EPLIBEACY

RESULTS OF STANDARD STANDARD SMALL MAMMAL SURVEY LAKE JASPER AREA

17-27 MAY 1993



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F/R Carl Beck

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CONTENTS

a	Page
Summary	2 2 4
Introduction	2
1 Survey Area	
2 Methods	4
2.1 Cage Trapping	5
2.2 Pit Traps	5
2.3 Ground Searches	7
2.4 Spotlighting	7
3 Results Mammals	7
3.1 Native Mammals	7
3.1.1 Bush Rat (Rattus fuscipes)	7
3.1.2 Southern Brown Bandicoot (Isoodon obesulus)	9
3.1.3 Common Dunnart (Sminthopsis murina)	10
3.1.4 Western Grey Kangaroo (Macropus fulingosus)	10
3.2 Introduced Mammals	11
3.2.1 Domestic Rat (Rattus rattus)	11
3.2.2 House Mice (Mus musculus)	11
3.2.3 Rabbits (Oryctolagus cunilculus)	11
3.2.4 Feral Cat (Felis catus)	12
3.2.5 Fox (Vulpes vulpes)	12
3.3 Additional Species	13
3.3.1 Brushtail Possum (Trichosurus vulpecula)	13
3.3.2 Ringtail Possum (Psedocherus peregrinus occidentalis)	13
3.3.3 Quokka (Setronix brachyurus)	14
3.3.4 Brushtail Phascogale (Phascogale tapoatafa)	15
3.3.5 Dingo (Canis familaris dingo)	15
4 Results Birds	16
Conclusion	17
Recommendations	17
Acknowledgements	18
References	19
Appendices	
Appendix 1 Trap Result Forms	20-39
Appendix 2 Spotlight Survey Form	40-41
- Francis - Spought out to Tolin	70-41
Maps	
Map 1 Location of Survey Area.	3
Map 2 The Survey Area.	4
Map 3 Location of Traps	6
Map 4 Spotlighting Route	8
Table 3.1	12

Lake Jasper Small Mammal Survey

Summary

During a small mammal survey in the Lake Jasper area a total of 384 captures were made representing 5 different species of mammals. A further 4 species were identified as being present in the area from sightings or signs while 5 additional species were identified as possibly present due to suitable habitat and nearby populations. Of these 14 species 5 are introduced species which are likely to have adverse effects on the native fauna populations.

23 species of birds and 3 frog species were also observed during the survey, however no formal intensive survey was carried out for these Classes of animals.

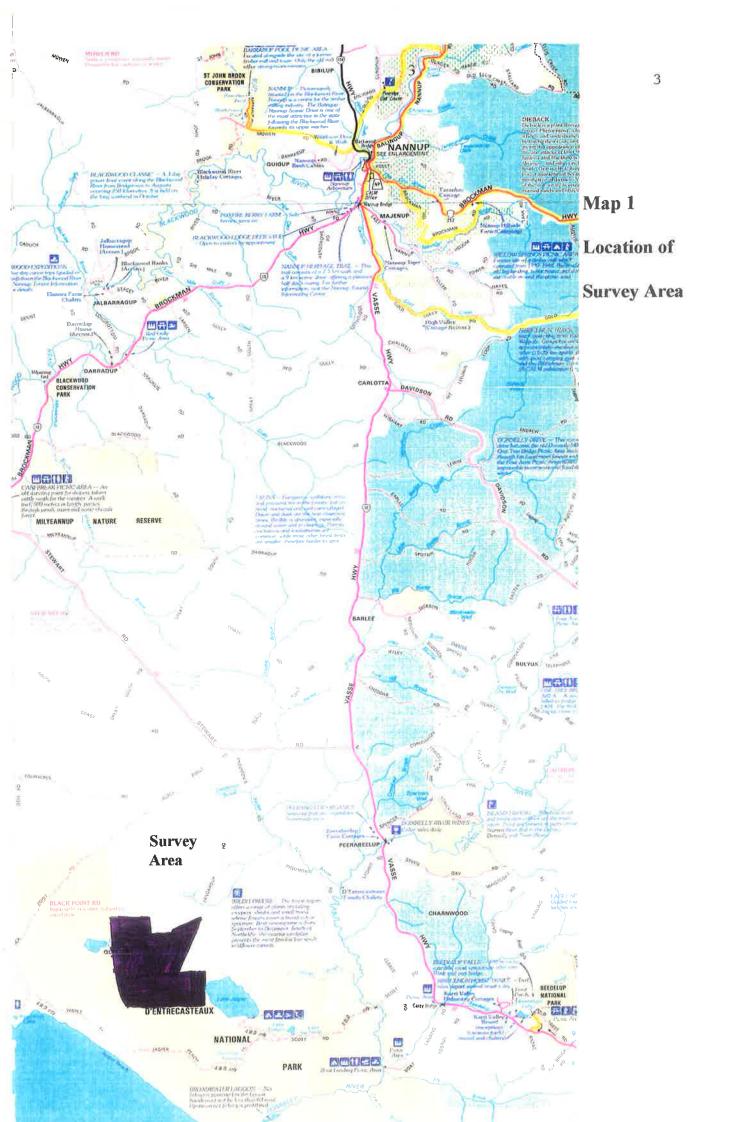
This area was found to have significant conservation value due to the higher than previously recorded numbers of Southern Brown Bandicoots which are at present declared endangered.

Introduction

From Monday 17 May to Thursday 27 May 1993 Department of Conservation and Land Management (CALM) Staff from the Nannup District conducted a small mammal survey for and with support from Cable Sands Ltd in the Lake Jasper area.

The survey area was located to the Northwest of Lake Jasper (see Map 1) which is approximately 50km South of Nannup. The area is part of the D'Entrecasteaux National Park. It appears that no recent biological survey of mammals in the area had been carried out and this survey was therefore developed to gather information on the species and number of mammals present in the area.

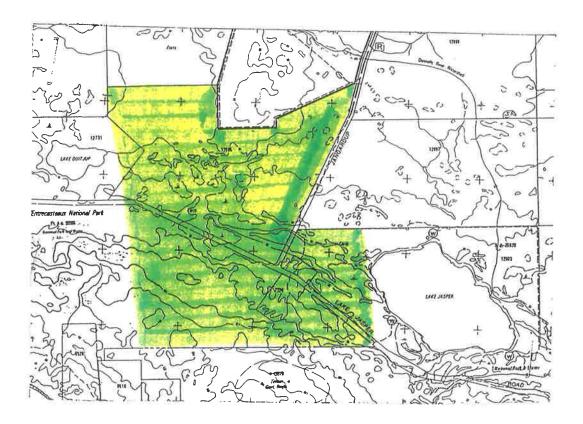
During the survey other information such as bird and plant species present was also collected when ever possible.



1 Survey Area

All of the area trapped as part of this survey was in the D'Entrecasteaux National Park. The area surveyed was approximately 1500ha in size and located to the Northwest of Lake Jasper. (see map 2)

Map 2 The Survey Area



2 Methods

Field work was carried out between 17 and 27 May 1993 with opportunistic observations by staff in April while working on other projects near by.

Sampling was carried out by several methods including

- a) Cage Trapping
- b) Pit Trapping
- c) Ground Searches
- d) Spotlighting

No sampling was carried out for bats due to the absence of personnel familiar with the methods.

2.1 Cage Trapping

Cage traps were set on transect lines through out the survey area and checked daily. A total of 95 Sheffield cage traps 25cm x 25cm x 45cm and 95 small Elliott traps were set on 17 May on 11 transect lines as per map 1. Traps were placed in likely sites where there appeared to be recent sign of animal habitation approximately 30m apart along transect lines pushed into the scrub. Transect lines were located to sample as many different vegetation types as possible. These traps were baited using a universal bait of peanut paste, muesli, cat food and sardines.

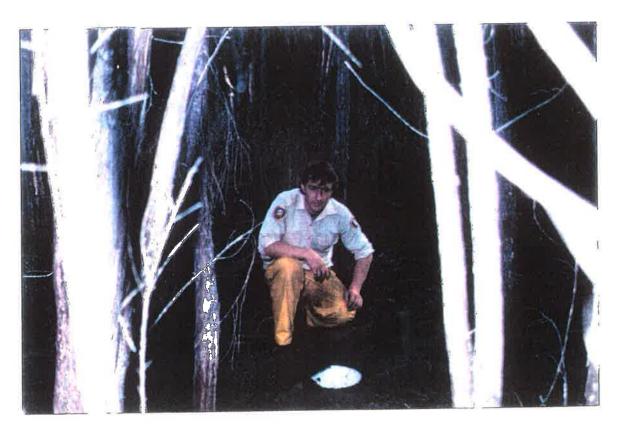
Five larger cage traps 60cm x 60cm x 100cm suitable for capturing Quokkas or Dingoes were also set on Friday 14 May 1993. These traps were baited with apples and free feeding carried out in adjacent area to attract animals to the trap site.

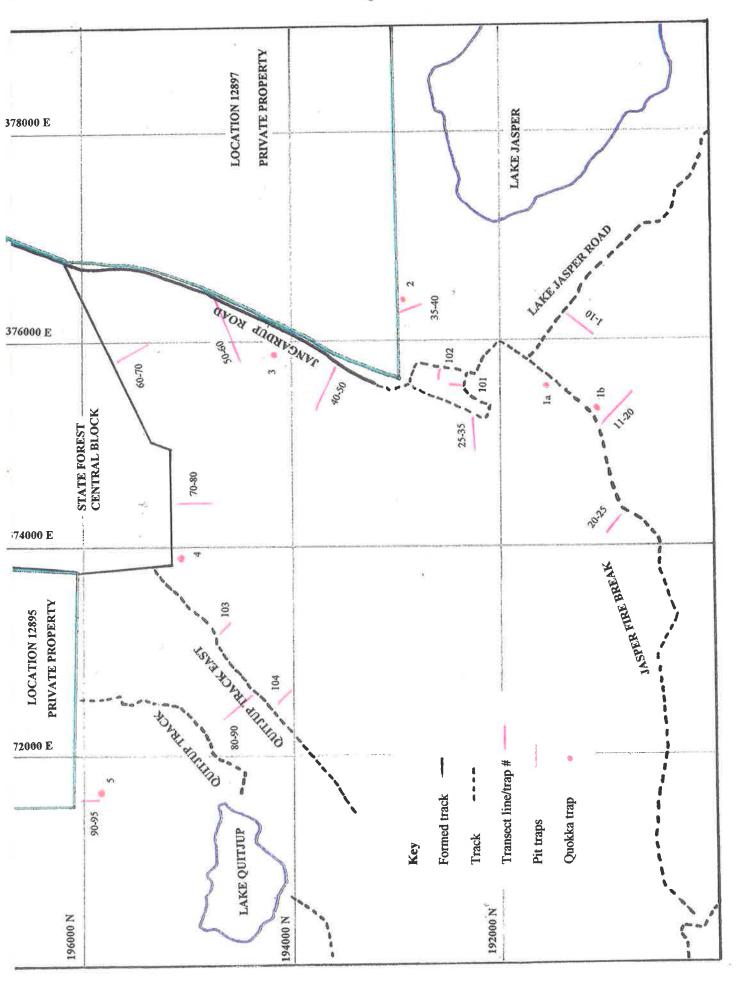
See Map 3 for transect location.

2.2 Pit Traps

On Friday 21 May four lines of 5 pit traps where set. The Pit traps consisted 20 litre buckets dug into the earth till the tops where level with the dirt and a 15cm net fencing that runs over the buckets to direct animals into them. Again the pit trap lines where placed as to sample differing habitat types.







MAP 3 LOCATION OF TRAPS

2.3 Ground Searches

Most days after checking of the above traps a ground search for signs of different species was conducted. During these searchers surveyors were looking for direct sightings, tracks, scats, nests, habitat trees or logs. During these searches a large area was checked with up to 4 surveyors working at one time.

2.4 Spotlighting

Spotlighting was carried out on 14 June 1993 by driving the internal tracks as shown. Three surveyors were used with one driver, one spotlighter and one recorder. The vehicle was travelling at speeds of less than 10km/hr at all times during the spotlighting. The purpose of this method was to try and observe nocturnal animals that would not enter traps. However only animals previously observed during the survey were sighted.

Map 4 shows route taken while spotlighting and completed survey form is Appendix 2.

3 Results Mammals

During the survey 9 species of mammals were identified as positively being present in the survey area.

3.1 Native Mammals

Of the 9 species of mammals observed in the area only 4 were native being

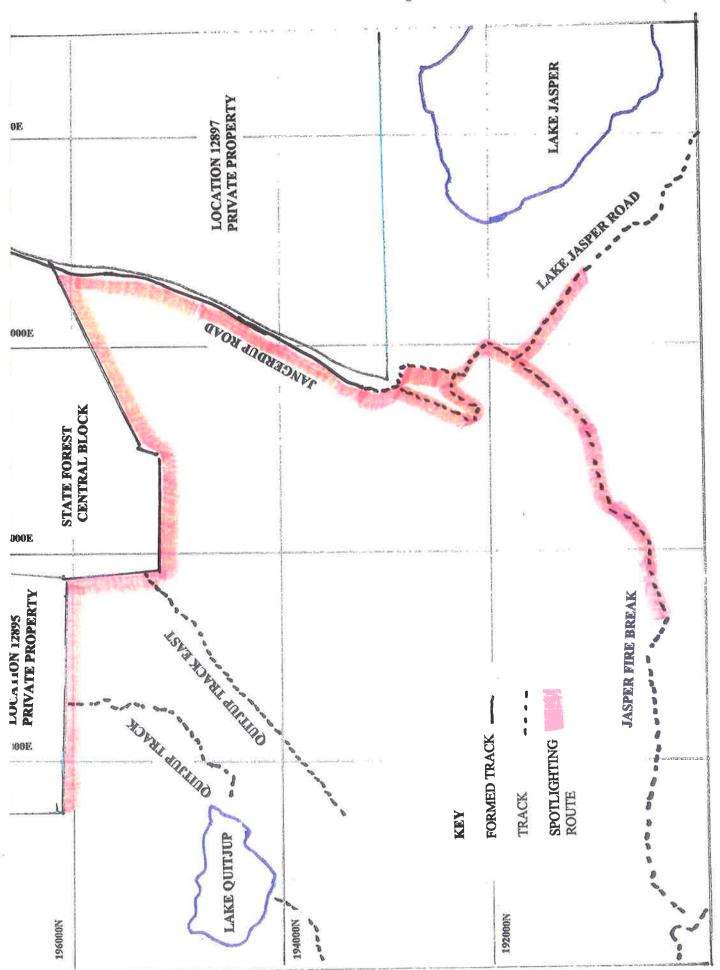
- 1 Bush Rats
- 2 Bandicoots
- 3 Dunnarts
- 4 Kangaroos

3.1.1 Bush Rat (Rattus fuscipes)

Bush rats accounted for a total of 317 captures during the survey and although some of these were bound to have been recaptures this points to a healthy population. This is by far the highest capture number of this species for any area sampled in the Nannup District.

Captures were made on all trap lines with the population appearing to be consistent over the entire survey area. The majority of captures were in a healthy condition with males and females in similar numbers.





MAP 4 SPOTLIGHTING ROUTE

3.1.2 Southern Brown Bandicoot (Isoodon obesulus)

Again Bandicoots were captured in higher numbers in this area than any other surveyed in the Nannup District. A total of 10 captures were made of which 2 were recaptures, therefore giving 8 different animals captured.

Bandicoots were captured on 7 of the 11 trap lines and diggings were observed over a large area. Weights ranged from 360g to 1000g with all animals in a healthy condition.

No captures were made before day 5 of the survey with regular captures after this time. This tends to confirm that the bandicoots require time to become accustomed to the traps before captures occur.

The status of Isodon obesulus is Declared Endangered

Southern Brown Bandicoot



3.1.3 Common Dunnart (Sminthopsis murina)

Only 3 Common Dunnarts were captured with all captures being made in pit traps. This is unusual as Dunnarts have been found to be easily captured in Elliott traps in other areas.

Common Dunnart



3.1.4 Western Grey Kangaroo (Macropus fulingosus)

Kangaroos are numerous over the entire survey area with extremely high concentrations observed along the private property boundaries.

Tracks and scats were also observed continuously during ground searches.

3.2 Introduced Mammals

Introduced mammals accounted for 5 of the 9 species of mammals observed in the area. Although the introduced species were in considerably smaller numbers than the natives this still gives cause for concern. The species of introduced mammals present include

- 1 Domestic Rats
- 2 House Mice
- 3 Rabbits
- 4 Cats
- 5 Foxes

3.2.1 Domestic Rats (Rattus rattus)

A total of 25 domestic rats were captured during the survey, with captures being made on most trap lines. All captured domestic rats were distroyed however numbers of captures remained steady throughout the survey.

24 of the 25 domestic rats captured were captured in Sheffield cage traps with only 1 capture in an Elliott box trap. All individuals captured appeared to be in good condition.

3.2.2 House Mice (Mus musculus)

As with the domestic rat the introduced house mouse was a regular capture during the survey with 30 captures spead evenly over the length of the survey with captures made on most lines. Again mice captured were destroyed and in this case a reduction in numbers captured was observed over the last 2 days of the survey.

Directly opposite to the domestic rat all mice were captured in the Elliott box traps.

3.2.3 Rabbits (Oryctolagus cuniculus)

Rabbits were sighted along the private property boundaries that form the Northern boundary of the survey area most mornings during the survey. Diggings and scats were also observed over a wide area during the ground searches carried out (concentrations were highest near private property).

3.2.4 Feral Cats (Felis catus)

One feral cat was sighted on the private property boundary at the north of the survey area along with several sightings on Black Point road approximately 2km north of the survey area.

During the survey several trap lines were disturbed by what was thought to be cats, some hair samples were recovered from these sites and are at present being analysed.

3.2.5 Foxes (Vulpes vulpes)

Foxes were sited on Jangardup road and tracks and scats were found during the ground searches carried out. The majority of sign was observed along the roads and tracks which the foxes seem to be using as easy access. Foxes in this area seem to be in similar numbers to other areas surveyed in the Nannup District near to private property.

Table 3.1 Summary of Trapping Results

Date	Day	Bush rat	Dom rat	Mouse	Bandicoot	Dunnart	Other	Total
18/5/93	1	18	3	1				22
19/5/93	2	27	2	6				35
20/5/93	3	31	2	4				37
21/5/93	4	34	6	2				42
22/5/93	5	40	3	1	1			44
23/5/93	6	35	2	4	2			43
24/5/93	7	32	2	8		2	1 Bird 4 Frogs	44
25/5/93	8	43	3	3	3	1	3 Frogs	53
26/5/93	9	37	2		1			40
27/5/93	10	20	-	1	3		7	24
Total		317	25	30	10	3		384
Average		31.7	2.5	3	1			38.4

A total of 384 captures were made from 1786 trap nights a success rate of 21.5% For complete results see Appendix 1

3.3 Additional Species

Several other species not recorded during the survey are likely to be present in the area these would include

- 1 Brushtail Possum
- 2 Ringtail Possum
- 3 Quokka
- 4 Brushtailed Phascogale
- 5 Dingo

These species would be expected to be present due to the survey area being inside their known distribution range and suitable habitat being observed for each specific species with in the survey area.

3.3.1 Brushtail Possum (Trichosurus vulpecula)

The Brushtail Possum has been captured in all other areas surveyed with in the Nannup District in small numbers. Suitable habitat (trees, open forest and woodlands) for the Brushtail Possum was observed over parts of the survey area. Brushtail possums are present in similar habitat at Black Point approximately 7km south west of the surveyed area.

Extensive searching was carried out for habitated trees and scats in an attempt to positively locate this species however no positive sign was observed in the survey area.

3.3.2 Ringtail Possum (Psedocherus peregrinus occidentalis)

The Ringtail Possum is at present declared endangered due to the low numbers of this species. The best local populations of this species are found around the Busselton area where they are mainly found in association with Peppermint stands. Several suitable stands of Peppermints were found during the survey. Therefore it is possible Ringtail Possums are present in the area.

Ringtail Possums are very rarely captured in traps with no captures in the Nannup District recorded. Again extensive ground searching was conducted with no positive sign of this species observed.

3.3.3 Quokka (Setronix brachyurus)

Quokkas have a preference for densely vegetated, moist habitat therefore making much of the survey area suitable for this species. Several sites were discovered where what appeared to be small animal tunnels similar to those produced by Quokkas was present. Large cage traps suitable for capturing Quokkas were placed at these sites. However no captures were made and difficulties were experienced with the large numbers of Bush Rats removing the bait (apples) over night.

A dead Quokka was retrieved and positively identified by the Perth Museum recently from an area 12 km west of the survey site.

Quokka (Setronix brachyurus)



3.3.4 Brushtailed Phascogale (Phascogale tapoatafa)

The Brushtail Pascogale habitats a similar range of forest areas to the Brushtail Possum with a preference to open Jarrah/Marri forest that is present in small areas in the northern half of the survey area. As with the Ringtail Possum it is very rare to capture Pascogales in traps.

Again sign of this species was not found during any of the ground searches carried out over this area.

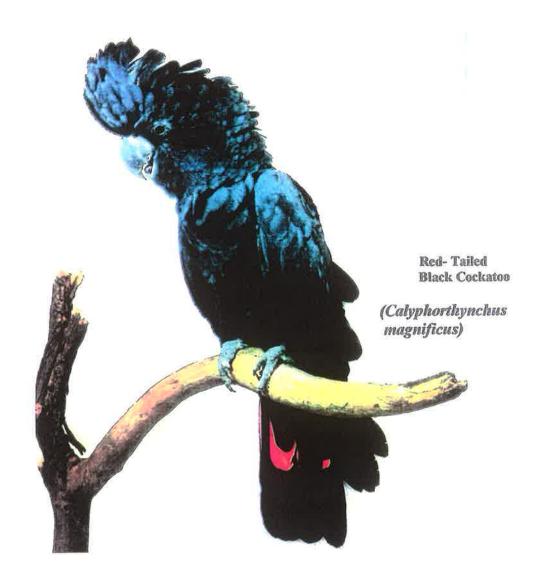
3.3.5 Dingo (Canis familaris dingo)

Several possible sightings of Dingo have been reported recently on Jangardup and Lake Jasper Roads. One large trap was damaged during the survey after an unknown animal was trapped in side. This animal used force to pull the cage door inwards and escape. Hair samples were recovered from in side this trap and are at present being analysed. It is thought this animal was a Dingo or wild dog.

4 Results Birds

The following is a list of birds observed in the survey area by staff while travelling and conducting ground searches. No formal intensive Avifauna survey was carried out and this list is only a guide to species observed and is in no way complete.

New Holland Honey-eater (Phylindonyris novaehollandiae)
Grey Fantail (Rhipidura rufifirons), Splendid Fairy-wren (Malurus splendens)
Red Wattlebird (Anthochaera canunculata), Western Rosella (Platycerus icterotis),
Grey Butcherbird (Cracticus torquatus), Willie Wagtail (Rhipidura rufiventris)
Emu (Dromaius novaehollandiae), Wedge-tailed Eagle (Aquila audax),
Red Tailed Black Cockatoo (Calyptorhynchus magnificus),
Carnabys Cockatoo (Calyptorhynchus latirostris),
White Breasted Robin (Eopsaltna georgiana), Red Capped Parrot (Platycercus spurius),
Sacred Ibis (Threskiomis spinicollis), Grey Currawong (Strepera versicolor),
Australian Crow (Corvus orru), Austrailian Magpie (Cracticus tibicen),
Magpie Lark (Grallina cyanoleuca), Grey Breasted White Eye (Zosterops lateralis),
Scarlet Robin (Petroica multicolor), Ringnecked Parrot (Platycercus zonarius),
Banded Land Rail (Gallirallus philipprnsis)



Conclusion

From the results of the survey it can be concluded that the surveyed area is supporting healthy populations of at least 4 native fauna species of which 1 (Southern Brown Bandicoot) is declared endangered. A further 5 species are possibly present and deserve consideration due to suitable habitat.

Unfortunately the area is also infested with 5 species of introduced animals. One of these the Fox can be shown from research to have a drastic effect on the native fauna populations of an area, especially those animals in a critical weight range of 35g to 5 500g. All of the native fauna present or possible present with the exception of the Kangaroo and Dingo fall to this weight range.

Recommendations

- 1 In view of the suitable habitat for Ringtail Possums which is Declared Endangered and Quokkas which are in very low numbers on mainland Western Australia it is recommended that a further expanded survey is carried out in the area for these species.
- 2 Fox baiting should be carried out to decrease the fox population and protect the populations of native fauna within the critical weight range (35g 5 500g)

Acknowledgements

The following people are thanked for their contributions to the survey,

Cable Sands Ltd for financial support and access to detailed maps of the area.

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APPENDIX 1

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Sheff. Bush rat F 8.5 M 36.4 32.0 27.1 Escaped Sheff. Domestic rat M 8.0 M 35.2 31.6 26.5 Escaped Sheff. Bush rat M 9.0 M 37.4 33.3 29.1 Elliot Bush rat M 9.0 M 38.4 33.7 29.1 Elliot Bush rat M 9.0 M 38.4 33.7 29.1 Elliot Elliot Elliot Bush rat M 4.0 M 38.4 33.7 29.1 Escaped Elliot Bush rat M 7.0 M 35.2 31.4 28.4 Escaped	6				W	Escaped
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Sheff. Bush rat M 9.0 M 38.4 33.7 29.1 Elliot Mouse 2.6 Elliot Bush rat M 7.0 M 35.2 31.4 23.4	4	Elliot		Œ	8.5 M 36.7 32.4 28.	
Elliot Mouse 2.6 2.6 Elliot Bush rat M 7.0 M 35.2 31.4 23.4	12		ra	M	9.0 M 38.4 33.7 29.	
Biliot Bush rat M 7.0 M 35.2 31.4 23.	4	Elliot	Mouse		-15.40	Escaped
	7	Biliot		M	7.0 M 35.2 31.4 23.	

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5ATE: 19/5/93 NO. TAPS: UCCATION: LAKE JASPER WEITHT: WENTER:

				-		-				-		-			1673
Section 1	SPECIES	ID/TRG	SEX	N/R	5	AGE	3.5	TIBIA	शुर	13	TEATS/POUCH	PY	PY CR	CCHAENTS .	
1 =	Bush rat														
1 0	l a						-							Destroyed	
1			-									_			
	Bush rat														
1	Bush rat						-								
1	Bush rat														
	Domestic rat	1												Destroyed	
	House mouse													Escaped	
Sheffield	Bush rat														
	Bush rat					-								_	
1	Bush rat	\													200
	Bush rat							_							eras e
field	Bush rat														Descrit 1
	Bush rat												-		
	House mouse	 e			-"			-						Destroyed	P
Sheffield	Bush rat														

A Company of Both dead CCAMENTS 20/5/93 PY CR NO. TAPS: Yq " TEATS/POUCH IJ PES TIBIA 1 AGE 5 H/R SEX ID/TRG Domestic rat 2 house mide House mouse Bush rat Bushrat Mouse Bush SPECIES LAKE JASPER Sheffield Sheffield Sheffièld Sheffield Sheffield Elliot Elliot Elliot Blliot Elliot Elliot Elliot Elliot Elliot Elliot Elliot TRAP TYPE 62 63 59 62 75 61 92 63 85 98 71 72 84 82 CATION: 92 TRAP | 91 P.T. YER: SITAT:

5ATE: 20/5/93

16. TAPS:

LAKE JASPER

KABITAT:

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, and	SEX									.,							
2	ID/TRG			rat Tat													
	SPECIES	Bush rat	Bush rat	Domestic r	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	Bush rat	
	SP		114	,1d		-1d)1d	b1.e		eld	ple	eld		eld	eld	eld	
1	TRAP TYPE	Elliot	Sheffield	Sheffield	Elliot	Sheffield	Sheffield	Sheffield	Biliot	Sheffie	Sheffield	Sheffield	Elliot	Sheffi	Sheffield	Sheffield	
	TRAP	4	8	13	17	22	24	25	29	32	35	39	42	44	97	67	1

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25 5 45 3465 - SE Sec. 35. CCHOKENTS Dead 22/5/93 PY CR NO. TW. S. DATE: r PY TEATS/POUCH C PES TIBIA -3 AGE S K/R SEX ID/TAG Bush rat Mouse SPECIES LAKE JASPER Sheffield Sheffield Sheffield Sheffield Sheffield Sheffield Sheffield Elliot Elliot TRAP TYPE Elliot Elliot Elliot Elliot Elliot Elliot Elliot 99 TRAP ! 65 XATION: 63 63 62 ELTHER: 89 06 72 17 ASITAT: 85 98 84 84 83 96 16

The tank the tel A CCANENTS 22/5/93 PY CR Ad ... TEATS/POUCH 13 PES TIBIR .0 AGE 5 K/R SEX ID/TRG rat Domestic gat Domestic Bush rat Bush rat Bush rat Bush rat Bush rat Bush rat SPECIES LAKE JASPER Sheffield Sheffield Sheffield Sheffield Sheffield Sheffield TRAP TYPE Elliot Elliot ACATION: TRAP | 22 23 25 WENTHER: 35 Н DBITAT: 34 2.1

62	F.11iot	Bush rat								1					
		3		-											
63	Sheffield	Bush rat	_												
94	Elliot	Bush rat		- : -	t =	0.00									
99	Elliot	Bush rat													
68	Elliot	Bush rat			. 415				-						
89	Sheffield	Bush rat						,						Dead in	trap
69	Sheffield	Bush rat													
7.0	Sheffield	Bush rat													
70	Elliot	Bush rat			, (a. par mane)										
53	Elliot	Mouse	-												
54	Elliot	Bush rat		1,000								- 5			
09	Sheffield	Bush rat								_,,		أغفر ولينو			
58	Sheffield	Bush rat													
58	Elliot	Bush rat		L ,=+			-								7
56	Elliot	Mouse													
47	Elliot	Bush rat	-				7.00		TAY		×++.				
47	Sheffield	Bush rat				-			-					- ,	
38	Sheffield	Bush rat			.1								- TX 77	-)	
39	Sheffield	Bush rat				1100			= 1						
40	Sheffield	Bush rat			-	. 11 80	-							. —;—	
28	Elliot	Bush rat		724								OF ET	_	-	

DATE: 24/5/93

LAKE JASPER

ACATION:

ZELTYER:																	
TRAP I	TRAP TYPE	SPECIES	ID/TRG	SZK	K/R	5	AGE	22.	TIBIA	234	CI	TEATS/POUCH	y Py	PY CR	CCHAENTS		
2	Sheffield	Domestic Rat						-					اسرون		Dead		
3	Elliot	Mouse						-								-	
4	Sheffield	Bushrat															
6	Sheffield	Domestic Rat															
6	Elliot	Mouse						-									
23	Sheffield	Domestic Rat						-									
25	Elliot '	Bush Rat												-			
101	Pit	Dunnart			,			17.2	2 22								
	Pit	Frog 1											- 1	-			
	Pit	Frog 2							-								
102	Pit	punnart						32				_					
		Frog 2				107	-										
		Frog 2								-							
36	Elliot	Bush Rat				200								-			
38	Sheffield	1 Bush Rat											-				
40	Sheffield	1 Bush rat			-	-						- 45 FI					

fullation or the which distribute

(F) The same to the ***** ** * trap in CCHORENTS Dead SATE: 24/5/93 S 16. TAPS: bd 79 P TEATS / POUCH J 223 TIBIA 2 AGE 5 N/R SEX 1D/"hG Bush rat LAKE JASPER Mouse Mouse Mouse Mouse Mouse Mouse SPECIES Sheffield Sheffield Sheffield Sheffield Sheffield Elliot ' Elliot Elliot Elliot Elliot TRAP TYPE Elliot Elliot Elliot Elliot Elliot Elliot 9 99 9 63 TANE! 19 62 CCATION: WENTHER: 90 78 85 85 86 89 Vallar: 84

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25/5/93 16. Tab25: BITAT: DIFFER:

I Olor	Save atan	SPECIES	10/1116	SZX	N/R	5	AGE	77	TIBIA	PES	CI	TEATS/POUCH	\d =-	PY CR	CCHARMIS	-	
2	o iii poit										-						
2	Elliot	Bush rat							- -		+						
3	Sheffield	Bandicoot			_		625880.	80.5	81.2		-			_			65 53
4	Sheffield	Domestic ra	rait										_	-	_		
6	Elliot	Bush rat				_,_											
102	pit	Dunnart					_								-		
22	Sheffield	Bush rat			-		+						-				
23	Sheffield	Domestic r	rat					-	+		-			-	Des	Destroyed	
25	Sheffield	Bush rat						-		_							
33	Sheffield	Bush rat							_					-	_		
36	Sheffield	Bush rat						-						-			1
37	Ejliot	Bush rat						-	_	_	-+						
39	Sheffield	Bush rat						_		-					-		
40	Sheffield	Bandicoot									-				Re St	Recapture Short tall	
101	Pit	Frog 2															
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25/5/93

X (ないなwy ** カカナ CCANENTS CR Md 16. TAPS: Ad a TENTS/POUCH U 534 FIBIA :2 SOE 5 N/3 SEX 1D/"hG Bush rat Mouse Bush rat Bush rat Bush rat Mouse Bush rat Bush rat Mouse LAKE JASPER SPECIES Sheffield Sheffield Sheffield Elliot Sheffield Ellhot Sheffield Elliot Sheffield Elliot Elliot Elliot Elliot Elliot Elliot Riliot TRAN TYPE

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26/5/93 SATE:

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TAP !	TRAP TYPE S	SPECIES	10/1746	SZX	Ii/R	Ę	AGE	342	TIBIR	PES	CI	TEATS/POUCH	Ad ==	PY CR	CCHORENTS	
-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1															
	EIIIOL				-			-								
76	Sheffield	Bush rat					_ _		1	-	_		-	-		
93	Sheffield	Bandicoot			Σ	380g	Y	72.2	64.4	4 46 . 4	4			-	Patch of fur	fur missing
82	Elliot	Bush rat					_,		_	_	_			-	- 1	
84	Elliot	Bush rat						-								
84	Sheffield	Bush rat			-			+ -	_						_	
86	Elliot .	Bush rat					-	y		_				-		
89	Elliot	Bush rat								_						
06	Elliot	Bush rat							_							*
7.2	E11:0+				-		-		-							•
4	TOTTE TOTTE					-			-	-				-	_	
11	Sheffield	Bush rat	7			-		-		-	1			-	-	
62	Sheffield	Bush rat														
62	Elliot	Bush rat														
63	Sheffield	Bush rat														
99	Sheffield	Bush rat														
99	Elliot	Bush rat														

A.C. TXX Charles of the Control 1 CCANENTS DATE: 26/5/93 PY CR PY . TEATS/POUCH J PES TIBIA 7 REE 5 N/R SEX ID/TRG Domestic rat rat Bush rat rat Bush rat LAKE JASPER Bush Bush SPECIES Sheffield Sheffield Sheffield Sheffield \$heffield Sheffield Sheffield Sheffield Sheffield Elliot Elliot Elliot TRAP TYPE 27/5/93 22 6 3 40 2 36 36 TANP ! 29 23 ∞ T10,4: \mathcal{C} TYER: 77.

APPENDIX 2

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y Hlloch	ADDITIONAL NOTES	Numerous mainly along P.P. boundary	On fence post	Roosting in tree	Running from park to PP		
	VISIBILITY ≃						
Helen- -Denris	DIST FROM ROAD						
1	WOITAUTIS						
	□ NNDERSTORY NNDERSTORY NNDERSTORY		1				
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1 1	LKEE CONEK		Nil				
	NNNBER SE≰EN			н	H		
Co1d	3Z1S		13	12	Σ		
MEATHER FINE/Cold	SPECIES OR TYPE	Kangaroos	0w1	Scared Ibis	Cat		
IN 679,	LOCATION		Mathews Bound	Jangardup Rd	Jangardup Rd		
1 17	MILEAGE		2	en .	4		
ROUTE No.	TINE						