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CHUDITCH RECOVERY PLAN PHASE 2

NATURAL HERITAGE TRUST PROJECT 6279

ANNUAL REPORT

1999

by

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for the Chuditch Recovery Team

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WESTERN AUSTRALIA

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SUMMARY

This document reports on the eighth year of implementation of the Chuditch recovery plan. During the year financial support continued from Natural Heritage Trust's Endangered Species Program, CALM, Perth Zoo and Department of Defence. Financial assistance from Alcoa through Operation Foxglove fox baiting also continued. Monitoring the impact of prescribed burning regimes and timber harvesting on Chuditch and other threatened mammals continued in the jarrah forest of south west WA. Sampling 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. Chuditch are being regularly reported at Alcoa's bauxite mining sites in the Jarrah forest. The captive breeding program continued successfully at the Perth Zoo and 47 young were weaned during the year. Monitoring of the previously reintroduced populations at Julimar, Lake Magenta and Cape Arid continued. The 1996 translocation to Lake Magenta appears to have been successful. A further translocation was undertaken to Mt Lindesay near the south coast of WA and this was monitored. Planning was commenced for a translocation to Kalbarri National Park in 2000. A review of the conservation status of Chuditch will also be undertaken in 2000.

1. INTRODUCTION

This document reports on the eighth year of implementation of the Chuditch recovery plan. Progress on all recovery actions has been satisfactory and a review of conservation status is planned for 2000. The focus has been on translocations and monitoring of Chuditch in semi arid habitats. Significant work was conducted on ecological studies in those habitats. With the premature cessation of NHT funding the ultimate fate of the more recent translocations will remain inconclusive.

2. RECOVERY TEAM

The Chuditch Recovery Team met once in 1999; on 25 June at the CALM Wildlife Research Centre. Membership of the recovery team for 1999 was as follows:

Mr Keith Morris	(Chair)	CALM Woodvale
Mr Brent Johnson		CALM Woodvale
Dr Andrew Burbidge		CALM WATSCU
Mr John Gardner		Alcoa
Ms Sandra McKenzie		WWF
Dr Terry Fletcher		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 Linda Selg		Environment Australia
Mr Alan Danks		CALM South Coast Region

Dr Nicky Marlow attended as an observer.
Ms Joanne Varley took Minutes.

3. RECOVERY PLAN STATUS AND FUNDING

The recovery plan completed its eighth year of implementation in 1999, and was fully funded by Environment Australia, CALM and Perth Zoo. The Department of Defence fund the baiting on the Bindoon military training area, adjacent to Julimar conservation park. Alcoa continued to support the recovery plan through funding of fox baiting operations in the northern Jarrah forest (Operation Foxglove). CALM was notified in November that the NHT endangered species program would not renew funding for 2001. The major impact of this will be on the maintenance of the captive breeding program at Perth Zoo and the ability to monitor translocated populations.

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 and November. As previously reported abundance estimates have been confounded by the increasingly high number of woylie captures (60%+) reducing trap availability for

other species. The condition and abundance of Chuditch does not appear to have been detrimentally impacted by prescribed burns in 1994 and 1996 (Figures 1 and 2).

Effectiveness of silvicultural guidelines:

Monitoring of Chuditch at Kingston continued in 1999, albeit at a reduced level. The condition and abundance of Chuditch has not been reduced by logging (Figures 3 and 4). A workshop was held in November to determine progress and the future monitoring regimes at Kingston. It was determined that the road transects on which most Chuditch are trapped will only be operated in February of each year for the next 5 years.

Rehabilitation after surface mining:

Medium sized mammals were surveyed in upland forest at Huntly and Jarrahdale. This was a repeat of a previous 1993 survey, using identical trapping methods and locations. At Jarrahdale, 3 Chuditch were trapped from 544 trap nights in 1999 compared with 0 from 952 nights in 1993. At Huntly, one Chuditch was trapped during 480 trap nights in 1999 compared with none from 714 nights in 1993. A broadscale pre-mining survey in the Orion region north of the Willowdale mining area recorded no Chuditch from 192 trap nights. Some sites were near the western edge of the baited area, so it is possible that limited, fox predation may still be occurring. The species is known to be present due to sightings recorded by mine staff.

Chuditch sightings continue to be recorded regularly at all mines, although the number of sightings at Jarrahdale is expected to decrease with lower staff numbers following the cessation of mining operations. At both Willowdale and Huntly, seven Chuditch were sighted by mine staff between January and November 1999. At all three Alcoa mines, fauna sightings by field staff continue to be recorded and stored on an Excel database and GIS generated maps.

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. 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.

Community involvement:

The Denmark Environment Centre community group was invited to participate in the translocation of Chuditch to the proposed Mt Lindesay National park in 1999. Strong support has subsequently been forthcoming for this project from the group with numerous community members and school groups involved. This relationship has been further strengthened by their successful grant application to WWF enabling further more intensive aspects of ongoing monitoring to be undertaken by the community.

Action 2 - Research into effect of fox baiting

Completed action. CALM is currently developing a new, cheaper sausage fox bait. Dr Nicky Marlow briefed the recovery team on her research into the development of this bait, including the use of Perth Zoo Chuditch in non target trials.

Action 3 - Population Monitoring

Trapping is now routinely undertaken by district staff as part of Western Shield monitoring. In the Hills Forest a trap success rate for Chuditch of 7.4% was obtained in March, nearly twice the rate of 3.8% in December 1998. This was probably due to the presence of independent, dispersing young in the population in March 1999. At Noggerup forest, trap success rates increased from 2.1% in December 1998 to 5.1% in March 1999 probably for the same reason. Other forest sites still have very low numbers or infrequent captures suggesting that habitat variables also determine Chuditch distribution in the forest. Chuditch were recorded for the first time within the Fitzgerald National Park on the south coast (although they have been previously recorded at nearby Jerramungup and Hopetoun) and in the outer northern suburbs of Perth (upper Swan and Gnangara). Trapping surveys were undertaken at Dryandra woodland where no captures were recorded, and at Honeymoon Pool near Collie where 9% capture rates indicated that this popular recreation area still contains a good Chuditch population. All available Chuditch trap success rates will be incorporated into the conservation status review.

Trials with a different bait that reduces the attraction of cage traps to Woylies and increases trap success for Chuditch continued at Batalling. The results over three days trapping using 60 paired cage traps (total 120 traps) are shown below:

Date	UNIVERSAL BAIT				CHUDITCH BAIT			
	3/4	4/4	5/4	mean	3/4	4/4	5/4	mean
# empty traps	5/60	2/60	3/60	3/60	27/60	13/60	12/60	18/60
# disturbed traps	9/60	16/60	8/60	11/60	7/60	11/60	14/60	11/60
Chuditch trap success (%)	1.7	0	3.3	1.7	13.3	6.7	8.3	9.5
Woylie trap success (%)	66.7	63.3	71.7	67.2	28.3	46.7	38.3	37.8
BT Possum trap success (%)	6.7	6.7	6.7	6.7	1.7	5.0	10.0	5.5
Quenda trap success (%)	1.7	0	0	0.6	0	1.7	0	0.6
Total trap success (%)				76.2				53.4

Points to note:

- Number of empty traps increased from 3/60 (universal bait) to 18/60 (Chuditch bait)
- Woylie trap success rate declined from 67% (universal bait) to 37% (Chuditch bait).
- Chuditch trap success increased from 1.7% to 9.5%.
- Captures of Possums and Quenda were about the same.

Action 4 - Semi arid Research

Two Honours students undertook an intensive study of several facets of the ecology of Chuditch within the Lake Magenta Nature Reserve in 1999. Utilising trapping and radio-telemetry they studied the variation in aspects such as home range, habitat

use and diet between captive bred, translocated individuals and Chuditch born within the reserve following translocation. This work is now complete. **(Brent – we need some more info here. Can you pls summarise their findings and put it in.)**

Action 5 - Captive Breeding

As at December 1999, the captive colony at Perth Zoo comprised 76 Chuditch, including 47 that were born in 1999. Forty eight animals had been taken from the colony during 1999 for translocation to Mt Lindesay. Because of the premature termination of NHT funding the captive breeding colony will be reduced in 2001. Most animals will be released at Kalbarri National Park in August 2001. Six Chuditch were brought into the colony from the Collie area. Fungal dermatitis affected 5 animals – a similar problem was noted in 1992 and 1994.

One litter of four young were born to a pair of Chuditch at the Desert Park, Alice Springs. Some of these may be returned to WA for release into the wild.

Action 6 - Translocations

Julimar: Annual monitoring took place in July 1999. A trap success rate of 8.6% was achieved, similar to 1998 and indicating that this area may have reached its carrying capacity (Figure 5). Most captured females were carrying pouch young.

Lake Magenta: A total of 725 trapnights during February as part of the honours students project resulted in 35 captures of 14 individuals (4.8%). Subsequent trapping in March (4.6%), May (3.0%) and later in November (3.8%) confirmed that this population is stable (Figure 6). Captures of two 1995 born translocated individuals during this period indicates the good longevity of Zoo born Chuditch in the wild. Data from the radio-telemetry work suggest that home ranges may have considerably more overlap than those studied in forest areas by Soderquist and Serena. Interesting records of chuditch utilising bird nests for refuge 2-3 metres above ground were also made in 1999.

Cape Arid: A further 6 individuals were released in February taking the total translocated to 46. The population was monitored in April - 6 individuals (5.5%), October - 2 individuals (4%) and December - 4 individuals (1.4%). These data and in particular the low number of individuals captured are inconclusive as to the current state of the translocated population. Very low numbers of zoo bred chuditch have been caught in the year although the presence of local born individual is encouraging. This site needs further monitoring in 2000.

Mt Lindesay: The first batch of 25 chuditch was released in Autumn 1999 with a further 23 being released in September. Radiocollars were fitted to 8 of the chuditch in the first batch and subsequent tracking and trapping has been undertaken. The first large scale trapping was carried out in May when 37% of the animals released to that time were captured. All had lost weight (mean=29%) but appeared to be in reasonable health. Subsequently 5 of 8 collared chuditch were found to have died. Causes of death for 2 were unknown, bodies intact no obvious signs, 2 were predated (cat, bird) and one was a roadkill. Another non-collared individual was later run over on a road 14km to the East. During the time collars were fitted and animals active, refuge choice was found to improving over time with most finding good shelter in hollow logs or granite outcrops within the first month. Breeding did occur but many females failed to bear young and there was a record of one female losing

all pouch young shortly after birth. The most recent trapping session in December found 6 individuals along the transect (1.5%) with no recruitment. Weights were all down but appeared to have stabilised. This translocation requires further monitoring before its success or otherwise can be ascertained.

5. BUDGET

The recovery program was fully funded for 1999 with the Environment Australia Endangered Species Program contributing \$ 80 000, primarily for operating costs and a portion of technical officer salary, and CALM contributing \$ 51 800, primarily for salaries for a research scientist 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 1999. It is now clear that Chuditch have recovered significantly over the last five years due primarily to fox control and translocations. It is likely that the species may be removed from threatened species lists in the next 1-2 years. A review of its conservation status to be completed in 2000 will confirm this. The premature loss of NHT funding will impact on the recovery program primarily through an inability past August 2000 to maintain the captive breeding colony at Perth Zoo. CALM's ability to monitor translocated populations will also be reduced.

Acknowledgements

Dorian Moro prepared Figures 1 and 3, and Adrian Wayne prepared Figure 4.

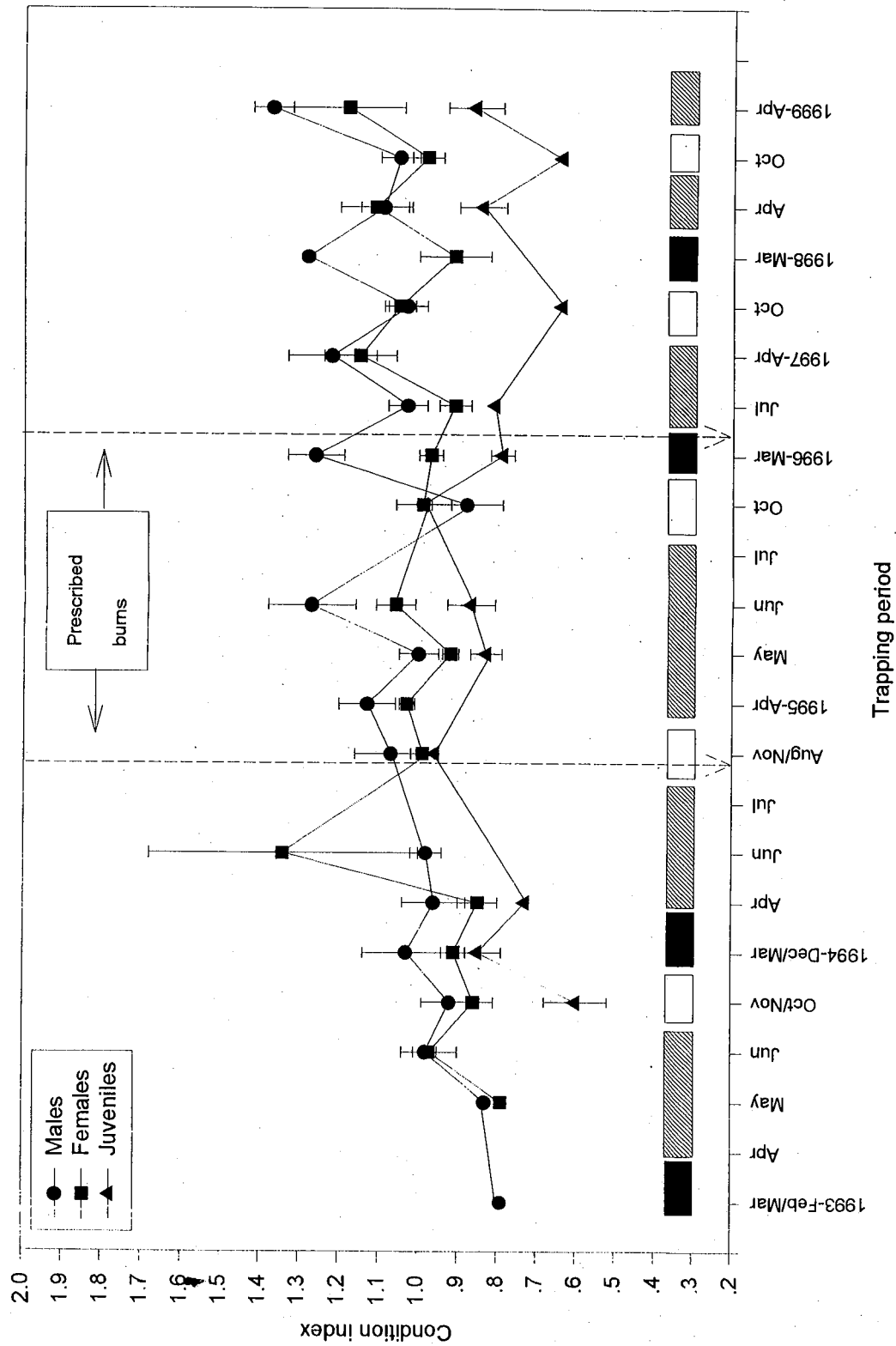


Figure 1. Variation of condition index for chuditch over trapping period (1993-1999) at Batalling. Breeding season (hatched), weaning/dispersal season (unshaded), nonbreeding season (shaded). Values are mean \pm standard error. Prescribed burning occurred during October 1994 and April 1996.

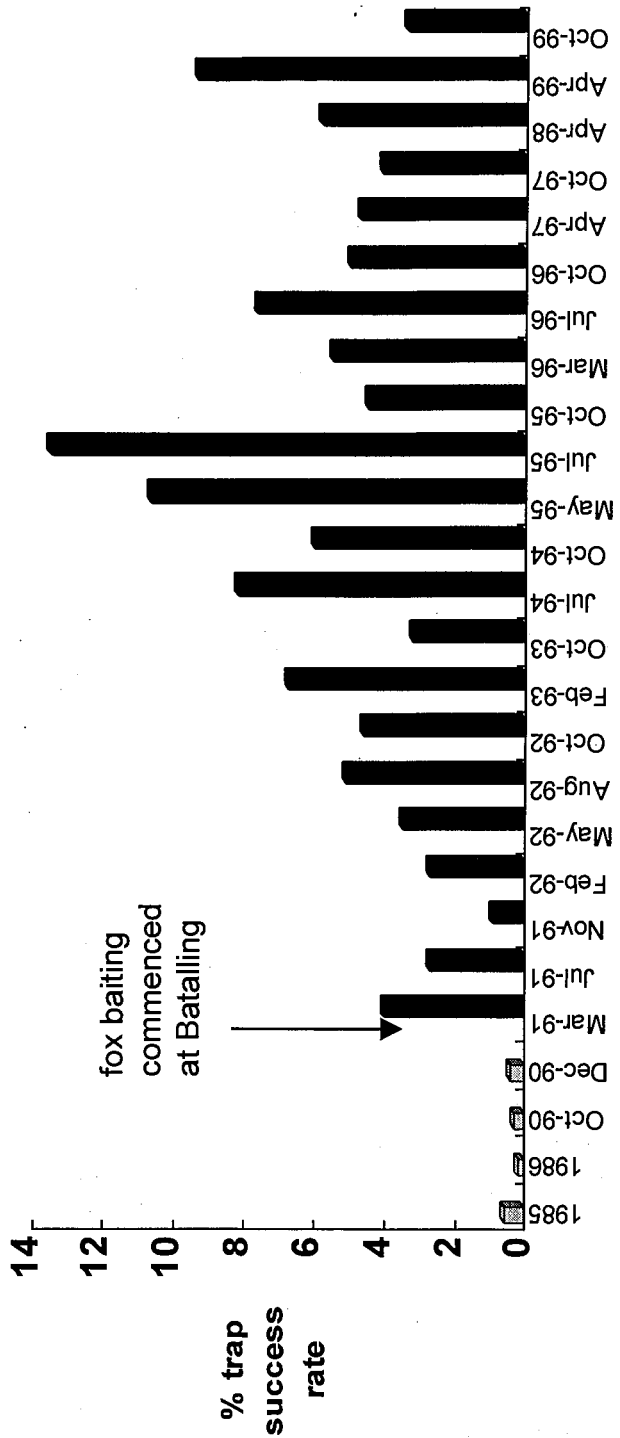
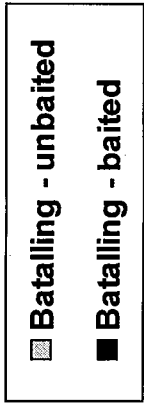


Figure 2. The impact of fox control on Chuditch at Batalling forest

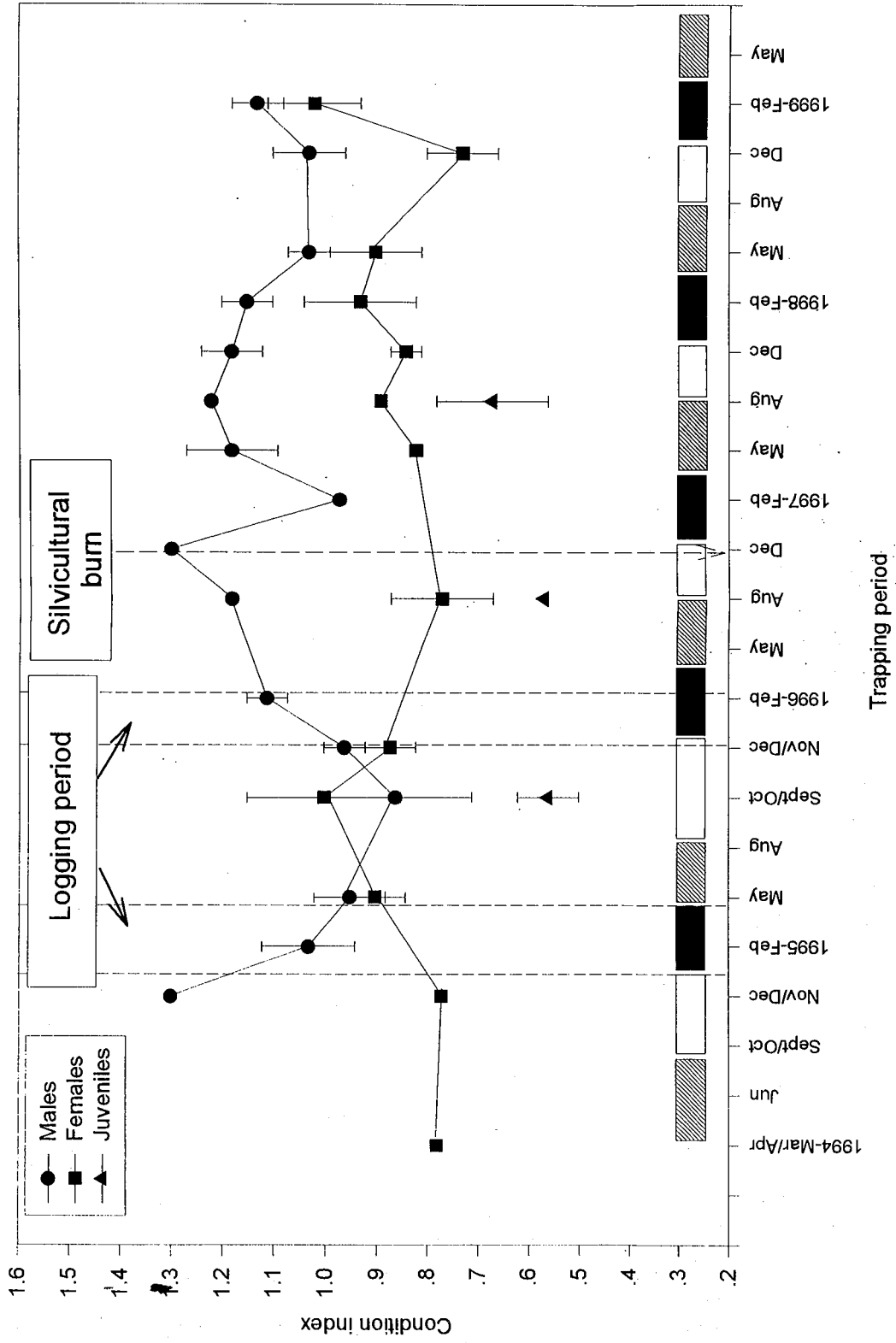
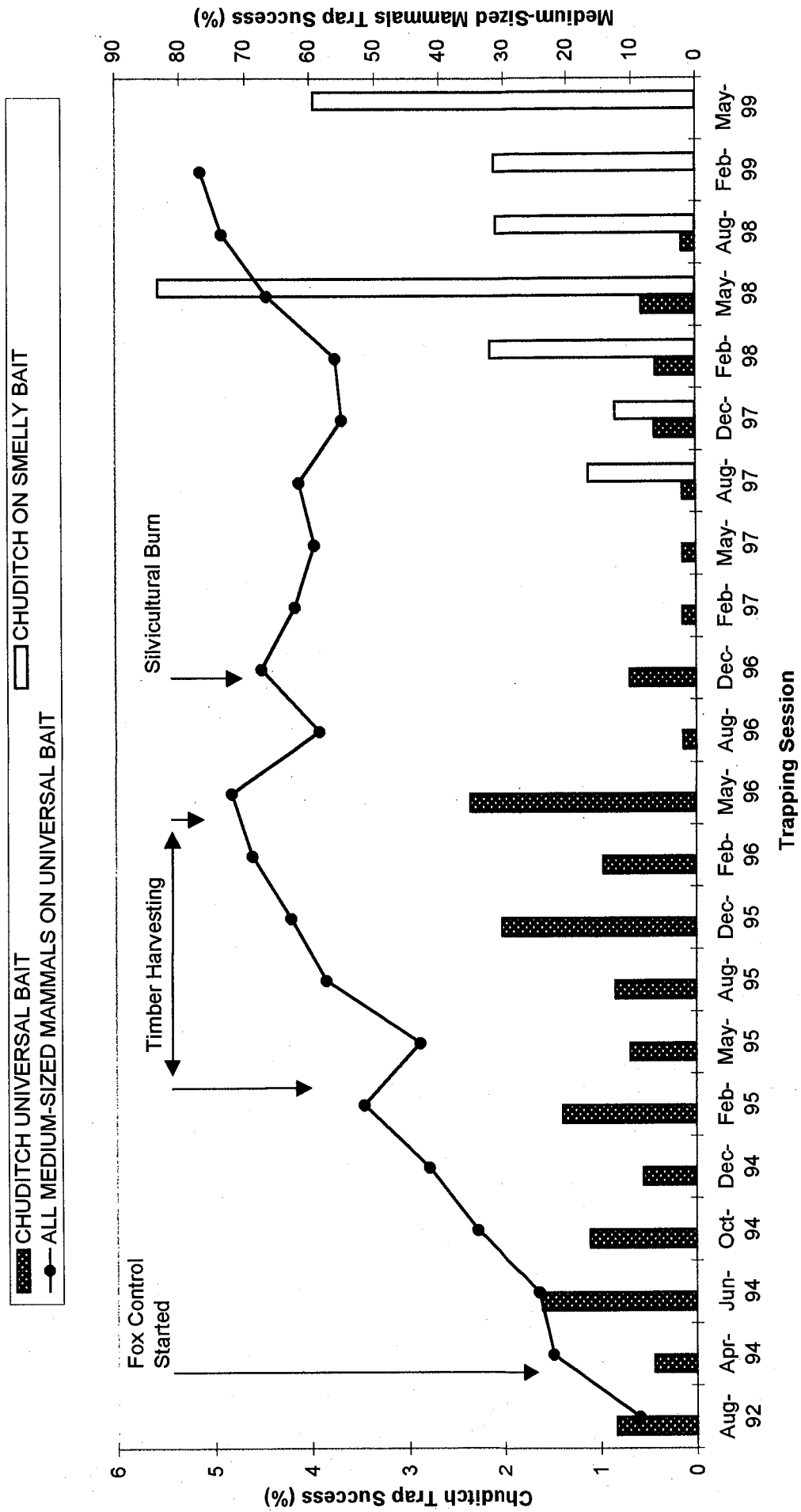


Figure 3. Variation of condition index for chuditch over trapping period (1994-1999) at Kingston. Breeding season (hatched), weaning/dispersal season (unshaded), nonbreeding season (shaded). Values are mean \pm standard error. A silvicultural burn occurred during November 1996.

Figure 4 The Trap Success Rates (%) for the Chuditch on Universal and 'Smelly' Baits and All Medium-Sized Mammals on Universal Bait



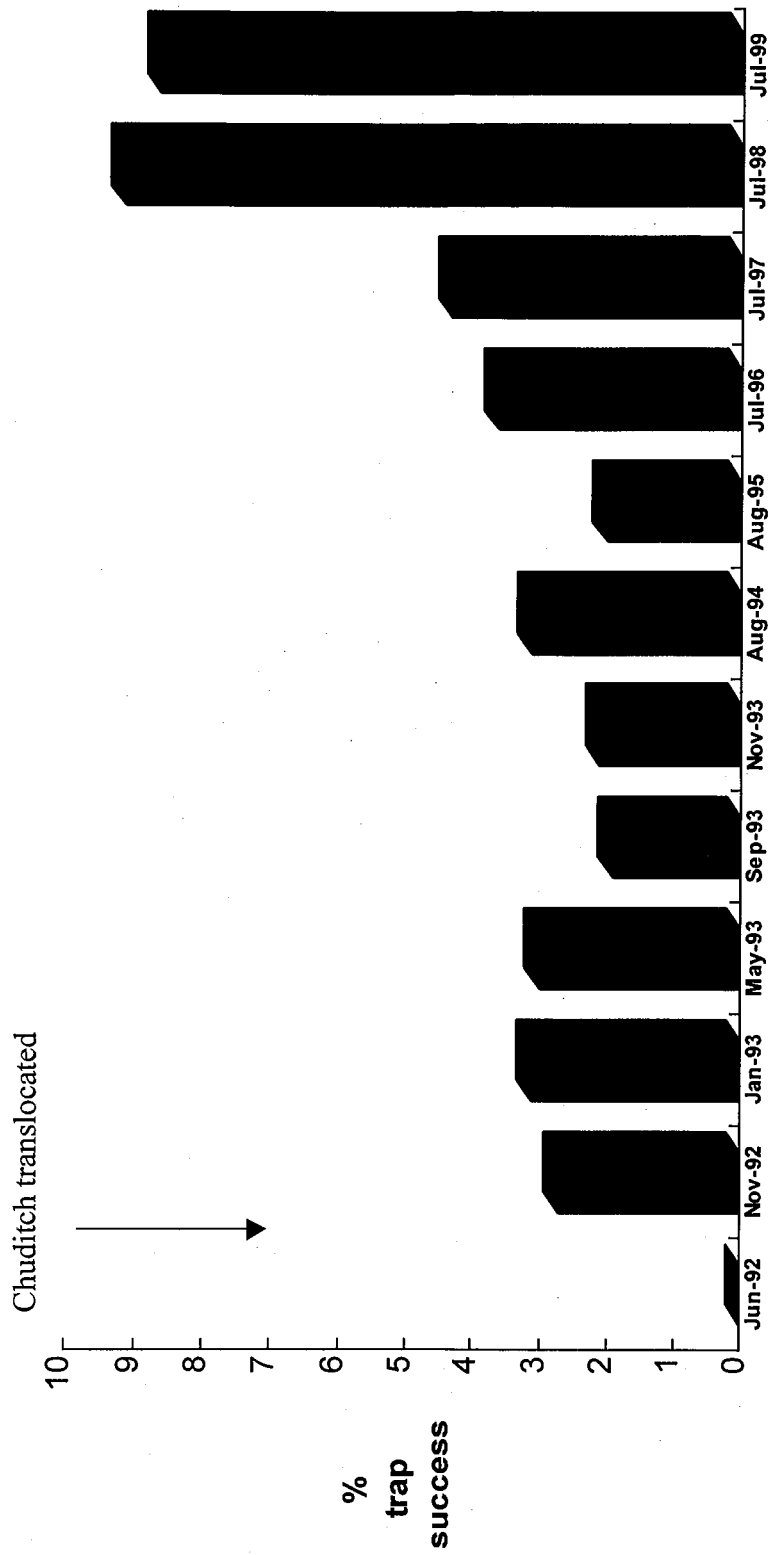


Figure 5. Trap success rates for Chuditch at Julimar Conservation Park.



Figure 6. Trap success rates for Chuditch at Lake Magenta Nature Reserve.