CHUDITCH RECOVERY TEAM

ANNUAL REPORT

1995

by
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SUMMARY

This document reports on the fourth year of implementation of the Chuditch Recovery Plan. Financial support continued from ANCA's Endangered Species Program, Perth Zoo and CALM. Funding from WWF (utilising a grant from Alcoa) enabled a Community Involvement Program coordinator to be appointed part time. The Recovery Plan was published as a CALM *Wildlife Management Program* in January 1995. Satisfactory progress has been made on all actions. 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. Preliminary results suggest that neither of these disturbances have 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 37 young were produced during the year. Monitoring of the reintroduced population at Julimar continued and numbers appear to have stabilised in the central part of the conservation park. However Chuditch do not appear to have expanded towards the eastern boundary and inadequate fox control is thought to be responsible for this. More intensive ground fox baiting was subsequently implemented. The area fox baited at Julimar expanded to include the southern half of the Bindoon military training area. There is concern that wheatbelt populations are continuing to decline and future work will focus on Chuditch conservation in this area. Planning commenced for a translocation to Lake Magenta Nature Reserve in September/October 1996.

1. INTRODUCTION

This document reports on the fourth year of implementation of the Chuditch Recovery Plan. Following revision in 1994, this plan was published as a CALM Wildlife Management Program in January 1995 (Orell and Morris 1994).

2. RECOVERY TEAM

The Chuditch Recovery Team met twice in 1995; on 30 June at the CALM Wildlife Research Centre, Woodvale; and on 15 November at the Hills Forest Centre, Mundaring. The Minutes from the June meeting formed the basis of a Progress Report for 1995. Membership of the Recovery Team for 1995 was as follows:

Mr Keith Morris, (Chair)	CALM, Science & Information Division, Woodvale
Mr Peter Orell	CALM, Science & Information Division, Woodvale
Dr Andrew Burbidge	CALM WATSCU
Ms Sally Stephens	ANCA, Endangered Species Unit
Mr John Gardner	Alcoa
Dr Ray Nias	WWF
Ms Stephanie Maxwell	WWF Community Involvement Coordinator
Dr Graham Hall / Mr Colin Hyde	Perth Zoo
Mr Bob Hagan	CALM Southern Forest Region
Mr John Skillen	CALM Central Forest Region
Mr Paul Brown	CALM Swan Region
Mr David Mitchell	CALM Wheatbelt Region

3. RECOVERY PLAN STATUS AND FUNDING

The Recovery Plan completed its fourth year of implementation in 1995, and was fully funded by ANCA, CALM and Perth Zoo. Funding from WWF (utilising a grant from Alcoa) enabled a part time community involvement coordinator to be appointed.

4. PROGRESS ON RECOVERY ACTIONS

Habitat Management

Action 3.1.- Research into effects of prescribed burning regimes on Chuditch:
Post fire monitoring at Batalling was undertaken in May and October. Trap success rates increased in May before declining again in October (Figure 1). However, this probably reflects a seasonal variation in Chuditch trap success rates rather than a response to the prescribed burn. Trap success rates in October 1994, one month post fire, were significantly higher than those in October 1993 and possibly reflect the continuing increase in Chuditch population as a response to fox control over this time. Trap success rates in October 1995 were not significantly different to those in October 1994. It should be noted that trap success rates for all mammals at Batalling now exceeds 50% and competition for available traps may be a factor in lower trap success rates for Chuditch in the future.

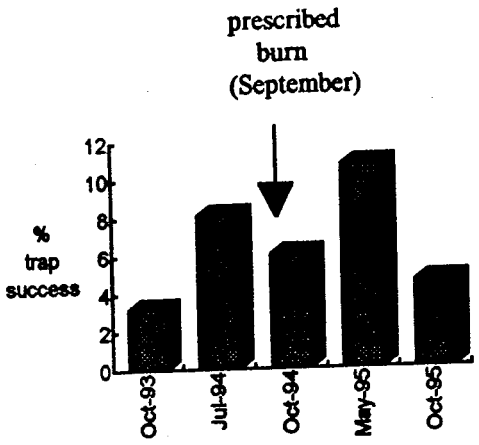

Figure 1. Chuditch trap success rates at Batalling before and after a prescribed spring burn.

While the condition of Chuditch, measured as the cube root of body weight divided by the pes measurement, has fluctuated at Batalling over the last three years (Figure 2), it would be difficult to attribute this to the spring prescribed burn. Again it is more likely seasonal climatic factors that have led to the changes observed.

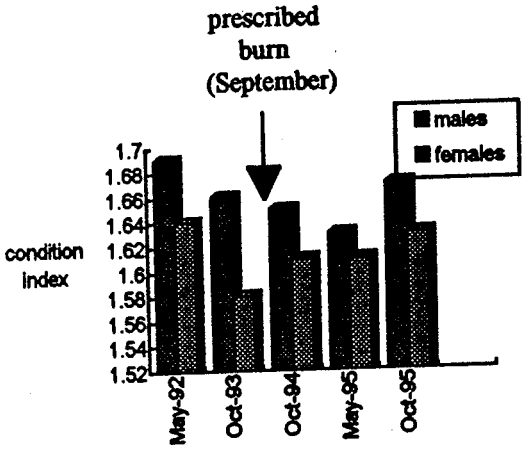

Figure 2. Condition of Chuditch before and after a spring prescribed burn at Batalling.

Action 3.1.2.1 - Effectiveness of silvicultural guidelines:

Abundance of Chuditch, as estimated by trap success rates, does not appear to have been affected by logging activities at the Kingston study site (Figure 3). Trap success rates for Chuditch along road transects varied significantly, ranging between 0.25 and 1.8 %. No population trend is apparent either following the commencement of fox control in December 1993, or following timber harvesting. It should be noted that trap success rates for all mammals at Kingston exceeds 60% and that competition for traps may be a factor in low Chuditch trap success rates. Similarly there is no difference in the condition of male and female Chuditch before and up to six months after timber harvesting (Figure 4). All of the females trapped in 1995 produced young.

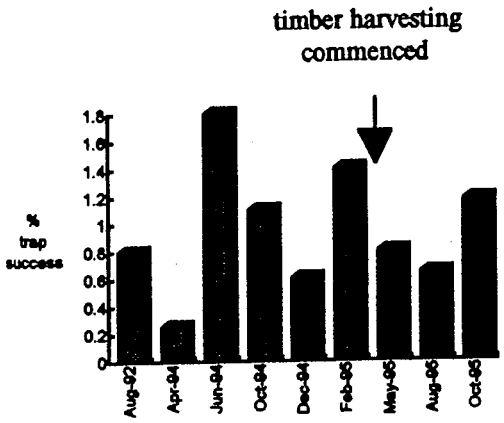

Figure 3. Chuditch trap success rates along road transects at the Kingston timber harvesting study site.

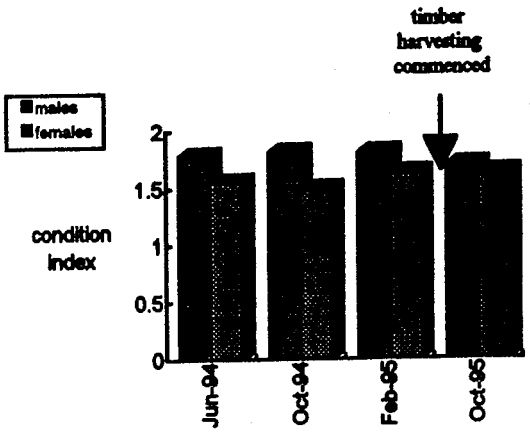

Figure 4. Condition of Chuditch before and after timber harvesting at Kingston.

Action 3.1.3 - Rehabilitation after surface mining:
During 1995, Alcoa conducted fauna trapping programs in both unmined forest and rehabilitation sites at Jarrahdale, Karnet and Huntly. The program involved at total of 240 trap-nights in unmined forest and 60 trap-nights in rehabilitated forest. No Chuditch were trapped. At all three Alcoa mines, fauna sightings by field staff are recorded and stored on an Excel database and GIS generated maps. During 1995, three Chuditch sightings were recorded in unmined forest at Huntly and one at Jarrahdale. Fox baiting has continued at all sites but at this stage no recovery in Chuditch numbers has been observed.

Formal procedures which describe the steps to be followed when constructing fauna habitat dens and corridors in rehabilitation have now been developed and are being implemented at all mine sites. 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. 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 be monitored as rehabilitation matures.

Action 3.1.5 Community involvement:
Funding was received from WWF (via a grant from Alcoa) to employ part time a Community Involvement Program coordinator. Stephanie Maxwell commenced in this capacity in April. The program was launched in May and since then several initiatives have been implemented to enhance community involvement in the Chuditch recovery program. A brochure has been prepared and distributed, a mobile display used in meetings and shopping centres, and a school resource kit developed for teachers and students. Stephanie has also been coordinating volunteers involved in assistance with ongoing Chuditch research. She has also been organising assistance from community groups for proposed broad-scale trapping programs along the south coast and Fitzgerald River National Park.

A Chuditch Convention was held in Balingup in July. This included presentations from invited speakers and a workshop to establish a Friends of the Chuditch (FOC) group. This is now an incorporated body and able to receive tax deductable donations. The group has prepared a "I support the Chuditch" bumper sticker with financial support from WWF.

Research into effect of fox baiting

Monitoring of the Batalling Chuditch population continued as part of other research (Woylie monitoring, impact of prescribed burning on Chuditch). Despite an apparent seasonal variation in trap success rates, there has been an increasing trend in the population at Batalling. Trap success rates reached 13.5% in July 1995, the highest for any known population of Chuditch and declined to 4.5% in October. However the comments above concerning competition for traps from other mammals should be noted.

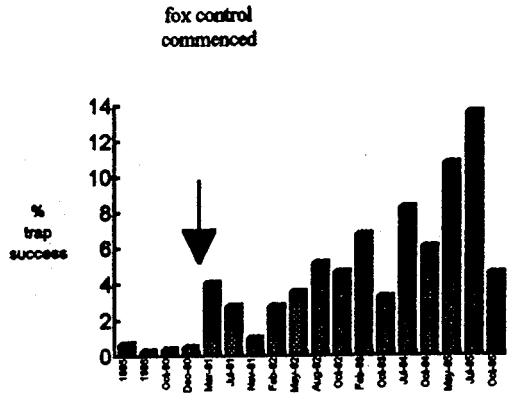

Figure 5. Chuditch abundance at Batalling before and after fox control.

A feeding trial of non toxic feral cat baits was undertaken on captive Chuditch at Perth Zoo. These baits were a minced kangaroo meat sausage approximately 30 g in weight, air dried to approximately 25 g and coated with the attractant "digest". These have been found to be effective baits for feral cats under certain circumstances (Dr D. Algar, CALM, pers comm.). However, the relatively high moisture content compared to the dried meat fox baits and their size also made them highly palatable to Chuditch.

Further research is required before an operational cat bait will be available for use in areas containing non target species such as Chuditch..

Population Monitoring

Action 3.3 - As part of the fauna monitoring for Operation Foxglove, Chuditch have been recorded from 19 of the 49 monitoring sites in the northern Jarrah forest. It is not yet possible to determine a response to the fox control.

Semi arid Research

Action 3.4 - In April/May 1995 a broad-scale survey of two areas in the eastern wheatbelt was undertaken by District staff. Approximately 3 500 trap-nights were set in the Yellowdine/Southern Cross area and 5 900 trap-nights in the Dragon Rocks/Dunn Rock/ Lake Magenta area. No Chuditch were trapped. Fourteen feral cats were trapped and new populations of the threatened Western Mouse and Heath Rat discovered. A summary of cage trap surveys in the wheatbelt over the last 10 years is shown in Table 1. Despite several sightings and road kill reports, very few Chuditch have been trapped and it is possible that populations are still declining in the wheatbelt. A photograph of a Chuditch was taken in a poultry shed near Jerramungup in February 1995.

Site	Area (ha)	Date	# cage trap-nights	# Chuditch trapped
Lake Magenta NR	110 000	Sep 90	800	1
		Apr 94	1 050	0
		Jul 94	1 400	1
		Apr 95	2 289	0
Frank Hann NP	50 000	Jun 90	800	1
		Sep 94	1 800	0
Fitzgerald River NP	342 000	1985-7	330	0
		1988	500	0
North Kalgarin NR	5 168	Apr 94	250	0
		Jul 94	250	0
		Oct 94	200	0
Reserve 31111	3 000	Jul 94	520	0
Dongolocking	1 400		1 000	0
Boolenalling NR	700		482	0
Dunn Rock NR		Apr 95	1 741	0
Ravensthorpe Range VCL		1982-7	420	0
Yellowdine		Apr 95	3 500	0
Dragon Rocks NR	32 218	Apr 95	1 888	0

Table 1. Summary of Chuditch surveys undertaken in the wheatbelt over the last ten years.

Chuditch specimens from South Australia and held in the SA Museum were measured and compared with WA specimens. Measurements of four adult skulls were within the range for WA specimens, supporting the suggestion of Serena *et al.* (1991) that the subspecific status of eastern and western Chuditch is not valid on size differences.

Captive Breeding

Action 3.5 - Thirty seven Chuditch (17 males, 18 females, 2 unsexed) were born at the Perth Zoo in 1995. All were microchipped. One litter of six young was cannibalised by their mother. Another three animals also died, including the old (at least 5 y.o.) male trapped at Lake Magenta in 1994. One female in poor condition and with a broken leg was trapped on a farm near Byford and taken to the Zoo for veterinary treatment. This animal subsequently recovered and will be used in the captive breeding program in 1996. Three wild caught males from Batalling were introduced to the captive population. Two males were released back to Batalling following veterinary treatment for wounds and another male was transferred to the Western Plains Zoo at Dubbo, NSW. The current (December 1995) captive population consists of 25 males and 33 females. A total of 114 Chuditch have now been born in captivity at Perth Zoo since the captive breeding program commenced in 1989 (Table 2). A paper entitled "The role of captive breeding in the conservation of the Chuditch" was presented at the ARAZPA conference held in Perth in April.

Year	# held	# births	# deaths	# released into wild	# from wild
1989	3.6.0	0	0.3.0	0	0
1990	11.9.0	7.5.0	1.0.0	0	1.1.0
1991	16.14.2	4.5.2	1.0.0	0	2.0.0
1992	24.33.2	8.17.0	3.3.0	12.11.2	1.2.0
1993	9.19.0	11.12.0	0.2.0	9.9.1	3.3.0
1994	23.25.0	3.3.0	0.2.0	10.8.0	5.4.0
1995	13.15.0	17.18.2	5.2.2	2.0.0	3.1.0

Table 2. Summary of the captive breeding program at Perth Zoo (# males.# females.# unsexed).

The captive colony had relatively few health problems in 1995. Two adults had superficial masses which turned out to be a histiocytoma near the elbow and a sterile granuloma in the pouch. One male had its tail amputated following complications from a previous tail problem. As indicated above, the male from Lake Magenta was euthanased due to progressive hind limb paralysis. The carcass was added to the WA Museum collection.

Zoo veterinarians spent five days with CALM at Julimar Conservation Park during the annual monitoring of the reintroduced Chuditch population. Trapped animals were microchipped if required, bled for health examination and toxoplasmosis titers, weighed and had cloacal cultures taken. One male was brought back to the Zoo due to a swelling on his left leg. This was diagnosed as osteomyelitis in the distal fibula which responded to treatment and the animals remains in the Zoo collection.

Translocation

Action 3.6 - The translocated population at Julimar Conservation Park was monitored again in August. A wider area was sampled at this time to examine the extent of dispersal of Chuditch since their release. A trap success rate of 2.0 % was obtained (Figure 6), lower than the rate for 1994. However, the same number of individual Chuditch were trapped (16) as for 1994 and all animals were trapped in the central area of Julimar which has been the focus of monitoring in the past. No animals were caught to the east of Julimar Brook. This suggests that animals have not spread out to the eastern and northern parts of Julimar. This may be because the geometry of the eastern boundary means that very little fox protection has occurred in this area since the introduction of aerial fox baiting in 1994. This is supported by the different survival rates of Woylies translocated to Julimar in February 1995. Animals in the eastern part of Julimar have not established due to high predation rates, whereas those released in the central part of Julimar with better fox protection have persisted. In order to correct this, ground baiting of the eastern boundary was re-commenced in September 1995.

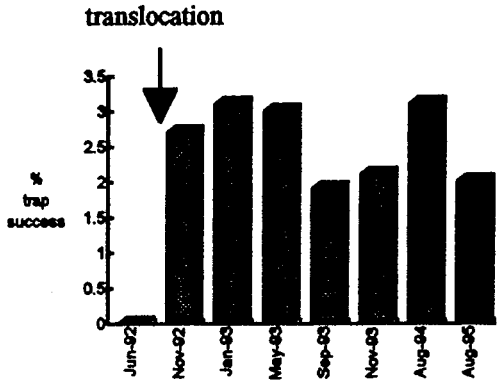

Figure 6. Chuditch trap success rates at Julimar Conservation Park

Baiting of the southern half of the Bindoon military training area commenced in February and is now incorporated into the regular (3 monthly) baiting of Julimar and much of the northern jarrah forest as part of Operation Foxglove.

At its meeting in June, the recovery team decided that a translocation would be undertaken to Lake Magenta nature reserve, in the southern wheatbelt, using captive-bred jarrah forest animals. Extensive trapping during 1994 and 1995 has failed to detect any sizeable Chuditch population in the wheatbelt. A translocation to an area known to recently support Chuditch was therefore considered necessary if the second success criteria of the recovery plan of maintaining at least one population in a semi arid area, was to be achieved. Planning for this has now commenced and the translocation will be undertaken in September/October 1996.

5. BUDGET

The recovery program was fully funded for 1995 with the ANCA Endangered Species Program contributing $85 400, primarily for operating costs and a technical officer salary, and CALM contributing $44 700, primarily for salaries for a research scientist

and district staff, and vehicle standing fees, as well as funds for fox baiting which is benefiting several other animal species. The Perth Zoo contributed $10 900 through staff salaries and vehicle running costs. The ANCA grant included $26 400 for assistance with the maintenance of the captive breeding and health management program at the Perth Zoo. Alcoa contributed approximately $25 000 to the community involvement program.

6. CONCLUSIONS

The implementation of the Chuditch recovery plan proceeded satisfactorily in 1995. Significant progress has now been made towards ensuring the conservation of the Chuditch in the south west forested areas. This has been primarily through the implementation of the broad-scale fox baiting of the jarrah forest. It appears that the Julimar population has established and this provides further security for the species. A report of three female Chuditch being trapped in degraded forest near Avon Valley National Park (André Schmitz *pers comm*) and the finding of sheep wool in Chuditch scats at Batalling suggest that in the presence of fox control Chuditch will use expanded habitats adjacent to the forest. Preliminary results also suggest that prescribed burns and timber harvesting do not detrimentally impact on Chuditch. However, Chuditch conservation in the wheatbelt is far from secure. There is some evidence that populations are continuing to decline in this area and this is where future work needs to be focussed. This process will commence in 1996 with a translocation to Lake Magenta Nature Reserve.

7. REFERENCES

Orell, P. and Morris, K.D. (1994). *Chuditch Recovery Plan. Wildlife Management Program No.13.* Department of Conservation and Land Management, Como, WA.

Serena, M., Soderquist, T.R., and Morris K.D. (1991). *Western Australian Wildlife Management Program No. 7: The Chuditch.* Department of Conservation and Land Management, Como, WA.