Reintroduction Specialist Group

Australasian Newsletter

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Edited by Doug P. Armstrong
Australasian Chair, Reintroduction Specialist Group

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RSG Strategic Planning Workshop

The RSG held a Strategic Planning Workshop from the 23-25 March 2002 at the RSG Secretariat, hosted by the Environmental Research & Wildlife Development Agency (ERWDA) headquarters in Abu Dhabi, United Arab Emirates (UAE). The aim of this session was to define the RSG Strategy for the next 3 – 5 years, within the framework of the IUCN/SSC Strategic Plan; including considerations of the mission, vision, role and structure of the group. The meeting was attended by RSG Chairman Fred Launay, previous RSG Chairman Mark Stanley Price, RSG Vice-Chair Mike Maunder, RSG Project Officer Pritpal Soorae, RSG Section Chairs Phil Seddon, Mike Jordan, Doug Armstrong, Devra Kleiman, Luke Hunter, and Andrew Spalton, IUCN/SSC Program Officer, Mariano Gimenez-Dixon. We had sessions on:

(1) Laying out the recent past and current situation
(2) Evaluating Impact of the RSG
(3) Perceptions of RSG and role within SSC
(4) Role of re-introductions in conservation
(5) What is the niche for the RSG in the conservation landscape?
(6) Should the RSG expand its interests, mandate and/or focus of its efforts?
(7) What would RSG need to succeed?
(8) How will the RSG get there?
(9) What do we conclude about RSG's strategy, niche and operational plan?

One initiative from the meeting was a restructuring of the RSG to shift our emphasis from taxonomic specialisation to regional coverage. Following the model of our Australasian section (previously the only regional section), we proposed to divide the world into 8 sections with a regional RSG chair acting as the contact point for each sections. We recommended retaining a reduced (6) number of taxonomic chairs, with 6 previous mammal sections combined into one. We also had considerable discussion on ways that we could improve our level of networking and increase the profile of the RSG. There will be a full report on the meeting in the next issue of Reintroduction News.

Boom Year for Kakapo Breeding

Kakapo, the big flightless parrots of New Zealand, are one of the rarest birds in the world and were saved by extinction by translocation to predator-free islands starting in the 1970s. While kakapo have survived well, they have done little breeding. In recent years the New Zealand Department of Conservation has translocated most of the surviving kakapo, including all known females, to Codfish/Whenua Hou Island, a 1396 ha island off NW Stewart Island (click here for info on translocations). Kiore rats, the only predator of birds eggs and chicks on kakapo islands, were eradicated from Codfish in 1998. Kakapo normally attempt to breed every 2-5 years, and this appears to be triggered by heavy fruiting of rimu trees. This summer rimu trees on Codfish have around twice the volume of fruit seen in any previous mast year and it is now ripe. The kakapo therefore anticipated that this would be "the year" for kakapo breeding, and have gone to considerable planning to ensure maximum suvival of the chicks produced. This included training kakapo to take supplementary food in case the rimu crop failed, and doing round-the-clock remote surveillance of nests. The prediction of a boom year has now come to pass, with 20 of the 21 females laying, and 26 chicks being produced. Only one has died so far, so it looks like this breeding season will result in a substantial increase in the kakapo population. The kakapo team

is now quite confident that the population will continue to increase as long as management continues, and have started addressing a new problem – where to put the kakapo when space runs out! Recently the team has proposed to trial the possibility of introducing kakapo to Campbell Island, a 12000 ha subantartic island.

Contact Don Merton (dmerton@doc.govt.nz) for further information.

Training New Zealand Falcon for Release in the Wild

New Zealand Falcon (*Falcon novaeseelandiae*) were estimated at 30,000 individuals in the 1970s, but habitat loss, human disturbance at nests and illegal persecution threatens this endemic species. No captive breeding programme is currently managed, but offspring of captive pairs are released into suitable habitat. Hunting skills are established using traditional falconry techniques prior to release, both for captive-reared falcons and rehabilitated injured falcons. Although this is time consuming, falcons are self sufficient hunters if they are released capable of capturing avian prey. A juvenile female New Zealand Falcon was trained for 8 weeks and released in March 2002. Training involved manning the bird to the glove before flying to an artificial lure resembling attack flights at live prey. Lure training builds strength, stamina and flight agility needed for capturing avian prey. Once capable of hunting she was introduced to live prey, usually small introduced passerines. She was trained and released in a horticultural area where numerous flocks of passerines fed on seed crops. The release site is frequented by wild falcons outside of the breeding season and is close to habitat were falcons are know to breed. Illegal persecution of falcons preying on racing pigeons and poultry was also considered when selecting potential release sites. A tail mounted radio transmitter was attached prior to release for monitored progress of the bird in the wild. Two days after release she was seen chasing and capturing an Australian Magpie and was still seen at the release sight 4 weeks after release. Horticultural areas are being considered as future release sites.

From Matthew Wong, Massey University (nzraptor@hotmail.com)

NSW Biodiversity Research Network

The NSW Biodiversity Research Network has been established to facilitate communication and cooperation among stakeholders in research on biodiversity in NSW. These stakeholders include government, private and community organisations, and individuals - both those who do the research, and those who use the research. One of our goals is to identify gaps and priorities for biodiversity research in NSW, and to outline these in an upcoming website and NSW Biodiversity Research Strategy document. Our website will also summarise and link the research of relevant organisations, and thus serve as a central point of reference for biodiversity researchers and students in NSW. We also aim to form enduring links among people, by providing opportunities for communication, such as an electronic mailing list, newsletters, and meetings or mini-symposia. The initiative for this Network arose out of the NSW Biodiversity Strategy (hard copy published by the National Parks & Wildlife Service 1999; click here for online version). The Network Steering Committee now holds regular meetings of interested agency and university partners.

If you would like to get involved, or receive further information, please contact Meri Peach, NSW Biodiversity Research Network Coordinator (Meredith.Peach@rbgsyd.nsw.gov.au).

New Book on Conservation Genetics

The book 'Introduction to Conservation Genetics' by Dick Frankham , Jon Ballou and David Briscoe [Cambridge University Press] is now out. It contains extensive treatment of the genetics issues in reintroductions in a readable form.

New PhD thesis in Reintroduction Biology

Abstract from "Reintroduction biology of Yellow-footed Rock-wallabies (Petrogale xanthopus celeris and P. x. xanthopus)" *by Steven Lapidge, University of Sydney*

Captive-bred Yellow-footed Rock-wallabies were re-introduced to parts of their former ranges in South Australia and Queensland (click here for info on the reintroductions). The aim of the initial South Australian re-introduction was to trial re-introduction methods for the genus *Petrogale*; the aim of the latter Queensland re-introductions was to gain insight into how captive-bred animals biologically adapt to their unpredictable semi-arid environment. Following is a summary of key findings:

- Two subspecies were released, *P. x. xanthopus* and *P. x. celeris*. The *xanthopus* released ere generally older and larger than the *celeris*, but age, mass or condition did not affect initial post-release survival. Longer-term survival was slightly lower for *xanthopus* due to natural attrition of older animals. Survival of re-introduced *celeris* did not differ significantly from captive *celeris*. Pouch young survival was high in both sub-species, but survival of marked juveniles to adulthood was low (20% for *xanthopus* and 30% for *celeris*). Wild-born sub-adult and adult survival (73%) was higher than that reported for natural *xanthopus* colonies (58%).
- 26 pouch young or independent wild-born *xanthopus* have been recorded, with a sex ratio close to 1:1. Fecundity was 53% and related to vegetation abundance.
- Re-introduced *celeris* have bred continuously since release, with 37 pouch young recorded in a female-biased sex ratio.
- Fecundity of re-introduced *celeris* was higher and sexual maturity earlier than captive *celeris*. More births occurred for both sub-species in autumn and spring than summer and winter, indicating that the species is a semi-seasonal breeder. Findings support the theory that sex of offspring is affected by population density and local resource competition.
- Growth of re-introduced *xanthopus* was similar between sub-species, and to that previously reported for captive *xanthopus*. Greater sexual dimorphism was detected in *celeris*, as previously reported.
- Haematological and plasma biochemical parameters of both sub-species underwent significant changes post-release, initially due to the adoption of a natural diet. Plasma vitamin E increased post-release in both sub-species, probably due to change in diet and reduction in stress.
- Home range of re-introduced *celeris* peaked at 12 months (15.9 ha), while core area (50% polygon) continued to increase throughout the two-year sample period

(6.0 ha at 24 months). Both parameters did not significantly differ from that of wild counterparts after 12 months, and was similar to other *Petrogale* species.

- Dispersal of re-introduced *celeris* was the furthest recorded for any *Petrogale* species; one male dispersed 7.3 km to join another re-introduced colony, another male went at least 27 km over 12 months, and a minimum of three wild *celeris* males immigrated into a re-introduced colony from 17 km away.

Biological parameters measured in the current study suggested that captive-bred animals had adjusted to the wild by 12 months post-release, although many changes had occurred by 5 months or the first recapture session for re-introduced *celeris.* The re-introductions are judged to be successful at present, 3 years after release in Queensland and 5 years after release in South Australia.

Contact Steve Lapidge (stevenlapidge@hotmail.com) for further information. Steve is currently looking for jobs or postdocs, so would also be grateful to know of any positions available.

Optimization strategies for Captive Breeding

There are many uncertainties that must be evaluated when captive breeding is considered. We have begun examining methods for supporting captive breeding decision-making by combining stochastic models with optimization methods. Captive breeding decisions should be state dependent – i.e., the best decision when there are 20 animals left might be different from one when there are 100 animals left. The method we use to search for state dependent decisions that minimize the risk of extinction for a species is called Stochastic Dynamic Programming. We construct stochastic models of two populations, a captive population and a wild population, and use stochastic dynamic programming to identify the optimal size of translocations between captivity and the wild. For an initial test we parameterized the model with data on Arabian oryx (*Oryx leucoryx*). A key result is the importance of captive breeding in minimising the extinction risk of a species in the wild if we can be sure that the captive population will fare better than the wild population. If the wild population is small the entire wild population is best transferred to a captive breeding facility even if the population in the wild is growing. The optimal strategy for release should not compromise the captive population, so at any point in time only one or two animals are released. As a result of the high growth rate of the captive population the released animals are replaced quickly and can be released the following year. Therefore, the optimal release strategy stretches the release effort over several years, ultimately releasing a large number of animals. In future work we are going to test the generality of our results by varying parameters such as translocation costs, birth and death rates of the endangered species in the wild and in captivity, and uncertainty about the breeding success in captivity.

From Brigitte Tenhumberg (btenhumberg@zen.uq.edu.au), Hugh P. Possingham and Drew Tyre

Recent Translocations

Mohua to Ulva Island, NZ

27 Mohua (Yellowheads, *Mohoua ochrocephala)* were reintroduced to Ulva Island (Pattersons Inlet, Stewart Island) in October 2001. The birds were translocated from the Blue Mountains in West Otago. They were caught with mist nets (high and low sets), held in large transfer boxes, and fed meal worms for up to 2 nights prior to flying to Ulva for hard release. The birds were of mixed age and sex. Ulva Island is 260 ha, and consists of podocarp forest with coastal muttonbird scrub. There is one record of Mohua from Stewart Island in the late 1800s, suggesting that they would have originally occurred on Ulva as well. As noted in the previous newsletter, mohua have been declining recently from the beech forests where they occur on the South Island, causing the recovery team to recommend translocations to two offshore islands including Ulva. There was already one island population on Breaksea. Norway rats were eradicated from Ulva in 1995, and robins and saddlebacks have also been reintroduced. While reinvasion by rats is an ongoing issue, there is a trap/bait network set up to control this. Ulva is an open sanctuary (free public access), so the reintroduction will enhance advocacy as well as assessing whether Mohua can survive in podocarp forest and hopefully providing an insurance population for the species. Post-release monitoring being carried out by a student.

From Peter McClelland (pmcclelland@doc.govt.nz)

South Island Saddlebacks to Passage Island, NZ

35 South Island saddlebacks (*Philisturnus carunculatus carunculatus*) were reintroduced to Passage Island (Chalky Inlet, Fiordland National Park) 3 October 2001. The birds were translocated from Breaksea Island, also in Fiordland National Park. Similar numbers of males and females were taken, based on measurements. Birds were caught in mist nets, held in a temporary aviary for up to 5 days, and transported by helicopter. Passage Island is 176ha and has rata-kamahi forest. Saddlebacks probably occurred on the island historically, and were recorded from the adjacent mainland in the 19th century. The reintroduction was part of the recovery programme for South Island saddlebacks, and part of the island's restoration programme. Stoats were eradicated in 1999, making the reintroduction possible. The island will be monitored for stoats, and stoats are being controlled on adjacent Great Island.

From Allan Munn (amunn@doc.govt.nz)

Fairy prion chicks to Mana Island, NZ

The Friends of Mana Island and the Department of Conservation wish to re-establish a breeding colony of fairy prions (titiwainui, *Pachyptila turtur*) on Mana Island by transferring fully-grown chicks from Takapourewa (Stephens Island), and hand feeding them on Mana Island until they fledge. The first transfer of 40 chicks occurred on 13 January 2002. The chicks were divided into 2 groups, 20 of which were fed a krill-based diet and the remaining 20 fed a diet based on tinned sardines, to

assess which of the diets would be more suitable for future translocations. The chicks were kept in artificial burrows, and were fed once a day, with their weights and wing lengths recorded each day. Of the 40 chicks, 39 fledged with the target weight and wing length. The one other chick left its burrow 4 days early, but probably fledged, as a search of the surrounding area and of nearby burrows failed to find any sign of it.
No problems occurred with either of the two diets during the project. The sardine-based diet was considered the best for the chicks, as well as being logistically easier. All other aspects of the project on Mana Island ran very smoothly. The assistance and enthusiasm of Ngati Koata, Ngati Toa and the three teams of volunteer feeders (organized by the Friends of Mana Island) contributed largely to the success of the project.

From Colin Miskelly (cmiskelly@doc.govt.nz) & Rex Williams

Further Releases of Kaki, NZ

The kaki (black stilt) captive-rearing and release programme continues at full steam, and recent releases have all had excellent survival following the discovery that survival could be enhanced by providing iodine-rich supplementary food (see previous newsletter). 16 sub-adults were released in the lower Ahuriri River in September 2001, 22 sub-adults in were relased in the Tasman River area in September 2001, and 31 juveniles were released in the Godley River area in January-February 2002. Initial survival has been good in all cases, although three of the Godley River birds were found eaten by predators and at least 6 dispersed more than 10 km to nearby habitat. Click here for a full rundown of the programme including other recent releases.

From Richard Maloney (rmaloney@doc.govt.nz)

Mokohinau skinks to Coppermine Island, NZ

In January 2002, 30 Mokohinau skinks (*Cyclodina* sp) were transferred from 'Middle Stack' to Coppermine Island in the Marotere (Chickens) Islands group. This endangered skink only survived on five small islands of less than 5ha each. Now it has been released onto the three largest Marotere Islands totalling 330ha following the removal of kiore (*Rattus exulans*). This is the last of the planned releases of this species within the Marotere group. Monitoring to see if they successfully establish will continue at 5 yearly intervals.

From Richard Parrish (rparrish@doc.govt.nz)

Updates on Previous Translocations

Robust skink and Matapia Island gecko on Motuopao Island, NZ

30 robust skinks (*Cyclodina alani*) and 41 Matapia Island geckos (*Hoplodactylus* sp.) were transferred from Matapia Island to Motuopao Island in 1997 (Parrish & Anderson, 1999). Monitoring was carried out in March 2002 nearly 5 years since they had been released. Three robust skinks were caught in 80 trapnights. Two of these were adults from the original release, one of these had increased 4mm snout-vent length and 21.5 to 61 g (54.5%) while the other had increased 6mm snout-vent length and 19g to 48.5 g (61%). One juvenile (75mm snout-vent) was caught which must have been born on the island as the smallest one released was 80mm. No Matapia Island geckos were seen from 2.5 hours spotlighting. This is not surprising as we have had very little success spotlighting for Pacific geckos (*Hoplodactylus pacificus*) on Lady Alice Island in the Marotere Islands. More success was acheived there using artificial 'gecko homes' (sunken ptifall traps filled with rocks) and these will now be tried on Motuopao Island.

From Richard Parrish (rparrish@doc.govt.nz)

Southern Emu-wrens in Cox Scrub Conservation Park, South Australia

Of thirty (1:1) critically endangered Mount Lofty Ranges Southern Emu-wrens *Stipiturus malachurus intermedius* reintroduced to Cox Scrub Conservation Park, South Australia, in July 2001 (see September 2001 newsletter), 16 have been found and successful reproduction recorded during monitoring of the 540 ha reserve. Fourteen emu-wrens—seven established pairs—were recognised by their colour-bands. Individuals dispersed 0.2–1.4 km from their respective release sites and territories formed by five of the pairs were clustered at the south end of the park. Four of the seven established pairs bred successfully in the 2001–2002 spring–summer breeding season. Of the remaining pairs, one pair's only known nest was predated, one pair hosted a cuckoo and did not re-nest, and there was no evidence of breeding for one pair. Overall, monitoring revealed 10–11 fully-grown young (5 males, 5–6 females) from 8–9 known/inferred clutches, including some that had dispersed when found and may be attributable to hitherto unknown established pairs. Although mostly pairs (13 putative pairs) were transferred from Deep Creek CP only two of the seven pairs found were also originally trapped as a pair. The small (7 g), secretive and almost flightless emu-wrens are difficult to locate in the extensive dry-heath habitat of the reserve and it is likely that further reintroduced individuals will be found. A supplementary transfer of 10 pairs is planned for July 2002, and monitoring of the source population will be repeated during the 2002–2003 breeding season. The translocation is funded primarily through the Australian Commonwealth Government Endangered Species Program with additional support from the SA Government Department for Environment and Heritage, and Nature Foundation SA. The Conservation Council of SA administers the recovery program. Contact Marcus Pickett (marcus_pickett@bigpond.com).