



Global Re-introduction Perspectives: 2010

Additional case-studies from around the globe
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IUCN/SSC Re-introduction Specialist Group (RSG)





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Re-introduction of captive-bred Malherbe's parakeet to Maud Island, Marlborough Sounds, New Zealand

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Introduction

The Malherbe's parakeet (*Cyanoramphus malherbi*) is a critically endangered New Zealand endemic (Juniper & Parr, 1998; Kearvell *et al.*, 2003) confined to three remnant populations in the South Island (Robertson *et al.*, 2007) and two populations on offshore islands established by the release of captive-bred individuals (Elliot & Suggate, 2007). The species has a long taxonomic history, in large part due to its morphological and phenotypic similarity to the yellow-crowned parakeet (*Cyanoramphus auriceps*) and only recently has been recognized as a distinctive species (Boon *et al.*, 2000). By the time the species was recognized as a separate evolutionary unit, the global population was thought to be around 500 individuals in the wild (Kearvell, 1997 cited in Boon *et al.*, 2000).

As with other *Cyanoramphus* species, introduced predators such as mustelids (*Mustela* spp.) and rats (*Rattus* spp.) and human-induced habitat modification are thought to be the major drivers of the species decline (Grant & Kearvell, 2000). Following the recognition of the Malherbe's parakeet as a distinctive species in urgent need of conservation action, the Department of Conservation in partnership with the Isaac Wildlife Trust, established a captive-breeding program aimed at providing individuals for later re-introduction to offshore islands free of introduced predators (Grant & Kearvell, 2000). Starting in 2005, captive-bred individuals have been released on Chalky Island, Fiordland and in 2007 on Maud Island, Marlborough Sounds. The release of captive-bred Malherbe's



Malherbe's parakeet (*Cyanoramphus malherbi*)

parakeets has provided a unique opportunity to study its biology on island environments free of mammalian predators, which provide a safe environment for this critically endangered species.

Goals

- Goal 1: Establishment of a self-sustaining population of Malherbe's parakeets on Maud Island.
- Goal 2: Geographic expansion of the species.

Success Indicators

- Indicator 1: 50% survival of first founder flock three months after release.
- Indicator 2: Successful breeding on Maud Island within a year of translocation.

Project Summary

Maud Island (also known as "Te Hoiere") is a Scientific Reserve (296 ha) located in the Marlborough Sounds of the South Island, New Zealand and administered by the Department of Conservation. Maud Island was identified as an eligible release site for Malherbe's parakeets due to the presence of remnants of coastal forest (47 ha) and remnants of regenerating forest (220 ha), which contain mature trees likely to provide nesting sites. Three areas of *Pinus radiata* (former pine plantations, 17 ha) and grassland (2 ha) are also present on the island. Maud Island does not have other resident parakeet species, which was considered an important feature to prevent hybridization (Grant & Kearvell, 2000). Most significantly, Maud Island is considered mammalian-predator free except for the sporadic incursions of stoats (*Mustela erminea*) (Elliot *et al.*, 2001). Finally, Maud Island is accessible by boat and helicopter and has a track network that allows monitoring of the parakeets (Ortiz-Catedral and Brunton, 2009).

Starting in March 2007, 68 Malherbe's parakeets bred in captivity at the Isaac Wildlife Trust in Christchurch, were transferred by plane from Christchurch to Blenheim airport and by helicopter from Blenheim airport to Maud Island. Parakeets have been released onto Maud Island on eight occasions. Groups released have varied from three to 14 individuals ranging in age from two months to approximately four years. Although the proportion of males and females varied between releases, an overall even sex ratio has been achieved by the release of 34 females and 34 males. The releases were planned according to the number of fledglings available at the captive breeding facility and consequently, the releases occurred two to 11 months apart and consisted of flocks of three to 14 birds. Prior to release, all parakeets were given a unique metal numbered band and a combination of plastic coloured bands for individual identification. Also, 20 parakeets were fitted with tail mount transmitters prior to release.

Teams of four observers undertook monitoring approximately every two months. Three months after the first release (which consisted of 11 individuals), eight individuals (72%) were confirmed alive, six of them in breeding pairs. The first evidence of breeding behaviour was noticed within a month of release when courtship behaviour was observed in a pair. Subsequently, two actively incubated clutches were found within two months of the first release. The first confirmed

fledged juveniles (3) were recorded three months after the first release. Sightings of unbanded Malherbe's parakeets have been made consistently across the island since. In November 2008, two breeding pairs of unbanded adults were observed nesting near ground level. A clutch of two eggs was confirmed in one nest. Since the first release, Malherbe's parakeets have been recorded foraging in all vegetation types around the island on native and exotic plant species as well as taking invertebrates (Ortiz-Catedral and Brunton, 2009) indicating that captive-bred individuals make use of all available habitats of Maud Island.



Parakeet habitat on Maud Island

Major difficulties faced

- Hard to monitor: Limited access to areas on Maud Island where other critically endangered species occur (i.e. Maud Island frog *Leiopelma pakeka*) meant that monitoring of parakeets had to be restricted to the track network (Ortiz-Catedral & Brunton, 2009) and the shoreline of the island. This means that during the first two years after the first release only limited information was obtained in this low-density population.
- Discrepancies between management priorities by the Department of Conservation and research needs from academics originated conflict over techniques for data collection and the level of acceptable handling of individuals. Such situation developed an agreement over a minimum of research goals to study the biology of this species on an island for the first time. Consequently, the breeding biology of this species remains poorly studied.

Major lessons learned

- Long-term monitoring schemes must be implemented considering the access limitations on site.
- Discrepancies between the management and research approaches need to be negotiated further to encourage further field research for this critically endangered species. Both approaches are complementary and when combined have the potential to advance the improvement of the conservation status of Malherbe's parakeets.

Success of project

Highly Successful	Successful	Partially Successful	Failure
√			

Reason(s) for success/failure:

- The re-introduction of captive-bred Malherbe's parakeets on Maud Island has resulted in an increase of the global population of this taxon.
- In addition, the geographic range of the species has been expanded

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