

KATANNING DISTRICT

FINAL REPORT

The Status and Conservation of the Western Mouse

(*Pseudomys occidentalis*)

at Anderson Lake Nature Reserve No. 25194

by

M S Graham

Department of Conservation and Land Management

KATANNING

1. Background

World Wildlife Fund for Nature Australia/CALM project P145 "The Status and Conservation of the Western Mouse (*Pseudomys occidentalis*)" was originated by Mr K Wallace, CALM, Narrogin. In January 1990, following a request by Mr Wallace for district assistance, the Katanning district confirmed an intention to undertake regular trapping at Anderson Lake Nature Reserve No. 25194 and submit data to the Project Consultant, Mr L Whisson.

2. Objectives

- 2.1 To provide data to determine the status of the Western Mouse at Anderson Lake Nature Reserve.
- 2.2 To provide supplementary information of the associated flora, fauna and soils at a predetermined monitoring site at Anderson Lake Nature Reserve.
- 2.3 To gather additional, opportunistic information on the biota of the Anderson Lake Nature Reserve.
- 2.4 To train district personnel in flora and fauna monitoring and survey techniques.

3. Summary of Work January 1990 - March 1992

- 3.1 Twenty-five sites on a 50 x 50m grid established, each with 2 x pitfall traps and 10 x metres of drift fence.
- 3.2 Seventeen trapping sequences of 1 week duration undertaken. Total trap/nights to date:-

Pitfall traps	=	4 072 trapnights
Elliott traps	=	1 672 trapnights
Cage traps	=	8 trapnights
- 3.3 Surface soils described at 25 trap sites.
- 3.4 Vegetation formations (Muir) and plant species lists prepared for 25 trap sites. Reference plant specimens retained in Katanning district herbarium.
- 3.5 Opportunistic fauna sighting lists maintained.
- 3.6 Lake water depth recorded during each trap sequence since December 1990, Wetland Research Group notified.
- 3.7 Modifications for pitfall traps manufactured and installed.

4. Results

4.1 Western House

4.1.1 Nineteen (19) *P. occidentalis* trapped, marked and measured. One dead *P. occidentalis* and one partial skeleton recovered within the trap site. Marked *P. occidentalis* re-trapped on 14 occasions.

4.1.2 Breeding

Juvenile and sub-adult *P. occidentalis* recovered December 1990, November and December 1991 and March 1992.

4.1.3 Diet

Further to the events reported in Progress Report No. 1. During February 1992 freshly chewed fruits of *Santalum acuminatum* were noted in an old cache of fruits which was found when the pit lines were established. In March 1992 a new cache of *S. acuminatum* fruits was found within the trap area. This cache contained fruits from the current season's fall and also older fruits which had been recently chewed open.

4.1.4 Behaviour

Further to the events reported in Progress Report No. 1.

(a) During December 1991 and February 1992 no obvious patterns resulted when mice were observed following release.

(b) Mice released during March 1992 all moved positively and with no hesitation when released, however two distinctly different directions were taken (Figure 1). The movements of mouse P18 on different days may indicate that more than one hole or refuge may be utilized by the same animal.

4.2 Other Trap Results

4.2.1 Mammals

1 x *Mus domesticus*
2 x *Sminthopsis crassicaudata*

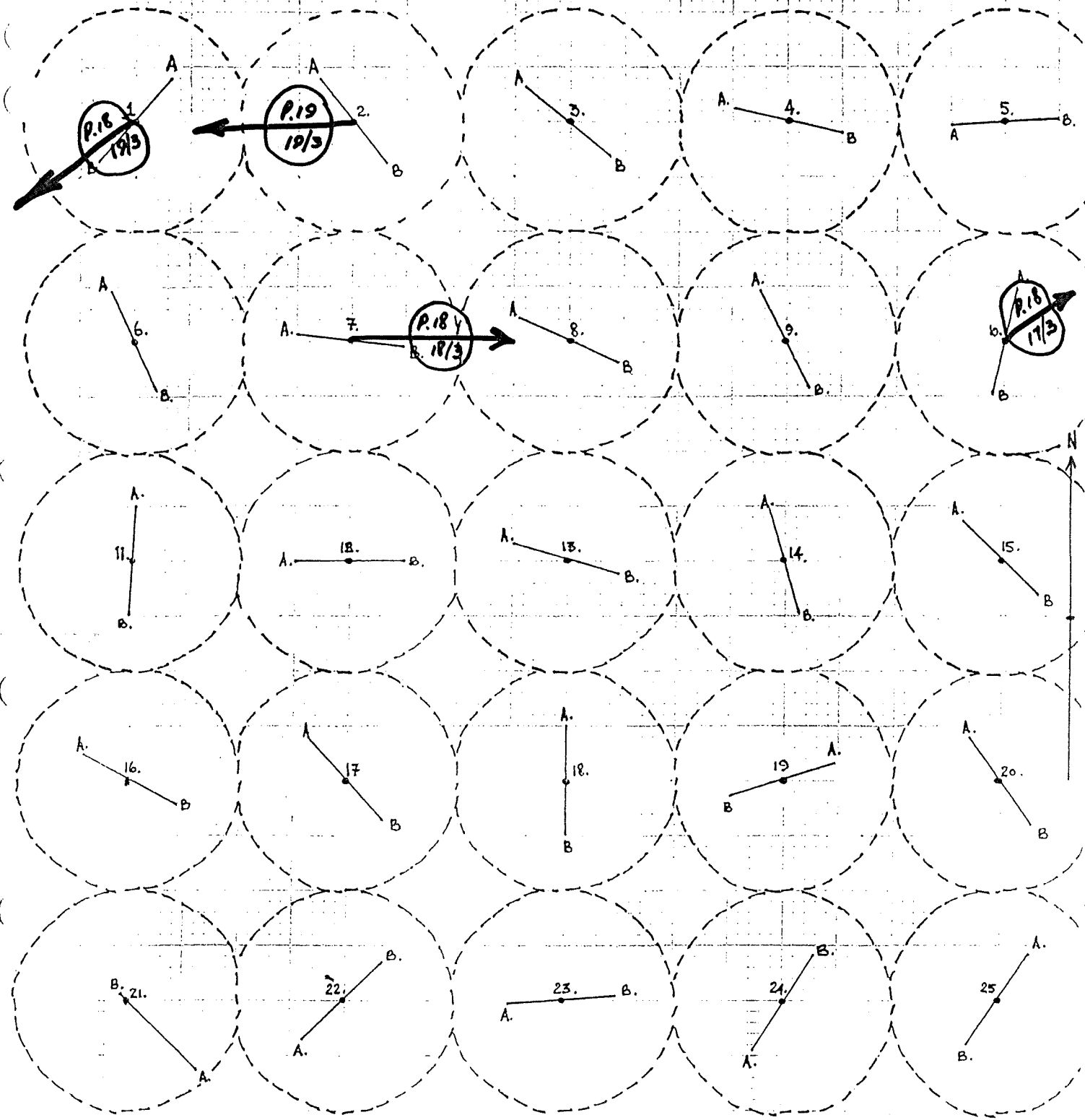


Fig 1: Directional movement of Pseudomys occidentalis following release W/E 20-3-92.

5 x *Tarsipes rostratus*
1 x *Trichosurus vulpecula*

4.2.2 **Birds**

4 x Red-winged Fairy-wren

4.2.3 **Reptiles**

1 x *Aprasia repens*
3 x *Crenadactylus ocellatus*
12 x *Ctenophorus maculatus griseus*
(+ 2 re-traps)
8 x *Ctenotus impar*
2 x *Ctenotus sp.*
22 x *Diplodactylus g. granariensis*
(+ 8 re-traps)
21 x *Lerista distinguenda*
(+ 2 re-traps)
1 x *Memetia greyii*
11 x *Morethis obscura*
1 x *Notechis curtus*
3 x *Pogona m. minor*
1 x *Ramphotyphlops australis*
2 x *Rhinoplocephalus nigricaps*
14 x *Tiliqua r. rugosa*
(+10 re-traps)
2 x *Varanus rosenbergi*

4.2.4 **Frogs**

21 x *Limnodynastes dorsalis*
5 x *Litoria cyclorhynchus*
(+ 1 re-trap)
2 x *L. moorei*
4 x *Myobatrachus gouldii*
28 x *Neobatrachus sp.*
1 x *N. pelabatoides*
6 x *N. sutor*
1 x *Pseudophryne guentheri*
2 x *Ranidella pseudinsignifera*

4.2.5 **Invertebrates**

Fifty-four (54) invertebrate specimens have been collected of which eleven (11) have been identified by Mr G Hall and three (3) Scorpion species have been forwarded to Mr G Smith at CSIRO. With the exception of the scorpions and six (6) beetles all specimens are retained at Katanning.

4.3 Opportunistic Fauna Records

4.3.1 Birds

A total of 77 bird species have been recorded during the current survey, bringing to a total of 87 species recorded for the reserve. The list given as Appendix I of Progress Report No. 1 remains unchanged.

4.3.2 Other Vertebrates

Vulpes vulpes
Macropus fuliginosus
Pseudonaja a. affinis
Tiliqua occipitalis

4.4 Vegetation

The trapping area is predominantly Open Shrub Mallee with an average height of six (6) metres over Low Scrub B to one (1) metre with *Melaleuca* spp predominating. Seventy-seven (77) plant species were collected/identified within the trapping area and a list of these is given at Appendix I. No Declared Rare Flora species were recorded. Two species, *Melaleuca polycephala* and *Thysanotus aff gageoides* are Priority 3 and 2 respectively, however identification of the specimens requires confirmation.

4.5 Weather

From the commencement of trapping on 6 May 1990 to 20 March 1992 daily weather data was collected during each trapping sequence. Rainfall figures for Cranbrook Post Office, Tambellup Post Office and the Stirling Ranges National Park, plus daily maximum and minimum temperatures from the latter were forwarded to Wildlife Research.

4.6 Trends in Trapping

4.6.1 Some relationship between numbers of mammals recovered (Figure 2) and number of plant species in flower (Figure 3) is indicated. The number of mammals recovered, including re-traps, is generally at its highest immediately after the number of plant species flowering has peaked. At the Anderson Lake site this trend was interrupted by high levels of predation from pit traps by foxes during April 1992 and was re-established when pit traps were modified to prevent predation.

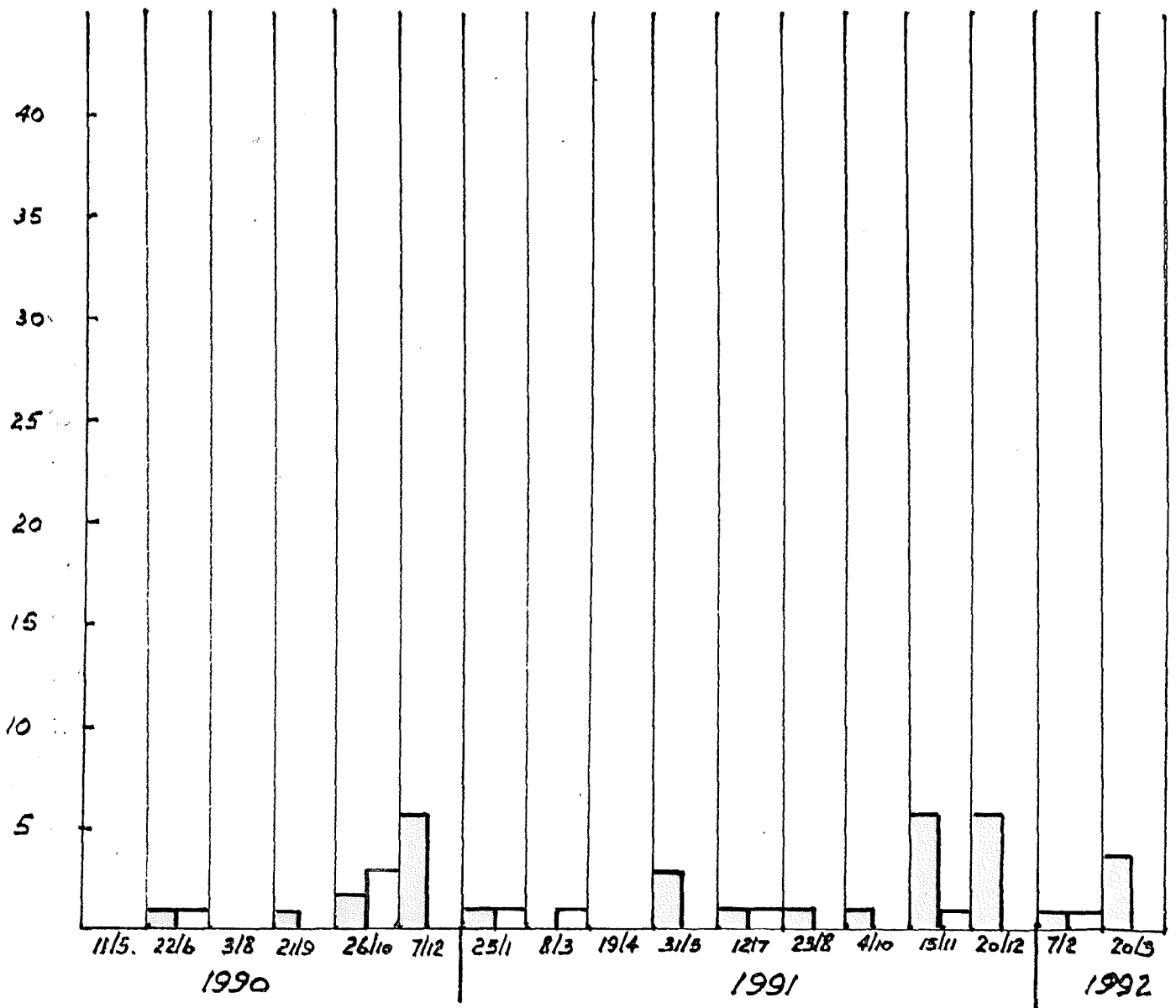


Figure 2: MAMMAL RECOVERIES AT THE ANDERSON LAKE TRAPSITE



Pseudomys occidentalis

Other mammals

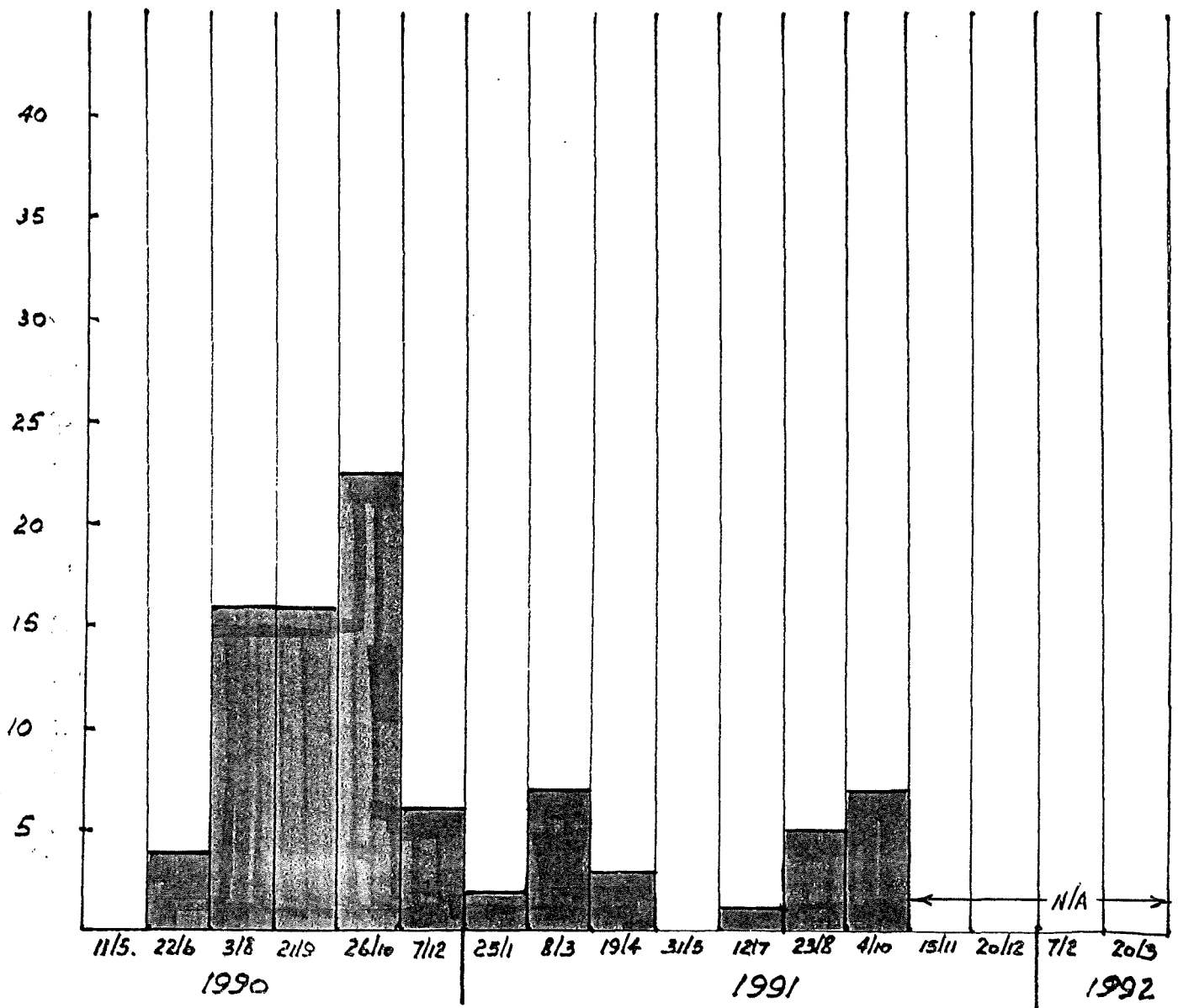


Figure 3: NUMBER OF PLANT SPECIES IN FLOWER AT THE ANDERSON LAKE TRAPSITE

- 4.6.2 As anticipated numbers of frogs recovered (Figure 4) has a strong link to rainfall (Figure 5) between autumn and spring. Rain during hot weather, ie thunderstorms, did not influence frog recovery numbers.
- 4.6.3 Peak reptile recovery numbers (Figure 6) occurs in the post-flowering period (Figure 3) closely following the trend for mammals. Reptile recovery numbers were dramatically reduced when the average daily minimum temperature fell below 7 degreesC. Additionally reptile numbers declined when the average daily temperature exceeded 20 degreesC (Figure 5).

5. COSTS

	SALARIES	WAGES	PLANT	MATERIALS	TRAVEL
1989/90	6888.78	363.12	2975.65	9.73	109.75
1990/91	5755.91	195.42	1888.39	125.75	529.37
1991/92	3032.00	Nil	1072.00	39.67	91.85
TOTALS	\$15676.69	\$558.54	\$5938.04	\$175.15	\$730.97

6. ACKNOWLEDGEMENTS

- 6.1 Weather data provided by Alan and Sandy Rose at the Stirling Ranges National Park is appreciated.
- 6.2 Keith Morris and Leigh Whisson from the WA Wildlife Research Centre provided pit trapping materials, assisted in site establishment, undertook trapping when district staff were unavailable, assisted in fauna identification, etc and above all maintained enthusiasm for the project.
- 6.3 Assistance in identifying plant specimens is acknowledged in Appendix I.
- 6.4 The following District personnel assisted in all facets of the project and are especially thanked; Brad Bourke, Melissa Ford, Greg Leaman, Des Plumb and Steve Toole.

M Graham
SENIOR RESERVES OFFICER

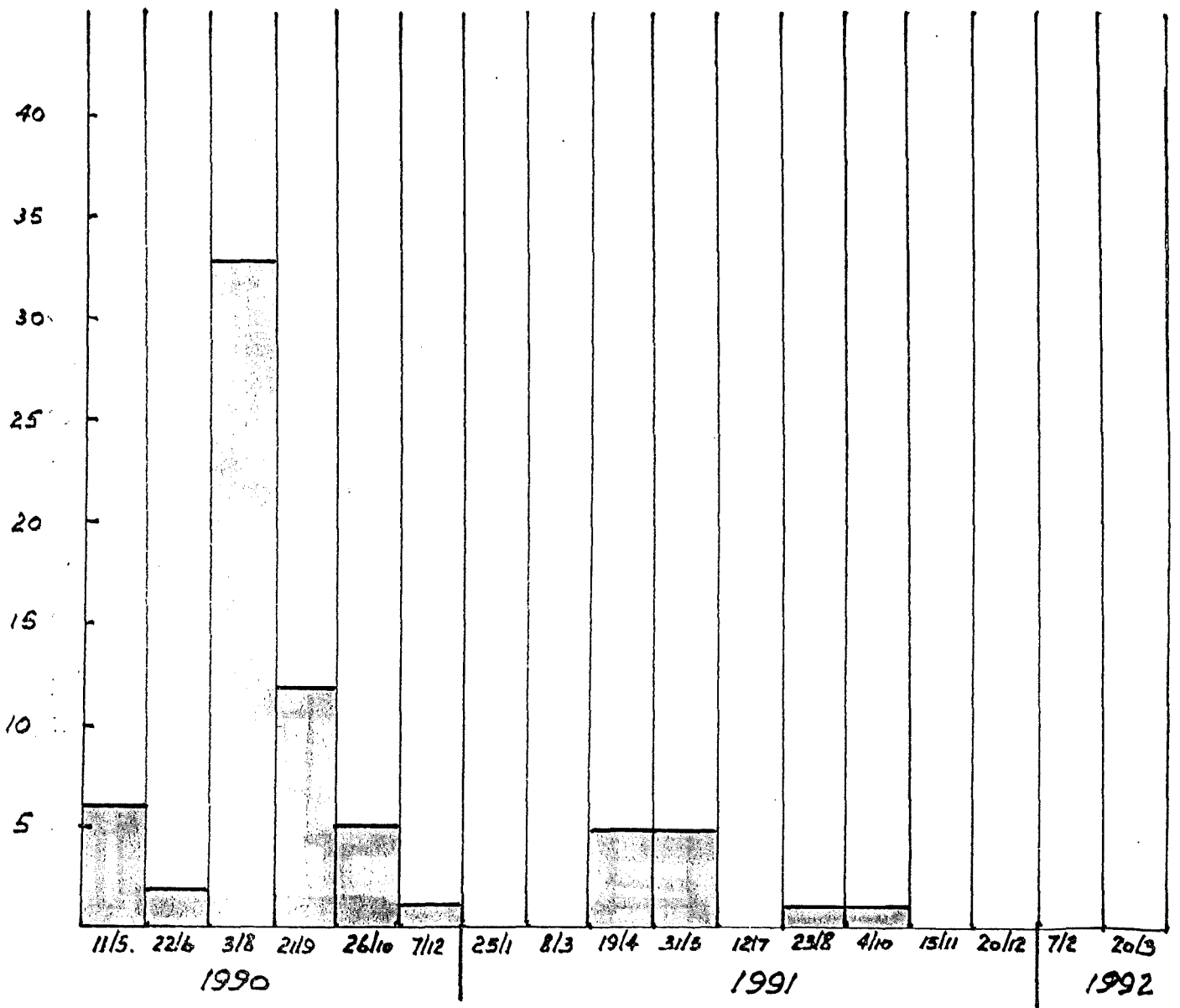


Figure 4: FROG RECOVERIES AT THE ANDERSON LAKE TRAP SITE

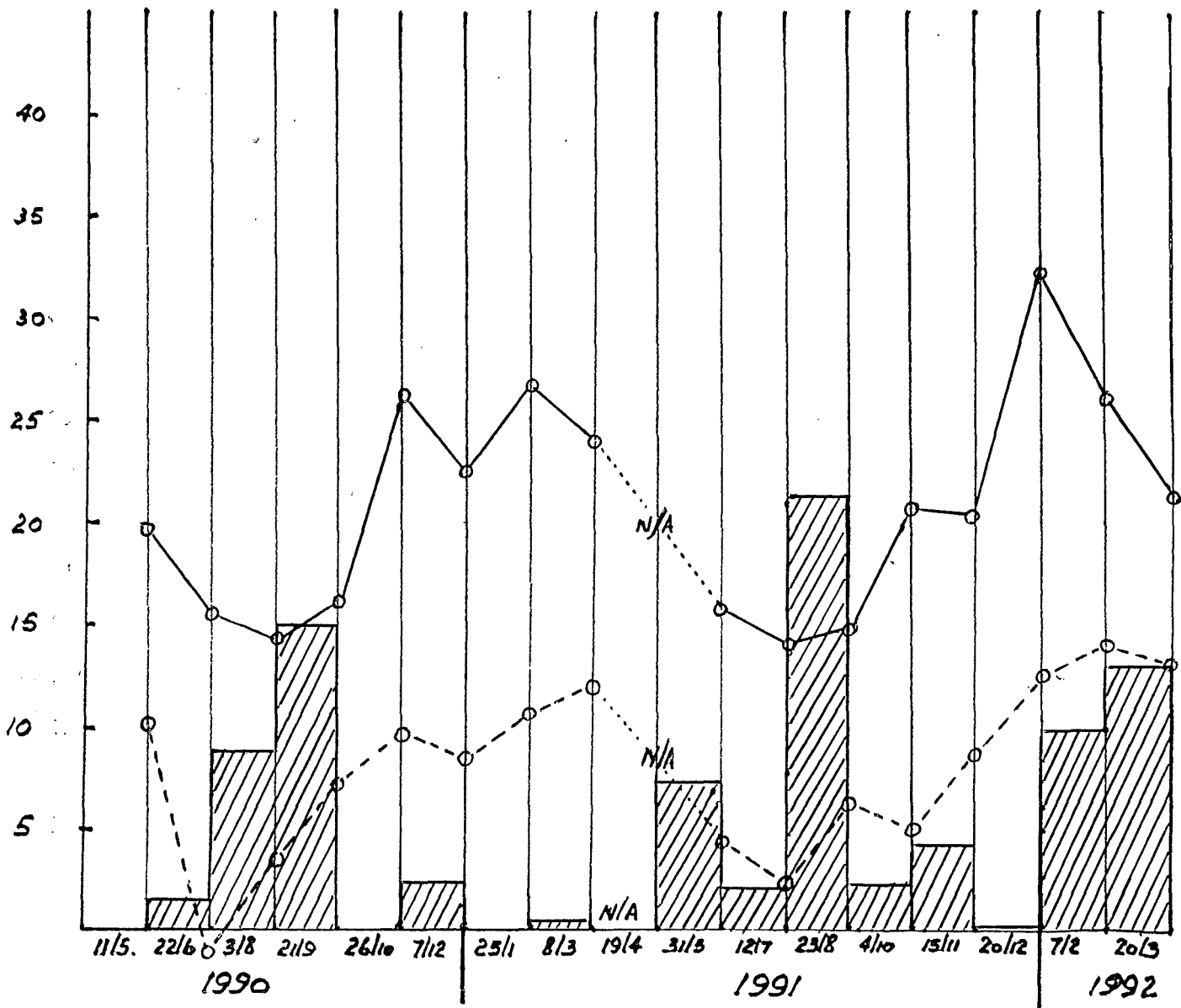
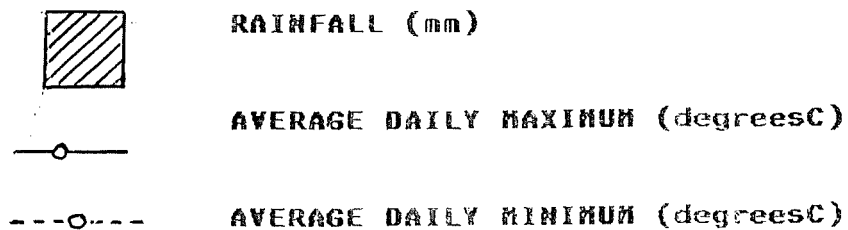


Figure 5: WEATHER DATA FROM THE STIRLING RANGES NATIONAL PARK DURING TRAPPING AT ANDERSON LAKE



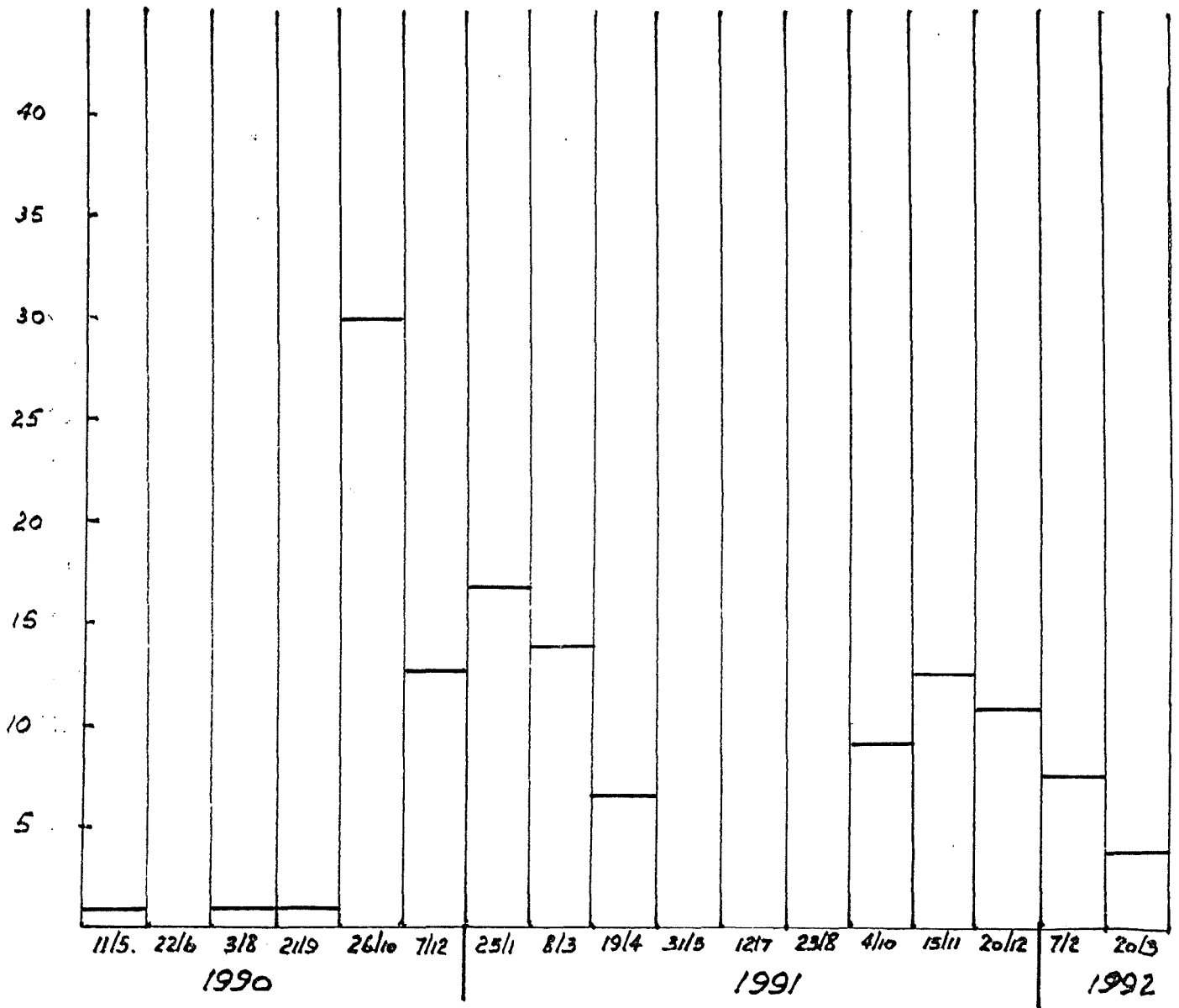


Figure 6: REPTILE RECOVERIES AT THE ANDERSON LAKE TRAPSITE

A P P E N D I X I

PLANT SPECIES LIST

ANDERSON LAKE PSEUDOMYS RESEARCH SITE

COLLECTION NO.	SPECIES	IDENTIFIED CONFIRMED/ASSISTED (Other than MSG)
MSG. 266	<i>Acacia bidentata</i>	B MASLIN
260	<i>A. mutabilis</i> ssp. <i>mutabilis</i>	"
319	<i>A. sphacelata</i>	
362	<i>Arctotheta calendula</i>	
264	<i>Astartea</i> sp.	M TRUDGEON
330	<i>Baekea latens</i>	"
235	<i>Boronia</i> sp. (aff. <i>crassifolia</i>)	
360	<i>Caladenia doutchae</i>	
348	<i>C. saccharata</i>	
322	<i>Cassytha melantha</i>	K J ATKINS
209	<i>C. micrantha</i>	
328	<i>Comesperma</i> sp. nov	
210	<i>C. spinosum</i>	K J ATKINS
294	<i>Cooperookia</i> <i>strophiolata</i>	
261	<i>Cryptandra</i> <i>parvifolia</i>	
316	<i>Daviesia benthamii</i>	K J ATKINS
289	<i>D. pectinata</i> var <i>decipiens</i>	"
339	<i>Dianella revoluta</i>	"
208	<i>Dodonaea stenozyga</i>	J ALFORD
331	<i>Dryandra tenuifolia</i>	
314	<i>Eucalyptus anceps</i>	

315	<i>E. annulata</i>	K J ATKINS
327	<i>E. aff. occidentalis</i>	
313	<i>E. spathulata</i> var. <i>grandiflora</i>	
269	<i>Eucalyptus</i> <i>transcontinentalis</i>	K J ATKINS
335	<i>E. uncinata</i>	
323	<i>Exocarpus aphyllus</i>	K J ATKINS
224	<i>Gahnia drummondii</i>	
292	<i>Gompholobium</i> <i>baxteri</i>	
334	<i>Grevillea huegelii</i>	
326	<i>G. patentiloba</i>	
333	<i>G. pauciflora</i>	N MARCHANT
265	Gen. Indet.	
312	<i>Hakea commutata</i>	K J ATKINS
325	<i>H. laurina</i>	"
332	<i>H. marginata</i>	"
262	<i>Hibbertia</i> sp. aff. <i>gracilipes</i>	J WHEELER
	<i>Hypochoeris glabra</i>	
361	<i>Istotropis cunifolia</i>	
206	<i>Lepidosperma</i> <i>angustatum</i>	K J ATKINS
290	<i>Leptomeria</i> <i>presissiana</i>	
263	<i>Leucopogon</i> sp.	
295	<i>L. fimbriatus</i>	
205	<i>Melaleuca</i> sp.	
232	<i>Melaleuca</i> sp.	
317	<i>Melaleuca</i> sp.	
210	<i>M. aff. glaberrima</i>	

221	<i>M. halmaturorum</i>	
293	<i>M. holosericea</i>	
230	<i>M. polycephala</i>	
204	<i>M. aff. spathulata</i>	
203	<i>M. subfalcata</i>	
259	<i>M. thyoides</i>	
324	<i>M. uncinata</i>	
218	<i>M. undulata</i>	
321	<i>Nematolepis phlebalioides</i>	G KEIGHERY
329	<i>Neurachne alopecuroides</i>	K J ATKINS
212	<i>Persoonia teretifolia</i>	
267	<i>Phebalium tuberculata</i>	K J ATKINS
211	<i>Pultenaea verruculosa var. pilosa</i>	
349	<i>Pterostylis mutica</i>	
346	<i>P. recurva</i>	
350	<i>P. aff. rufa</i>	
341	<i>P. vittata var. vittata</i>	
347	<i>P. nana</i>	
320	<i>Santalum acuminatum</i>	
338	<i>Stipa sp.</i>	
287	<i>Stylidium repens var. diplectroglossum</i>	
318	<i>Templetonia sulcata</i>	K J ATKINS
363	<i>Thelymitra canaliculata</i>	

310	Thysanotus aff. gageoides	
	T. paterosni	
	Thysanotus sp.	
365	Ursinia anthemoides	
364	Velleia glabarata	
291	Vulpia sp.	J ALFORD
288	Westringia rigida	K J ATKINS