



# 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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## The history and success of noisy scrub-bird re-introductions in Western Australia: 1983-2005

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### Introduction

The noisy scrub-bird (*Atrichornis clamosus*) is a small, sexually dimorphic, semi-flightless obligate insectivore, endemic to the south coast of Western Australia between Two Peoples Bay and Cheynes Beach east of Albany. The scrub-bird occupies dense low forest and scrub vegetation that provides for cover, nesting habitat and well developed leaf litter invertebrate food resources, generally in long unburnt vegetation. The scrub-bird is a winter breeder, and has a low fecundity with each breeding female producing only a single offspring in a year (Danks, 1997). Territorial males sing loudly and frequently during the breeding season and counts of these males provide an index to the total population. The scrub-bird is listed under CITES App. I, as Vulnerable by the IUCN and Australian Commonwealth, and as Endangered by the Western Australian Department of Environment and Conservation. Following 72 years without records, the species was rediscovered at Two Peoples Bay in 1961, when the population index was 45 (around 100 individuals). Since then, re-introductions and habitat management have led to the population index reaching 770 in 2001, however wildfires between 2000 and 2005 significantly impacted over half of the optimal scrub-bird habitat in the Albany area, leaving a population index of 343 in 2005 (Burbidge *et al.*, 2005).

### Goals

- Goal 1: To develop translocation techniques and strategies for the scrub-bird based on wild-caught individuals.
- Goal 2: To increase the total population size, with the long term goal of removing the species from the threatened list.
- Goal 3: To establish geographically distinct populations, in order to



Male noisy scrub-bird © A. Danks

reduce the impact that the loss of any sub-population has on the overall population.

## Success Indicators

- **Indicator 1:** Techniques developed for routine capture, holding, transporting and monitoring.
- **Indicator 2:** Source populations able to withstand removal of birds.
- **Indicator 3:** Singing males still present in the release area in the season following their release. This allows assessment of habitat suitability before release of females.
- **Indicator 4:** Number of singing males at the release site exceeds the number of males released. This is the only practical indicator of recruitment.
- **Indicator 5:** Habitat is protected from wildfire and potential predators, with specific fire protection and predator control strategies in place.
- **Indicator 6:** Improved conservation status reflected in IUCN categories and in the long term delisting.

## Project Summary

Following a 5-year captive breeding trial that produced only one additional scrub-bird, it was realised that creating new populations would require wild-caught birds.

**Table 1: Summary of Noisy Scrub-bird translocations and their outcome**

Translocation Site	Source	Release Years	No. of Birds (M:F)	Success/Fail (year number of males exceeded number released)
Manypeaks	Lakes, Mt Gardner	1983,1985	31 (18:13)	Success (1988) (despite major wildfire in 2005)
Nuyts	Mt Gardner, Lakes	1986,1987	31 (16:15)	Fail
Quarram	Mt Gardner, Lakes	1989,1990	26 (15:11)	Fail
Mt Taylor (1)	Mt Gardner, Lakes	1990,1991, 1992	12 (6:6)	Success (1993) (lost after wildfire 1994)
Bald Island	Mt Gardner	1992,1993, 1994	11 (8:3)	Success (1997)
Mermaid	Mt Gardner	1992,1993, 1994	10 (8:2)	Success (1999)
Stony Hill	Mt Gardner	1994	5 (5:0)	Fail
Darling Range (8 separate sites)	Mt Gardner, Angove, Manypeaks	1997,1998, 1999,2000, 2001, 2002, 2003	80 (60:20)	Fail (most sites) (Singing males persisted at several sites, evidence of breeding at one site)
Porongurup	Mermaid	2006	8 (8:0)	Fail (wildfire in first year)
Mt Taylor (2)	Mermaid	2007	5 (5:0)	Fail
<b>TOTAL</b>			<b>219 (149:70)</b>	

Fortunately, the population at Two Peoples Bay Nature Reserve was increasing at the time, indicating it might be capable of sustaining the removal of individuals for a translocation program. Capturing the semi-flightless, cryptic scrub-bird presented a major challenge. Only two had ever been caught alive. However, techniques were developed for the routine capture of adult males and females and these basic methods have been used in all subsequent translocations (Danks, 1994 & 2000).



Wildfire at Two Peoples Bay in 2006 © S. Comer

Nevertheless, over the years these methods, plus transport and holding techniques, have been modified to improve their effectiveness.

**Implementation:** Between 1983 and 1989 founder groups of around 15:15 were released at each of three sites (Table 1). This strategy was revised in order to reduce capture effort and the impact on the source population of the removal of relatively large numbers of birds, particularly females (Danks, 1994). From 1990 smaller numbers of males were released first at a new site to ‘test’ suitability of habitat. The persistence of males through to the next breeding season indicated that the habitat provided suitable food resources to support scrub-birds, and also that there were no significant predation issues. Females were then released in the second year. Individual captured birds were held temporarily (up to two weeks) in aviaries near the capture site. The health of each bird was monitored through observation of their behaviour in the holding aviary as well as general inspection in the hand. In later years more rigorous health screening was carried out. The birds were transported to the release site (often remote and difficult to access) in padded carry boxes by 4WD vehicle, boat, helicopter and on foot where they were released directly into dense vegetation (hard release). Selection of translocation sites was based on visual assessment of habitat structure (vegetation post-fire age, density of cover), similarity to known scrub-bird habitat, assessment of leaf litter invertebrates (not all sites), and capacity of management with respect primarily to fire management, and control of predators (Danks, 1994 & 2000; Danks *et al.*, 1996). In total 219 birds have been released in nine areas (Table 1). There were only two mortalities, which were confirmed by autopsy to be individuals carrying high parasite burdens and therefore more likely to be affected by the stress of capture and handling. The low rate of loss indicates that the processes of capture and handling were appropriate.

**Post-release monitoring:** At release sites the regular counting of singing males in the years immediately following release determined both the subsequent



Noisy scrub-bird with transmitter © A. Berryman

release of females and in the longer term whether the translocation had been successful (Table 1). From 1992 the movements of translocated birds were monitored using radio-telemetry. This was usually only useful for the first few weeks as the transmitters have limited attachment life, and generally battery life is restricted to 4-6 weeks. Of the large number of birds that were radio-tracked following release several provided information on immediate post-release survival. At one site

in the Darling Range two individuals were predated within days of release, but it was not possible to identify the predator.

Monitoring of the source populations was also a key aspect of this program. Between 1983 and 1999 Two Peoples Bay Nature Reserve (TPBNR) provided a total of 168 birds (110 males:58 females) for the re-introduction program. The Mt Gardner sub-population provided 138 of these, 30 came from the Lakes sub-population). The effects of this removal were monitored by annual census of the territorial males, and by documenting the number of days taken for a territory to be re-occupied by another, previously non-singing male. Despite the removal of birds the population index continued to increase on Mt Gardner until 1996, when it started to decline. No more birds were captured from this area after 1999 in order to allow the sub-population to recover. Since then birds have been sourced from other sub-populations in the Albany area including Manypeaks (10), Waychinicup NP (13), and Mermaid (14) which were begun as re-introductions, and Angove-Normans (14). The Angove-Normans and Manypeaks areas were impacted by wildfires in 1999 and 2004 respectively, but monitoring of birds in the Waychinicup and Mermaid sub-areas suggest no long term issues with removal of birds.

### Major difficulties faced

- Despite refinements over the years each translocation event required considerable time and individual effort for release site survey, assessment and selection; capture and care of captured birds; radio-tracking and monitoring of release sites; monitoring of source populations.
- Short term and unreliable funding resulted in large turnover of technical staff, and loss of skills from the program. Considerable time and effort were constantly required to ensure the program was adequately funded.
- Difficulties in monitoring survival of birds post release - which was almost completely reliant on being able to find singing males. This is particularly

difficult at sites distant from Albany, partially due to the lack of experienced survey personnel and extensive release area habitat requiring survey effort.

- Difficulties in determining optimal release habitat qualities - for example, leaf litter food resources have been assessed by wet-pit trapping of invertebrates, but these trapping methods are no longer viewed favourably by ethics committees. Knowledge of vegetation types able to support scrub



**Alan Danks with local community members at Mt. Taylor Release site in 2007 © A. Berryman**

-birds has grown with experience. However, the suitability of release site habitat is still difficult to predict.

- Three translocation sites, Mt. Manypeaks, Porongurup and Mt. Taylor were impacted by wildfires, as has the Angove-Normans source population. Despite pre-suppression fire management and increased fire fighting resources over the period of the re-introduction program, wildfires are increasingly likely to impact on scrub-bird populations and re-introduction sites because of the well documented and ongoing decline in rainfall in south-western WA in recent decades due to global warming.

## Major lessons learned

- While some translocations have failed, the overall strategy of establishing distinct sub-populations has been extremely successful in improving the status of the scrub-bird.
- The volume of work required to complete monitoring of source populations and released birds, in addition to that required to carry out the translocation, could not be achieved without the input of volunteers.
- Close monitoring of the impact of the removal of birds is essential to ensure that source populations are not depleted. Knowledge of vegetation types able to support scrub-birds has grown with experience. However, the suitability of release site habitat is still difficult to predict accurately.
- Management of release areas, particularly fire management and feral predator control, is critically important and requires ongoing liaison and communication with land managers.
- Capacity of land managers to manage threatening processes in an active adaptive management framework is enhanced through regular communication and involvement in recovery team meetings and communication with the recovery team.

# Birds

- A multi-species recovery team that deals with species occupying similar habitats or geographical areas, and faced with similar threats, has been beneficial to the program by facilitating knowledge transfer, ready sharing of equipment and facilities, and coordinating recovery efforts across these species.

## Success of project

Highly Successful	Successful	Partially Successful	Failure
	√		

### Reason(s) for success/failure:

- Overall this project has been successful. Translocation (introduction and re-introduction) has increased the population size, area of occupancy and extent of occurrence of scrub-birds such that wildfires have not resulted in the total loss of the species.
- The project has seen the development of translocation techniques and skills that enable birds to be captured and re-located successfully.
- The project is not considered highly successful as there are still issues with determining what is likely to be suitable habitat for translocations.

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