

# Reintroduction Specialist Group

## Australasian Newsletter

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## **Summary of New Zealand Plant Translocations**

Rachael Coumbe and Suzan Dopson of the New Zealand Biodiversity Recovery Unit have prepared a 72 page document entitled “Indigenous Plant Translocations in New Zealand: A summary 1987-1999” which will be published as part of the Threatened Species Occasional Publication series. The document summarises 245 plant translocations involving 80 different species, and also summarises instances of species being brought into cultivation. As well as summarising what has been done, the authors discuss lessons learned from translocations to date and improvements that can be made in the future. Hard copies will be available soon via DoC’s Science Publishing Unit ([science.publications@doc.govt.nz](mailto:science.publications@doc.govt.nz)). People wanting an electronic copy of the document should contact Suzan Dopson ([sdopson@doc.govt.nz](mailto:sdopson@doc.govt.nz)).

## **Research on Training Predator-Naïve Animals for Translocation**

The focus of my PhD research has been to understand how tammar wallabies learn about predators. After testing various training techniques, I found I could enhance the responses of tammars to a taxidermically-prepared fox by presenting it in conjunction with a human simulating a capture procedure (Griffin et al. 2001, <http://www.nature.com/nsu/>). To identify exactly what the animals learnt, I presented the tammars with mounts of other species both before and after training. Wallabies generalised their response to another predator (cat), but not to a non-predator (goat), suggesting that they distinguish predators from other vertebrates. Even when the goat was presented in conjunction with a simulated capture, wallabies did not become more fearful of it. This suggests that tammars are genetically predisposed to become fearful of predators. My most recent finding is that predator-naïve tammars become fearful of the fox after watching a trained companion respond fearfully to it. Such social transmission could maintain the effects of pre-release training in a population after release. These results encourage the use of predator-avoidance training in reintroduction programmes with this species. Several other studies in fish, birds and mammals have shown that animals can learn about novel predators and improve antipredator skills with experience (for a review, see Griffin et al. 2000, *Cons Biol* 14: 1317-1326). The question should hence no longer be, “can we train animals to recognise predators?” but “how can we train them?”. Theoretical work will improve our understanding of the type of experience that engages predator-avoidance learning, and empirical research is needed to assess which behaviours correlate with high survival after release. I would like to implement my training methodology as part of an experimental release programme and evaluate the effects of training on survival.

From Andrea Griffin ([andrea@galliform.psy.mq.edu.au](mailto:andrea@galliform.psy.mq.edu.au))

## Recent Translocations

### Marquesan Imperial-Pigeon to Ua Huka Island, French Polynesia

The Upe or Marquesan imperial pigeon (*Ducula galeata*), is one of the most threatened insular pigeon species. Subfossil remains indicate a previously widespread SE Pacific distribution, but the Upe now only inhabits Nuku Hiva Island, in the Marquesas archipelago, French Polynesia. The population is probably less than 150 individuals, and its continued survival is threatened by hunting (despite legal protection), habitat loss and degradation, predation (cats and three species of rat are present), and disease transmission from an increasing population of wild rock dove *Columba livia*. A programme to reintroduce the Upe to Ua Huka, also in the Marquesas group, is being undertaken by Société d'Ornithologie de Polynésie. The decision to use Ua Huka as the destination island was based on prehistoric evidence of Upe presence, the existence of quality habitat and food plants in the Vaikivi reserve protected area, absence of black rat (*Rattus rattus*), and strong support from the local population, including hunters. In May 2000 we travelled to Nuku Hiva to capture birds for translocation. 26 days were spent mist-netting Upe. Difficulties were experienced in capturing Upe because of the Upe's rarity and wariness, steep terrain with few possible net sites, strong winds, bright sunshine reflecting on nets, and occasional heavy rain. 5 Upe were captured, kept in captivity for 1-14 days in Nuku Hiva then were transferred as soon as possible on Ua Huka. Contact with the birds was initially lost when they moved from the release area. However, contact was subsequently established with 4 of the birds (2 male, 2 female), and these birds continue to be found by Robert Sulpice and local people.

From Caroline Blanvillain ([cblanvillain@mail.pf](mailto:cblanvillain@mail.pf)), Mike Thorsen and Robert Sulpice

### Reintroductions of Middle Island Tusked Weta, New Zealand

This giant weta was previously found only on Middle Island in the Mercury Group, but would probably have been present on other islands in the group before arrival of introduced mammals, especially rats. Tusked weta are carnivorous and nocturnal, and spend the day resting in sealed chambers that they dig. They have recently been translocated to 2 islands where mammals have been eradicated.

**Double Island, Mercury Island Group.** Reintroduction. 61 (11 male, 50 female) released May and September 2000. The weta were reared from 2 females and 1 male taken from Middle Island, and were liberated when half grown. They were released individually in artificial holes and in depressions under plastic plant pot saucers. This species is extremely difficult to find, so monitoring is limited to checks of the saucers.

**Red Mercury Island, Mercury Island Group.** 44 weta (15 male, 29 female) released May and September 2000. Release methods and monitoring as for Double Island. In addition, 6 weta (3 male, 3 female) were released (4 under saucers; 2 in holes) in a 5 m by 5 m predator proof enclosure. Tuatara and Little Spotted Kiwi have also been released to Red Mercury, and may prey on the weta outside the enclosures.

From Ian Stringer ([I.Stringer@massey.ac.nz](mailto:I.Stringer@massey.ac.nz))

### **Cook Strait Giant Weta and Flax Weevils to Titi Island, New Zealand**

92 Cook Strait giant weta and 82 flax weevils introduced to Titi Island (32 ha, Marlborough Sounds) from Maud Island. Norway rats, which had a clear impact on invertebrate fauna, were eradicated from Titi 1970-75. These translocations help to re-establish ecological links which would have formerly existed on the island as well as establishing another population of species once widespread. Animals were captured by hand at night, held overnight in sealed plastic containers, then released into vegetation on Titi the next day. The first major survey to assess the success of the operation will be four years after the final releases (additional animals may be released).

From Peter Gaze ([pgaze@doct.govt.nz](mailto:pgaze@doct.govt.nz))

### **Brown Skinks to Awaiti Island, Marlborough Sounds, New Zealand**

In November 2000 15 adult brown skinks *Oligosoma zelandicum* were taken from Maud Island, Marlborough Sounds, into captivity to compare their behaviour with that of the threatened striped skink *Oligosoma striatum*. After the study ended, these animals translocated to Awaiti Island (4 ha in Tennyson Inlet, Marlborough Sounds) an attempt to establish a new population. While brown skinks are widely distributed in New Zealand, their presence in Nelson and Marlborough is almost exclusively on rodent-free islands. Awaiti Island was chosen because it has been rodent-free for 17 years, but has a resident population of weka. Knowing whether skinks can establish in the presence of weka is an important consideration in the restoration of lizard species elsewhere in the Sounds. It was deemed undesirable to return the skinks to Maud because this could potentially introduce disease back onto the island. No lizards had ever been recorded from Awaiti, and a further 50+ trap days using "G Minnow" traps baited with canned pear caught no animals. The original 15 adults (7 males, 7 female, 1 unknown) and 11 juveniles born in captivity were released on Awaiti on 19 May 2001. The release site was in a damp rocky gully to the south of the only landing beach, and the adults and juveniles were about 20 m apart. The skinks will be searched for in the 2001/02 summer, and if some animals are surviving a further 20 adults may be brought from Maud.

From Peter Gaze ([pgaze@doc.govt.nz](mailto:pgaze@doc.govt.nz))

### **Mainland Translocations of New Zealand Robins**

New Zealand robins (*Petroica australis*) continue to be a key focus of mainland restoration programs in New Zealand (see my article in last year's bird issue of Reintroduction News <http://194.158.18.4/intranet/DocLib/Docs/IUCN965.pdf>). Robins are able to hang on in the presence of predators better than many other NZ species, but have nevertheless become extinct over much of their range on the mainland. They are therefore a useful first species to reintroduce into restoration areas to assess the quality of habitat for more endangered species. Reintroductions to multiple mainland areas are providing an opportunity to understand the conditions needed to support a viable population of robins in terms of patch size, connectivity,

and habitat quality. Following the 5 reintroductions of robins to mainland sites in 1998-99, there have been a further 5 reintroductions this year.

**Mangaokewa Reserve** (200 ha managed mainland site near Te Kuiti).

Reintroduction. 30 birds from Waipapa Ecological Area released 18-20 March 2001.

**Barnett Reserve** (23 ha) and **Stephenson covenant** (4 ha, with addition 5 ha reserve adjacent) (mainland remnants near Waotu, Waikato, North Island). Reintroduction. 30 birds from Waipapa Ecological Area (Pureora State Forest) released in these two mainland remnants 24-31 May 2001. 20 birds (about 11 male, 9 female) released in Barnett Reserve and adjacent covenant, and 10 birds (about 6 male, 4 female) released on Stephenson's covenant, about 700 m away separated by pasture. Barnett Bush became a reserve in 1992. A group of 6 community members has been doing possum control since 1993, and rat control (50 x 50m bait stations maintained late winter and March) since 2000. There is little sign of mustelids, and cats will be searched for in June 2001. A similar, but more intensive regime is in place at the nearby Stephenson's covenant, and the whole district has had possum, mustelid and magpie control. MSc student Dave Pattemore (Auckland University) is studying post-release dispersal of these birds in comparison to a similar sized founder group released into continuous bush in the Hunua ranges (see below). Contact Gordon Stephenson ([lorax@xtra.co.nz](mailto:lorax@xtra.co.nz)) about the community led restoration program, Tim Lovegrove ([tlovegrove@arc.govt.nz](mailto:tlovegrove@arc.govt.nz)) re the translocation, and Dave Pattemore ([dpat052@ec.auckland.ac.nz](mailto:dpat052@ec.auckland.ac.nz)) re subsequent monitoring.

**Hunua Ranges** (600 ha mainland island SE of Auckland, part of 17,000 ha contiguous forest). Reintroduction. 30 birds from Waipapa Ecological Area (Pureora State Forest) released 24-31 May 2001. These were divided into groups of 10 and 20 birds released 1 km apart in the contiguous forest of the managed kokako block. Contact Tim Lovegrove ([tlovegrove@arc.govt.nz](mailto:tlovegrove@arc.govt.nz)) re the translocation and Dave Pattemore ([dpat052@ec.auckland.ac.nz](mailto:dpat052@ec.auckland.ac.nz)) re subsequent monitoring.

**Bushy Park Reserve** (87 ha mainland forest block near Wanganui). Reintroduction. 28 robins from Winstone International Forest (near Raetihi, Central North Island) were released 25-28 August 2001. The project was led by the Bushy Park Trust, and is an extension of the nature education program at Bushy Park. Contact Alan Martin ([amart@xtra.co.nz](mailto:amart@xtra.co.nz)).

**Karori Wildlife Sanctuary** (210 mainland restoration area surrounded by a mammal-proof fence), central Wellington, North Island. Reintroduction. 38 birds from Kapiti Island were released in May 2001, and a further 2 were released in August 2001. Robins became extinct in the Wellington area about 100 years ago. The reintroduction is part of the restoration program in the sanctuary. The sanctuary is surrounded by a fence, which is impervious to all mammals except the occasional mouse. The introduced mammals present (possums, rodents, hedgehogs, mustelids, cats, lagomorphs, ungulates) were subsequently eradicated, making this area equivalent to a predator-free island rather than a normal mainland restoration area. Several other species have now been reintroduced to the sanctuary (see <http://www.sanctuary.org>). Robins were caught were clap traps or mist nets, held in cardboard boxes, translocated by helicopter (May) or boat and road (August), and released within 48 hours of capture. At this stage 28 of the 40 robins have been located since the release. One robin has resided outside of the sanctuary in some

regenerating bush on (Wright's Hill) about 1 km from the fence. One of the interesting questions about this translocation is whether the (hopefully) burgeoning robin population in the future will result in a significant population outside the sanctuary? Contact Delia Small ([delia@paradise.net.nz](mailto:delia@paradise.net.nz)) or Raewyn Empson ([raewyn@sanctuary.org.nz](mailto:raewyn@sanctuary.org.nz))

### **Yellow-crowned Parakeets to Long Island, New Zealand**

20 yellow-crowned parakeets were reintroduced to Long Island (142 ha, Marlborough Sounds) from Te Kakaho (Outer Chetwode Island) in February 2001. This species would have been present on the island before it was cleared of forest for farming. They were formerly very abundant on the adjacent mainland, and are still occasionally encountered in mature forest surrounding Queen Charlotte Sound. The island is now thought to have regenerated sufficiently to support the species, and the reintroduction was part of the Nelson/Marlborough island management plan (Millar & Gaze. 1997. DoC Occasional Publication 31). Birds were caught in mistnets set by artificial water supplies, held in aviaries up to 48 h, then transported in small boxes by boat, road, and boat to the release site (max 4.5 h in transit). All birds were individually colour banded, and 6 had blood samples taken for haematological assessment. Monitoring will consist of annual surveys.

From Peter Gaze ([pgaze@doc.govt.nz](mailto:pgaze@doc.govt.nz))

### **Fernbirds to Tiritiri Matangi Island, New Zealand**

13 fernbirds have been translocated from Transit land called RAP21, near Auckland, to Tiritiri Matangi Island (220 ha) in the Hauraki Gulf 28 km north of Auckland. The translocation is part of the extensive restoration program that has taken place on Tiritiri Matangi since the early 1980s, and fernbirds are the 10<sup>th</sup> bird species translocated to the island. The translocation took place at this point because a motorway extension is going through the source location. The birds have been caught in mistnets and transported in cardboard cat boxes by helicopter. They hope to eventually have 20 birds on the island but the birds are tricky to catch. There have been no fatalities (bird or human) so far. The project (both the translocation and subsequent monitoring) is being run by Auckland University MSc student Kevin Parker ([k.parker@auckland.ac.nz](mailto:k.parker@auckland.ac.nz)).

From Rosalie Stamp ([rstamp@doc.govt.nz](mailto:rstamp@doc.govt.nz))

### **Supplementation of the Kaki population, New Zealand**

The Kaki (black stilt, *Himantopus novaezelandiae*) is one of New Zealand's most threatened species. The wild population consists of about 39 birds, including 9-10 females, in the Upper Waitaki Basin, central South Island. DoC maintains a further 19 kaki in captivity. Kaki readily lay repeat clutches of eggs following clutch loss, and current management exploits this by taking eggs for artificial incubation, thereby producing up to four clutches per pair. 16 juveniles held in captivity over winter from the previous year's production were released as sub-adults this spring, and all survived the 2 month period after release. In the 2000/01 season, wild and captive

pairs produced 105 eggs, of which 77 hatched. All of these chicks were raised in captivity by captive pairs or by hand, and in early summer 27 juvenile kaki were released into the wild. The remaining young have been held over winter and will be released in spring 2001. Of the 27 juvenile kaki released in summer 2001, 22 survived for at least 2 months after release. These results are very encouraging: through a combination of improved fitness of released birds brought about by changes in the captive diet, and through post-release supplementary feeding for one month, initial survival rates range from 81-100%. However, many of these birds disappear before they reach breeding age 1-2 years after release, and the challenge is now to discover what the fate of these missing birds is. Captive-rearing and release is currently the only viable method of increasing wild kaki numbers.

From Richard Maloney ([rmaloney@doc.govt.nz](mailto:rmaloney@doc.govt.nz))

### **Kokako Translocations, New Zealand**

**Boundary Stream Mainland Island, Hawkes Bay.** 3 pairs of kokako were moved from Te Urewera to Boundary Stream during May/June 2001. The plan to maintain these birds in aviaries and over the next 2-3 years release offspring into Boundary Stream Mainland Island, which has intensive predator control.

**Mt. Bruce Reserve, Wairarapa.** 5 kokako (sexes not yet confirmed) from Mangatutu (Waikato) to Mt. Bruce National Wildlife Centre. These birds will also be kept in aviaries, and offspring released into the adjacent Mount Bruce Reserve which has recently had a predator control program put in place.

**Puketi Forest, Northland.** Two kokako fledglings were transferred within Northland from Matarau forest to Puketi forest. One died soon after transfer and the second has been wandering widely within Puketi.

From Ian Flux ([iflux@doc.govt.nz](mailto:iflux@doc.govt.nz))

### **Banded Hare Wallabies and Mala to Peron Peninsula, Western Australia**

Banded Hare Wallabies were (*Lagostrophus fasciatus*) reintroduced to Francois Peron National Park on the Peron Peninsula, Shark Bay, in August 2001. This is the first reintroduction of this species to a mainland site. The project is comparing soft and hard release strategies for a small number of animals (~18) as a first trial, and will closely monitor their movement and survival over the next 12 months before proceeding with further releases if successful. A similar number of Mala (*Lagorchestes hirsutus*) will be reintroduced in early September. These animals will also be radio-tracked and closely monitored for 12 months, before continuing with the release program in 2002 if survival is good. These reintroductions are part of CALM's "Project Eden" restoration project in the park, which involves ongoing control of feral predators and herbivores (trapping, shooting and poisoning). Previous reintroductions of Woylie (*Bettongia penicillata*), Malleefowl (*Leipoa ocellata*) and Greater Bilby (*Macrotis lagotis*) from 1997-2000 have all resulted in good survival and breeding. For further information on Project Eden see <http://www.proeden.org>.

From Colleen Sims ([colleens@calm-denham.wa.gov.au](mailto:colleens@calm-denham.wa.gov.au))

## **Southern Emu-wrens to Cox Scrub Conservation Park, South Australia**

The critically endangered Mount Lofty Ranges Southern Emu-wren (*Stipiturus malachurus intermedius*) has been reintroduced to an area from which it was extirpated by wildfire almost 20 years ago. In July 2001 30 emu-wrens (15 male, 15 female) were transferred from Deep Creek Conservation Park 50 km NE to Cox Scrub Conservation Park, 50 km SSE of Adelaide. Southern Emu-wrens occurred in Cox Scrub Conservation Park until the fire burnt out the park in 1983, but being isolated from the nearest subpopulations, the park was not recolonised. Emu-wrens have short, rounded wings and cannot undertake sustained flight, and as such have very limited dispersal capabilities. The source population in Deep Creek Conservation Park is the largest known subpopulation of the subspecies, with at least several hundred individuals. Emu-wrens were trapped over several weeks, mostly as pairs, using mist-nets and pre-recorded calls to facilitate trapping, and transferred to the release site by road, generally on the day of capture. Post-translocation monitoring will commence in August, and a supplementary transfer of 5 pairs is planned for July 2002. The project is funded primarily by the Commonwealth Government Endangered Species Program and S.A. Government Department for Environment and Heritage. The Conservation Council of S.A. administers the recovery program.

From Marcus Pickett ([marcus\\_pickett@bigpond.com](mailto:marcus_pickett@bigpond.com))

## **Updates on Previous Translocations**

### **Research on Reintroduced NZ robins**

**Tiritiri Matangi** (220 ha offshore Island, Hauraki Gulf). We are now into our 10<sup>th</sup> year of research on the Tiritiri Matangi robin population since it's reintroduction in 1992. Wendy Dimond's ([wijid@hotmail.com](mailto:wijid@hotmail.com)) recent MSc project has focused on understanding density dependence in the population, using the harvesting of 21 birds from the population in 1999 as an experimental perturbation. The broad aim is to develop a methodology for determining the extent to which managed populations can be sustainably harvesting for further translocation. There appears to be clear density dependence in juvenile survival, which is closely correlated with the number of pairs at the start of the breeding season. Wendy's computer simulation's incorporating this model show a good fit to the observed population dynamics, including the response to the harvest, and she has used her simulation model to explore potential harvesting strategies.

**Wenderholm Scenic Reserve** (60 ha mainland restoration area just N of Auckland). The 21 robins harvested from Tiritiri Matangi in 1999 were reintroduced to Wenderholm. These birds have had a good reproductive rate in terms of fledglings produced and have had good adult survival. However, recruitment has been extremely poor, either due to low juvenile survival or high dispersal from the reserve, and the population's viability is marginal at best.

**Paengaroa Mainland Island** (100 ha mainland restoration area near Taihape). 40 robins were reintroduced in 1999. Liz Raeburn ([E.H.Raeburn@massey.ac.nz](mailto:E.H.Raeburn@massey.ac.nz)) studied

this population for her MSc which she has just submitted. Her thesis develops a general methodology for monitoring NZ robin populations reintroduced to the mainland and assessing viability. Viability of the population is marginal, and very sensitive to uncertainty in parameters. However, reproduction and survival were both higher in the second year than the first year, giving a more optimistic picture. Paengaroa has a low-intensity predator control program, and robins have a lower nest success rate than on other mainland populations, particularly during the first half of the breeding season where almost all nests fail. However, like Wenderholm, the key parameter affecting viability appears not to be the number of fledglings produced, but recruitment of those birds into the population. One juvenile produced last breeding season turned up in a small reserve 10 km away, suggesting that juvenile dispersal may be a problem. It is possible that the viability of robins in small mainland reserves will be consistently threatened by dispersal out of those reserves, so we will attempt to focus some of our future research on distinguishing juvenile dispersal and mortality.

From Doug Armstrong ([D.P.Armstrong@massey.ac.nz](mailto:D.P.Armstrong@massey.ac.nz))

### **Genetic Decline in a Translocated Population of Corrigin Grevillea**

The Corrigin Grevillea (*G. scapigera*: Proteaceae) is one of the world's rarest plant species, currently known from 5 plants in the wild in the Western Australian wheatbelt. In 1995, 10 plants were selected from 47 plants known at the time to act as genetically representative founders for translocation into secure sites. Ramets were micropropagated and introduced into one of these secure sites (Corrigin) in 1996, 1997, and 1998. By late 1998, 266 plants had been translocated and were producing large numbers of seeds. With the development of an artificial seed-germination technique, and lack of seed germination in situ, seed was collected from these plants, germinated ex situ, and 161 seedlings returned to the field site in winter 1999. We used AFLP ( a DNA fingerprinting technique) to (1) assess the genetic fidelity of the clones through the propagation process, (2) contrast genetic variation and average genetic similarities of the F1s to their parents to assess genetic decline, and (3) assign paternity to the reintroduced seeds to assess the reproductive success of each clone. We found that (1) 8 clones, not 10, were present in the translocated population and 54% of all plants were a single clone, (2) the F1s were on average 22% more inbred and 20% less heterozygous than their parents, largely because (3) 85% of all seeds were the product of only four clones.  $N_e$  (effective population size) was therefore about 2. Such rapid genetic decline may be a feature of many translocated populations when  $N_e$  is small, and may threaten long-term survival. Strategies to reverse such genetic declines include equalizing founder numbers, adding new genotypes when discovered, promoting multiple siring and reducing kinship, promoting seed germination in situ rather than germinating seeds ex situ, and creating a metapopulation of numerous translocated populations.

From Siegy Krauss ([skrauss@kpbgintra.kpbg.wa.gov.au](mailto:skrauss@kpbgintra.kpbg.wa.gov.au)), Bob Dixon and Kingsley Dixon

### **Lakeland Downs Mouse on Serrurier Island, Western Australia**

The Lakeland Downs Short-tailed Mouse, *Leggadina lakedownensis*, occurs in arid-zone sandy ecosystems across northern Australia, and on Thevenard Island in the

remote northwest of WA. This species is rarely captured on the mainland, so the island population is an important refugium for the species and is also genetically unique from northern populations. In 1996, 65 mice were translocated to Serrurier Island from Thevenard Island. The translocation was a conservation introduction performed as a security measure against the future poison-baiting of house mice on Thevenard Island. Mice were initially monitored by radiotelemetry and subsequently by trapping. Monitoring of the population two years later resulted in 344 individuals being captured, with 206 mice caught per 100 trap-nights. This is more than twice the capture rate of native mice on Thevenard Island. High rainfall years, coupled with the release of a high number of founder individuals, is believed to have contributed to the success of this translocation. However, this translocation can also serve as a warning of the high densities that some species can reach when introduced into environments.

From Dorian Moro ([d.moro@ecu.edu.au](mailto:d.moro@ecu.edu.au))

### **Dibblers on Escape Island, Western Australia**

The Dibbler (*Parantechinus apicalis*) is a small carnivorous marsupial with a distribution restricted to the south-west of WA (coastal habitats of Fitzgerald River National Park along the south coast, plus Boullager and Whitlock Islands about 300 km north of Perth). Stock from the two islands was bred at Perth Zoo, and captive-bred animals were released on Escape Island in 1998. This was a conservation introduction aimed to establish dibblers in a more secure site given that the other islands are at risk from house mice and other risks (fire, pets) associated with high visitation to the islands by people. Of the initial 26 dibblers released in 1998, 5-10 were consistently captured, and bred the following season in 1999. A further 41 captive-bred animals were released in 1999 and a further 19 in early 2000. An indication of the success of the translocation, at least in the short-term, is the 72 individuals captured in October 2000. Of these, 18 were translocated animals (4 from 1998, 11 from 1999, 3 from 2000) and 40 were born on the island (14 adults born in 1999 and 26 juveniles). All appeared in good or very good condition.

From Dorian Moro ([d.moro@ecu.edu.au](mailto:d.moro@ecu.edu.au))

### **Mala on Trimouille Island, Western Australia**

The Mala (the central Australian subspecies of the Rufous Hare-wallaby *Lagorchestes hirsutus*) currently meets IUCN Red List criteria for 'Extinct in the Wild'. In 1998, it existed only as a semi-captive population at the 'Mala Paddock' in the Tanami Desert, NT, and some small captive populations. In June 1998, 30 Mala (10 males, 20 females of which 12 had pouch young) were translocated from the 'paddock' to Trimouille Island off the Pilbara coast of WA. The translocation was part of the Montabello Islands Renewal Project involving eradication of cats and black rats and reintroduction or introduction of threatened species. Black rats were eradicated from Trimouille, and cats, which were recorded on the island in the 1970s, were confirmed to be absent. The animals were packed two to a pet pack, driven 3 hours by 4WD to Willowra airstrip, flown to Karratha by twin-engine aircraft, and flown by helicopter to Trimouille, arriving just after sunset. All Mala were monitored by radio-tracked over the first 10 days after release, at 8 weeks and at 12 months. Only two Mala died during the first 12 months. Monitoring thereafter was by track searches, with some

hand captures to examine reproductive condition. Monitoring up to October 2000 showed that the Mala are breeding and extending their range on the island. Further monitoring will occur approximately annually. Further translocations are planned for Francois Peron National Park, Shark Bay, and Dryandra Woodland, southeast of Perth.

From Andrew Burbidge ([andrewb@calm.wa.gov.au](mailto:andrewb@calm.wa.gov.au)).

### **Shark Bay Mouse on North West Island, Western Australia**

Djoongari (Shark Bay Mouse, *Pseudomys fieldi*), which were previously restricted to a single island, were introduced to North West Island (135 ha) in 1999 and 2000. Survey in 2001 has shown that they have bred and now occupy the whole island. The translocation was part of the Montabell Islands Renewal Project involving eradication of cats and black rats and reintroduction or introduction of threatened species.

From Andrew Burbidge ([Andrew.Burbidge@calm.wa.gov.au](mailto:Andrew.Burbidge@calm.wa.gov.au))

### **Proposed Translocations**

#### **Mohua in the South Island of New Zealand**

Mohua (Yellowheads, *Mohoua ochrocephala*) appear to have become extinct on Mt Stokes (Marlborough) and be in serious decline in other locations including the well studied population in the Eglinton Valley (Fiordland). These declines are attributable to increased abundance of ship rats, probably caused by heavy seeding of beech and warmer temperatures allowing the rats to disperse into the colder mohua habitats. While these mohua populations had increased over previous years with the trapping of stoats, it was not possible to manage them successfully in the presence of rats. The recovery group have decided that given the current uncertainty that mohua can be maintained on the mainland, there should be further translocations to predator-free islands. The intention is to transfer 20+ birds from the Dart Valley to Nukuwaiata (Inner Chetwode Island) and a similar number from the Blue Mountains to Ulva Island on the west coast of Stewart Island. Once these translocated populations, along with the one on Breaksea, are secure and self-sustaining, efforts will again focus on how the species can be maintained on the mainland.

From Peter Gaze ([pgaze@doc.govt.nz](mailto:pgaze@doc.govt.nz))