CHUDITCH RECOVERY TEAM

ANNUAL REPORT

1997

by
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SUMMARY

This document reports on the sixth year of implementation of the Chuditch recovery plan. During the year financial support continued from Environment Australia's Endangered Species Program, CALM, Perth Zoo and Department of Defence. Studies into the impact of prescribed burning regimes and timber harvesting on Chuditch and other threatened mammals continued in the jarrah forest of south west WA. All impact treatments have now been implemented. Sampling up to 24 months post impact suggest that none of these disturbances have had a detrimental impact on Chuditch abundance or condition. Population monitoring continued at Mundaring, Batalling and Kingston as well as at several sites in the northern jarrah forest as part of the research associated with Operation Foxglove. The captive breeding program continued successfully at the Perth Zoo and 53 young were weaned during the year. Monitoring of the reintroduced populations at Julimar and Lake Magenta continued. The 1996 translocation to Lake Magenta has been successful and preparation for a further re-introduction to Cape Arid National Park is well advanced.

1. INTRODUCTION

This document reports on the sixth year of implementation of the Chuditch recovery plan. A five year review of progress on the Chuditch recovery plan was underetaken by Environment Australia in early 1997 and assessed as being satisfactory.

2. RECOVERY TEAM

The Chuditch Recovery Team met twice in 1997; on 24 June at the CALM Wildlife Research Centre, Woodvale, and on the 20 November at the Perth Zoo. Membership of the recovery team for 1997 was as follows:

Mr Keith Morris	(Chair)	CALM Woodvale
Mr Brent Johnson		CALM Woodvale
Dr Andrew Burbidge		CALM WATSCU
Mr John Gardner		Alcoa
Ms Denise True		WWF
Dr Mark Bradley		Perth Zoo
Mr Bob Hagan		CALM SFR
Mr Kim Williams		CALM CFR
Mr David Mitchell		CALM Swan Region
Mr Brett Beacham		CALM Wheatbelt Region
Mr Peter Orell		CALM Wildlife Branch
Ms Elsa Dexter		Environment Australia

3. RECOVERY PLAN STATUS AND FUNDING

The recovery plan completed its sixth year of implementation in 1997, and was fully funded by Environment Australia, CALM and Perth Zoo. The Department of Defence funded the baiting on the Bindoon military training area, adjacent to Julimar conservation park. A review of the recovery plan was completed in early 1997.

Under the IUCN (1994) criteria, Chuditch are now be regarded as Vulnerable, rather than Endangered, and this status was included in the revised Marsupial and Monotreme action Plan (Maxwell *et al* 1996). The recovery plan objective is now be to downlist its conservation status to Lower Risk (Conservation Dependent) by 2001.

4. PROGRESS ON RECOVERY ACTIONS

Action 1 - Habitat Management

Research into effects of prescribed burning regimes on Chuditch:

Post burn monitoring at Batalling was undertaken in April (12 months post autumn burn) and October. Trap success rates of approximately 5% were similar to those recorded in previous years at that time of year (Figure 1). These data suggest that prescribed burning at this scale (4 000 - 6 000 ha burns) in either spring or autumn has not detrimentally impacted on Chuditch populations. A more detailed assessment of this study will be undertaken in 1999.

As part of the normal silvicultural treatment following timber harvesting all logged coupes within the Kingston study have undergone regenerative burns. These relatively intense but smaller (5-20ha) burns also appear not to have affected Chuditch (Figure 2).

Effectiveness of silvicultural guidelines:

A report on the impact of timber harvesting and associated activities on medium sized mammals in the jarrah forest has been submitted for publication (Morris *et al* 1998). Monitoring continued at the Kingston site every 3 months during the year and the abundance of Chuditch, as estimated by trap success rates, does not appear to have been affected by timber harvesting activities. Post logging trap success rates for Chuditch along road transects has been strongly influenced by the proliferation of other more trappable species such as woylies and possums. It should be noted that trap success rates for all medium sized mammals at Kingston exceeds 60% and that competition for traps may be a factor in previous low Chuditch trap success rates. Operational trials utilising an alternative bait mix have successfully shown that Chuditch abundance is considerably higher than previously thought and that a strong population persists within and around the harvest area (Figure 2).

Rehabilitation after surface mining:

Alcoa:

At all three Alcoa minesites, fauna sightings by field staff are recorded and stored on an Excel database and GIS generated maps. This data has now been incorporated into CALM's threatened fauna database. Anecdotal evidence in the form of increased sightings are becoming more regular from areas adjacent to minesite. It is possible that Chuditch abundance is increasing, however continued monitoring is required to confirm this. During 1997, two Chuditch were sighted at Jarrahdale, 12 at Huntly and three at Willowdale.

Fauna habitat dens and corridors are now routinely constructed at all three mines. Dens consist of one or more logs, stumps, or rocks arranged to provide shelter and burrowing sites for Chuditch and other mammal and reptile species. These are installed at the rate of one per hectare at Huntly and Willowdale minesites, and at 10 per hectare at Jarrahdale. Corridors consist of logs and stumps placed in rehabilitated areas and connecting areas of unmined forest. The use of dens and corridors by fauna will continue to be be monitored as rehabilitation matures.

Worsley:

Worsley is conducting an ongoing regional sampling program encompassing Saddleback Timber Reserve, Marradong Timber Reserve and Quindanning Timber Reserve. A survey of five nights was carried out in July 1997 with no Chuditch captured.

During 1997/98 a baseline survey of Southern Saddleback was conducted. This resulted in a total of eight Chuditch captured over 1,800 trapnights. A survey of the overland conveyor corridor was also conducted over 1997/98. A total of 28 Chuditch resulted from 1,476 trapnights. Each survey consisted of three seasonal sessions of six nights.

In all cases, Chuditch have been individually marked with a small ear tattoo and released at their point of capture. Many animals were recaptured, some up to 10 times, within and between sampling sessions. A total of 144 captures and recaptures of Chuditch up to March 1998 have been made. A comprehensive database including sex ratios, weight, rate of growth, movements, habitats used and breeding has now been compiled. Chuditch have been captured in nearly every habitat type sampled since 1996. These ranged from Jarrah ridges and slopes, various stream zone communities, Wandoo woodlands and granite heaths.

Construction of fauna habitats in rehabilitated mine pits continues at the Boddington Bauxite Mine and is being trialed at the Boddington Gold Mine. No Chuditch captures have resulted from surveys of the Boddington Bauxite Mine rehabilitation to date.

Fauna sighting programs have continued at the Boddington Bauxite Mine, Boddington Gold Mine, refinery and along the overland conveyor corridor. The number of sightings at each site is outlined in the table below.

Site	**1997**	**1998**
Boddington Gold Mine	44	19
Boddington Bauxite Mine	10	11
Refinery	0	4
Overland Conveyor Corridor	20	8

Community involvement:

The Friends of the Chuditch group released their Community Action Plan in February. It was noted by the recovery team that this plan had been prepared with little input from the team and there were errors of fact that need correction. Subsequently the Chair provided comments to the Friends of the Chuditch on the Community Action Plan on behalf of the recovery team. Several of the proposed actions were considered to be beneficial to Chuditch conservation, particularly in the area of public education and the recovery team considered that a co-ordinated and co-operative approach would be appropriate. The "Friends of the Chuditch" community group was invited to nominate a representative to join the Recovery Team. After some time a nomination was received but by the end of 1997 this had not yet been ratified by CALM.

Action 2 - Research into effect of fox baiting

Monitoring of the Batalling Chuditch population continued in April and October as part of other research (Woylie monitoring, impact of prescribed burning on Chuditch). Trap success rates appear to have stabilised at approximately 5% at this site, reflecting a significant increase on trap success rates before fox control was implemented (Figure 1).

Action 3 - Population Monitoring

Batalling: Monitoring undertaken in conjunction with UWA Natural Resource Management students in April (4%) and as part of the annual Fauna Course in October (5%). Population is obviously stable although woylie numbers hinder the capture of alternate species.

Kingston: This site also suffers from woylie overload making it difficult to determine chuditch abundance. Trials of alternate bait are promising. A trial in August showed a significant reduction in woylie captures and an increase in chuditch. Further trapping sessions have shown a significant increase in Chuditch captures indicating a much larger population than previously thought from this area.

Dwellingup: Trapping was undertaken along lines previously monitored by Johnson in 90/91 and Morris et al in 1992. These were comparable to Soderquist and Serena trappings of the 1980's. Only 1 capture was made after some 280 trapnights(0.35%). Whilst this is similar to the 1992 result it is well down on the figures from the earlier sessions.

It may be necessary to investigate the downturn in numbers from what was a reasonably prolific site. The local CALM district will be re-instigating annual monitoring which appears to have lapsed in the 90's. The baiting flightlines that avoid the Murray River valley may also need to be reviewed and/or the presence of ferals studied.

Honeymoon Pool: A one night trap session was undertaken in August 97 as part of a trap modification trial. Trap success of 28.5% showed that a very high density of Chuditch exists in the immediate vicinity.

District Monitoring: Monitoring was undertaken by Mundaring twice in 1997. Trap success remained 2-3%. Low intensity trapping within Yalgorup National Park continues to show the existence of a small population. Monitoring in the Southern Forest Region other than Kingston Block occurred in Moopinup, Tone , Wheatley, Gray, Boyicup and Chitelup forest blocks. Chuditch were captured in Tone and Moopinup only with trap successes of 0.5 and 3% respectively. A review of the previous 5 years trapping data was undertaken within CALM's Central Forest Region and this revealed that 24 of the 33 locations surveyed contained Chuditch.

Operation Foxglove:
De Tores (1998) reports increases of captures of new Chuditch at all the sites where fox baiting is implemented (2, 4 and 6 times per year) compared to unbaited sites where Chuditch numbers are low and stable.

Action 4 - Semi arid Research

No further reports of Chuditch in semi arid parts of WA were received in 1997. Further research will be associated with the translocated populations at Lake Magenta and Cape Arid. An unmarked Chuditch was trapped at Lake Magenta in February 1997 (before breeding had occurred) indicating that a small number of Chuditch must have persisted despite the belief prior to the translocation program, that they no longer existed at this site.

Action 5 - Captive Breeding

The captive breeding program at Perth Zoo has continued successfully through 1997. A total of 41 Perth Zoo bred chuditch were released into Cape Arid over a two month period by CALM; 20 were released in March, and 21 in April. Glen Gaikhorst accompanied the Chuditch to Cape Arid for the second release.

Zoo veterinarians again spent five days with CALM at Julimar Conservation park during the annual monitoring of the reintroduced Chuditch population in July. Trapped animals were microchipped if required, bled for health examination and toxoplasmosis titers, weighed and had cloacal cultures taken.

Action 6 - Translocation

Julimar: Annual monitoring took place in July 1997 and at this time a handover to CALM's Mundaring District was undertaken as part of their committment to the Western Shield program. Funding and assistance will continue to be forthcoming from the Recovery Team. Trap success of 4.2% (Figure 3) is a further increase on previous figures and combined with the fact that all females had a full tally of PY indicates a vibrant and strong population. Reports of sightings and roadkills are also becoming more common around the Julimar area. Proposed rural developments on the east side of Julimar may have implications for ongoing fox control in this area. Mundaring District are liaising with relevant planning authorirties to ensure that fox control can continue in the area.

Lake Magenta: The initial release of captive bred Chuditch to Lake Magenta Nature Reserve was originally reported on in the 1996 annual report. Following this translocation further releases and considerable monitoring have been undertaken. A further 20 individuals were released in April 97 and another 15 in August. This combined with 2 Chuditch released during the press release in late 1996 takes the total translocated to 66 individuals.

Radiotracking of collared individuals released in October 1996 continued through the first quarter of 1997. Flights were conducted over the reserve in late 1996 and on 3 Feb, 11 Mar and 8 Apr 1997. These flights were particularly successful in locating

individuals and ascertaining if dead or alive. Ground crews were then able to confirm location and either recover carcass or check on refuge use. By April most collars had either been removed or had run out of battery life. The use of aircraft was absolutely invaluable during this monitoring phase. It should also be noted that collars performed well with no premature failures recorded.

A range of movement has been recorded with a few individuals having travelled over 20 km from release point whilst others have settled into fairly well defined home ranges. All radio-tracking data has been collated and input in a database awaiting more detailed analyses.

Of the initial 20 collared animals a total of 5 deaths were recorded. The only predation events occurred soon after release with the subsequent 3 mortalities appearing to be starvation or some other illness. The last 2 of these were noted in February although actual time of death was at least several weeks prior. No death was recorded after the 3 Feb flight. This data indicates that some element of fast-track natural selection may be at work whereby some captive bred individuals find conditions too "tough" and are eliminated relatively quickly. It should also be noted that 4 of the 5 deaths were females. This could suggest that the larger more aggressive males may out compete the female for prime territories and other resources.

Monitoring by traplines was undertaken 4 times in 1997. (Feb/May/Aug/Nov). Results of these sessions indicate the Chuditch are persisting at Lake Magenta and that breeding did occur. By November weights of captured Chuditch had returned to near or equal to release figures. Three juveniles, presumably the offspring of translocated females were also captured in November.

Cape Arid: Under the Western Shield Fauna Recovery Program it was proposed to undertake a translocation to Cape arid National Park. This also met an objective of the recovery plan to establish "at least one self-sustaining population outside the present Chuditch distribution". The park was reconnoitred in November 1997. All trapping results and anecdotal evidence alluded to Chuditch having been absent from the area for a considerable time. The area was considered suitable for an experimental release and this proceeded in early 1998. Early results are most positive.

5. BUDGET

The recovery program was fully funded for 1997 with the Environment Australia Endangered Species Program contributing $ 86 200, primarily for operating costs and a portion of technical officer salary, and CALM contributing $ 51 800, primarily for salaries for a research scientist, technical officer and district staff, and vehicle standing fees. The Perth Zoo contributed $ 10 900 through staff salaries and vehicle running costs. The Environment Australia grant included $ 26 400 for assistance with the maintenance of the captive breeding and health management program at the Perth Zoo. The Department of Defence contributed $ 4 500 to the fox baiting program at the Bindoon military training area.

6. CONCLUSIONS

The implementation of the Chuditch recovery plan proceeded satisfactorily in 1997. The focus during the year was on the translocation and monitoring of Chuditch in the semi arid wheatbelt. Ongoing population monitoring at all forest sites was continued and investigations into the effects of prescribed burning and timber harvesting also remained a high priority.

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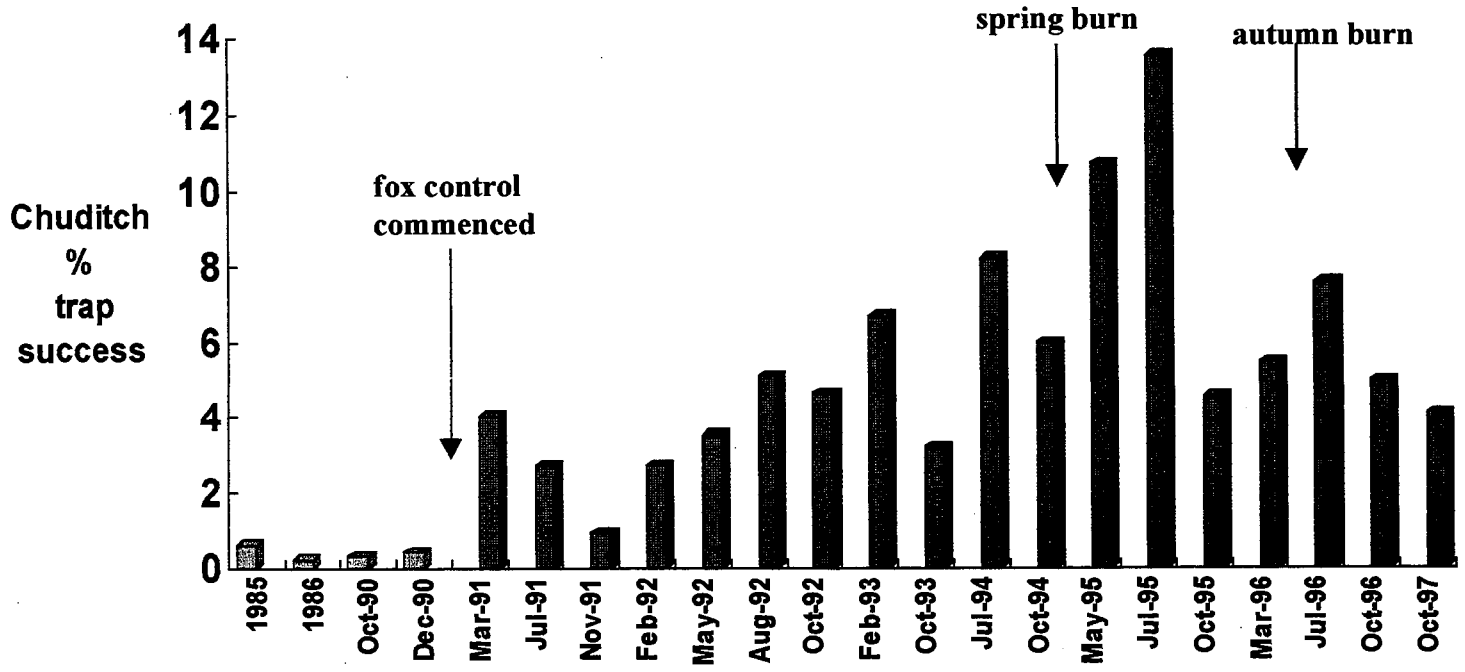

Figure 1 Chuditch trap success rates at Batalling

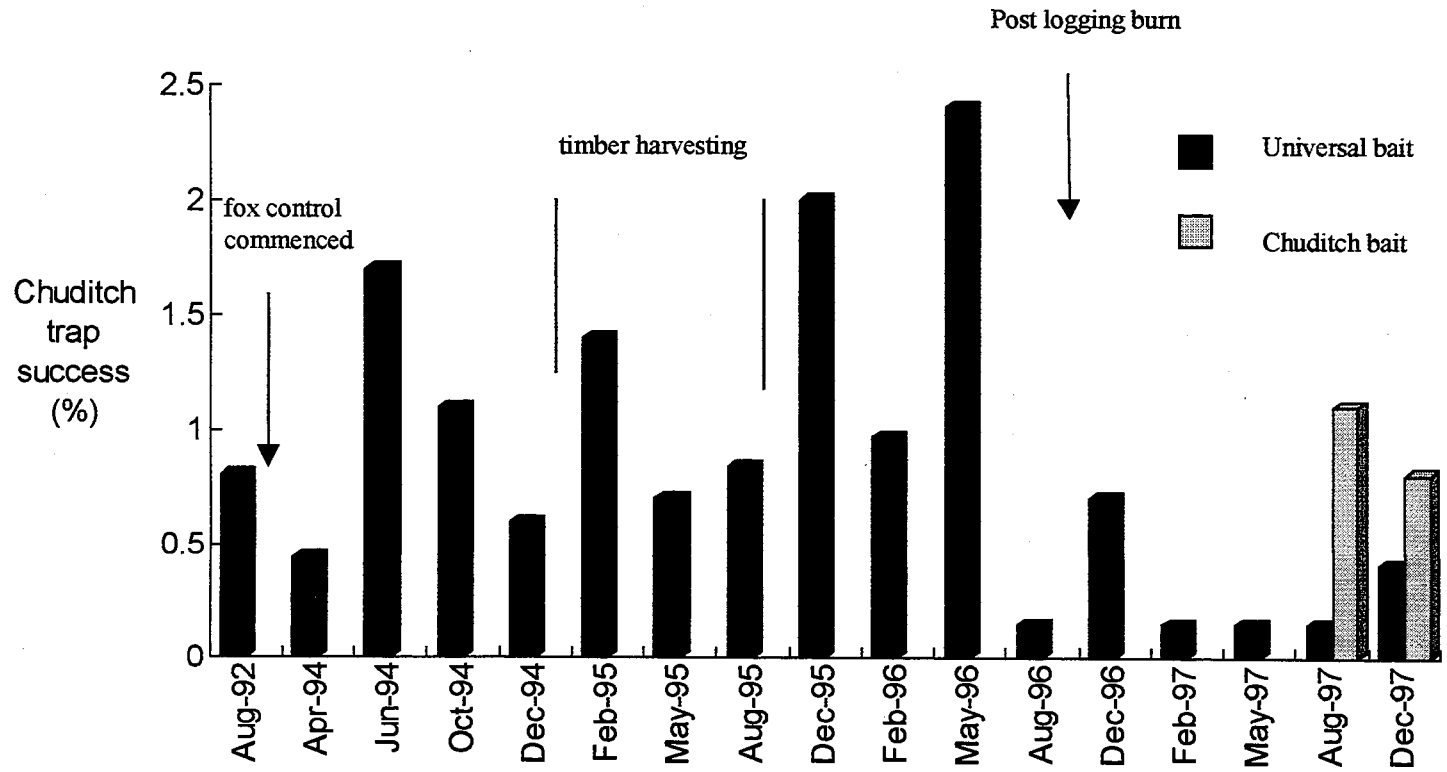

Figure 2. Trap success rates for Chuditch along road transects during the Kingston timber harvesting study.

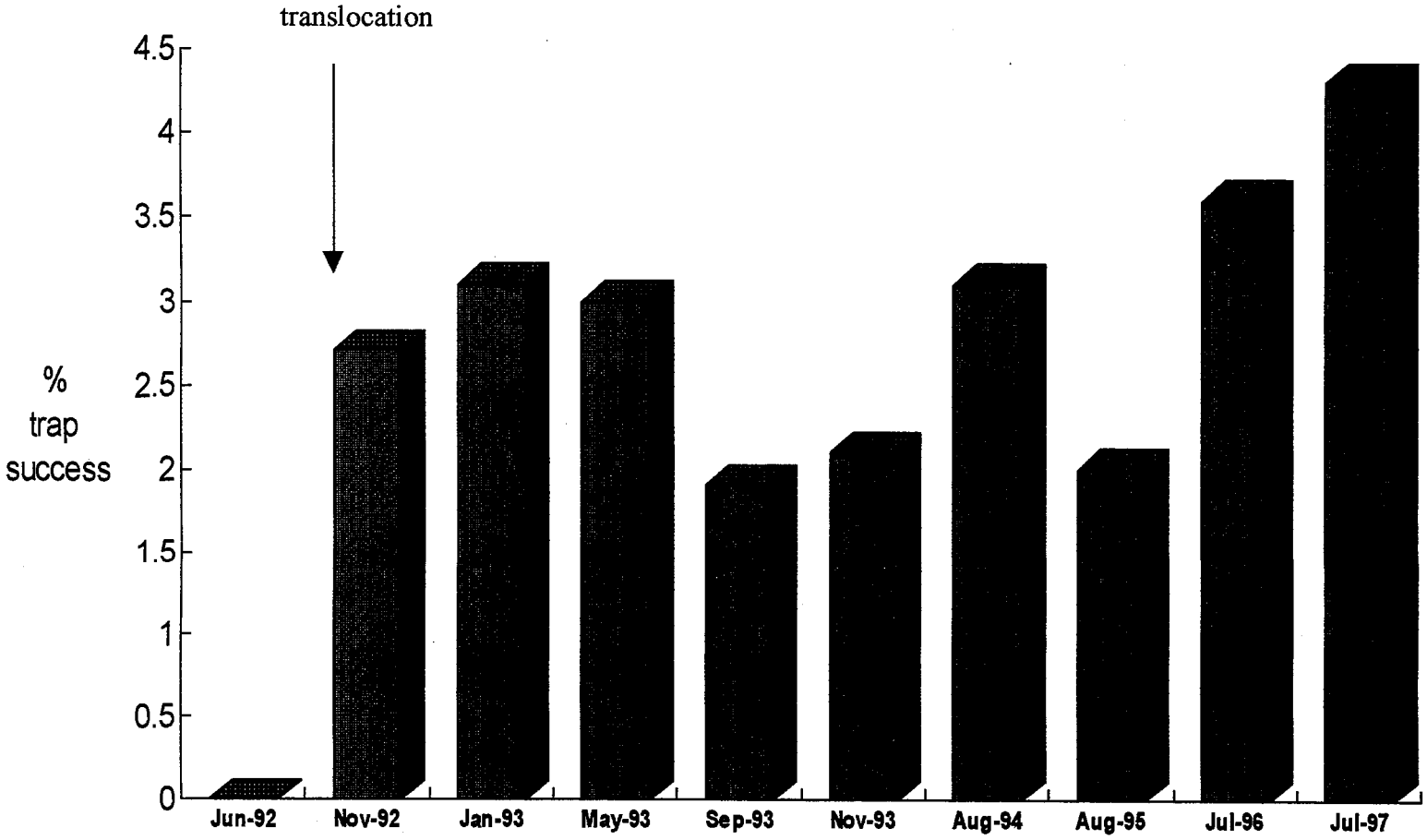

Figure 3 Chuditch trap success rates at Julimar Conservation Park