releases of blue duck in to the park. A Bank of New Zealand Operation Nest Egg programme is underway.

A rehabilitated female kiwi was released into the area of stoat trapping in January. The kiwi originated from a site near Wanganui and lost two toes in a possum trap. Hard work by Wanganui Bird Rescue and Massey University over 5 months led to the bird recovering sufficiently to be released.

Katipo monitoring begins

Katipo are found along the Manawatu and Wanganui coastline. There has been concern that the population is in decline, particularly as a result of habitat alteration; sand dunes are being replaced by pine plantations, planted with marram grass or invaded by weeds. Transects were run every 500 m along a study stretch of 10 km of coastline north of Moana Roa. Kaitpo were found scattered along the study area, with highest densities under driftwood in dune slacks and blowouts. Spiders were largely absent from areas with

dense marram, high levels of litter and sparse foredune vegetation. The extreme patchiness of spiders and relatively low densities mean that assessing change in populations over time will be a challenge.

Results of blue duck breeding season

Blue duck have been intensively monitored through the 2003/04 season along a 9.5 km stretch of the Manganui-a-te-ao, a tributary of the Whanganui. Limited stoat control was put in place, with a single line of double set Fenn traps along one side of the river. A total of 19 nesting attempts occurred: 18 pairs making a single attempt and one pair nesting a second time following the loss of the first nest to flooding. Ten successful nesting attempts resulted in 43 chicks hatching and reaching the river. The latest hatching date was 12/12/03. Of these 43 chicks, only 13 survived to fledge (NB includes four birds currently one week away from fledging). A series of flood events during spring and early summer appear to be the primary cause of this high rate of chick mortality. Of the nine nests that failed, two had females predated whilst incubating, and seven were washed out by floods.

A major effort was put in through January to band this year's juveniles, catch unbanded adults, and check bands on existing birds. Over 30 birds were caught, with 18 having bands fitted for the first time. Only one unbanded pair remains on the study stretch of river. Four juveniles remain to be banded.

WELLINGTON

From Hilary Aikman, Adam Bester, Garry Foster, Peter Griffen, Colin Miskelly, Greg Moorcroft, John Sawyer, Tony Silbery & Bryan Welch

Threatened plant conservation

The most important discovery was that of *dactylanthus* at Alfredton, Wairarapa (10 plants known and a new southern limit) by Tony Silbery, followed by another five plants at Mount Bruce. The Alfredton plants were caged and have flowered.

A large population of *Crassula ruamahunga* was discovered at Pikes lagoon next to Carters Scenic Reserve. Monitoring of populations of *Crassula peduncularis* has been undertaken by Peter Griffen at Turakirae with help from Peter de Lange and John Sawyer.

Olearia gardneri seed was collected at Koromiko, Kowhai Bush and Tyneside, and sent to Otari/Wilton Bush. Plants grown in previous years were planted at Springhill and at Kaumangi Stream, where the landowner is keen to protect the species. A fencing/weed control/covenant funding proposal is with the Nature Heritage Fund.

Forty *Pterostylis micromega* plants were found this season, more than ever seen here and a huge improvement on the original single specimen. Two areas of swamp

south-west of Lake Wairarapa now support the orchid, but together total less than 30 m².

Amphibromus fluitans was found in abundance (100+ plants appeared) when Boggy Pond wetlands dried off after 18 months underwater. The wetlands were then inundated before the plants could flower. Monitoring and research into this species will continue when the sites dry off again.

Translocations of a number of species to new sites has occurred including *Olearia gardneri*, *Urtica linearifolia* and *Coprosma pedicellata* planted at Carter Scenic Reserve, *Olearia gardneri*, *Coprosma wallii* and *C. pedicellata* planted at Lowes Bush, and a new population of *Muehlenbeckia astonii* planted at Cape Palliser.

Mount Bruce National Wildlife Centre and Pukaha

The Campbell Island teal currently have 17 ducklings, three females are incubating a further seven eggs between them, and two eggs are in an incubator. These ducklings are intended for release on Campbell Island later this year.

We have five shore plover fledglings to date. The big news is that our Western Reef male has produced a chick. This bird was brought into captivity in June 2003, when he was the last remaining bird from a recently discovered population that had declined from 21 birds for unknown reasons. He paired with one of our resident females, and they produced three clutches of eggs: the

first was infertile, the second had one fertile egg which didn't hatch and the third clutch had two fertile eggs, one of which hatched in mid-February.

We currently have two fledgling hihi (stitchbird) ready for release onto Kapiti Island. In addition, one female is raising her second brood, and a second female incubating two eggs.

It is another busy season for kaka, with 15 chicks in Mount Bruce Scenic Reserve (Pukaha restoration project) and another two in our aviary. Three females are re-laying, and two females that haven't been seen for quite a while have turned up again, and so may have chicks as well. Our captive kokako pair has not bred this season, but we are delighted to announce that two of the six kokako released into the reserve in July/August 2003 paired up and produced two fledglings. Unfortunately one of the other kokako was killed by an as yet unidentified predator that slipped through the cordon of traps and toxins (watch this space).

Six captive-reared brown kiwi were also released into the reserve in December 2003, and all appeared to be thriving until one was found drowned during recent floods. Kiwi calls are now a regular feature of the Mount Bruce nightlife.

Chatham Islands

Another busy taiko season began with the eighth taiko telemetry operation, to search for new taiko burrows, during Sep-Nov 2003. A record 18 taiko were caught at the

lights. Two light-sites were used this season, the usual one in the Tuku plus a new one near Otawae. The new site proved very productive, accounting for nine of the 18 captures, in fewer light-hours. Of the 18 birds caught, 12 were males (three new, nine recaptures) and six females (four new, two recaptures). The recaptures included a female banded in 1982, and three returning chicks (one fledged in 1999 and two in 2000). Two birds (both the recaptured females) were tracked to new burrows this season. One burrow was located c. 250 m from the Tuku River. The second, located using a combination of telemetry and searching with a dog, was found on private land beside Lake Te Rangatapu. This is a long way south of the other known burrows. A third bird was tracked into the southern Waipurua catchment, but its burrow was not located. Options for protecting birds in these remote areas will pose a few interesting management issues! Two of the returning chicks were tracked to the surface in the Tuku, both relatively close to their natal burrows.

Predator trapping and burrow monitoring for the known taiko is underway. At the latest count there were nine burrows which definitely contained chicks and one other that is still to be confirmed. This is a similar number to last year (when ten fledged). While we had hoped to improve on last year's total, this season has seen a number of new young pairs form that have not attempted to breed, but are expected to do so next season.

A spring/summer census of Chatham Island shag and Pitt Island shag breeding colonies has revealed an alarming decline since the 1997 census: Chatham Island shags have dropped by 67%, while Pitt Island shags have dropped by 25%. At this stage we do not know whether this is a real decrease in the number of birds, or whether this year was just a poor breeding season. Further surveys should determine this.

The Chatham Island oystercatcher season has almost come to an end, although there are still a few small chicks that can be found around the islands. Within the management areas, 27 chicks should fledge this season. While this number is down on last season, the number of chicks in unmanaged areas appears to be slightly up (around 20). A full census in December 2003 revealed a record 248 birds, which suggests that oystercatcher numbers have improved substantially over the last five years under existing management.

A team is currently on Rangatira selecting juvenile black robins for transfer to Pitt Island. This time the transfer will be conducted in February (rather than September) and we will be transferring juveniles rather than adults. Birds will also be transferred into aviaries within a predator-proofed area, and held for two weeks before release. This will hopefully give them time to fix themselves to the site, and increase the chances of some establishing within the predator-fenced portion of Ellen Elizabeth Preece Conservation Covenant. We have a highly experienced team for the

transfer; Don Merton (Biodiversity Recovery Unit) has a lead role in selecting and catching birds for the transfer, while Rose Collen (National Wildlife Centre) and Kirsty Chalmers (Auckland Zoo) will be looking after the birds whilst in the aviaries.

Kapiti Island

Six kokako nests have been found on Kapiti Island, and another six pairs may be nesting out of a maximum possible 15 pairs. Four chicks have been banded, and another two have fledged.

Twenty-eight nesting attempts of 18 female hihi have been monitored, producing about 40 fledglings.

It has been a record year for takahe on Kapiti, with four chicks from four breeding groups (including one set of twins); unfortunately one chick has since died.

A brown teal pair that had four ducklings in November is now down to one.

There have been two reported sightings of a nankeen night heron near the royal spoonbill colony. The spoonbills are thriving, with around 70 adults present and breeding well underway.

Mana Island

The third and final transfer of fairy prion chicks from Takapourewa (Stephens Island) occurred on 17 January 2004. All 100 chicks thrived on a diet of sardine smoothies, and all had fledged by 6 February. The

100% fledging success for 240 chicks over the period of 2002-04 is a tribute to the dedicated contractors and volunteers organised and funded by the Friends of Mana Island Society.

Also from the 17 January Takapourewa (Stephens Island) transfer, 48 speckled skinks were transferred and released on Mana Island, bringing lizard diversity on the 217 ha island to 10 species.

It has been another good year for takahe on Mana Island, with the five chicks equalling last year's high.

NELSON/MARLBOROUGH

From Mike Ogle, Cathy Jones, Tim Shaw, Simon Elkington, Roger Gaskell, Peter Gaze & Ian Millar

***Powelliphanta* "Anatoki Range"**

A team of three from Golden Bay Area Office flew onto the Anatoki Range and surveyed one of the most range restricted *Powelliphanta*. Ranked Nationally Critical, *Powelliphanta* "Anatoki Range" is restricted to an area of about 2 ha of alpine vegetation at 1,500 m altitude. The number of snails appears to be similar to when it was last surveyed in 1991, and it appeared that none of the empty shells were predated by possums or rats. The main threat seems to be habitat degradation by hares and goats.

South Marlborough

Plants

In December staff on a botanical training day found *Galium trilobum*, *Wahlenbergia mathewsii* and plenty of pink brooms on the Sawcut Gorge track going in to Isolated Hill. A survey for *Myosotis laingii* at Mt Maling was unsuccessful but did turn up plants of *Pittosporum patulum*, *Pachycladon* (*Cheesemania*) *fastigiata*, *Raoulia* "m", *Carex bergrenii*, *Haastia recurva*, *Hebe salicornioides* and *Gentianella* "scree".

Census of *Craspedia* "Leatham" in January found numbers similar to last summer and five flowers. Some weed control was carried out. Other bluffs were surveyed for the species without success, though we did discover *Galium trilobum* in several sites.

A survey in the upper Tone River turned up *Pachycladon stellata*, *Traversia baccharoides*, *Galium trilobum*, *Vittadintia australis*, *Cardamine* aff. *bilobata* and large numbers of *Ewartiothamnus sinclairii*. This confirms the importance of the goat control which is being carried out in the area.

Invertebrates

A search was made in the upper Tone River to assess the extent and size of the population of giant weta *Deinacrida parva* discovered a few years ago. It is the only known extant population of this formerly

widespread species outside the Seaward Kaikoura Range.

Cool night temperatures meant the results were somewhat inconclusive, but it appears that a sparse population is present in the upper Tone along the section of the valley that lies wholly in conservation land. Habitat on the river flats is being strongly impacted by cattle grazing, potentially reducing available cover for the weta. A catch of other invertebrates is still being evaluated, but species caught or seen included scree weta *Deinacrida connectens*, the *Gingidium*-feeding moth *Gingidiobora nebulosa* and a very large species of ground weta.

Motueka

Whio

In order to conserve whio, 568 double stoat traps have been placed to protect 4,500 ha of the Flora Stream catchment from stoats. This involved a massive job of trap tunnel construction and track cutting.

Eleven fertile eggs were harvested in October from two whio nests on the fringes of Kahurangi National Park, and as a result we have 10 healthy ducklings to release into the protected area on 27th March. One of the pairs from which eggs were taken has successfully re-nested and is raising four young. The project is a partnership with a local community group named Friends of Flora and has been generously supported by the wonderful whio at Isaacs Wildlife trust in Christchurch.

Pest fish

The pest fish season is well under way but is being hampered by unseasonably wet and cold weather. One rotenone control operation to eradicate gambusia at an orchard dam has been completed. The operation to date appears to have been a success and after 4 days the rotenone levels had dropped to almost undetectable. Two other pest species (tench and rudd) found in the dam have also been killed by the rotenone. The netting-out of fish from two other sites is going well to date and by the end of February we will know whether or not this is a viable method for the eradication of gambusia from some sites.

Plants

Peppercress: The usual problems of aphids, insects and drought have not been an issue this summer. Most plants on Moutere Islands have had a bumper crop of seed.

Olearia polita: A covenant process has been completed for a forest remnant containing *Olearia polita* in the Sherry River. Tackling weeds has commenced there.

Alpine marble plants *Clematis marmoaria* and *Myosotis arnoldii* (Range Restricted) were surveyed for distribution and abundance on Hoary Head... both were found to be rampant. Exclosures were set up to examine effects of browse.

Ranunculus 'Hope' (Nationally Critical) was surveyed for on the Garibaldi Plateau following botanical records; none were found.

Craspedia 'Garibaldi' and *Melicytus* 'Matiri' (Nationally Endangered) were located.

Following botanical records, *Carex kirkii* var. *elatior* (Data Deficient) was searched for in wetlands on Mt Arthur; none were found but one plant of *Melicytus* 'Owen' was located, the only one so far located on the mountain. A possible rare hybridisation between *Dracophyllum traversii* and *D. filifolium* is being investigated.

Motueka Area and St Arnaud staff combined on Mt Owen to survey for a range of threatened and Data Deficient plants. Over 100 *Melicytus* 'Owen' (Nationally Endangered) plants were located, most in refuges on marble bluffs, out of reach of possums, goats and deer.

Rock wren

A generous sponsorship deal has allowed the Department to begin its first investigation into the status of rock wren. This work is well overdue as the species is notable for being a representative of the ancient and endemic family of New Zealand wrens, and one in which three subspecies have become extinct in the last 50 years. Te Anau staff are using this opportunity to take immediate management action for some birds in the Murchison Mountains. Another element of this work is contracting Sue Heath from Otago Museum to research trends in the abundance and distribution of rock wren. There is little quantitative information available and therefore this work will rely on making the

most of anecdotal records and various databases over the last 50 years. As with several other bird species, the concern is that rock wren may be declining, yet we do not have the tools to detect this before it is too late to manage them. In Nelson/Marlborough, local records are being checked out and updated as part of this programme.

CANTERBURY

From Nick Head, Anita Spencer & Scott Hooson

Survey of Canterbury limestone outcrops for rare plants

Contract botanists have been surveying the limestone outcrops of Canterbury for rare and threatened plants this summer. The limestone project is part of a major initiative to inventory the habitat for threatened Canterbury limestone species. Twenty percent of Canterbury's threatened plants are found only on limestone habitats and many of these have the highest conservation threat ranking of either Nationally Critical or Nationally Endangered.

Initial results in North Canterbury have been very encouraging, with 120 plants of the Nationally Critical *Gentianella calcis* subsp. *waipara* found at seven sites on one property. This gentian is endemic to the Waipara area. There had been no sightings of the plant for 10 years.

A second find was an abundance of the Nationally Endangered *Heliobebe raoulii* var. *maccaskillii* (another North Canterbury endemic) on the same property, however part of the population had been killed recently during a spray operation to control gorse.

A second summer of surveying South Canterbury is coming to an end. This survey has provided valuable information on the population status of four very threatened species that are endemic to South Canterbury limestone; two Nationally Critical gentians (*Gentianella calcis* subsp. *taiko*, *Gentianella calcis* subsp. *manabune*) and two buttercups (Nationally Endangered *Ranunculus* aff. *stylosus*, Nationally Critical *Ranunculus* aff. *royii*). This find confirms a total population of 40 plants for the latter buttercup species. In addition, other more widespread threatened limestone species were discovered; most notably three new populations of the Nationally Vulnerable *Australopyrum calcis* subsp. *optatum*, extending the known range and new southern limit for this species by a few hundred kilometres.

The results of these surveys should further our knowledge on the abundance and distribution of these species, and provide landowners with information about the threatened plants on their properties and measures they could take to help protect them. This survey has also presented opportunities for more formal protection of significant limestone habitats. Above all, this work highlights the value of 'habitat' based survey as a cost effective

method in dealing with multiple species.

Orange-fronted parakeet

The orange-fronted parakeet (OFP) population crashed in the South Branch of the Hurunui during the rat plague of the 2000/01 summer. The species was in dire trouble and the Recovery Group had to re-think its priorities! Surveying areas in the species' former range and establishing a population on predator-free Te Kakahu (Chalky) Island became the main focus for the 2003/04 season. So, what progress has been made?

In May 2003 a survey of the Poulter Valley discovered a new population of OFPs. This was a significant find, as they were previously known to survive only in the Hawdon Valley and the South Branch of the Hurunui. A follow up survey in December found that OFPs were more numerous than expected and distributed throughout the valley. Encounter rates indicate the populations' status is similar to the populations in the Hawdon and Hurunui.

In the third week of December 2003 a clutch of seven eggs was flown from the Hurunui to Isaac's Wildlife Trust in Christchurch, and placed in the care of a pair of yellow-crowned parakeets. All seven hatched, but one nestling died shortly after. The remaining six successfully fledged and have been transferred to a separate, larger aviary with dense native foliage. All six birds are healthy, active and noisy!

Recently, a nest with nine eggs was found in the Hawdon Valley 8 m off the ground in a mountain beech tree. On the 12th of February it contained two eggs and a mass of fluffy young nestlings. One egg had been externally pipped, but the chick had died in the egg. The other was close to hatching. Both eggs were flown by helicopter in a portable incubator to Isaac's Wildlife Trust where the live egg hatched on Valentine's Day. A second trip was made on the 17th of February to collect the remaining nestlings. Seven nestlings were carefully removed from the nest hole and flown to Isaac's to join their recently hatched sibling in the care of the same yellow-crowned pair that raised the last OFP clutch. The female accepted the new nestlings without hesitation and appears to be feeding them.

Including the two surviving birds transferred to Te Anau Wildlife Park last season (see *Rare Bits* No. 49), there are now 16 OFPs in captivity.

WEST COAST

From Dave Eastwood, Ron van Mierlo, Glen Newton, Stephen Pepper & Chrissy Wickes

Crested grebe survey

Hokitika Area participated in the crested grebe surveys on Lakes Kaniere and Mahinapua in January; no grebe were found. However, amongst other birds recorded on the two lakes were 12 kotuku, two royal

spoonbill, 75 scaup, 29 paradise duck, 29 grey duck, 12 black shag and four little shag.

Descampsia caespitosa

During an ecological baseline study at Lake Mahinapua a new site for the grass *Descampsia caespitosa* was found. It is the only record in the Hokitika Ecological District.

Shortjaw kokopu

Five giant kokopu and 31 shortjaw kokopu were tagged in the last 12 months in order to monitor a population of each as part of the Large Galaxiid Recovery Plan. Preliminary results after 6 months suggest considerable site fidelity in shortjaw kokopu.

Cascade gecko

Two recent survey trips to Cascade Plateau have taken place, looking primarily for 'Cascade forest geckos'. This species is thought to be a previously undescribed member of the *Hoplodactylus granulatus* complex. These geckos could be a new species related to geckos found at Takitimu and/or Esperence Valley, Fiordland. It was first found during a skink survey of Cascade Plateau in 1999. The geckos are small- to medium-sized (SVL to 80 mm) and are mainly nocturnal.

Search efforts were targeted to try and cover the majority of the plateau, with the aim of determining the range occupied by the gecko and its relative abundance. A total of 15 geckos were found in two localised

populations. Large numbers of skinks, tentatively thought to be *Oligosoma* 'Big Bay', were also observed during the surveys.

Eight geckos were found at the first site with relatively little search effort within an area of about 1.5 ha. Finding such a strong population of geckos, and the availability of what looked like miles of similar habitat, suggested that the geckos could potentially be quite widespread. However, 45 person hours of futile searching all but confirmed the population to be extremely localised.

The second survey effort found seven geckos in a similarly sized area, confirming the localised nature of the Cascade forest gecko populations. The geckos were found in habitat consisting of dry open rocky ground with patches of stunted shrubs.

Tony Whitaker's technique for spotlighting with binoculars was found to be extremely effective. Seven geckos were found using this technique and eight were found in the daytime under rocks (mostly rock-on-rock situations).

Landsborough mohua monitoring

The stoat control line in the Landsborough Valley has recently been extended down to Harper Flat, just above the confluence with the Clarke River. There are now 189 tunnels with two traps per tunnel in the valley, with 41 of these on the recent extension.

On the last few trips it has been extremely encouraging to notice that mohua are more abundant; the results of November's mohua monitoring confirm this abundance. We heard an average of 1.03 mohua per five minute bird count, a total of 183 mohua. This is a very positive result compared to the previous averages of 0.60 in 2002 and 0.52 in 1998.

Following a beech mast in 2000 and corresponding stoat plague in 2001, stoat numbers have steadily declined in 2002/03. Seven stoats were caught over a 10 week period this year compared with 23 from the same period in 2001.

Haast tokoeka

Rat numbers increased following a heavy kahikatea fruiting, which in turn increased the stoat numbers in the Haast Tokoeka Sanctuary compared to previous years. Twenty nests were detected from 34 potential breeding pairs. As part of the Operation Nest Egg trial, three eggs were taken and incubated at the Kiwi and Birdlife Park in Queenstown. Two successfully hatched and were released into Burwood Reserve, Te Anau. The third egg failed due to an unformed umbilicus. One of the chicks died 10 days after release, while the oldest chick weighed 575 gm on 12/1/04.

Out of the remaining 18 nests: one is still being incubated; eight produced chicks, two of which died naturally; and four showed signs of stoat predation. The remaining two chicks were transferred to Burwood Reserve due to the high numbers of stoats in

the sanctuary. One of these chicks has subsequently died.

An adult male was found dead and we are waiting for the necropsy results.

Kahu, a chick from the 2001/02 season was found this year with a female mate in a burrow lined with vegetation (suggesting a nest) though no sign of egg or chick was found.

OTAGO

From Trudy Murdoch, Dean Nelson, Emma Craig, Lyndon Perriman, Bruce McKinlay & John Barkla

Inland saline sites

We have continued our ongoing quest to establish the appropriate way to control the weed *Plantago coronopus* at inland saline sites. AgResearch had previously established which herbicides and concentrations are effective on buck's horn plantain in field conditions and aren't effective on native saline plants in the glasshouse. They recommended two herbicides (Versatill and 2,4-DB) for trial on natives in the field at a small scale. The targeted natives for this year were *Puccinellia raroflorens*, *P. stricta*, *Selliera radicans* and *Sarcocornia quinqueflora*. After being trained in how to use the spray equipment to deliver precise concentrations, the sites were sprayed in early December. The first

vegetation re-measurement is not until March, but initial observations indicate that 2,4-DB has killed the natives but Versatill has not. Neither has affected the plantain, but the full effects of Versatill will not be apparent until several months after treatment.

Taiaroa Head

The last of the 12 albatross eggs is in the process of hatching and has been placed under a foster pair of albatross. An albatross chick that we were hand-feeding has died. This chick was not fed at all by parents so it is hard to know if it was missing something important in its diet, or possibly died from ingested food/liquid into lung cavities which can cause pneumonia-related problems. Two other chicks are receiving some feeding from us too, both of which would have died without assistance. All other chicks are doing well with no fly strike problems this year.

At another nest the male has so far failed to return from sea. The female has been on the nest for 10 days now compared to the usual change over every second or third day!! She is readily taking fish fillets without us having to restrain and force feed her (nice to have a "win" every now and again!!). It's now a case of wait and see what happens with her, her mate and chick. So the total for the season looks like 11 chicks.

Inland Lepidiums

This year Peter Heenan (Landcare Research) has been contracted to

clarify the taxonomy of the *Lepidium sisymbrioides* subspecies. This has involved Central Otago Area staff visiting most of the known sites in Otago to collect leaves and seeds. Peter has collected material from the Canterbury populations. We are eagerly awaiting results.

This year we have also experimented with translocating propagated *Lepidium sisymbrioides* into a conservation area near Alexandra. Plants have been treated with varying watering and weeding regimes and their survival is being monitored. The aim is to establish the minimum amount of pre- and post- planting work that ensures success.

Threatened plants from tenure review

This summer's tenure review field work is nearing an end and there have been some significant finds of populations of many Acutely Threatened plants. Of particular note have been large populations of scrambling broom *Carmichaelia kirkii*, marsh arrow-grass *Triglochin palustris*, *Olearia hectorii*, *Myosotis cheesemanii*, *Carex inopinata* and *Ranunculus ternatifolius*. Finds of Chronically Threatened species have included *Olearia fimbriata*, *Carmichaelia vexillata*, *Epilobium chionanthum*, *Pachycladon cheesemanii*, *Leptinella serrulata*, *Deschampsia cespitosa* and scree pea *Montigena novae-zelandiae*.

Weka

A sick chick that we had in the quarantine aviary on Te Peka Karara has died. She was taken off the island to the vet in Wanaka on 21st January, returned to the quarantine aviary on the 24th and looked like she was perking up, but then died on the 27th. The provisional diagnosis for the dead chick (sent to Massey for autopsy) is that she was probably affected by bacterial peritonitis / air sacculitis, which is basically a huge bacterial infection in the abdominal cavity. The cause is unknown, but the symptoms may be exacerbated by stress.

The other loss was a fledged female who recently had a transmitter attached. She got tangled in vegetation by her harness and perished. There was nothing obviously wrong with the harness settings, so it is likely that it was just very bad luck that she got caught.

More recently, despite rain and snow, we have two new nests on the way! Both the aviary pair and the northern pair are sitting on clutches of three eggs apiece. The northern pair just fledged their solo and very large-footed chick, who was banded and confirmed as a male. He has taken to hanging around the aviary, leaving giant muddy foot-prints in his wake. The aviary pair also fledged their two chicks. It all happened in such a hurry that Emma only managed to catch and band one of them (male) before they both dispersed. She is confident the other (probably female), can be located and banded. Usually there are a couple of weeks of mild aggression

interspersed with parents feeding chicks prior to fledging, but in this case there was virtually no warning.

So of the four pairs, three are either sitting or have young chicks. The fourth pair fledged their latest chicks several weeks ago and surprisingly have not re-nested. Emma recently found them together again, looking friendly toward each other, so the pair-bonding is probably still intact.

Yellow-eyed penguin

Dean Nelson's summary for the yellow-eyed penguin breeding season is that nest numbers were generally about the same or slightly up on last season on the Peninsula and in North Otago, but approximately 13% down in the Catlins. Some monitored areas have had egg infertility/early chick deaths but generally productivity has been good, with high mean weights at the February monitoring. From 152 nests, 218 chicks fledged. This average of 1.43 chicks per nest is considered to be a very good. Average weight for chicks on the peninsula and the Catlins was 5.49 kg which is also very good. Kevin Pearce notes that the mean weight for the individual North Otago areas ranges from 4.7-6.4 kg. Twenty chicks were banded at Katiki Point, 12 at Barracuda Bay, 10 at Waianakarua, 10 at Bushy Beach, 3 at Tavora, one at Beach Road and one at Katiki Beach.

SOUTHLAND

From Andrea Goodman, Brian Rance, Hannah Edmonds, Kerri-Anne Edge, Brent Beaven & Tom O'Connor

New threatened plant finds

There have been several new threatened plant discoveries over the summer. In the Gorge Road Recreation Reserve *Olearia hectorii* (Nationally Vulnerable) (a single plant within the reserve and another nearby), the swamp nettle *Urtica linariifolia* (Gradual Decline) and the mistletoe *Tupeia antarctica* (Gradual Decline) were found. *Coprosma obconica* (Range Restricted), the mistletoe *Tupeia antarctica* (Gradual Decline) and fierce lancewood (Sparse) were found along the "middle ridge track" of Croydon Bush Scenic Reserve. While in Anderson Park (home of the Southland Art Galley) a large population of *Crassula ruamabanga* (Sparse) was found along the roadside as well as a few plants of *Coprosma pedicellata* (Gradual Decline).

***Olearia hectorii* seedling recruitment experiment**

This experiment was setup to build on the work of John Barkla, Stu Thorne and other Otago staff, in obtaining establishment and recruitment of *Olearia hectorii* by using herbicides to create a suitable seedbed. The experiment is a small-leaved tree daisy recovery group

initiative to develop guidelines/best practice with this technique. As part of the experiment four 10 × 10 m plots and one 14.5 × 5 m plot were established around one or more *O. hectorii* plants. The grass sward ground cover was sprayed off in October and plots have been revisited monthly to record the growth of any plants (including weeds, *O. hectorii* and other native woody seedlings). The results so far in the five plots have included 0, 1, 418, 5 and 9 *O. hectorii* seedlings. Other native woody seedlings recorded are native jasmine (41), lowland ribbonwood (24), *Coprosma propinqua* (18), *C. rotundifolia* (13), pouhuhue (11), pepper tree (6), broadleaf (1), wineberry (1) and weeping mapou (1).

The germination achieved this year is thought to be lower than normal because of the very dry conditions this summer. Consequently, most of the *O. hectorii* seedlings were restricted to moist areas within the plots. The monitoring will continue through the summer to find out what level of recruitment eventuates. The use of herbicides to promote seedling recruitment may have merit for other threatened plant species and for other native woody plants.

New Zealand sea lions shot

The Department is investigating the illegal shooting of several New Zealand sea lions on Tia Island off the coast of Stewart Island. The animals appear to have been shot with a high powered rifle.

About six years ago sea lions and fur seals were found shot at several

locations around Stewart Island, including on The Neck in Paterson Inlet, while others were found washed up on beaches. The dead sea lions were discovered by a group of visitors to Stewart Island on a kayak trip in Port Adventure.

Lizard experts in the South

Stewart Island hosted a team of lizard-seeking experts, including one canine version. Mandy Tocher and Puti Puti Rapua (gecko dog in training), Rod Hitchmough, Andrea Goodman and Phred Dobbins spent a week looking at the plight of Harlequin geckoes, southern skinks and small-eared skinks on Rakiura. These skinks are endemic to Stewart Island and Whenua Hou, with Harlequins only found on Stewart Island. All are under threat from rats, cats and poachers. This survey was followed up with more lizard surveys around Port Pegasus and the Tin range by Andrea and James Reardon (Landcare Research).

Yellow-eyed penguins

The Yellow-eyed Penguin Trust has been conducting an intensive monitoring programme of yellow-eyed penguin breeding success on Stewart Island. The news is not fantastic, with most nests having failed. In one spot where three breeding areas are being monitored (Rollers Beach through to Long Harry), only two chicks remain alive. The decline appears to be due to a lack of food for chicks. Monitoring will continue until either all the chicks have fledged or died.

Kakapo

At least three male kakapo are now booming on Whenua Hou (Codfish Island). Booming is the way that male kakapo “advertise” to the females that they are ready for a breeding season. Although rimu is not masting this year, the kakapo are in top physical condition. A number of males caught in the last couple of months have had well developed boom sacs.

Secretary Island

Permanent plot re-measure was finally completed last week. It was the final phase of a vegetation monitoring project that began with a recce trip to the island in 2001, another detailed recce in August 2003, 11 plots re-measured in December 2003 and 32 plots re-measured in one hit during this latest trip. The weather gods were smiling on Secretary Island for the majority of the time; all three monitoring teams had favourable weather conditions and they finished ahead of schedule. A total of 14 people participated in the 10 day trip—Te Anau and TSU staff formed the backbone of the teams, while staff from Murihiku, NRO, CRO, West Coast and Otago Conservancies also made valuable contributions. The collection of vegetation data is important because it will monitor the response of the islands' vegetation to the proposed deer control operation. Some plots were badly affected by the 7.1 earthquake (August 2003) and these results will be jointly written up with Landcare Research.

Takahe programme

Takahe chick rearing at the Burwood Bush captive rearing unit is continuing to go well, there are now 17 chicks and one egg from a late re-nest due to hatch shortly. The summer servicing of the 15,000 ha stoat control block in the southeast sector of the Murchison Mountains will be completed over February. All traps will be cleared and re-baited.

Rock wren

Several rock wren pairs in the Mystery Burn and Point Burn of the Murchison Mountains have been monitored over the last few weeks, with the aim of lining up birds for transfer to Anchor Island. This transfer should take place in February, weather permitting.

Whio

Release of the captive-reared whio juveniles back into the Clinton Valley is planned for 23rd February. Wild ducklings from this season are being fitted with radio transmitters so as to monitor their dispersal and survivorship through the winter.

Tieke and toutouwai on Erin Island

Post-release monitoring of 18 tieke (saddleback) and 18 toutouwai (robins) introduced from Breaksea to Erin Island in Lake Te Anau is winding down for the season.

Sabrina Taylor (University of Otago PhD student) has been closely following the tieke since their

release in early September last year. It is believed that at least two pairs of tieke and 5-6 single birds have survived, although no breeding has taken place this season.

Most of the toutouwai have been re-sighted, they are continuing to breed following an earlier introduction, and some have dispersed to the surrounding Doubtful Islands. Sabrina will return to Erin Island next season to monitor the birds.

Kiwi

One new kiwi chick hatched over Waitangi weekend in the Clinton valley and was subsequently named 'Waitangi'. There are two chicks presently in the study site. Six of the seven chicks that have died were confirmed stoat kills. Two of the Haast kiwi chicks at Burwood Bush Reserve were found dead recently. The causes of the deaths are unconfirmed to date, but starvation is the suspected cause of at least one. The remaining two kiwi chicks were weighed last week and both are good weights.

ISLAND ROUNDUP

From Ian McFadden

It has been ages since the last update of what's happening on our offshore islands, so here's another Island Roundup summary.

Auckland Island

Pigs were first put ashore at Erebus Cove on Auckland Island in 1807, and were well established by 1840. It is not known for sure when cats were first introduced, but probably around 1850 when Enderby set up the Hardwicke settlement in Port Ross.

The current situation is that both pigs and cats are widespread. Anecdotal evidence suggests pig numbers fluctuate between years, but until recently there have not been regular visits to the island, so the reliability of that information is questionable. So too is the information on pig distribution. Most sightings are of pigs feeding amongst flotsam on beaches or along the coast, and out in the open tussock at higher altitudes. The claim is that they do not use the rata forest. However this forest is a tangle of twisted tree trunks, almost impossible to get through in places, and a part of the island avoided by most people who visit. Like most feral pigs, they will eat any plant or animal matter they can find.

Cats are seldom seen but have been recorded over the entire island. They appear to be in quite low numbers and survive on mice and birds. My guess is they find the cold wet climate a bit of a challenge. It is not known when the mice were introduced, but may very well have been there since the pigs were released in 1807. Mice are the main component of cat diet, with birds and a bit of scavenging making up the remainder.

Goats were liberated at some stage during the last half of the 1800s, and for some reason established only in the Port Ross area. They have since been eradicated.

The present plan is to attempt to eradicate both pigs and cats, but not mice. The decision to not attempt mice is based on our poor track record with mice, plus the sheer size of the island. At 51,000 ha it compromises the largest eradication attempt on an offshore island yet to be made in New Zealand, or anywhere else in the world.

The intention is to carry out some preliminary field work this winter (June and July). The results of this should allow us to develop detailed costings for the work.

There are two parts to this field work. First is the bait trials for pigs, the intention being to present non-toxic 20 mm diameter Wanganui No 7 baits containing the biomarker Rhodamine B and (a synthetic) anchovy lure. In the first instance to make sure pigs will eat them, and secondly to allow an estimate of what proportion of the population is exposed to the bait. Bait will be laid at several key places around the Port Ross area. During the following weeks a record will be kept of how far away marked droppings are found, and toward the end of the trip a sample of pigs will be shot. Some of this bait will be used to lure up to 15 pigs into traps so that a radio transmitter (tx's) can be attached to the ear. This will provide an opportunity to carry out some telemetry work in an attempt to gain better information regarding their

pattern of movements around the island. Follow up telemetry work can be carried out during the summer period if the opportunity to get people down to the island arises.

The second part of the field work will involve trapping 15 cats and attaching tx collars. Monitoring of these cats during the following months will provide useful information about cat distribution and density.

Our game plan for the eradication has not yet been finalised, but will probably be to poison the pigs, and hopefully most of the cats with the one bait. We know that on Raoul Island some of the cats ate Wanganui No 7 bait which had no lure in it, so we expect the Auckland Island cats will also find it palatable.

Raoul Island

Like Auckland Island, pigs were released in the early 1800's and by 1836 were established on both Raoul and Macauley Islands. At some point they either died out or were harvested to extinction on both islands as by around 1900 they were not known to be present on either island. The Polynesian rat (kiore) was probably liberated by early Polynesian voyagers several hundred years ago. It is thought that the Norway rat arrived in the early 1920's when the Columbia River ran aground somewhere near D'Arcy Point. From as early as the mid 1830's Europeans attempted to settle on Raoul, and it was probably at some stage around then that cats were introduced. Goats were finally

eradicated in the mid 1970's after several years of concentrated effort.

In July 2002 two Bell 205 (Iroquois) helicopters flew up to Raoul and were used to apply Pestoff 20R to the entire island. Twice. The objective was to eradicate both species of rat, and most (though hopefully all) of the cats through secondary poisoning. Since then, laying of 1080 bait and trapping may have resulted in the eradication of cats. The last cat to be trapped was in the middle of last year. During the following months considerable effort searching, using dogs, and trapping, resulted in no positive cat sign being found. The most recent effort being when Scott Theobald spent the best part of November and December 2003 on Raoul with two dogs searching specifically for cat sign, and failed to find anything definite. Then surprise, surprise, on 27th January a cat was found dead in a "cosy nook" at the base of Ngaio Bluff. While the date of death has not yet been determined, it was in an advanced stage of decomposition. Lets hope this recent find is the last cat. Between April and August this year the entire island will be searched for any sign of rats, and of course cats.

Hauturu (Little Barrier)

The tender documents have been sent out for this eradication attempt on Polynesian rats this winter. This project has been in the pipeline for several years, but was delayed for a variety of reasons. The way has now been cleared, but only after having to go as far as to the Environment Court. There are no particular

problems envisaged with this project, but only time will tell. As with all aerial applications of bait, weather patterns will be the big unmanageable. Fingers crossed for a good spell of fine weather.

And that's about it for now.

NEXT ISSUE DEADLINE:

A reminder for contributions will be sent out on 30 April 2004, with all contributions required by 17 May 2004.