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RESULTS OF SMALL MAMMAL SURVEY LAKE JASPER AREA

17-27 MAY 1993



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F/R Carl Beck

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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.

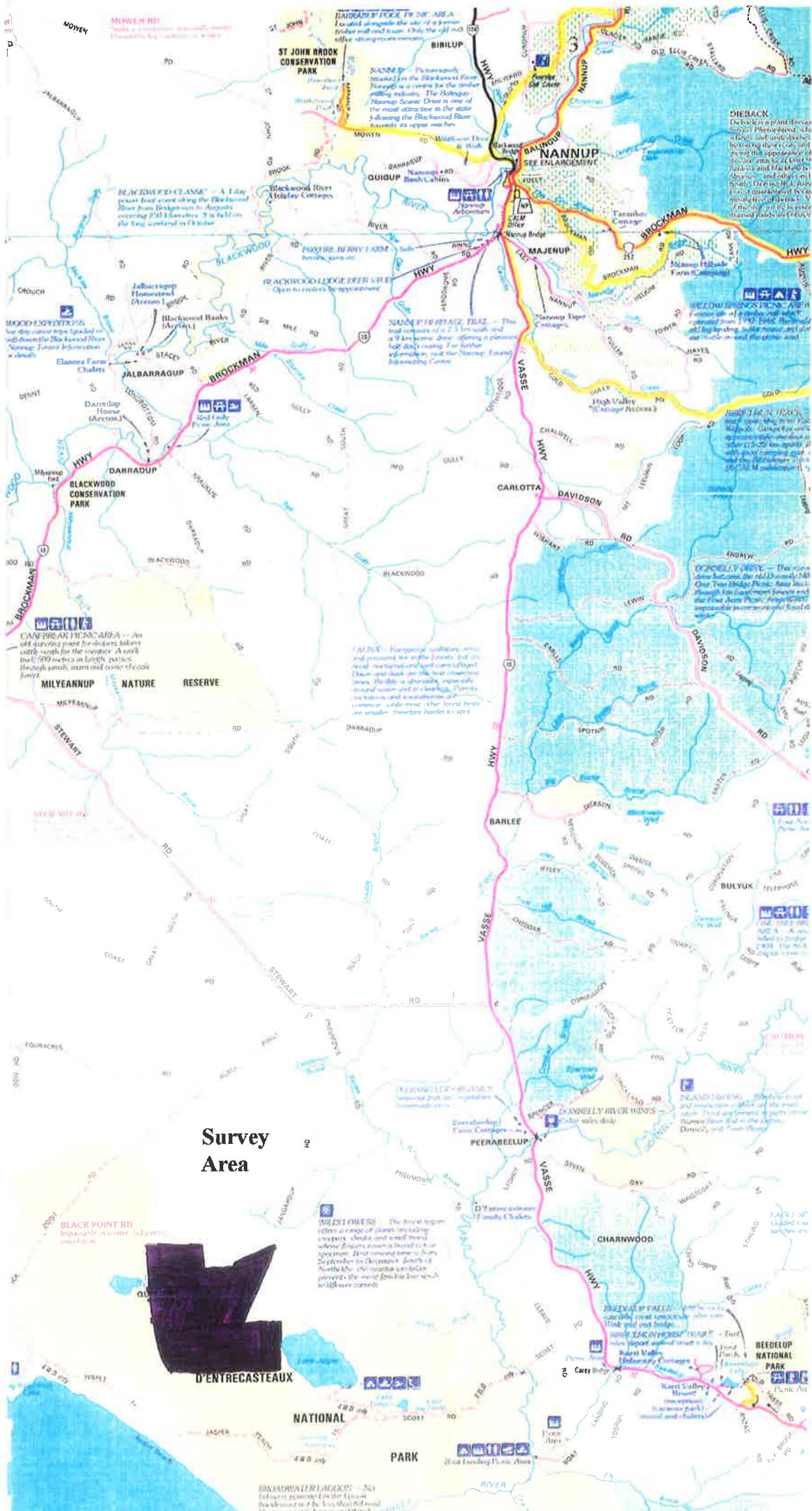
This area was found to have significant conservation value due to the higher than previously recorded numbers of Southern Brown Bandicoots which are at present declared endangered.

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.



Map 1
Location of
Survey Area

Survey Area



D'ENTRECASTEAUX

NATIONAL PARK

BLACK POINT RD
Impassable in winter, full petrol available

BLACKWOOD RIVER
A 1 day picnic area along the Blackwood River from Denham to Augusta covering 240 km. It is full on the 1st weekend in October

BLACKWOOD RIVER
This road follows the river for 2.5 km and is a 9 km scenic drive offering a peaceful spot for picnicking. For further information, visit the National Park Information Centre

WILSON'S
The Wilson's offers a range of camps including a campsite, a tent site and a well known where visitors can enjoy a picnic. It is situated on the banks of the Blackwood River, 10 km north of Nannup. The Wilson's is a popular picnic spot for the whole family.

DIEBACK
The Dieback plant (Corticeum) is a pest of many native plants and animals. It is a fungus that kills the cambium of the tree, which prevents the tree from transporting water and nutrients. It is a major threat to the Blackwood River National Park.

BLACKWOOD RIVER
This road follows the river for 2.5 km and is a 9 km scenic drive offering a peaceful spot for picnicking. For further information, visit the National Park Information Centre

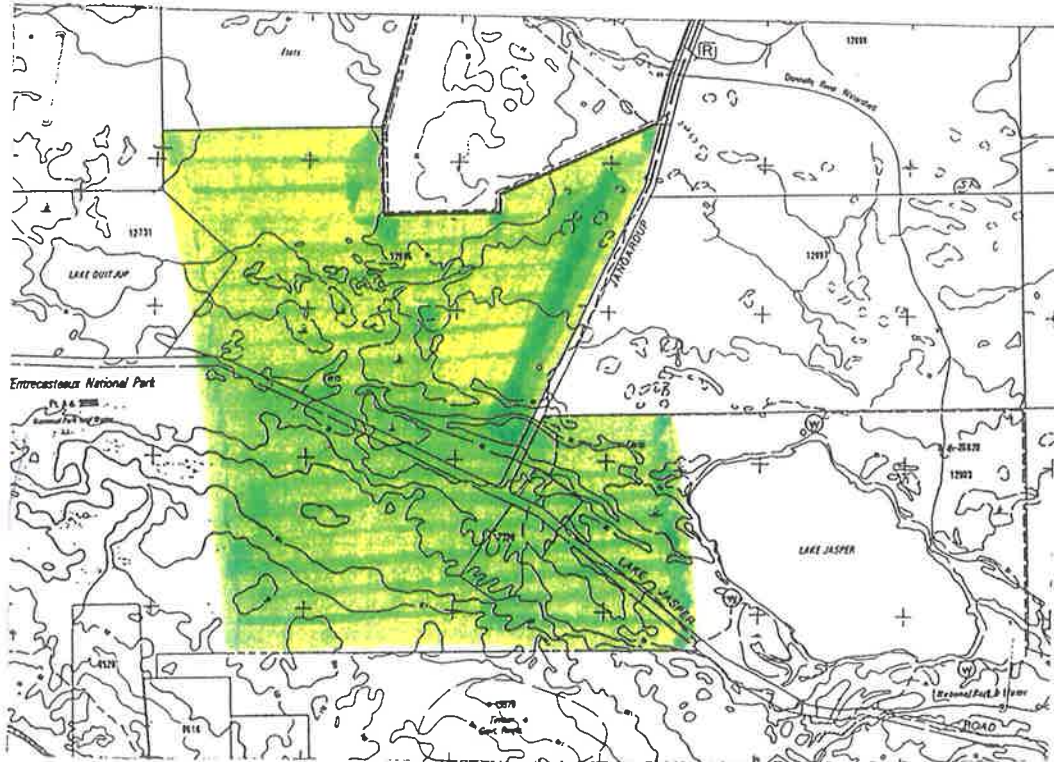
BLACKWOOD RIVER
This road follows the river for 2.5 km and is a 9 km scenic drive offering a peaceful spot for picnicking. For further information, visit the National Park Information Centre

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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.

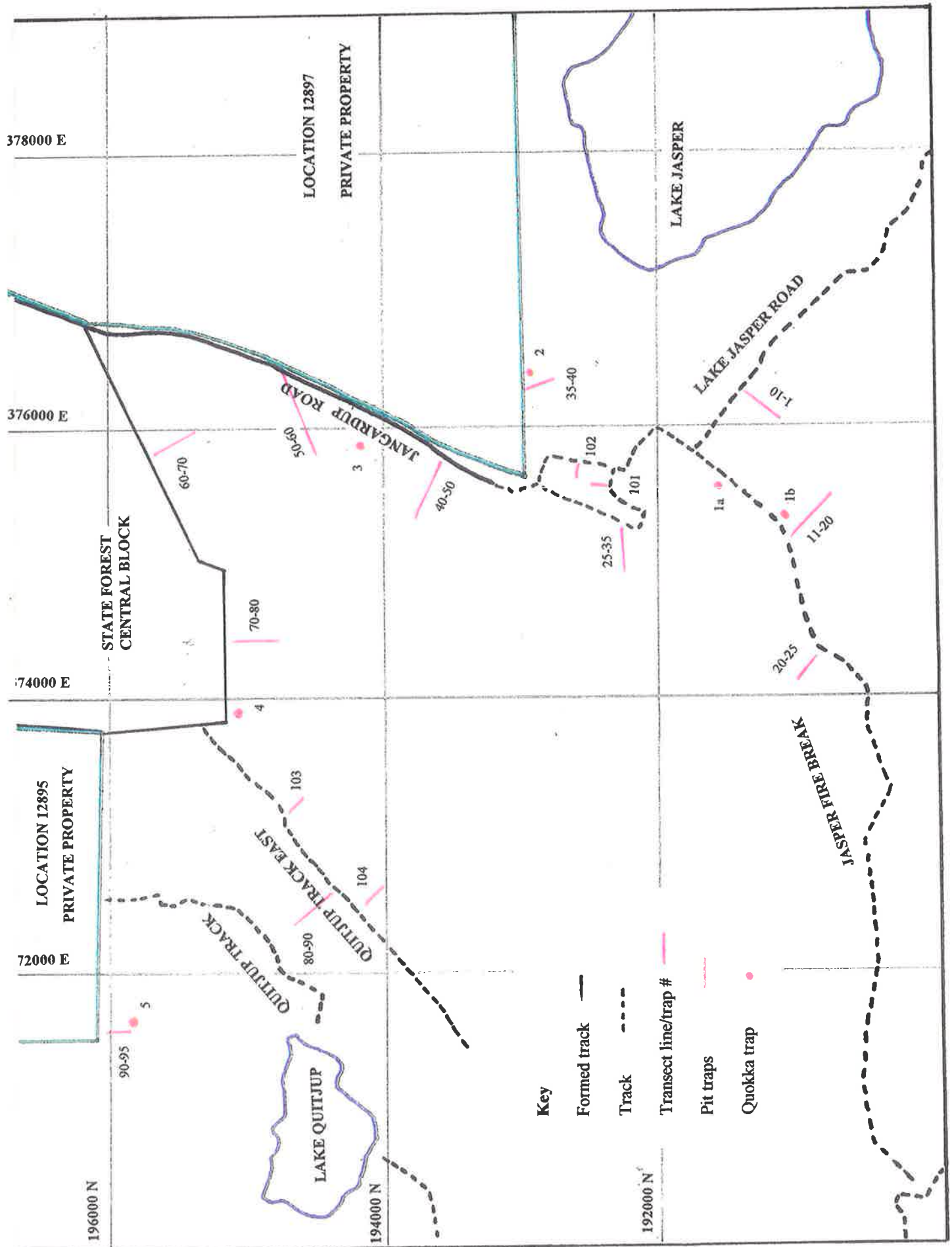
See Map 3 for transect location.

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.

Pit Trap and Drift Fence Lake Jasper Area.





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 searches 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 spotlihter 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

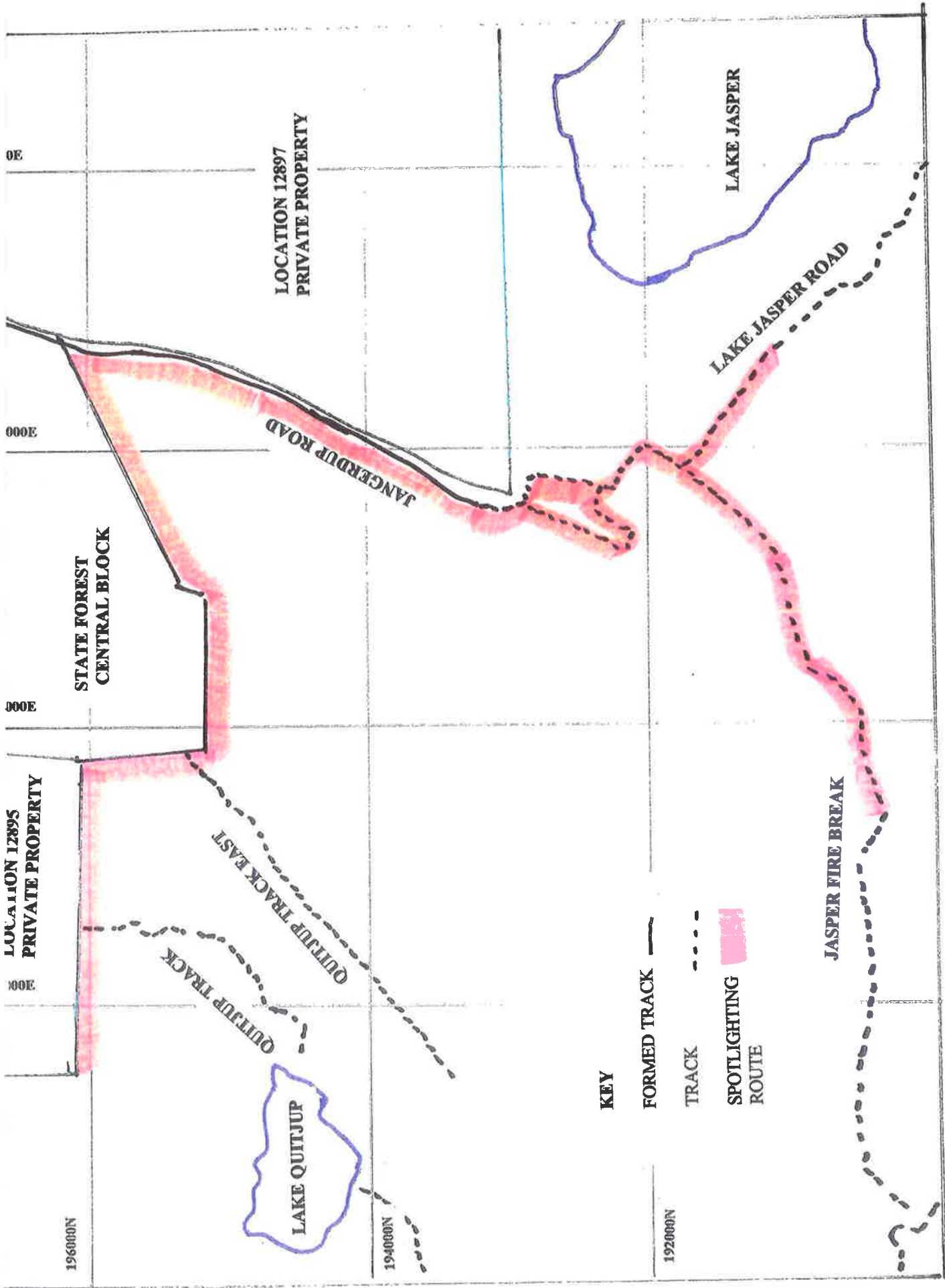
Of the 9 species of mammals observed in the area only 4 were native being

- 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 (*Isodon 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 destroyed 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 spread 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			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 within the survey area.

3.3.1 Brushtail Possum (*Trichosurus vulpecula*)

The Brushtail Possum has been captured in all other areas surveyed within 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 (*Pseudocheirus 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 Phascogale 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 Phascogales 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 familiaris 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 (*Phylidonyris novaehollandiae*)
 Grey Fantail (*Rhipidura rufifrons*), Splendid Fairy-wren (*Malurus splendens*)
 Red Wattlebird (*Anthochaera canunculata*), Western Rosella (*Platycercus 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*), Australian 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 philippensis*)



Red- Tailed
Black Cockatoo

(*Calyphorthynchus
magnificus*)

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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Readers Digest (1987). Readers Digest Complete Book of Australian Birds. (Readers Digest Services Pty Ltd. NSW)

APPENDIX 1

93	Sheffield	Bush rat	M	11.5 M	45.2	41.1	28.8		
84	Elliott	Bush rat	F	7.0 M	36.9	30.8	26.5		
84	Sheff.	Bush rat	F	8.0 M	39.8	28.9	25.9		
89	Elliott	Bush rat	F	9.0 M	39.4	35.4	27.5		
74	Sheff.	Bush rat		10.0 M					Escaped
77	Sheff.	Bush rat	F	10.0 M	37.5	37.9	27.8		
75	Sheff.	Domestic rat	M	11.0 M	44.4	42.2	28.4		
62	Elliott	Bush rat	F	11.5 M	43.2	34.2	26.0		
67	Elliott	Bush rat	M	8.5 M	40.2	29.1	27.2		
67	Sheff.	Bush rat	F	10.0 M	37.4	36.2	28.1		
53	Sheff.	Bush rat	M	10.5 M	27.4	35.5	26.2		
42	Sheff.	Bush rat	F	8.5 Y	36.4	31.2	27.8		
49	Sheff.	Bush rat		M					Escaped
50	Sheff.	Bush rat	F	8.5 M	36.4	32.0	27.1		
36	Sheff.	Domestic rat		M					Escaped
37	Sheff.	Bush rat	M	8.0 M	35.2	31.6	26.5		
39	Sheff.	Bush rat	M	9.0 M	37.4	33.3	29.1		
24	Elliott	Bush rat	F	8.5 M	36.7	32.4	28.2		
25	Sheff.	Bush rat	M	9.0 M	38.4	33.7	29.1		
11	Elliott	Mouse		2.6					Escaped
12	Elliott	Bush rat	M	7.0 M	35.2	31.4	23.4		

APPENDIX 2

