# TRANSLOCATION PROPOSAL FOR THE NOISY SCRUB-BIRD *ATRICHORNIS CLAMOSUS* 2005-2007

Sarah Comer & Alan Danks
On Behalf of the South Coast Threatened Birds Recovery Team

## 1. Summary

Translocations have been a fundamental factor in the successful recovery of the Noisy Scrub-bird *Atrichornis clamosus* (VU). In the Albany Management Zone [AMZ] (Figure 1) the annual population index, or number of territorial males, for this species increased from143 in 1983 to 765 in 2001 (Figure 2). Not only have translocations resulted in an increased area of occupancy for the species, but they have also given rise to a number of established sub-populations within the AMZ, with at least one of these (Manypeaks) larger and covering a greater area than the parent Mt Gardner population.

Suitable habitat for scrub-birds in the AMZ is limited, from the Mt Martin-Gull Rock area in the west to the north of Waychinicup National Park near Cheynes Beach and Bald Island in the east (Figure 1). An estimated 13 000 ha of the 28 000 ha of remnant vegetation in the AMZ is estimated to provide optimal habitat for scrub-birds. It is possible that habitat in other reserves in the Albany area, namely Porongurup National Park and Bakers Junction Nature Reserve may be suitable for scrub-birds, based on dense vegetation structure, post-fire age and well developed leaf litter beds.

The impact of recent wildfires on the Noisy Scrub-bird population highlights the importance of the translocation program in securing this species against the ever-increasing risk of wildfire. Despite significant resources currently dedicated to management of habitat in the AMZ, wildfire is still a key threatening process for scrub-birds and increasing the number of sub-populations will be one of the most effective strategies in reducing the impact of fire on the total population.

## 2. Name and affiliation of proponent

Sarah Comer and Alan Danks, CALM South Coast Region, on behalf of the Western Australian South Coast Threatened Birds Recovery Team.

## 3. Background

The Noisy Scrub-bird Recovery Program is widely recognised for its success in securing the status of this species. Since the scrub-bird was rediscovered at Two Peoples Bay in 1961 intensive management of habitat and a translocation program, which commenced in 1983, has seen the population index for the species increase from below 100 to 765 in 2001 (Figure 2), and the downlisting of the Noisy Scrub-birds from Endangered to Vulnerable in 1998.

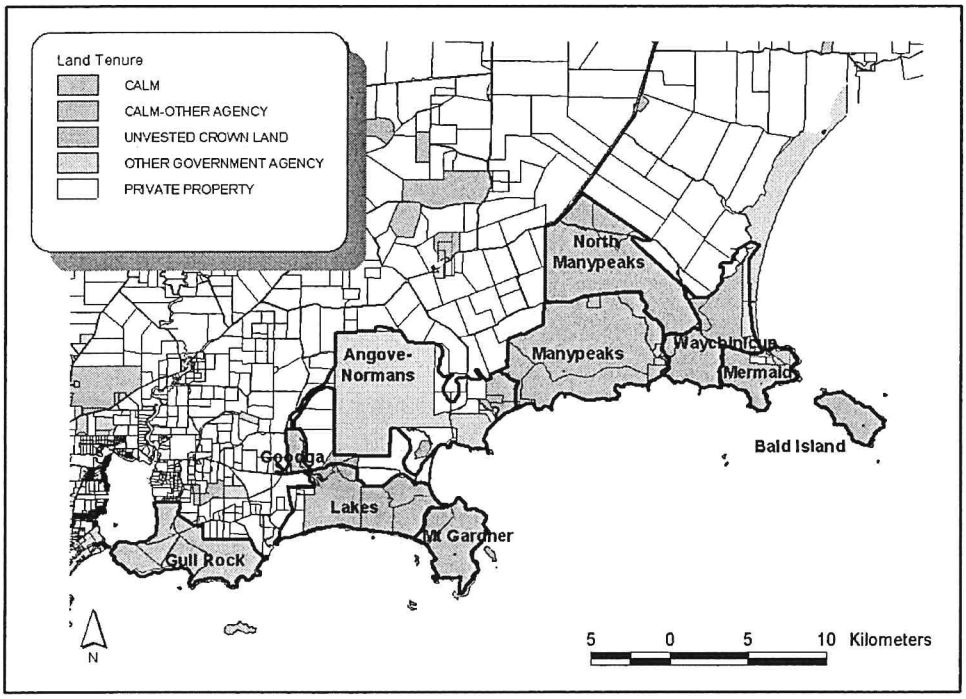


Figure 1: The Albany Management Zone [AMZ] and land managers

To date the translocation of scrub-birds has facilitated the growth and spread of the scrub-bird population in the Albany area (Figure 2). The Mt Manypeaks sub-population, the result of a translocation between 1983 and 1985, encompassed around 55% of the total population in 2001. Steady growth has been recorded in other AMZ sub-populations established through translocation of small founder groups. Scrub-bird population indices were increasing for both Mermaid and Waychinicup sub-populations when these areas were last counted in 2001. Bald Island, the only non-mainland translocation site, has also seen very successful establishment of scrub-birds with 59 territorial males counted during the 2004 census of the Island.

Despite the success of translocations in the AMZ there have been a number that have not been successful, including Quarram (1989 & 1990), Nuyts (1986 & 1987) and Stony Hill (1994). Noisy Scrub-birds have also been translocated to the Darling Range (1997 to 2003) and although birds have persisted in translocation sites for up to four years there is not yet any evidence that breeding has occurred.

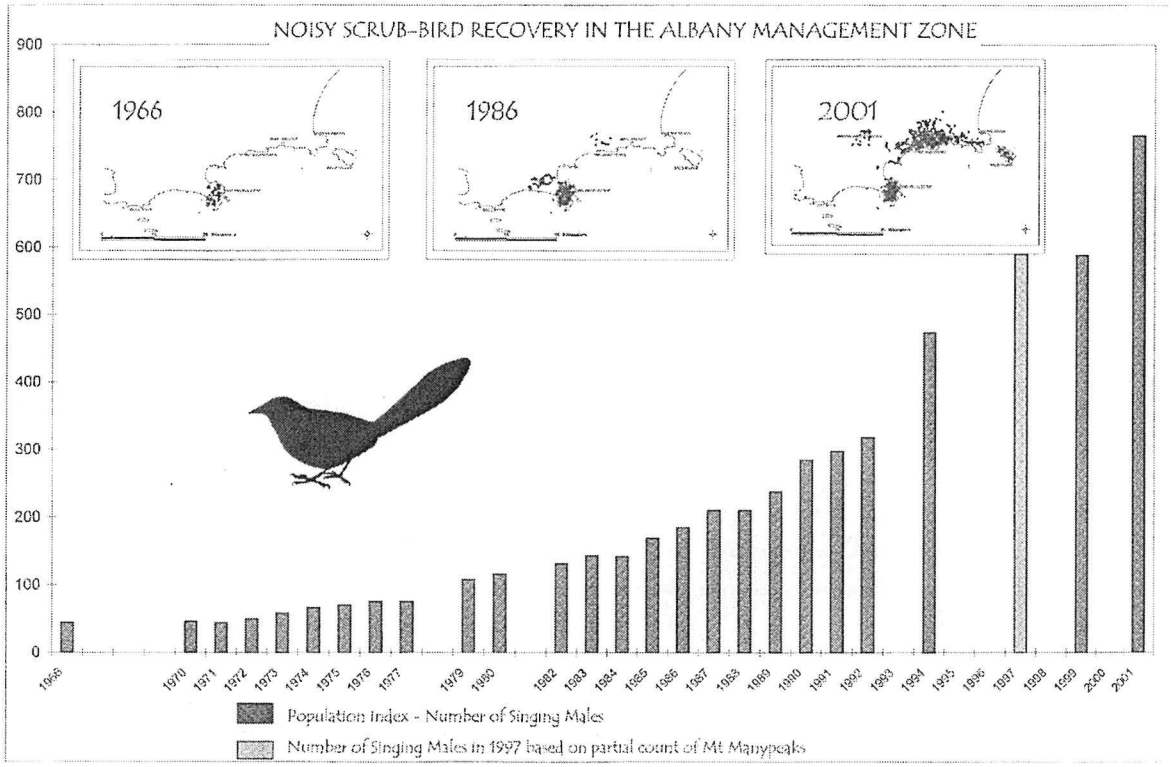


Figure 2: Recovery of Noisy Scrub-birds in the Albany Management Zone

Wildfires have had a significant impact on Noisy Scrub-birds in the AMZ in the past five years (Figure 3). In 2000 a wildfire in the Angove Water Reserve and Two Peoples Bay Nature Reserve resulted in a loss of approximately 10% of the total population of scrub-birds. In 2001 a prescription burn impacted on the habitat of approximately 27 birds counted during that year's surveys. In 2003 the loss of the 1200 ha of habitat remaining in the Angove Water Reserve resulted in the loss of a further 22 singing males.

A wildfire that started on Mt Manypeaks in late December 2004 burnt until mid-January 2005, resulting in the loss of approximately 4500 ha of scrub-bird habitat in the Manypeaks sub-area of the AMZ (Figure 3). In this single wildfire an estimated 397 territories of those present in 2001 were lost. The loss of habitat in the 2004 wildfire combined with other recent wildfires highlights the need to establish new scrub-bird populations in order to ensure that the impacts of future wildfires are minimised.

The wildfires mentioned are just a small number of the recent incidents that have either had potential or realised potential to impact on scrub-bird habitat in the Albany Management Zone. A summary of all wildfires (Appendix I) illustrates the increasing incidence of ignition in the AMZ in recent years. In summary wildfires in the last five years have resulted in the loss of approximately 60% of the total scrub-bird population in the Albany Management Zone.

A recent reassessment of the status of the Noisy Scrub-bird following the recent wildfire has found the species meets the IUCN criteria for Endangered.

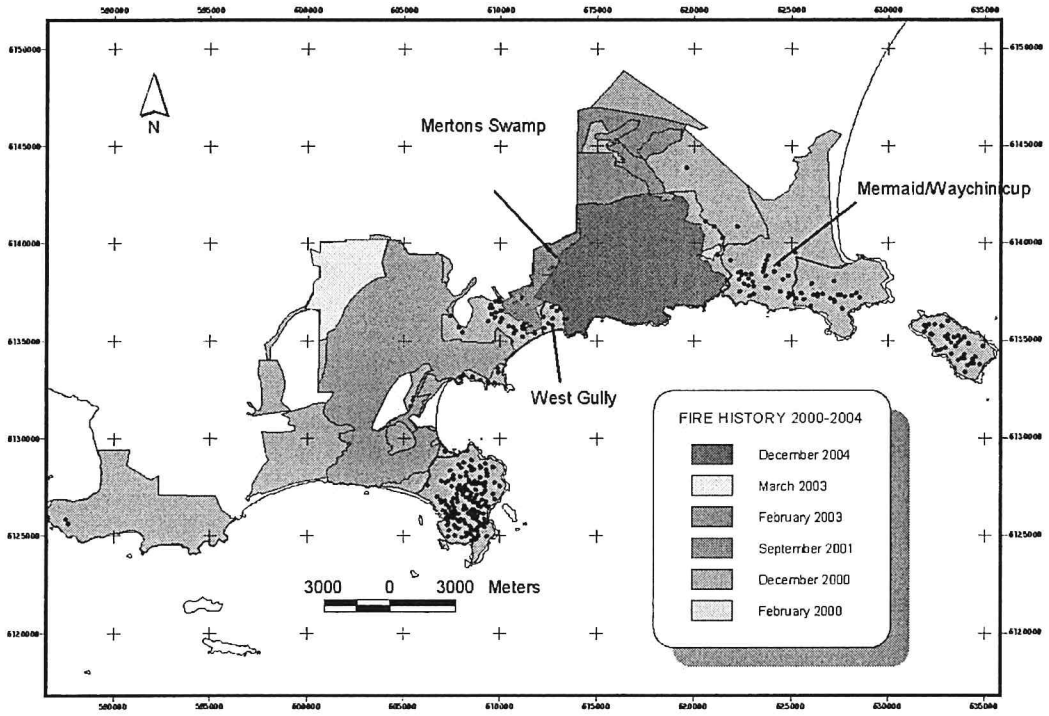


Figure 3: Recent fire history in the Albany Management Zone 2000-2004 and potential sites for sourcing birds for translocation.

## 4. The translocation

Several areas in the Albany Management Zone are under consideration for translocation.

(a) *Status of land at proposed translocation site*

- Gull Rock: Currently UCL proposed National Park. Suitable habitat in this area also includes Mt Martin Reserve, which is currently managed by the City of Albany.

- Porongurup National Park: Porongurup National Park managed by CALM Albany.

- Bakers Junction Nature Reserve: A Class Nature Reserve managed by CALM Albany.

(b) *Choice of source population and translocation site*

Source population

Due to the recent wildfires the areas that are being considered as sources for birds are Mermaid-Waychinicup, Merton's Swamp and the West Gully-Norman's Creek area (Figure 3). These sub-populations will be surveyed prior to capture work commencing (April-May) and a decision on which area to use as a source of birds made on the results.

Two of the potential capture sites, Merton's Swamp and West Gully, abut the 2004/05 Manypeaks burn boundary and may have provided refuges for scrub-birds which managed to escape the fire. Monitoring of singing males in areas on the boundaries of previous fires indicate these birds usually do not persist beyond the first year and their ultimate fate is unknown (Comer & Danks, 2001). They thus provide a good potential source of birds for translocation.

The number of birds occupying the areas mentioned will not be known until post-fire population monitoring can be conducted in late autumn 2005. However, if surveys show a significant increase in numbers above the last census (2001), then these birds will be considered for translocation, as there will not be suitable adjoining habitat for them to move into for at least five years. Recent trends in population indices for potential source populations give some indication of sub-populations that may have sufficient birds present to allow removal of a small number of males (Table 1). Mount Gardner is not being considered as a potential source of birds for this translocation.

| | Population Index | | Comment |
|---|---|---|---|
| | 2001 | 2004 | |
| Mt Gardner | 164 | 131 | May still be declining |
| Mt Manypeaks | 427 | Not surveyed | Burnt in wildfire; index may be <30 |
| Waychinicup | 32 | Not surveyed | Likely to have increased |
| Mermaid | 21 | Not surveyed | Likely to have increased |
| Angove-Normans | 79 | 34 | Likely to have increased |
| Bald Island | 37 | 59 | Logistically difficult |

Table 1. Population trends in potential source populations.

Potential translocation sites

Three potential scrub-bird release sites have been identified in the Albany area. The availability of food resources at all three potential release sites will be assessed in March-April 2005. This data, in conjunction with more detailed assessment of habitat characteristics at release areas, will be used to evaluate the most appropriate release site for releases.

Mt Taylor

In 1988 a single male Noisy Scrub-bird was heard calling in Herald Gully, on Mt Taylor. This bird had dispersed from the Two Peoples Bay area. In 1989 a bird was singing in the same area and a decision was made to translocate a number of individuals from Two Peoples Bay. In 1990 five males and one female scrub-bird

were translocated from Mt Gardner to Mt Taylor. In 1992 one male and three females were released at Mt Taylor.

The population index for this AMZ sub-population is illustrated in Figure 4. A wildfire in the Gull Rock area in January 1995 resulted in the loss of approximately 800ha of habitat. Following the fire five territorial males were heard during the winter months of 1995. This had reduced to three (outside the burnt area) in 1996 but these birds did not persist in the long term. Monitoring from 1997 to 2003 failed to find any sign of birds in the original release area

However, in 2001 two male Noisy Scrub-birds were defending territories in the Mt Martin area, approximately 6.5 km west of the original scrub-bird location on Mt Taylor. In 2002 and 2003 there were also two males here, and in 2003 a male Noisy Scrub-bird was heard in Herald Gully, near the area occupied by the first male heard in the area in 1988. However, no male scrub-birds were heard in the Mt Taylor or Mt Martin areas in 2004.

A male Noisy Scrub-bird has been defending a territory on private property to the north-east of the Gull Rock Reserve for at least three years, and possibly longer (Sanders, pers. comm.).

Given that the area has supported scrub-birds in the past and that the post-fire age of vegetation in the Mt Taylor area is now 10 years it is considered that habitat in the Gull Rock area is likely to be suitable for scrub-birds.

Supporting data on the suitability of habitat at Gull Rock can be obtained from the invertebrate data collected by Danks & Whisson (1997). An analysis of abundance of ten main invertebrate groups favoured by scrub-birds (Danks & Calver, 1993) found no significant difference between site abundance data from Mt Gardner and Mt Taylor for samples collected in November 1995. Conducting a similar temporal snapshot survey of the same sites prior to the proposed release will allow some level of confidence in determining if suitable scrub-bird food resources are present.

Porongorup National Park

Habitat that might be suitable for scrub-birds has been identified in the Porongorup National Park. This is largely associated with gullies on the southern slopes. The vegetation is quite different in composition to the vegetation closer to the coast, but structurally is likely to be suitable for scrub-bird habitat. Further work on vegetation structure and other habitat variables needs to be completed to adequately assess the Porongorups as a suitable release site.

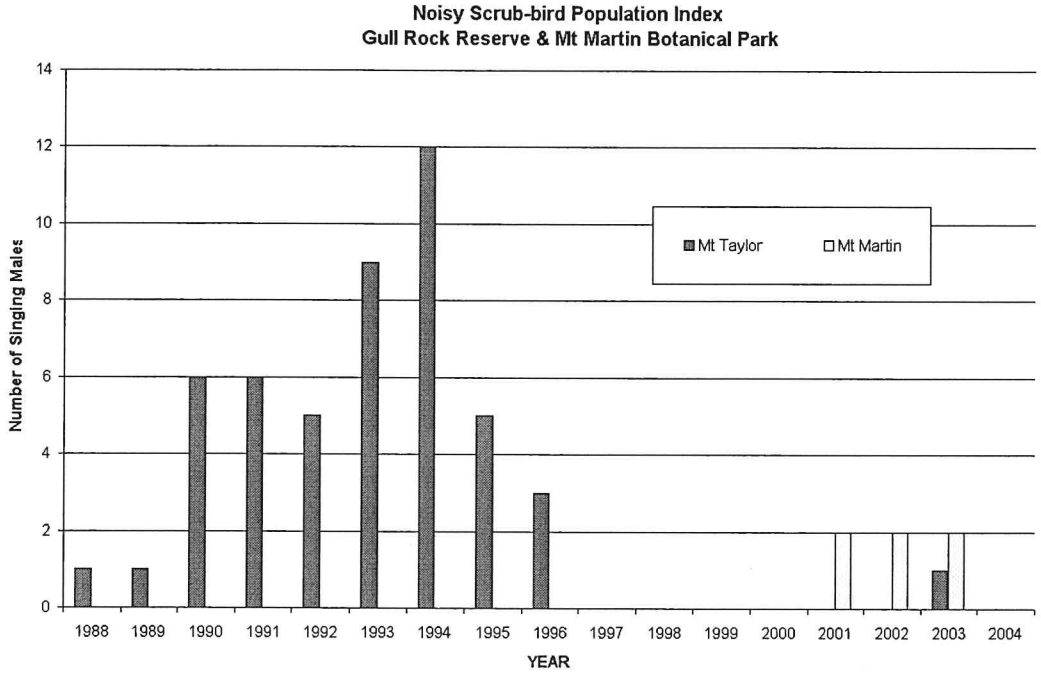


Figure 4: Noisy Scrub-bird population index for Mt Taylor (Gull Rock Reserve) and Mt Martin 1988-2004.

## Bakers Junction Nature Reserve

Bakers Junction is an 'A' Class Nature Reserve which lies approximately 10km north-north west of Gull Rock Reserve. There is a high degree of similarity between the riparian and swampy habitat in this reserve and areas known to support scrub-birds in other parts of the Albany Management Zone (for example the Angove Water Reserve and the flats north of Mt Manypeaks).

There are no existing corridors that would facilitate natural movement to this area from other Noisy Scrub-bird habitat in the Albany Management Zone.

(c) *Genetic considerations*

McLoughlin (2003) found indications of loss of genetic diversity in the Mt Gardner population, consistent with the historical decline of the species. However, the study also found that the current levels of genetic diversity and levels of inbreeding were not likely to significantly impact on the future of the species. Ongoing collection of genetic material was recommended for future monitoring of inbreeding levels.

McLoughlin's genetic study was limited to the Mt Gardner population, and any future genetic work should examine levels of inbreeding and genetic diversity in sub-populations resulting from both translocations and natural dispersal from the original Mt Gardner parent population. Collection of material from any birds captured in this translocation will facilitate increased understanding of Noisy Scrub-bird genetic diversity.

(d) *Causes of extinction*

Historically, clearing of native vegetation for agriculture and inappropriate fire regimes have been identified as major causes of the decline in numbers and reduction of the Noisy Scrub-bird's range (Danks *et al.,* 1996). In particular an increase in frequency, scale and intensity of wildfires experienced in the last 200 years is likely to have contributed to the decline of this species, which generally requires vegetation of a post-fire age greater than seven to ten years.

The establishment of other populations in the landscape by translocation is the most practical and effective way of securing the Noisy Scrub-bird population in the longer term. Additional populations also reduce the potential impact of wildfire on the total population.

Fox predation is not thought to be a major threat to the Noisy Scrub-bird however, in the immediate post-release period reducing the possible impact of predators can assist establishment. Two of the proposed translocation sites, Gull Rock and Porongurup NP, are currently baited under CALM's Western Shield program (aerial baiting four times per year, 4 baits/km$^2$) and this should minimise any possible effects of predation by foxes following translocation.

(e) *Methods*

This translocation will use established techniques to capture male Noisy Scrub-birds. It is proposed to catch scrub-birds between May and July, using modified mist-nets and playback.

A maximum of ten male scrub-birds will be released, dependent on release site selected and pre-capture monitoring results.

Once caught, birds will be maintained in aviaries at Two Peoples Bay until groups of five birds are available for translocation, and suitable weather exists at the release site.

Techniques and procedures for maintenance of scrub-birds in aviaries are well established. The health of all birds will be monitored whilst in captivity. The diet will include a range of invertebrates including meal worms, crickets, beetles, slaters and cockroaches. Maintenance of birds is not anticipated to be a problem, as Noisy Scrub-birds have been kept successfully in captivity for up to three weeks since the translocation program commenced in 1983.

Birds will be transported in transport boxes used for the Noisy Scrub-bird project. As the release site will be a maximum of 40km (Porongorups) from the holding aviaries birds can be released in groups of five as weather permits.

All birds will be fitted with bird bands supplied by the Australian Bird and Bat Banding Scheme, to enable reliable identification of individuals through time.

Scrub-birds will be fitted with radio-transmitters to allow post-release monitoring at the release site. In addition recordings of vocalisations will be obtained.

The second (and third) year of this translocation will see females released where males have persisted for a season. In some areas further male releases may also be considered.

A summary of the required resources for the translocation is listed in Attachment 1.

(f) *Monitoring*

The source population needs to be monitored closely to determine its ability to withstand the removal of birds. This will be conducted in late April and May, prior to capture work, and again in July following removal of birds.

At the translocation site, the presence of calling birds will be mapped at regular intervals, with more intensive monitoring and mapping during the period in which transmitters stay attached to birds. Recordings of singing males will also be made. Ongoing monitoring of the release site will be continued throughout the breeding season.

Ongoing annual monitoring of the release site will continue as part of the annual works program for the Noisy Scrub-bird program.

**5. Funding**

Funding for this pre-capture monitoring component of this work will be through the South Coast Threatened Species Priority Project. Further funding is currently being sought through a special submission to Cabinet to further support post-fire translocation work and post-release surveys. This translocation will be supervised by CALM Albany staff, and logistic and operational support will also be provided from CALM's Albany office.

## 6. Animal Ethics Committee approval

An application to cover the proposed translocation has been submitted to the CALM Animal Ethics Committee (see Attachment 2).

## 7. Endorsements and Approvals

(a) *Proponent's signature*

..... Date

Sarah Comer & Alan Danks, for the South Coast Threatened Birds Recovery Team

(b) *Endorsements*

i) This project has my endorsement; CALM Regional resources committed here are available for this purpose.

..... Date

Alan Danks, Regional Leader Nature Conservation, South Coast Region.

ii) This project has my endorsement; CALM Regional resources committed here are available for this purpose.

..... Date

John Watson, Regional Manager, South Coast Region

(c) *Approval*

Approved by Director of Nature Conservation

Date

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## 8. References

Comer, S. & Danks, A. (2001). Noisy Scrub-bird Recovery Annual Report 2001. Unpublished report to EA and the South Coast Threatened Birds Recovery Team.

Danks, A. & Calver, M.C. (1993). Diet of the Noisy Scrub-bird Atrichornis clamosus at Two Peoples Bay, southwestern Western Australia. Emu 93: 203-205.

Danks, A., Burbidge, A.A., Burbidge, A.H., Smith, G.T. (1996). Noisy Scrub-bird recovery plan: Wildlife management program no 12. Department of Conservation and Land Management, Como.

Danks, A. & Whisson, L. (1997). Release site ruveys for translocation of Noisy Scrub-birds to the Darling Range. Unpublished report to the Noisy Scrub-bird Recovery Team.

McLoughlin, J. (2003). Microsatellite diversity of three sub-populations of the vulnerable Noisy Scrub-bird (*Atrichornis clamosus*) in Western Australia. Unpublished Honours Thesis. Curtin University, Perth, WA.

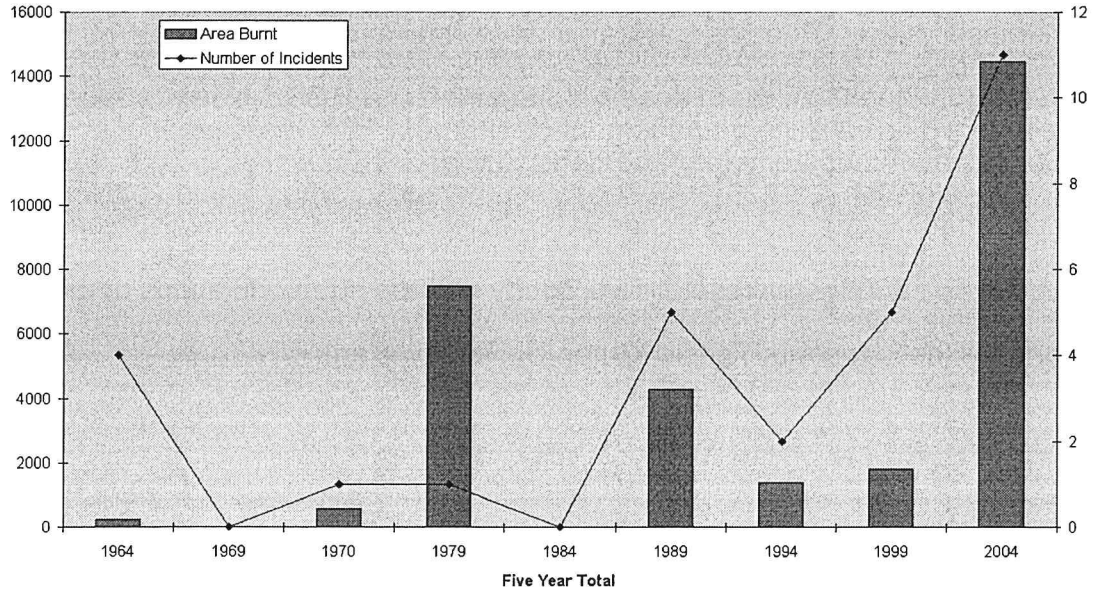
## 9. Attachments

1. Summary of required resources.

2. Application to CALM Animal Ethics Committee for approval for translocation.

Appendix I

**Fire History of the Albany Managment Zone:**
**Incidence and impact of wildfire for five year periods 1960-2004**



**Attachment 1: Summary of resources required for this translocation**

- Resources adequate for the task are available and will be provided by South Coast Region (Albany Work Centre)

1. *South Coast Region*

- membership of, and participation in, the South Coast Threatened Birds Recovery Team
- use of existing infrastructure at Two Peoples Bay
- supervision of capture and monitoring activities in the context of dieback hygiene, etc
- use of bird transporting boxes gear
- catching and monitoring

## Attachment 2: Application for Animal Ethics Committee Approval