CHUDITCH RECOVERY TEAM

ANNUAL REPORT

1998

By

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SUMMARY

This document reports on the seventh 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. Financial assistance from Alcoa through Operation Foxglove fox baiting also continued. 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 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 57 young were weaned during the year. Monitoring of the previously reintroduced populations at Julimar and Lake Magenta continued. The 1996 translocation to Lake Magenta appears to have successful. A further translocation was undertaken to Cape Arid National Park and this is being monitored.

1. INTRODUCTION

This document reports on the seventh year of implementation of the Chuditch recovery plan. Progress on the recovery plan was reviewed by Environment Australia in early 1997.

2. RECOVERY TEAM

The Chuditch Recovery Team met twice in 1998; on 25 June at the CALM Wildlife Research Centre and on the 18 November at the ALCOA Huntley. Membership of the recovery team for 1998 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 Mark Bradley / Dr Helen Robertson	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

Dr Bradley resigned as Director of Research at Perth Zoo in early 1998 and was replaced temporarily by Dr Helen Robertson.

3. RECOVERY PLAN STATUS AND FUNDING

The recovery plan completed its seventh year of implementation in 1998, 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).

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 (24 months post autumn burn) and October. Trap success rates have increased slightly to around 6% although in some specific areas this figure is lower due to the very high number of woylie captures reducing trap availability. This general data suggest that as previously reported prescribed burning at Batalling has not detrimentally impacted on Chuditch abundance.

This is supported by more detailed analysis that has been undertaken during the year. The survivorship of individuals since February 1993 has been plotted. Several individuals (12) have been recorded at the Batalling site for in excess of 24 months with the longest record being 42 months. In total some 110 females and 97 males have been recorded from the site.

Chuditch transiency is defined as all those individuals that were captured in only one trap session. Those caught over a longer period were regarded as residents. This data suggests an upward trend in recent years of the percentage of transient individuals both male and female. It is not clear whether this is as a result of prescribed burning, the increasing overall population (fewer available niches) or simply a fact of fewer trapping sessions in recent years. The last data points should not be taken literally as any new animals caught in those sessions have not had subsequent sessions to reappear in the record. The pooled transiency data is interesting and clearly shows that individuals of both sexes are residents by August/September each year. A high level of transiency toward the end of the year as juveniles enter the trap record during dispersal, and a declining trend through Autumn as individuals establish territories.

There was some concern and anecdotal evidence that weights of individuals may have dimished over time at the Batalling site. Mean weights have been plotted over time and no such trend is evident. Weights appear to have remained constant with the lower mean for 10/97 in male chuditch being attributed to the capture of several juveniles during that session. It would appear that prescribed burning has had no impact on this general condition indicator.

The presence of pouch young was also examined. It would appear that the reduced trap effort in recent years, particularly during the winter months (in part due to our reluctance to capture and place undue stress on lactating mothers) has made this data difficult to interpret and no conclusion is drawn.

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.

Rehabilitation after surface mining:

At all three Alcoa mines, 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.

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:

Following the release of their Community Action Plan in February, the "Friends of the Chuditch" community group was invited to join the Recovery Team. It was considered that a co-ordinated co-operative approach to eliminate duplication of actions would be appropriate. As at the end of 1998 this invitation had not been accepted.

Action 2 - 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). Trap success rates appear to have stabilised at around 5 percent at Batalling, reflecting a significant increase on trap success rates before fox control was implemented.

There has been considerable ongoing research undertaken into baiting regimes in areas immediately adjacent to farmland where predation is still occuring. Investigation into the degradation of 1080 into dried meat baits also continued in 1998.

Action 3 - Population Monitoring

Batalling: Twice yearly monitoring is ongoing at this site and the population appears to have reached a plateau with only a slight increase on the previous year. (See Action 1. Habitat Management above). Population is obviously secure under current management guidelines. As at the Kingston site the high numbers of Woylies can hinder the accurate assessment of the Chuditch population.

Kingston: Trials with new bait mixtures indicates the presence of a larger Chuditch population the previously thought. This site will remain on quarterly monitoring utilising standard universal bait to allow the completion of a major study into the impact of timber harvesting on the faunal community. In addition an annual trapping will be undertaken using the new bait specifically aimed at establishing Chuditch abundance in the area.

Dwellingup: Trapping in 1998 was confined to CALMs Operation Foxglove sites.
The local CALM district will be re-instigating annual monitoring by taking over several of these sites.

District Monitoring:

Monitoring was undertaken by Mundaring twice in 1998. Trap success on northern transect now 4-5%. Southern transect still low (0.5%).
Trapping within Yalgorup National Park was unsuccessful in 1998.
Various sites within Southern Forest monitored during the year with figures consistent with previous year. Several sites are yet to record the presence of Chuditch. A new population was discovered at Leschenault Peninsula near Bunbury. One male was captured and subsequently two were sighted during a spotlight survey. This site will be monitored annually. Trapping at Noggerup Block south of Collie resulted in 9 individuals captured - a substantial increase on previous years. A Chuditch was also captured in Fitzgerald River National Park on the south coast during Western Shield monitoring. An intensive trap session was conducted in Dryandra State Forest in December utilising the new experimental bait. No chuditch were captured.

Trap success rates for Chuditch at Operation Foxglove fauna monitoring sites in the northern jarrah forest range between 0 and 2.3 percent (de Tores 1996). Chuditch have now been recorded from 21 of the 49 monitoring sites, two more than 1995. It is not yet possible to determine a response to the fox control, however the seasonality in trapability of Chuditch is again obvious with higher capture rates at all baited sites higher in the winter months.

Action 4 - Semi arid Research

No further reports of Chuditch in semi arid parts of WA were received in 1998.
There now appears to be sufficient wild born Chuditch within the Lake Magenta population to facilitate research. Two honours students will commence studies into the diet, habitat use and home range of semi-arid chuditch early in 1999.

Action 5 - Captive Breeding

The captive colony at Perth Zoo presently (December 1998) comprises 75 Chuditch (33.42.0). During 1998, fourteen females paired produced 57 young. All were microchipped. The current policy is to breed with younger females and this appears to have resulted in bigger litters than previous. Four females were injured during breeding but subsequently recovered. Four deaths were recorded during the year - old age accounted for three while the fourth suffered a large tumour in the chest cavity. Three batches of animals were released during the year - 40 (20+20) to Cape Arid and an additional 15 to Lake Magenta. All aspects of the captive colony are very well maintained.
Research on the colony included oestrus detection, hormone detection and cat bait trials.

Action 6 - Translocations

Julimar: Annual monitoring took place in July 1998. This is now the responsibility of CALM's Mundaring District. Funding and assistance will continue to be forthcoming from the Recovery Team. Trap success of 9% is up from an already healthy 4.2%. Once again all females had a full tally pouch young.

Lake Magenta: An additional 15 individuals were added to Lake Magenta Nature Reserve. This takes the total number released to 81. Monitoring took place in February, May and November. Only 4 individuals were captured during the May session and there was some concern over the the success of the translocation. At that time however a large number of house mice were being caught and this may have reduced the number of available traps. During the November visit 12 chuditch were captured including 7 new Magenta born individuals. This high proportion of new animals indicates a reasonable level of breeding success and is an indicator that the translocation is in fact progressing satisfactorily. One interesting capture was an 1995 zoo born female released in the first batch in October 1996 who was re-captured for the first time in November 1998. She had bred in this her third breeding season since release. This is a good survivorship record for the translocation.

Further information on the success of this translocation will become available with the commencement of two honours students in early 1999.

Cape Arid: The Recovery Team approved Cape Arid National Park as a site outside of current distribution in 1997 and following reconnaissance in November that year a Translocation proposal was approved and implemented in 1998.

An initial batch of 20 zoo bred chuditch were released in March. Ten had been fitted with mortality indicating radio-collars. Intensive monitoring followed in the ensuing 6 weeks and following only one known death, due to most probably an over zealous male attacking a female as a prelude to mating, a second batch of 20 was released on the 20th April. One of these animals was stuck and killed by a car shortly after.

Trapping was conducted during this time and weights were found, as at Lake Magenta, to drop sharply for the first few weeks and then steadily rise back to near that at release. Most chuditch stayed within the vicinity of the release sites indicating that resource requirements may be being met from the area. One male was however captured 10 weeks after release some 180km away in a farm chicken shed giving an indication of what chuditch are capable of. A range of refuge/den sites have been located; Macrozamia/Xanth skirts, rock shelters, thick Banksia litter and rabbit burrows. The first record of breeding occurred in the first week of June when a female was captured with pouch young.

Breeding success was confirmed in December with the capture of 3 juveniles and 4 lactating/regressing mothers. A further 3 males were captured at this time which combined to give a trap success of 3.3% for that visit. The survivorship and breeding records to date are positive signs in regard the ultimate success of this tranlocation. Further monitoring will be undertaken in 1999.

New translocation sites for 1999 are currently being assessed.

5. BUDGET

The recovery program was fully funded for 1998 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 1998. The focus of the past two years has been on the translocation and monitoring of Chuditch in semi arid habitats. The next two years will confirm whether these translocations have been successful. Trapping results within the forest have been promising although there is still some patchiness in the distribution. With the evolution and changes in forest management practices, ongoing population monitoring at all forest sites was, and will continue to be, a high priority.

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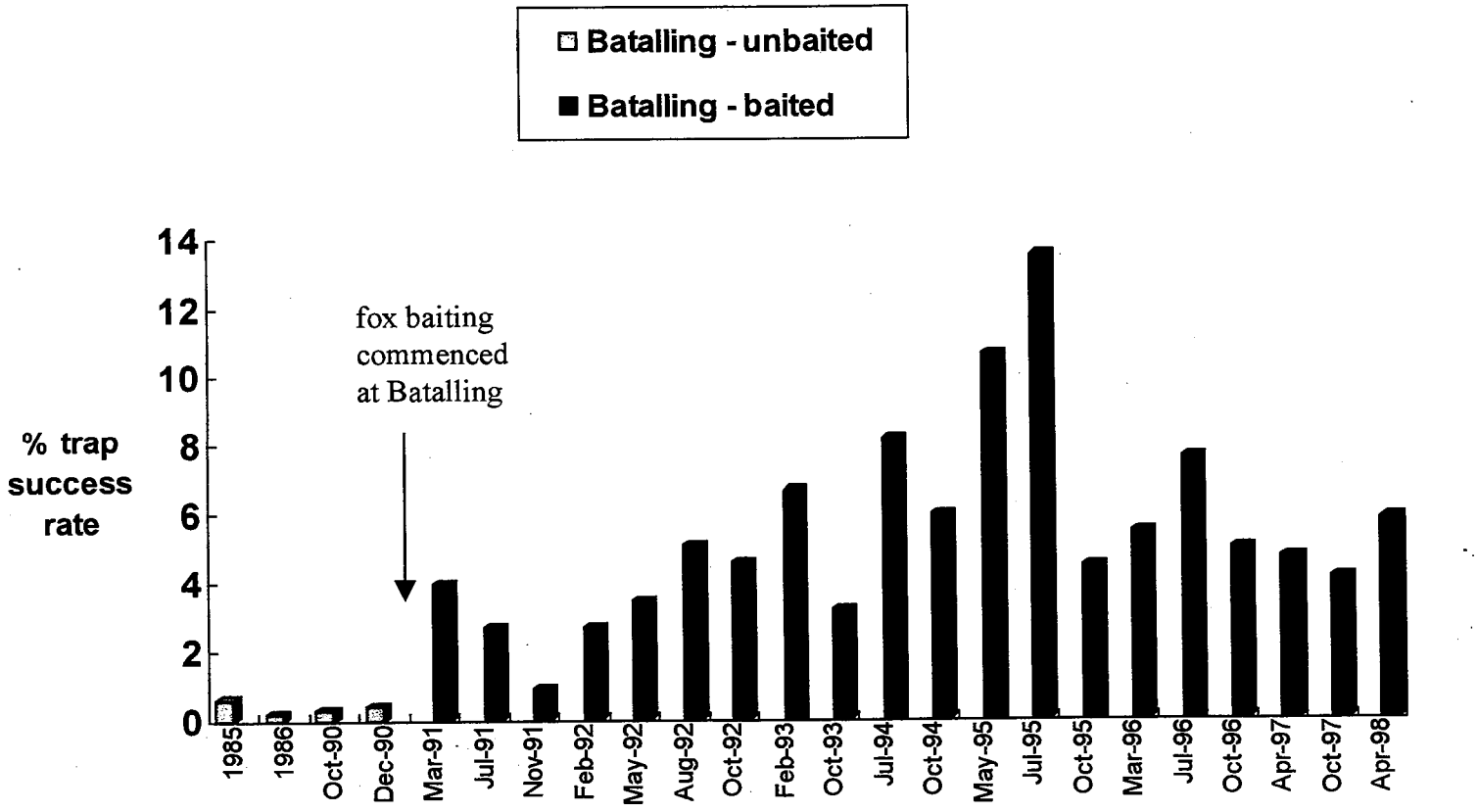

Figure 1. The impact of fox control on Chuditch at Batalling forest

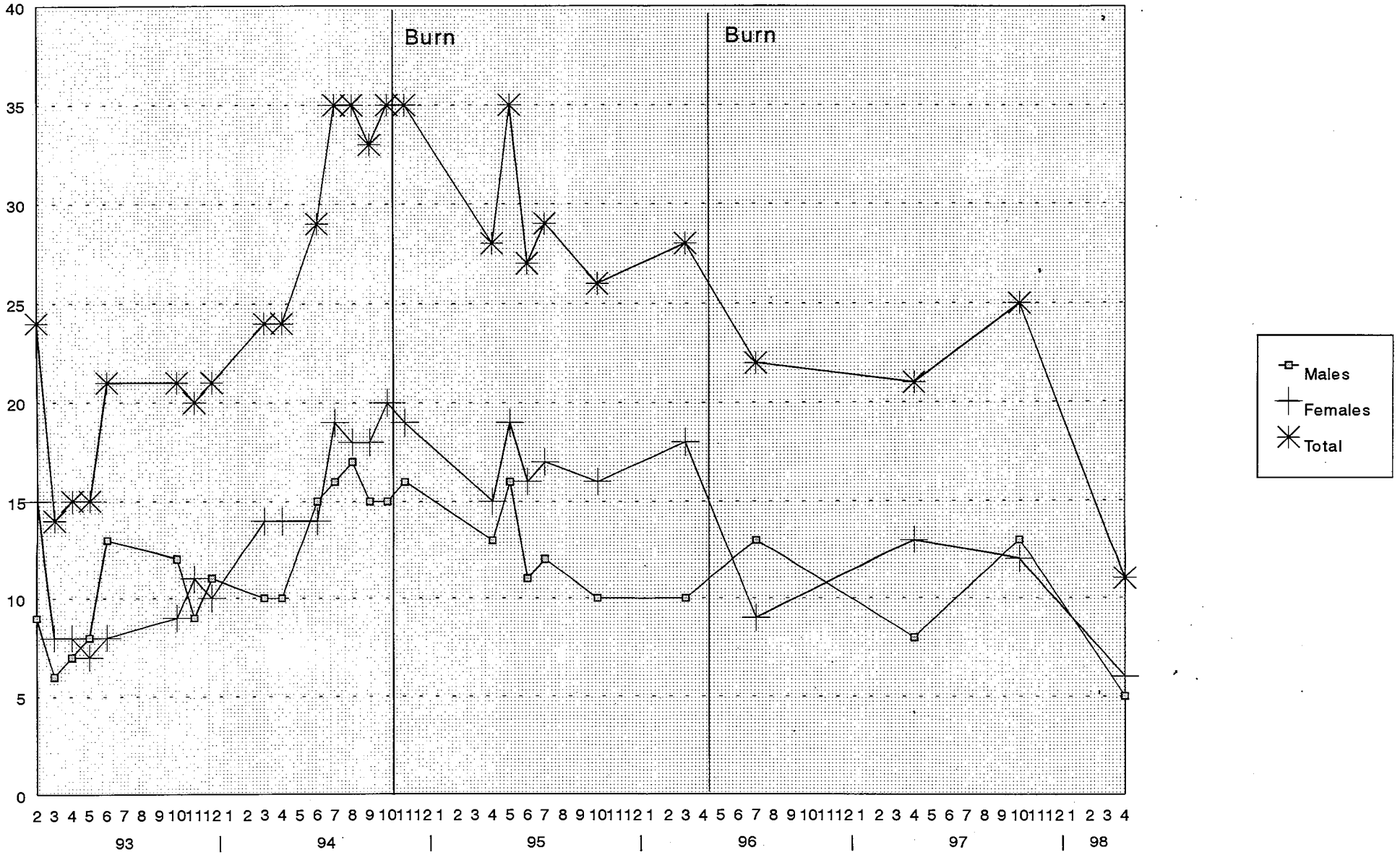

Figure 2. Known to be alive estimates for chuditch at Batalling using all grid and road traps.

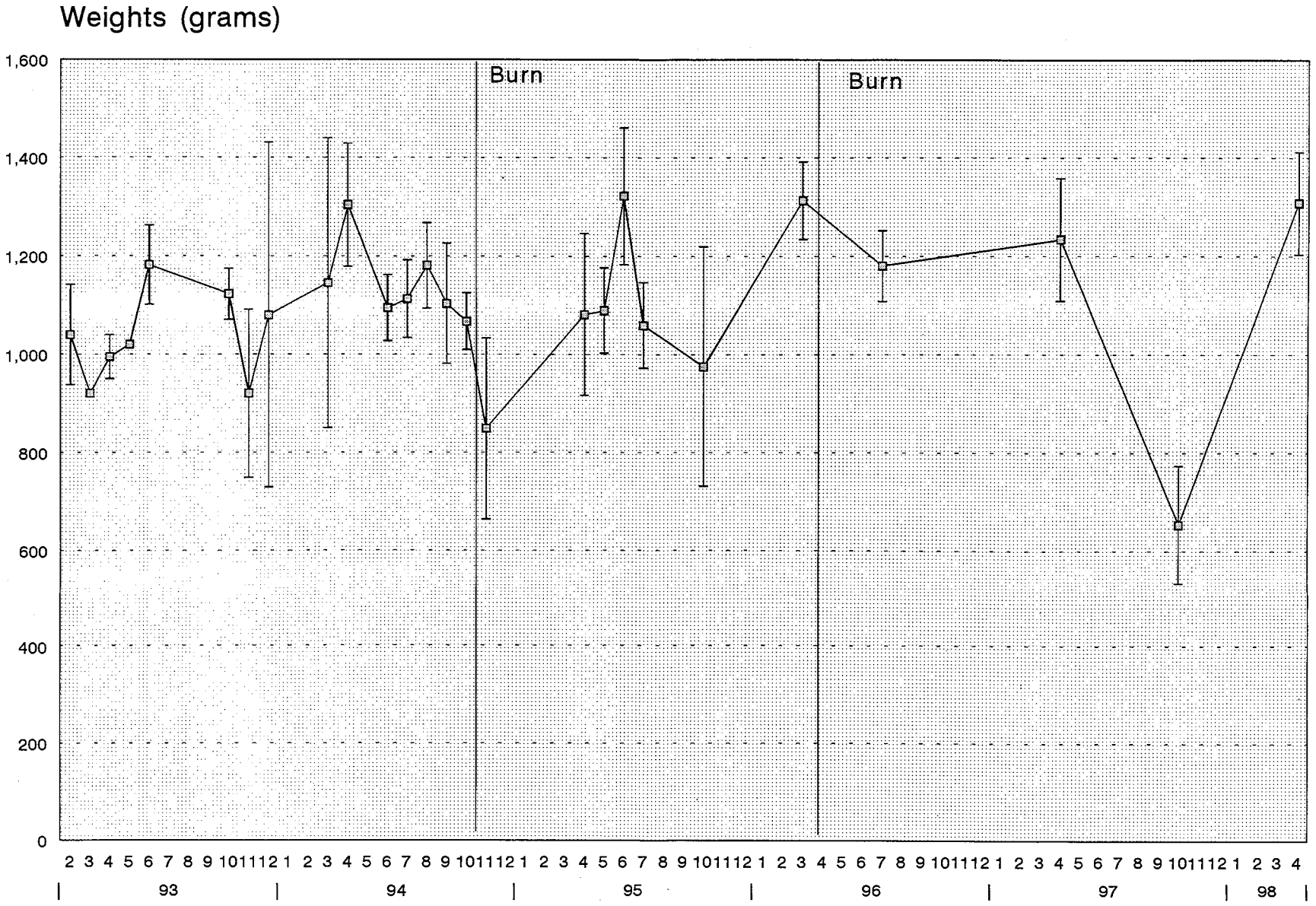

Figure 3. Mean weights chuditch males at Batalling using all grids and road traps.

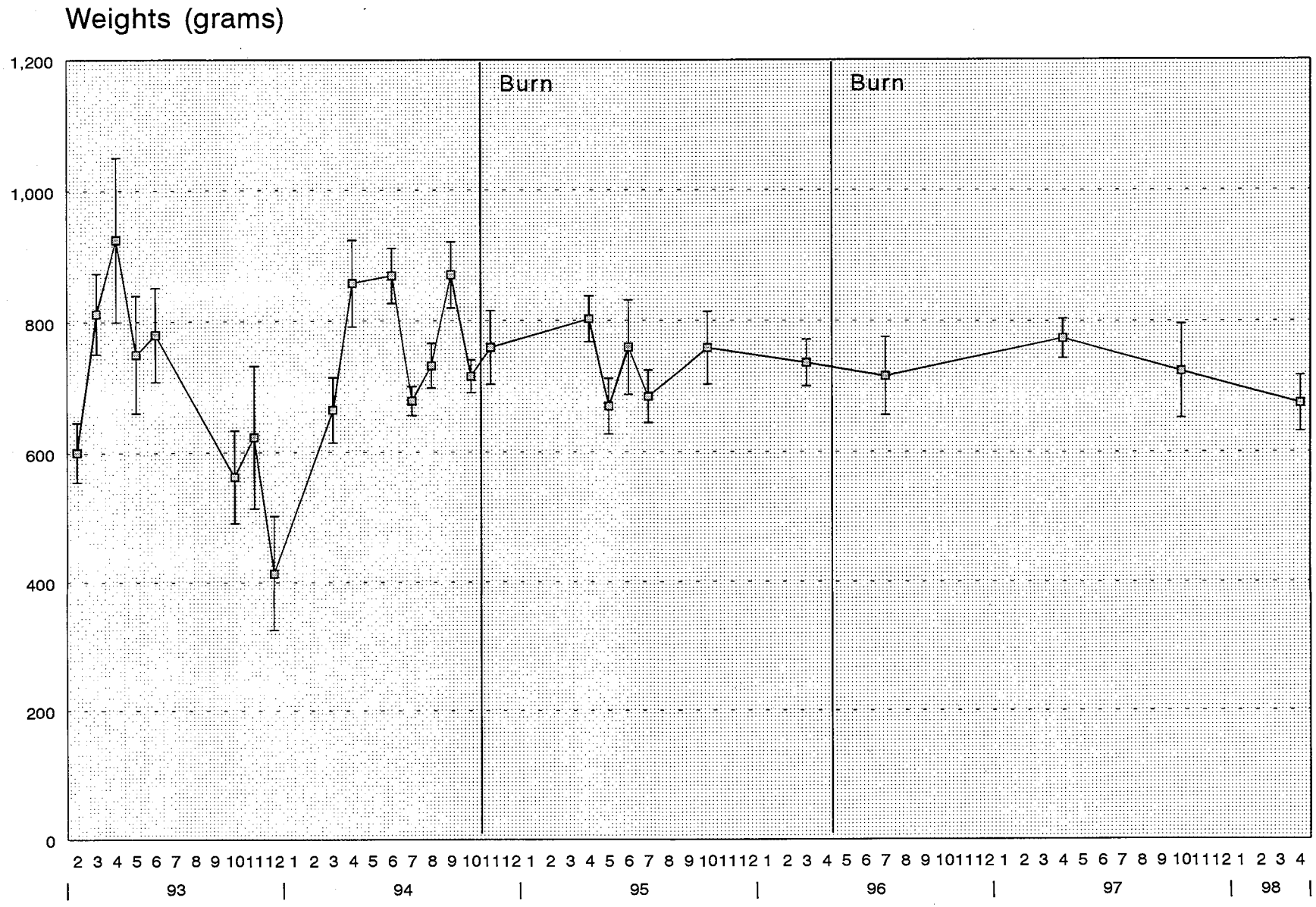

Figure 4. Mean weights chuditch females at Batalling using all grids and road traps

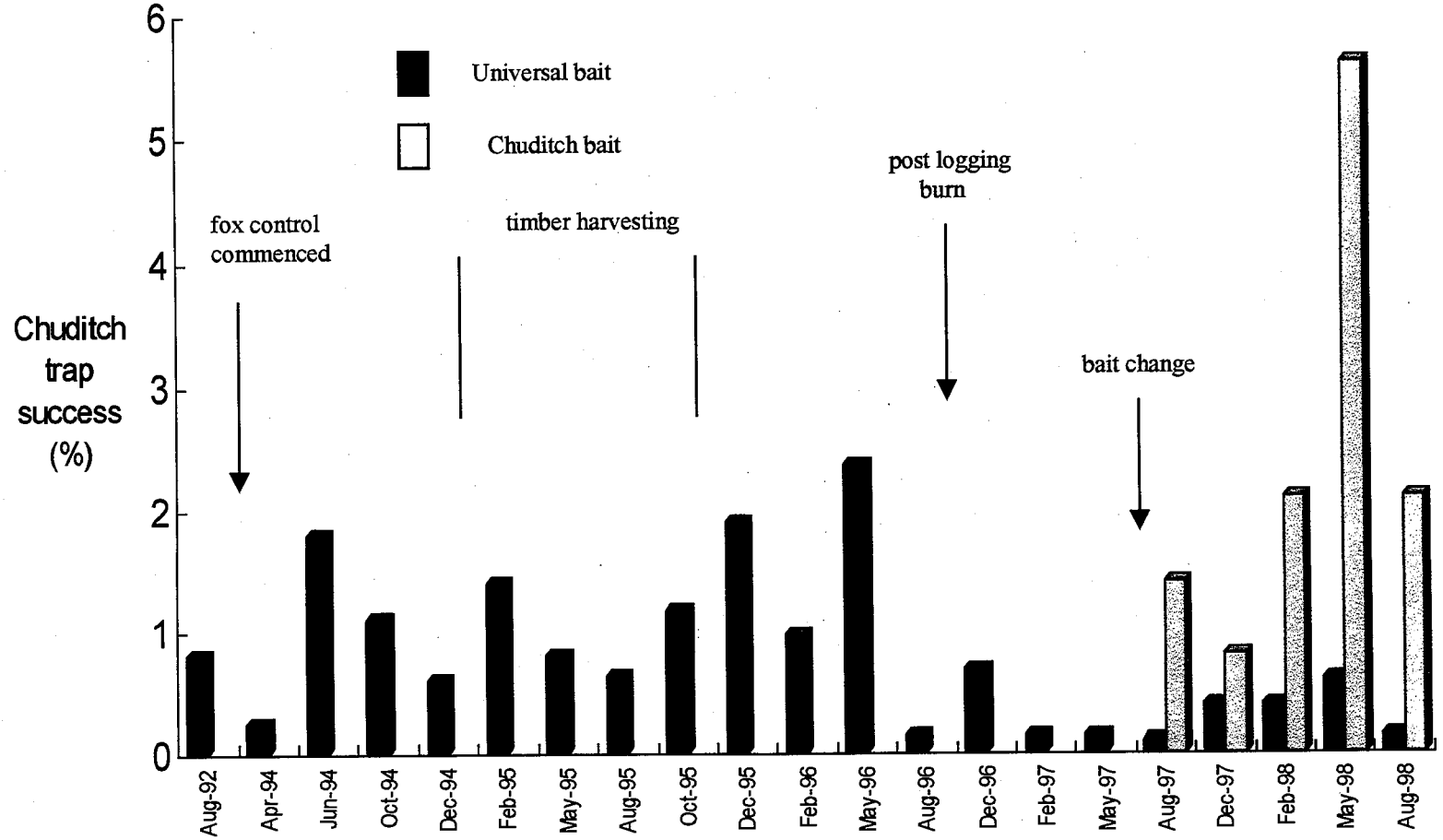

Figure 5 . Trap success rates for Chuditch along road transects during the Kingston timber harvesting study

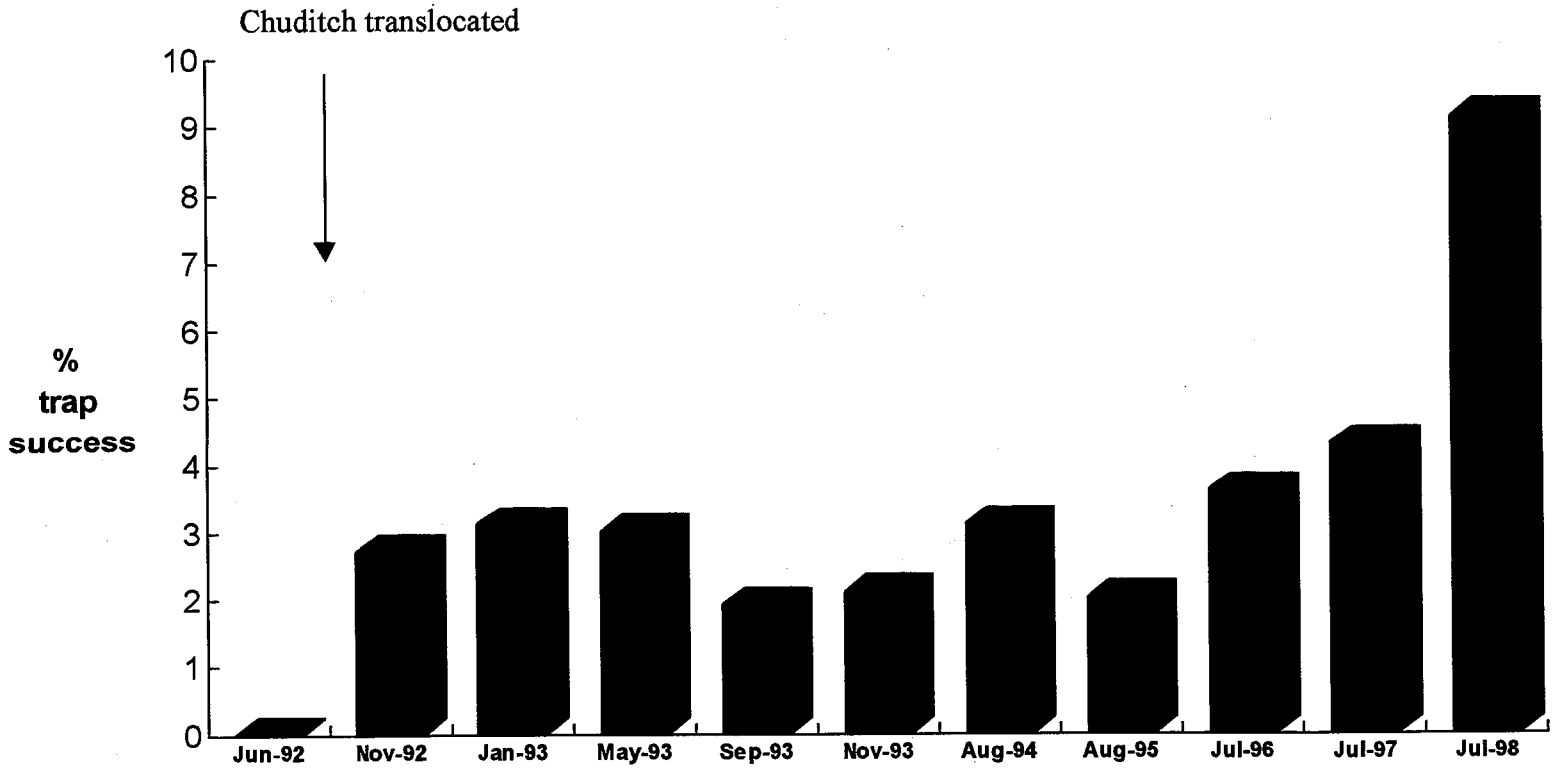

Figure 6. Trap success rates for Chuditch at Julimar Conservation Park.