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A VERTEBRATE FAUNA SURVEY OF FIVE NATURE RESERVES IN THE SHIRE OF
KOJONUP, WESTERN AUSTRALIA.

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For: Department of Conservation
and Land Management

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1.0

I N T R O D U C T I O N

This report was commissioned by the Reserve Management Section of the Department of Conservation and Land Management. It presents an inventory of the vertebrate fauna of Reserves 17759, 8617, 17760, 15388 and 2243, all located in the Shire of Kojonup, Western Australia. These reserves were selected for study either because they are small, and therefore vulnerable, or because they are the subject of future management plans. The information gathered during this survey will be used as a baseline resource inventory to facilitate future planning and define management priorities.

1.1 **METHODS**

The survey took place between March 16 and March 27, 1985 with two days being spent on reconnaissance, three days on trapline establishment and the remainder allocated to intensive sampling of vertebrate fauna. Five field personnel were divided into two teams, each with a four wheel drive vehicle, to allow for efficient and concurrent sampling of the reserves. Data collection centered around Sampling Locations on each reserve, all of which were directly referable to the major vegetation associations present.

Vegetation - During the reconnaissance period each reserve was visited and the major vegetation associations identified in the course of vehicle boundary transects and a limited number of internal foot transects. Associations were subsequently described using the techniques outlined in Muir, 1977. Unknown dominants were collected for future identification.

Mammals, Reptiles and Amphibians - Traplines were set in all major vegetation associations present in each reserve and were the focus of all vertebrate data collection; they are referred to as Sampling Locations in text and tabulations. Traplines

generally consisted of five plastic-lined pit-traps (50 x 15cm) bisected across the top by an aluminium flywire drift-fence (30m x 20cm). Where soils were shallow or rocky, "witches' hats" or short pits were used. Each pit-trap line was supplemented by 15 Medium Elliott box-traps, 2 Large Elliott box-traps and 1 wire cage-trap. Lines were checked each morning and left in position for a minimum of five to a maximum of seven days. All mammals captured were marked before release.

Hand-foraging for reptiles and recording of diurnally active mammals was carried out each morning by all personnel not involved in checking traps. This activity was restricted to the vegetation associations surrounding the trapline, all animals recorded away from traplines were integrated with the results from the most similar Sampling Locations. One afternoon and evening of intensive sampling involving all personnel was conducted in each reserve. During this period each Sampling Location was visited in rotation and the following activities took place: hand-foraging, recording of all diurnally active species, mist-netting and head-torching for nocturnal species in selected locations. Mist-nets were manned for two hours after sunset, then furled. A bat trap was left in position overnight. Sampling effort for each reserve is tabulated in text.

Birds - During daily trapline checking at individual Sampling Locations one team member concentrated on recording all birds seen or heard. These data were supplemented by opportunistic records gathered by all personnel in the same area. Intensive afternoon and evening sampling at each reserve (as described in the previous section) was also conducted. Birds recorded away from Sampling Locations were integrated with the results from the most similar vegetation associations. Sampling effort for each reserve is tabulated in text.

Taxonomy - Nomenclature follows Storr and Johnstone, 1979 - Birds; Storr, 1983 - Reptiles and amphibians; Strahan, 1983 - Mammals.

2.0

RESERVE 17759

2.1 VEGETATION AND SOILS

Four major vegetation associations were recognized and sampled on this reserve. A brief description of each follows.

LOCATION 1A

Code: Mr.VLr

Description: Open Woodland of Eucalyptus wandoo over native grasses, annuals and Very Open Low Sedges. Scattered E. wandoo saplings and occasional Hakea lissocarpha shrubs.

Litter: Moderate even cover of bark, leaves, twigs and larger debris; some clumping at tree bases.

Soil: Grey/brown sandy clay with some surface lateritic gravel.

Topography: Wide, flat valley floor.

LOCATION 1B

Code: Mi.LAi.SDr.VLr

Description: Woodland of Eucalyptus wandoo over Low Woodland A of E. wandoo saplings with occasional denser regenerating patches over Open Dwarf Scrub D of Plant 7 and Hakea lissocarpha over Very Open Low Sedges, native and exotic grasses.

Litter: Moderate even cover of bark, leaves, twigs and larger debris; some clumping at tree bases.

Soil: Grey/brown sandy loam with clay at deeper levels.

Topography: Narrow valley with seasonal watercourse.

LOCATION 1C

Code: Mi.Si.SDr.GLi

Description: Woodland of Eucalyptus marginata with scattered E.

wandoo over Dryandra sessilis Scrub and occasional E. marginata/E. wandoo saplings over Open Dwarf Scrub of immature D. sessilis, Allocasuarina humilis, Bossiaea ornata, Plant 1 and Plant 3 over Open Low Grass.

Litter: Moderate patchy cover of broad leaves, twigs, bark, needles and larger debris.

Soil: Sandy, lateritic gravel with many lateritic cap-rock exposures.

Topography: Upper slope/ridge.

LOCATION 1D

Code: Mi.LBi.SCc

Description: Woodland of Eucalyptus marginata/E. calophylla and scattered E. wandoo over Low Woodland B consisting of saplings of the above plus Dryandra sessilis over Low Heath C of Plant 7, Plant 3, Acacia pulchella and E. calophylla seedlings. Some sedges and exotic grasses.

Litter: Moderately abundant; broad leaves and twigs with some clumping at tree bases; sparse larger debris.

Soil: Deep grey/white sandy loam.

Topography: Wide, flat valley floor.

Table 1 Sampling effort in the vegetation associations of Reserve 17759.

ACTIVITY	LOCATION			
	1A	1B	1C	1D
Pit trap	35	35	35	35
Elliott trap	90	90	90	90
Large Elliott trap	12	12	12	12
Cage trap	6	6	6	6
Total no. of trapnights	143	143	143	143
Bat trap		X		
Mist-net		X		
Head-torching		X		X
Bird observation (hrs)	3.5	3.5	3.5	3.5
Reptile foraging (hrs)	3.5	3.5	3.5	3.5

Plate 1 Sampling locations on Reserve 17759.

Location 1a



Location 1b



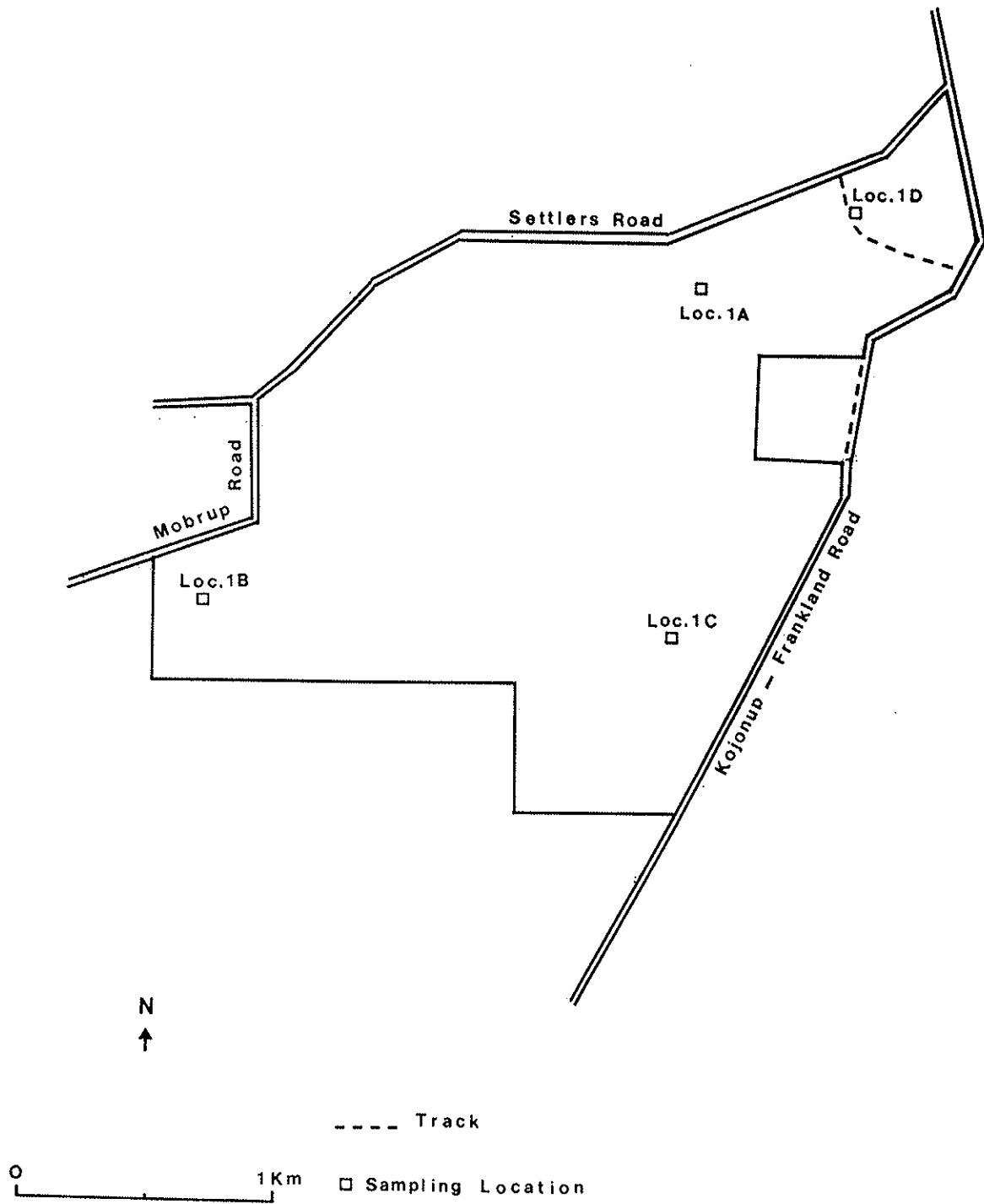
Location 1c



Location 1d



Figure 1 Reserve 17759 showing position of sampling locations and main features.



2.2 VERTEBRATE RESULTS

Table 2 Bird species recorded in the vegetation associations of Reserve 17759.

S = scats

BIRD SPECIES	LOCATION			
	1A	1B	1C	1D

CASUARIIDAE				
Emu - <u>Dromaius novaehollandiae</u>	S	S		S
COLUMBIDAE				
Common Bronzewing - <u>Phaps chalcoptera</u>		1		2
PSITTACIDAE				
Purple-crowned Lorikeet				
- <u>Glossopsitta porphyrocephala</u>	100	35	37	71
Ring-necked Parrot				
- <u>Platycercus zonarius</u>	11	11	4	6
Red-capped Parrot - <u>P. spurius</u>	4	8		
Western Rosella - <u>P. icterotis</u>	9	4	4	
Red-tailed Black Cockatoo				
- <u>Calyptorhynchus magnificus</u>	1			
ALCEDINIDAE				
Laughing Kookaburra - <u>Dacelo gigas</u>		4		2
HIRUNDINIDAE				
Tree Martin - <u>Hirundo nigricans</u>		2		
CAMPEPHAGIDAE				
Black-faced Cuckoo-shrike				
- <u>Coracina novaehollandiae</u>			1	
PACHYCEPHALIDAE				
Scarlet Robin - <u>Petroica multicolor</u>		3	4	4
Yellow Robin - <u>Eopsaltria australis</u>		7		
Golden Whistler				
- <u>Pachycephala pectoralis</u>		5	3	
Grey Shrike-thrush				
- <u>Colluricincla harmonica</u>	4	2	1	

Table 2 -- Cont.

BIRD SPECIES	LOCATION			
	1A	1B	1C	1D

MONARCHIDAE				
Grey Fantail - <u>Rhipidura fuliginosa</u>	1	10	3	5
Willie Wagtail - <u>R. leucophrys</u>	1	1		
ACANTHIZIDAE				
Western Flyeater - <u>Gerygone fusca</u>	4	10	2	1
Weebill - <u>Smicronis brevirostris</u>	7	18	3	3
Broad-tailed Thornbill				
- <u>Acanthiza apicalis</u>		2	1	
Western Thornbill - <u>A. inornata</u>		4	27	6
Yellow-rumped Thornbill				
- <u>A. chrysorrhoa</u>	2	10	7	4
MALURIDAE				
Splendid Fairy-wren - <u>Malurus splendens</u>		17		1
DAPHOENOSITTIDAE				
Australian Sittella				
- <u>Daphoenositta chrysoptera</u>		12		8
CLIMACTERIDAE				
Rufous Tree-creeper - <u>Climacteris rufa</u>	13	18		5
PARDALOTIDAE				
Spotted Pardalote				
- <u>Pardalotus punctatus</u>	1	14	1	5
Striated Pardalote - <u>P. striatus</u>	14	22	1	1
ZOSTEROPIDAE				
Grey-breasted White-eye				
- <u>Zosterops lateralis</u>		5	1	
MELIPHAGIDAE				
Brown Honeyeater - <u>Lichmera indistincta</u>	2			
Singing Honeyeater				
- <u>Meliphaga virescens</u>	7	2		3
Yellow-plumed Honeyeater - <u>M. ornata</u>	1			
Brown-headed Honeyeater				
- <u>Melithreptus brevirostris</u>	3	1		
White-naped Honeyeater - <u>M. lunatus</u>	6	9	2	1

Table 2 - Cont.

BIRD SPECIES	LOCATION			
	1A	1B	1C	1D

New Holland Honeyeater				
- <u>Phylidonyris novaehollandiae</u>	5		25	
Western Spinebill				
- <u>Acanthorhynchus superciliosus</u>	1	2	4	4
Little Wattlebird				
- <u>Anthochaera chrysoptera</u>		1	8	
Red Wattlebird - <u>A. carunculata</u>	6		1	3
GRALLINIDAE				
Magpie-lark - <u>Grallina cyanoleuca</u>	1		1	
ARTAMIDAE				
Dusky Woodswallow - <u>Artamus cyanopterus</u>	1			
CRACTICIDAE				
Australian Magpie - <u>Cracticus tibicen</u>	16	4	1	2
CORVIDAE				
Australian Raven - <u>Corvus coronoides</u>			1	5

Total number of species per location	26	31	24	22

Total number of species per reserve		40		

Table 3 Mammal species recorded in the vegetation associations of Reserve 17759.

S = scats; W = warren; X = scratchings/diggings;

H = hair sample

MAMMAL SPECIES	LOCATION			
	1A	1B	1C	1D
<hr/>				
TACHYGLOSSIDAE				
<u>Tachyglossus aculeatus</u> - Echidna	X	X	X	
PHALANGERIDAE				
<u>Trichosurus vulpecula</u> - Common Brushtail Possum	H			
MACROPODIDAE				
<u>Macropus irma</u> - Western Brush Wallaby				2
<u>M. fuliginosus</u> - Western Grey Kangaroo	3	2		2
VESPERTILIONIDAE				
<u>Nyctophilus major</u> - Greater Long-eared Bat		3		
MURIDAE				
<u>Mus musculus</u> - House Mouse	7	13	18	27
LEPORIDAE				
<u>Oryctolagus cuniculus</u> - Rabbit		1,W	W	1
CANIDAE				
<u>Vulpes vulpes</u> - Fox		1		
SUIDAE				
<u>Sus scrofa</u> - Pig	S			
<hr/>				
Total number of species per location	5	6	3	4
<hr/>				
Total number of species per reserve		9		

Table 4 Amphibian and reptile species recorded in the vegetation associations of Reserve 17759.

AMPHIBIAN AND REPTILE SPECIES	LOCATION			
	1A	1B	1C	1D

LEPTODACTYLIDAE - Ground Frogs				
<u>Limnodynastes dorsalis</u>		1		1
<u>Heleioporus eyrei</u>	1			
<u>H. inornatus</u>	1			
<u>Pseudophryne guentheri</u>	1			
GEKKONIDAE - Gekkos				
<u>Diplodactylus granariensis</u>	2	2	2	
<u>Phyllurus milii</u>			3	2
<u>Phyllodactylus marmoratus</u>		5		1
PYGOPODIDAE - Legless Lizards				
<u>Aprasia repens</u>				1
SCINCIDAE - Skinks				
<u>Cryptoblepharus plagioccephalus</u>		3		1
<u>Egernia napoleonis</u>		2	3	2
<u>Lerista distinguenda</u>			3	3
<u>Menetia greyii</u>	1	2	2	2
<u>Morethia obscura</u>			3	3
<u>Tiliqua r. rugosa</u>			1	
TYPHLOPIDAE - Blind Snakes				
<u>Ramphotyphlops australis</u>				2
ELAPIDAE - Front-fanged Snakes				
<u>Rhinoplocephalus gouldii</u>			1	2

Total number of species per location	5	6	8	11

Total number of species per reserve		16		

3.0

RESERVE 8617

3.1 VEGETATION AND SOILS

Three major vegetation associations were recognized and sampled on this reserve. A brief description of each follows.

LOCATION 2A

Code: Mc.SAr.GLc

Description: Woodland of Eucalyptus wandoo with scattered E. calophylla over Plant 18 and occasional Macrozamia riedlei over native and exotic Low Grass.

Litter: Sparse, patchy; broad leaves, twigs, bark and larger debris; some clumping at tree bases.

Soil: Grey sandy clay.

Topography: Gently sloping shallow valley.

LOCATION 2B

Code: Mc.SBr.GLi

Description: Forest of Eucalyptus marginata and E. calophylla over Open Low Scrub B of Plant 6, Macrozamia riedlei and Xanthorrhoea spp. over Open Low Grass (native and exotic) and some sedges.

Litter: Moderate, patchy; broad leaves, twigs and some larger debris.

Soil: Grey/white sandy quartz loam.

Topography: Gentle slope near head of valley.

LOCATION 2C

Code: LAc.SAd.SCi.GLc

Description: Low Forest A of Allocasuarina huegeliana with

scattered Eucalyptus marginata and E. calophylla merging with Dense Heath A of Hakea undulata, Xanthorrhoea spp. and A. heugeliana saplings over Hakea lissocarpha, Plant 16 and Plant 7 over native Low Grass and some sedges.

Litter: Moderate; matted needles and seed capsules in places, some broad leaves, twigs and larger debris.

Soil: Grey, coarse-grained, sandy loam.

Topography: Gentle slope at base of granite outcrop.

Table 5 Sampling effort in the vegetation associations of Reserve 8617.

ACTIVITY	LOCATION		
	2A	2B	2C
Pit trap	35	35	
Elliott trap	90	90	140
Large Elliott trap	6	6	
Cage trap	6	6	
Total no. of trapnights	137	137	140
Bat trap			
Mist-net			
Head-torching	X	X	X
Bird observation (hrs)	3.5	3.5	3.5
Reptile foraging (hrs)	3.5	3.5	3.5

Plate 2 Sampling locations on Reserve 8617.

Location 2a



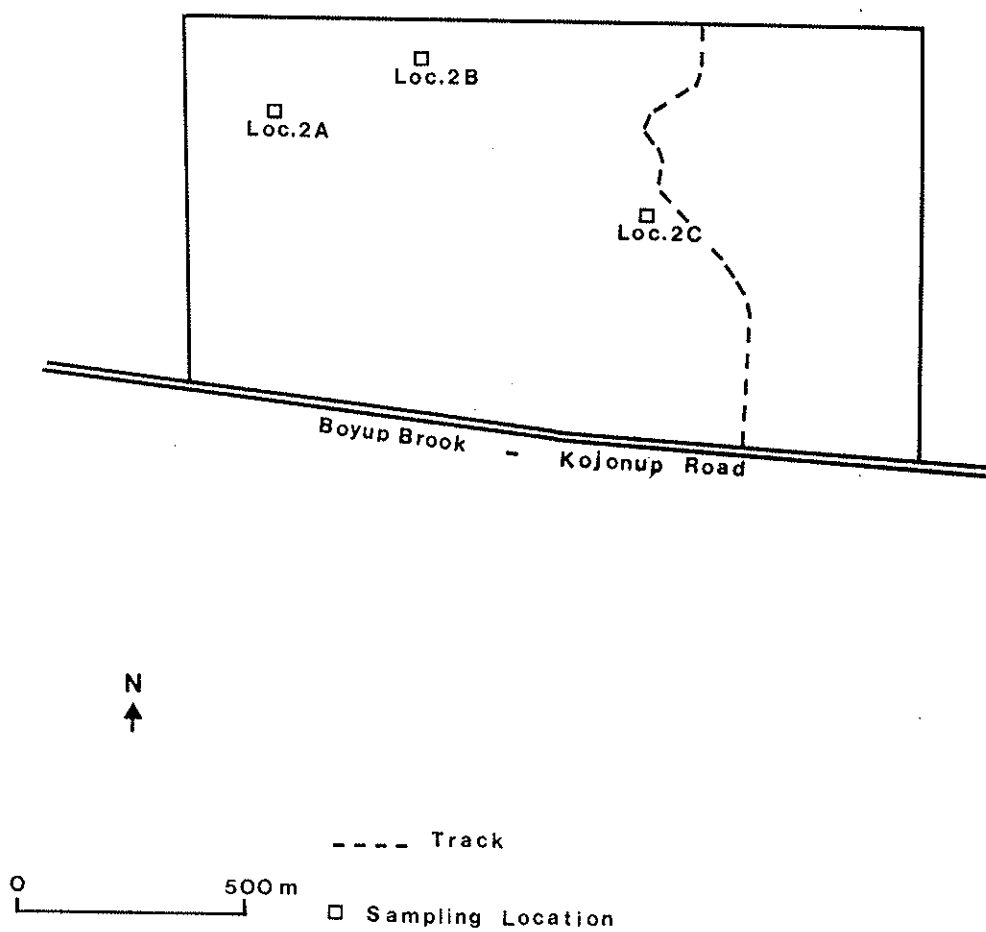
Location 2b



Location 2c



Figure 2 Reserve 8617 showing position of sampling locations and main features.



3.2 VERTEBRATE RESULTS

Table 6 Bird species recorded in the vegetation associations of Reserve 8617.

S = scats

BIRD SPECIES	LOCATION		
	2A	2B	2C

CASUARIIDAE			
Emu - <u>Dromaius novaehollandiae</u>	S		
ACCIPITRIDAE			
Unidentified Hawk - <u>Accipiter sp.</u>			1
TURNICIDAE			
Painted Button-quail - <u>Turnix varia</u>		3	
COLUMBIDAE			
Common Bronzewing - <u>Phaps chalcoptera</u>		2	
PSITTACIDAE			
Purple-crowned Lorikeet			
- <u>Glossopsitta porphyrocephala</u>	36	27	30
Ring-necked Parrot			
- <u>Platycercus zonarius</u>	7	9	6
Red-capped Parrot - <u>P. spurius</u>	7	4	
Western Rosella - <u>P. icterotis</u>	8	1	3
Carnaby's Cockatoo			
- <u>Calyptorhynchus latirostris</u>		40	
Red-tailed Black Cockatoo			
- <u>C. magnificus</u>		14	
STRIGIDAE			
Boobook Owl - <u>Ninox novaeseelandiae</u>			1
PODARGIDAE			
Tawny Frogmouth - <u>Podargus strigoides</u>		1	
AEGOTHELIDAE			
Australian Owlet-nightjar			
- <u>Aegotheles cristatus</u>			1
ALCEDINIDAE			
Laughing Kookaburra - <u>Dacelo gigas</u>	2	3	

Table 6 - Cont.

BIRD SPECIES	LOCATION		
	2A	2B	2C

HIRUNDINIDAE			
Tree Martin - <u>Hirundo nigricans</u>	6		
CAMPEPHAGIDAE			
Black-faced Cuckoo-shrike			
- <u>Coracina novaehollandiae</u>			1
PACHYCEPHALIDAE			
Red-capped Robin - <u>Petroica goodenovii</u>			1
Scarlet Robin - <u>P. multicolor</u>	4	1	3
Yellow Robin - <u>Eopsaltria australis</u>	1	4	
Golden Whistler			
- <u>Pachycephala pectoralis</u>	3	3	3
Rufous Whistler - <u>P. rufiventris</u>	1		
Grey Shrike-thrush			
- <u>Colluricincla harmonica</u>	2	1	
MONARCHIDAE			
Grey Fantail - <u>Rhipidura fuliginosa</u>	7	10	5
Willie Wagtail - <u>R. leucophrys</u>		1	
ACANTHIZIDAE			
Western Flyeater - <u>Gerygone fusca</u>	4	8	4
Weebill - <u>Smicrornis brevirostris</u>	10		1
Broad-tailed Thornbill			
- <u>Acanthiza apicalis</u>	1		2
Western Thornbill - <u>A. inornata</u>	4	8	8
Yellow-rumped Thornbill			
- <u>A. chrysorrhoa</u>		11	
DAPHOENOSITTIDAE			
Australian Sittella			
- <u>Daphoenositta chrysoptera</u>	20		12
CLIMACTERIDAE			
Rufous Tree-creeper - <u>Climacteris rufa</u>	12	1	
PARDALOTIDAE			
Spotted Pardalote			
- <u>Pardalotus punctatus</u>	4	3	3

Table 6 - Cont.

BIRD SPECIES	LOCATION		
	2A	2B	2C
Striated Pardalote - <u>P. striatus</u>	7	4	1
ZOSTEROPIDAE			
Grey-breasted White-eye - <u>Zosterops lateralis</u>		1	
MELIPHAGIDAE			
Brown Honeyeater - <u>Lichmera indistincta</u>		2	
Singing Honeyeater - <u>Meliphaga virescens</u>	1		
White-naped Honeyeater - <u>Melithreptus lunatus</u>	11	6	
New Holland Honeyeater - <u>Phylidonyris novaehollandiae</u>	1		
Red Wattlebird - <u>Anthochaera carunculata</u>	1	3	1
ARTAMIDAE			
Dusky Woodswallow - <u>Artamus cyanopterus</u>	7	4	
CRACTICIDAE			
Australian Magpie - <u>Cracticus tibicen</u>	1	26	6
CORVIDAE			
Australian Raven - <u>Corvus coronoides</u>	3	4	9

Total number of species per location	28	29	21

Total number of species per reserve		42	

Table 7 Mammal species recorded in the vegetation associations of Reserve 8617.

S = scats; W = warren; X = scratchings/diggings; T = tracks;
C = calling; H = hair sample

MAMMAL SPECIES	LOCATION		
	2A	2B	2C
<hr/>			
TACHYGLOSSIDAE			
<u>Tachyglossus aculeatus</u> - Echidna			X
MYRMECOBIIDAE			
<u>Myrmecobius fasciatus</u> - Numbat	H		
MACROPODIDAE			
<u>Macropus irma</u> - Western Brush Wallaby		2	
<u>M. fuliginosus</u> - Western Grey Kangaroo	2	5	2
MOLOSSIDAE			
<u>Tadarida australis</u> - White-striped Mastiff-bat			C
MURIDAE			
<u>Mus musculus</u> - House Mouse	10	14	13
LEPORIDAE			
<u>Oryctolagus cuniculus</u> - Rabbit	S,W	1	S,X,W
CANIDAE			
<u>Vulpes vulpes</u> - Fox		T	S,T
<hr/>			
Total number of species per location	4	5	6
<hr/>			
Total number of species per reserve		8	

Table 8 Amphibian and reptile species recorded in the vegetation associations of Reserve 8617.

AMPHIBIAN AND REPTILE SPECIES	LOCATION		
	2A	2B	2C

LEPTODACTYLIDAE - Ground Frogs			
<u>Limnodynastes dorsalis</u>		1	
GEKKONIDAE - Gekkos			
<u>Diplodactylus polyophthalmus</u>	1	1	
<u>Phyllodactylus marmoratus</u>	4	17	7
AGAMIDAE			
<u>Ctenophorus ornatus</u>			2
SCINCIDAE - Skinks			
<u>Cryptoblepharus plagioccephalus</u>	3	2	2
<u>Ctenotus impar</u>		1	1
<u>Egernia napoleonis</u>	1		
<u>Lerista distinguenda</u>	2	3	1
<u>Morethia obscura</u>		3	
VARANIDAE - Monitors			
<u>Varanus rosenbergi</u>			1

Total number of species per location	5	7	6

Total number of species per reserve		10	

4.0

R E S E R V E 1 7 7 6 0

4.1 VEGETATION AND SOILS

Five major vegetation associations were recognized and sampled on this reserve. A brief description of each follows.

LOCATION 3A

Code: Mi.LBr.SAr.SCc

Description: Woodland of Eucalyptus marginata over Open Low Woodland B of E. marginata regrowth with occasional Nuytsia floribunda and Plant 9 Mallee over Open Low Scrub of Xanthorrhoea spp. and scattered Macrozamia riedlei over Low Heath C of Plant 6, Plant 7, Plant 8, Plant 10, Plant 2, Acacia pulchella with scattered sedges and grasses in more open areas.

Litter: Sparse, scattered; broad leaves and twigs.

Soil: Deep grey/white sandy loam.

Topography: Small, shallow valley.

LOCATION 3B

Code: LAi.LBi.SBi.SDc

Description: Low Woodland A of Eucalyptus marginata, E. calophylla and scattered E. wandoo over Low Woodland B of saplings of the above over Low Scrub B of Xanthorrhoea spp., Acacia pulchella and Plant 5 over Low Heath D of Plant 6 and Plant 7.

Litter: Sparse, patchy; broad leaves, twigs, some larger debris.

Soil: Deep grey/white sandy loam.

Topography: Gentle slope near broad valley floor.

LOCATION 3C

Code: Mi.LAr.SCi.Pr

Description: Woodland of Eucalyptus marginata and E. wandoo over Open Low Woodland A of E. marginata regrowth and E. wandoo saplings over Dwarf Scrub C of Hakea undulata, H. trifurcata and Bossiae ornata over Very Open Mat Plants such as Dryandra nivea, Astroloma pallidum, A. epacridis and Conostylis setigera.

Litter: Sparse, scattered; broad leaves and twigs.

Soil: Shallow, brown, sandy lateritic gravel with lateritic cap-rock exposures.

Topography: Flat upland area.

LOCATION 3D

Code: Mr.Si.SBc.SDi.VLi

Description: Open Woodland of Eucalyptus marginata over Scrub of Dryandra sessilis, regenerating E. marginata and scattered Xanthorrhoea spp. over Heath B of Allocasuarina humilis, Leptospermum erubescens and D. sessilis over Dwarf Scrub D largely consisting of immature species from the above category over Open Low Sedges and native grasses in the more open areas.

Litter: Sparse; broad leaves, bark and twigs, some scattered clumping of Allocasuarina needles under shrubs.

Soil: Shallow red/brown sandy loam with lateritic gravel. Lateritic cap-rock at deeper levels.

Topography: Shallow valley floor.

LOCATION 3E

Code: Mr.LAc.Pc

Description: Open Woodland of Eucalyptus wandoo over occasional patches of Low Forest A of E. wandoo saplings over Mat Plants such as Conostylis setigera, mosses, lichens, native and introduced grasses in more open areas.

Litter: Sparse; broad leaves and twigs, some larger debris; clumping at tree bases.

Soil: Pale brown sandy clay loam with surface lateritic gravel; occasional small granite outcrops.

Topography: Valley floor; headwaters of seasonal stream-zone.

Table 9 Sampling effort in the vegetation associations of Reserve 17760.

ACTIVITY	LOCATION				
	3A	3B	3C	3D	3E
Pit trap	30	30	30	30	30
Elliott trap	75	75	75	75	75
Large Elliott trap	5	5	5	5	
Cage trap	10	10	10	10	5
Total no. of trapnights	120	120	120	120	110
Bat trap					X
Mist-net					X
Head-torching	X				X
Bird observation (hrs)	3.5	3.5	3.5	3.5	3.5
Reptile foraging (hrs)	3.5	3.5	3.5	3.5	3.5

Plate 3a Sampling locations on Reserve 17760.

Location 3a



Location 3b



Location 3c



Plate 3b Sampling locations on Reserve 17760.

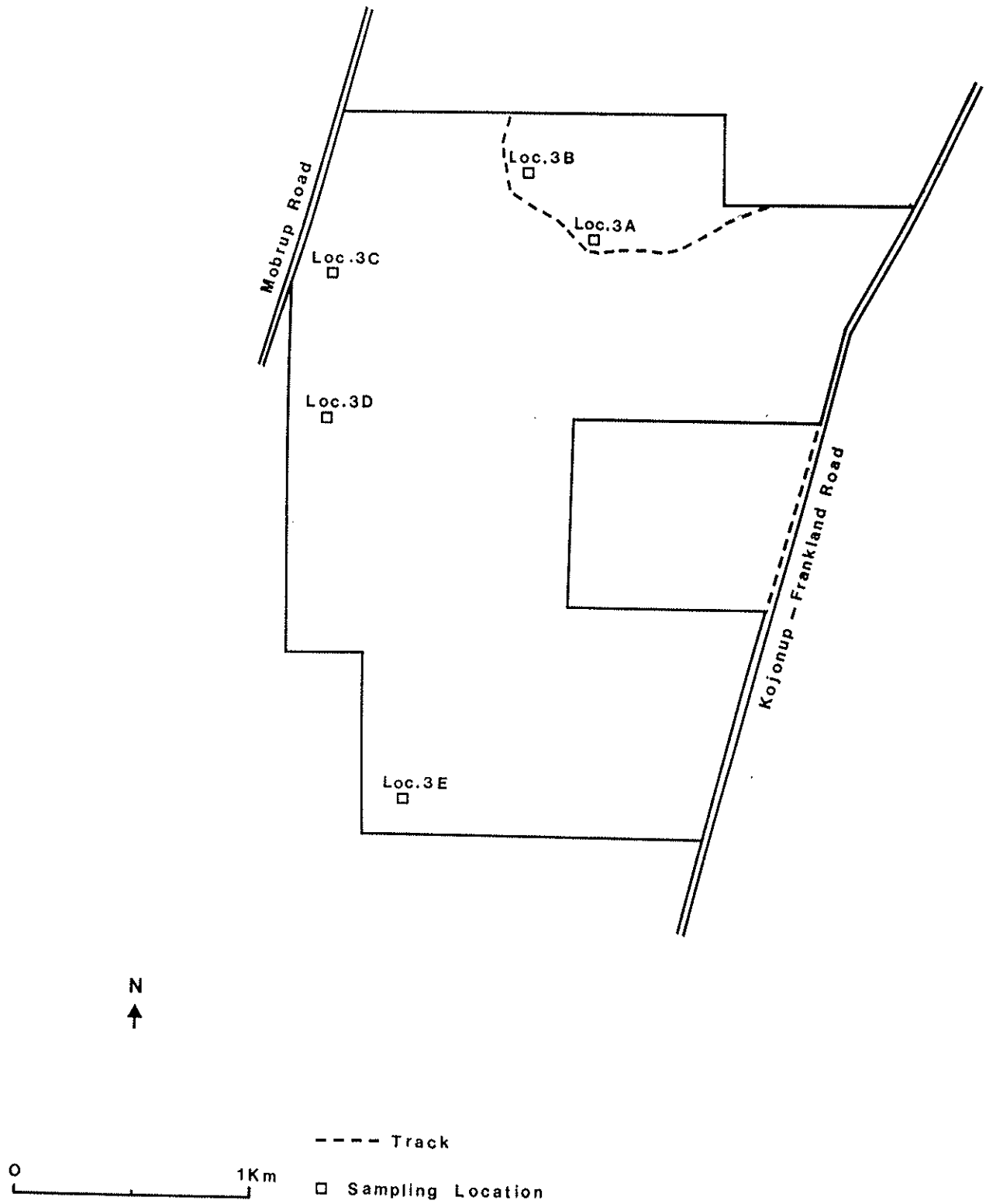
Location 3d



Location 3e



Figure 3 Reserve 17760 showing position of sampling locations and main features.



4.2 VERTEBRATE RESULTS

Table 10 Bird species recorded in the vegetation associations of Reserve 17760.

S = scats

BIRD SPECIES	LOCATION				
	3A	3B	3C	3D	3E

CASUARIIDAE					
Emu - <u>Dromaius novaehollandiae</u>				S	
COLUMBIDAE					
Common Bronzewing - <u>Phaps chalcoptera</u>	1	2	4		2
PSITTACIDAE					
Purple-crowned Lorikeet					
- <u>Glossopsitta porphyrocephala</u>	8	13	1	8	6
Ring-necked Parrot					
- <u>Platycercus zonarius</u>	2	1	7		5
Red-capped Parrot - <u>P. spurius</u>					2
CUCULIDAE					
Fan-tailed cuckoo					
- <u>Cuculus flabelliformis</u>					2
PODARGIDAE					
Tawny Frogmouth - <u>Podargus strigoides</u>	1				
AEGOTHELIDAE					
Australian Owlet-nightjar					
- <u>Aegotheles cristatus</u>	1	1			2
ALCEDINIDAE					
Laughing Kookaburra - <u>Dacelo gigas</u>	1	3			
HIRUNDINIDAE					
Tree Martin - <u>Hirundo nigricans</u>					2
CAMPEPHAGIDAE					
Black-faced Cuckoo-shrike					
- <u>Coracina novaehollandiae</u>	1				
PACHYCEPHALIDAE					
Scarlet Robin - <u>Petroica multicolor</u>	2				

Table 10 - Cont.

BIRD SPECIES	LOCATION				
	3A	3B	3C	3D	3E
Yellow Robin - <u>Eopsaltria australis</u>	2		3		5
Golden Whistler					
- <u>Pachycephala pectoralis</u>	2	1		1	1
Grey Shrike-thrush					
- <u>Colluricincla harmonica</u>		2			2
MONARCHIDAE					
Grey Fantail - <u>Rhipidura fuliginosa</u>	4	3	1		5
ACANTHIZIDAE					
Western Flyeater - <u>Gerygone fusca</u>	2	2	1	1	1
Weebill - <u>Smicromnis brevirostris</u>	1	2	1		6
Broad-tailed Thornbill					
- <u>Acanthiza apicalis</u>			1		
Western Thornbill - <u>A. inornata</u>	2		1		10
Yellow-rumped Thornbill					
- <u>A. chrysorrhoa</u>	2	7			5
MALURIDAE					
Splendid Fairy-wren - <u>Malurus splendens</u>	14				
DAPHOENOSITTIDAE					
Australian Sittella					
- <u>Daphoenositta chrysoptera</u>					5
CLIMACTERIDAE					
Rufous Tree-creeper - <u>Climacteris rufa</u>	1	1	1		3
PARDALOTIDAE					
Spotted Pardalote					
- <u>Pardalotus punctatus</u>	1				18
Striated Pardalote - <u>P. striatus</u>	2		1		6
ZOSTEROPIDAE					
Grey-breasted White-eye					
- <u>Zosterops lateralis</u>		1			
MELIPHAGIDAE					
Brown Honeyeater - <u>Lichmera indistincta</u>					1

Table 10 - Cont.

BIRD SPECIES	LOCATION				
	3A	3B	3C	3D	3E
<hr/>					
Singing Honeyeater					
- <u>Meliphaga virescens</u>					3
White-naped Honeyeater					
- <u>Melithreptus lunatus</u>	1		2		5
Tawny-crowned Honeyeater					
- <u>Phylidonyris melanops</u>					1
Western Spinebill					
- <u>Acanthorhynchus superciliosus</u>	3	1	2	1	2
Red Wattlebird					
- <u>Anthochaera carunculata</u>					1
CRACTICIDAE					
Australian Magpie - <u>Cracticus tibicen</u>					3
CORVIDAE					
Australian Raven - <u>Corvus coronoides</u>		5			
<hr/>					
Total number of species per location	21	15	13	5	26
<hr/>					
Total number of species per reserve			35		

Table 11 Mammal species recorded in the vegetation associations of Reserve 17760.

S = scats; W = warren; X = scratchings/diggings; C = calling

MAMMAL SPECIES	LOCATION				
	3A	3B	3C	3D	3E
<hr/>					
TACHYGLOSSIDAE					
<u>Tachyglossus aculeatus</u> - Echidna			X		X
MACROPODIDAE					
<u>Macropus fuliginosus</u>					
- Western Grey Kangaroo			2	1	4
MOLOSSIDAE					
<u>Tadarida Australis</u>					
- White-striped Mastiff-bat	C				
VESPERTILIONIDAE					
<u>Nyctophilus major</u>					
- Greater Long-eared Bat					1
<u>N. geoffroyi</u> - Lesser Long-eared Bat					1
<u>Eptesicus regulus</u>					
- King River Eptesicus					2
MURIDAE					
<u>Mus musculus</u> - House Mouse	8	7	8	9	7
LEPORIDAE					
<u>Oryctolagus cuniculus</u> - Rabbit	W	S			
<hr/>					
Total number of species per location	3	2	3	2	6
<hr/>					
Total number of species per reserve			8		

Table 12 Amphibian and reptile species recorded in the vegetation associations of Reserve 17760.

E = egg observed hatching

AMPHIBIAN AND REPTILE SPECIES	LOCATION				
	3A	3B	3C	3D	3E

LEPTODACTYLIDAE - Ground Frogs					
<u>Limnodynastes dorsalis</u>				1	
GEKKONIDAE - Gekkos					
<u>Diplodactylus granariensis</u>					6
<u>Phyllurus milii</u>			1	1	2
<u>Phyllodactylus marmoratus</u>	3	3,E	1		
PYGOPODIDAE - Legless Lizards					
<u>Aprasia repens</u>				2	
SCINCIDAE - Skinks					
<u>Cryptoblepharus plagiocephalus</u>	2			3	1
<u>Ctenotus impar</u>	3				
<u>Egernia napoleonis</u>	1			2	
<u>Lerista distinguenda</u>	2	4	2	3	1
<u>Menetia greyii</u>			1		
<u>Morethia obscura</u>	4	3	3	2	2
<u>Tiliqua r. rugosa</u>	4	1	1		2
VARANIDAE - Monitors					
<u>Varanus gouldii</u>			1		

Total number of species per location	7	4	7	7	6

Total number of species per reserve			13		

5.0

R E S E R V E 1 5 3 8 8

5.1 VEGETATION AND SOILS

Two major vegetation associations were recognized and sampled on this reserve. A brief description of each follows.

LOCATION 4A

Code: Mr.LBi.SAr.SCd

Description: Open woodland of Eucalyptus marginata, E. calophylla and occasional E. wandoo over Low Woodland B of regenerating patches and saplings of the above over Open Low Scrub A of Xanthorrhoea spp. over Dense Low Heath C of Xanthorrhoea spp., Hypocalymma angustifolium, Hakea lissocarpha, H. undulata and Plant 16. Scattered patches of sedges, native and exotic grasses in more open areas.

Litter: Sparse, patchy, leaves and twigs.

Soil: Deep grey sandy loam.

Topography: Gentle slope on upper edge of broad valley.

LOCATION 4B

Code: Mi.LAc.SDi

Description: Woodland of Eucalyptus wandoo with scattered E. calophylla and E. marginata over a Low Forest mainly composed of E. wandoo saplings over Dwarf Scrub D of Hakea lissocarpha, Plant 17, Plant 18 plus patchy native and exotic grasses.

Litter: Moderate, scattered; broad leaves, twigs, and some larger debris; clumping at tree bases.

Soil: Red/brown sandy clay with granite fragments; some very small granite exposures.

Topography: Broad, flat valley floor.

Table 13 Sampling effort in the vegetation associations of Reserve 15388.

ACTIVITY	LOCATION	
	4A	4B
Pit trap	30	30
Elliott trap	75	75
Large Elliott trap		
Cage trap	5	
Total no. of trapnights	110	105
Bat trap		
Mist-net		X
Head-torching	X	X
Bird observation (hrs)	3.5	3.5
Reptile foraging (hrs)	3.5	3.5

Plate 4 Sampling locations on Reserve 15388.

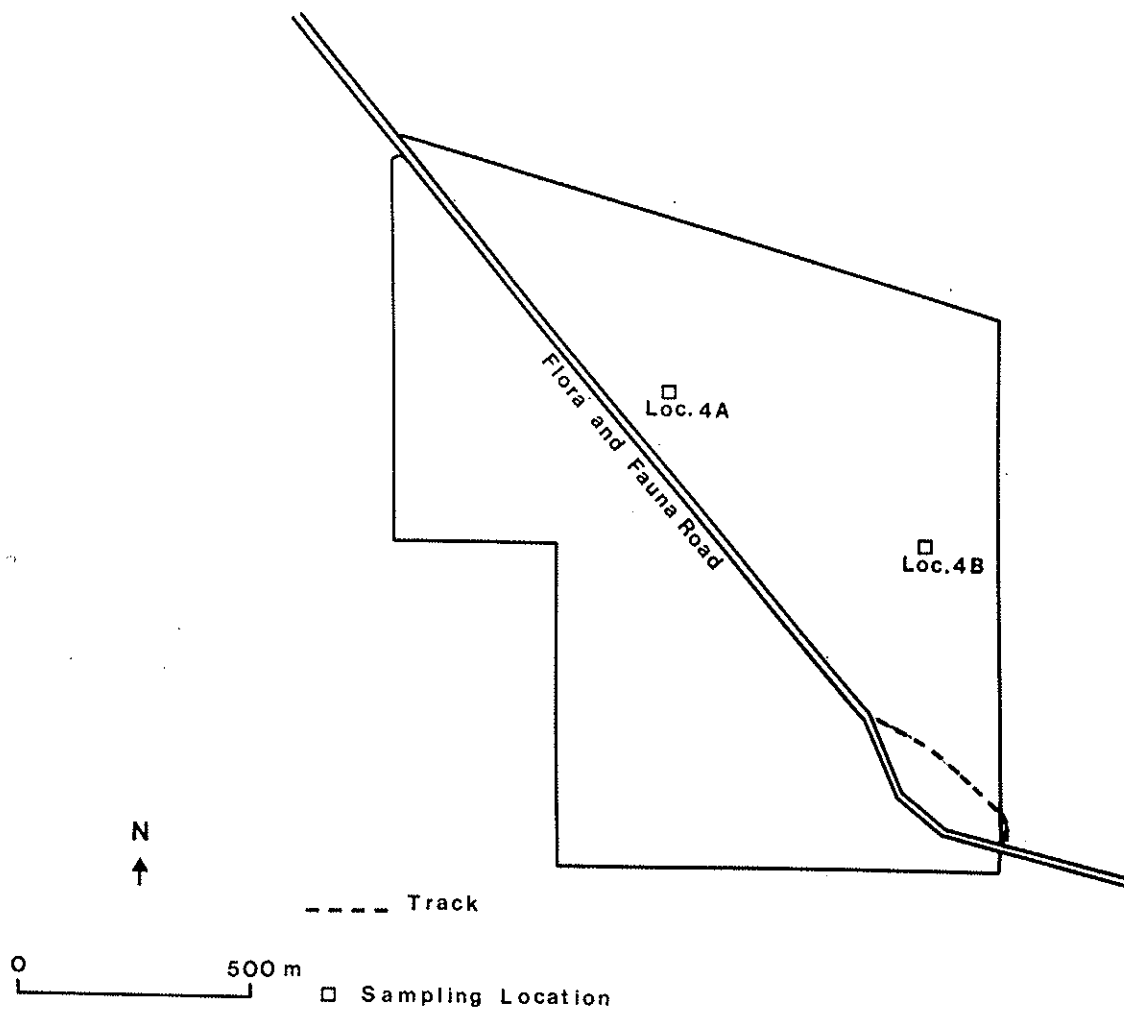
Location 4a



Location 4b



Figure 4 Reserve 15388 showing position of sampling locations and main features.



5.2 VERTEBRATE RESULTS

Table 14 Bird species recorded in the vegetation associations of Reserve 15388.

BIRD SPECIES	LOCATION	
	4A	4B
<hr/>		
CASUARIIDAE		
Emu - <u>Dromaius novaehollandiae</u>	3	
FALCONIDAE		
Peregrine Falcon - <u>Falco peregrinus</u>		1
COLUMBIDAE		
Common Bronzewing - <u>Phaps chalcoptera</u>		1
PSITTACIDAE		
Purple-crowned Lorikeet		
- <u>Glossopsitta porphyrocephala</u>	20	101
Regent Parrot - <u>Polytelis anthopeplus</u>		1
Ring-necked Parrot		
- <u>Platycercus zonarius</u>	14	18
Red-capped Parrot - <u>P. spurius</u>	4	2
Western Rosella - <u>P. icterotis</u>	7	2
Elegant Parrot - <u>Neophema elegans</u>		2
Red-tailed Black Cockatoo		
- <u>Calyptorhynchus magnificus</u>	2	5
AEGOTHELIDAE		
Australian Owlet-nightjar		
- <u>Aegotheles cristatus</u>		3
ALCEDINIDAE		
Laughing Kookaburra - <u>Dacelo gigas</u>	7	
HIRUNDINIDAE		
Tree Martin - <u>Hirundo nigricans</u>		47
CAMPEPHAGIDAE		
Black-faced Cuckoo-shrike		
- <u>Coracina novaehollandiae</u>		2
PACHYCEPHALIDAE		
Scarlet Robin - <u>Petroica multicolor</u>	2	1

Table 14 - Cont.

BIRD SPECIES	LOCATION	
	4A	4B
Yellow Robin - <u>Eopsaltria australis</u>	6	2
Golden Whistler		
- <u>Pachycephala pectoralis</u>	6	1
Rufous Whistler - <u>P. rufiventris</u>		2
Grey Shrike-thrush		
- <u>Colluricincla harmonica</u>	4	6
MONARCHIDAE		
Grey Fantail - <u>Rhipidura fuliginosa</u>	6	2
Willie Wagtail - <u>R. leucophrys</u>		4
Restless Flycatcher - <u>Myiagra inquieta</u>		4
ORTHO NYCHIDAE		
White-browed babbler		
- <u>Pomatostomus superciliosus</u>		5
ACANTHIZIDAE		
Western Flyeater - <u>Gerygone fusca</u>	3	3
Weebill - <u>Smicrornis brevirostris</u>		1
Broad-tailed Thornbill		
- <u>Acanthiza apicalis</u>	3	
Western Thornbill - <u>A. inornata</u>	10	
Yellow-rumped Thornbill		
- <u>A. chrysorrhoa</u>	8	
MALURIDAE		
Splendid Fairy-wren - <u>Malurus splendens</u>	4	
DAPHOENOSITTIDAE		
Australian Sittella		
- <u>Daphoenositta chrysoptera</u>	7	
CLIMACTERIDAE		
Rufous Tree-creeper - <u>Climacteris rufa</u>		10
PARDALOTIDAE		
Spotted Pardalote		
- <u>Pardalotus punctatus</u>	2	6
Striated Pardalote - <u>P. striatus</u>	1	10

Table 14 - Cont.

BIRD SPECIES	LOCATION	
	4A	4B
<hr/>		
ZOSTEROPIDAE		
Grey-breasted White-eye		
- <u>Zosterops lateralis</u>	1	
MELIPHAGIDAE		
Brown Honeyeater - <u>Lichmera indistincta</u>	2	3
Singing Honeyeater		
- <u>Meliphaga virescens</u>	1	
Yellow-plumed Honeyeater - <u>M. ornata</u>		15
White-naped Honeyeater		
- <u>Melithreptus lunatus</u>	1	4
Tawny-crowned Honeyeater		
- <u>Phylidonyris melanops</u>		1
Red Wattlebird		
- <u>Anthochaera carunculata</u>	1	2
ARTAMIDAE		
Dusky Woodswallow - <u>Artamus cyanopterus</u>		41
CRACTICIDAE		
Australian Magpie - <u>Cracticus tibicen</u>	7	
CORVIDAE		
Australian Raven - <u>Corvus coronoides</u>		1
<hr/>		
Total number of species per location	26	33
<hr/>		
Total number of species per reserve	43	

Table 15 Mammal species recorded in the vegetation associations of Reserve 15388.

W = warren; X = scratchings/diggings; T = tracks; H = hair sample

MAMMAL SPECIES	LOCATION	
	4A	4B

TACHYGLOSSIDAE		
<u>Tachyglossus aculeatus</u> - Echidna		X
MYRMECOBIIDAE		
<u>Myrmecobius fasciatus</u> - Numbat		H
MACROPODIDAE		
<u>Macropus irma</u> - Western Brush Wallaby	1	
<u>M. fuliginosus</u> - Western Grey Kangaroo	10	2
VESPERTILIONIDAE		
<u>Nyctophilus major</u>		
- Greater Long-eared Bat		1
MURIDAE		
<u>Mus musculus</u> - House Mouse	17	12
LEPORIDAE		
<u>Oryctolagus cuniculus</u> - Rabbit	W	
CANIDAE		
<u>Vulpes vulpes</u> - Fox	T	
FELIDAE		
<u>Felis catus</u> - Cat		1

Total number of species per location	5	6

Total number of species per reserve	9	

Table 16 Reptile species recorded in the vegetation associations of Reserve 15388.

REPTILE SPECIES	LOCATION	
	4A	4B

GEKKONIDAE - Gekkos		
<u>Diplodactylus granariensis</u>		5
<u>Phyllodactylus marmoratus</u>	2	1
SCINCIDAE - Skinks		
<u>Cryptoblepharus plagiocephalus</u>	1	1
<u>Ctenotus impar</u>	1	
<u>Hemiergis p. peronii</u>	1	
<u>Lerista distinguenda</u>	4	
<u>Morethia obscura</u>	1	

Total number of species per location	6	3

Total number of species per reserve	7	

6.0

R E S E R V E 2 2 4 3

6.1 VEGETATION AND SOILS

Three major vegetation associations were recognized and sampled on this reserve. A brief description of each follows.

LOCATION 5A

Code: LAc.Jr.SAr.VLr.GLr

Description: Low Forest A of Plant 11 over Herbs (Plant 12).

This association merges into an Open Low Scrub A of Acacia saligna and Xanthorrhoea spp. with emergent Banksia littoralis, Eucalyptus rudis and E. calophylla over Very Open Low Sedges and native Very Open Low Grass.

Litter: Clumped river debris at tree bases; broad leaves, Melaleuca needles, twigs and larger debris.

Soil: Grey sandy clay near river, ranging to light grey alluvial loam away from banks.

Topography: Incised, narrow river valley.

LOCATION 5B

Code: Mr.LAi.SAr.SCc.SDc.VLr

Description: Open Woodland of Eucalyptus marginata and very occasional E. wandoo over a Low Woodland A of E. marginata and patches of Plant 13 over an Open Low Scrub A of Hakea prostrata, Allocasuarina humilis and Leptospermum erubescens with occasional Banksia grandis, Persoonia longifolia, Xanthorrhoea spp. and E. marginata saplings over Low Heath C of Petrophile serruriae, H. lissocarpha, Bossiae aquifolium, B. ornata and Xanthorrhoea spp. over Low Heath D of Plant 7 and mixed low shrubs over Very Open Low Sedges and very scattered native and introduced grasses.

Litter: Moderate, scattered; broad leaves, twigs and occasional larger debris; some clumping under bushes.

Soil: Yellow/brown deep sandy loam.

Topography: Valley mid-slope.

LOCATION 5C

Code: Mi.SAr.Pr

Description: Woodland of Eucalyptus wandoo over Open Low Scrub A of very sparse Xanthorrhoea spp. Macrozamia riedlei, Hakea lissocarpha, E. wandoo saplings and occasional thickets of Plant 15 over Very Open Mat Plants including Conostylis setigera and some native and exotic grasses, mosses and lichens.

Litter: Moderate, scattered; broad leaves, twigs, bark and abundant larger debris; clumping at bases of trees.

Soil: Grey/brown sandy clay with some surface and sub-surface laterite.

Topography: Wide, flat valley floor.

Table 17 Sampling effort in the vegetation associations of Reserve 2243.

ACTIVITY	LOCATION		
	5A	5B	5C
Pit trap	25	25	25
Elliott trap	75	75	135
Large Elliott trap	5		
Cage trap	5		
Total no. of trapnights	110	100	160
Bat trap	X		
Mist-net	X		
Head-torching	X	X	X
Bird observation (hrs)	3.5	3.5	3.5
Reptile foraging (hrs)	3.5	3.5	3.5

Plate 5 Sampling locations on Reserve 2243.

Location 5a



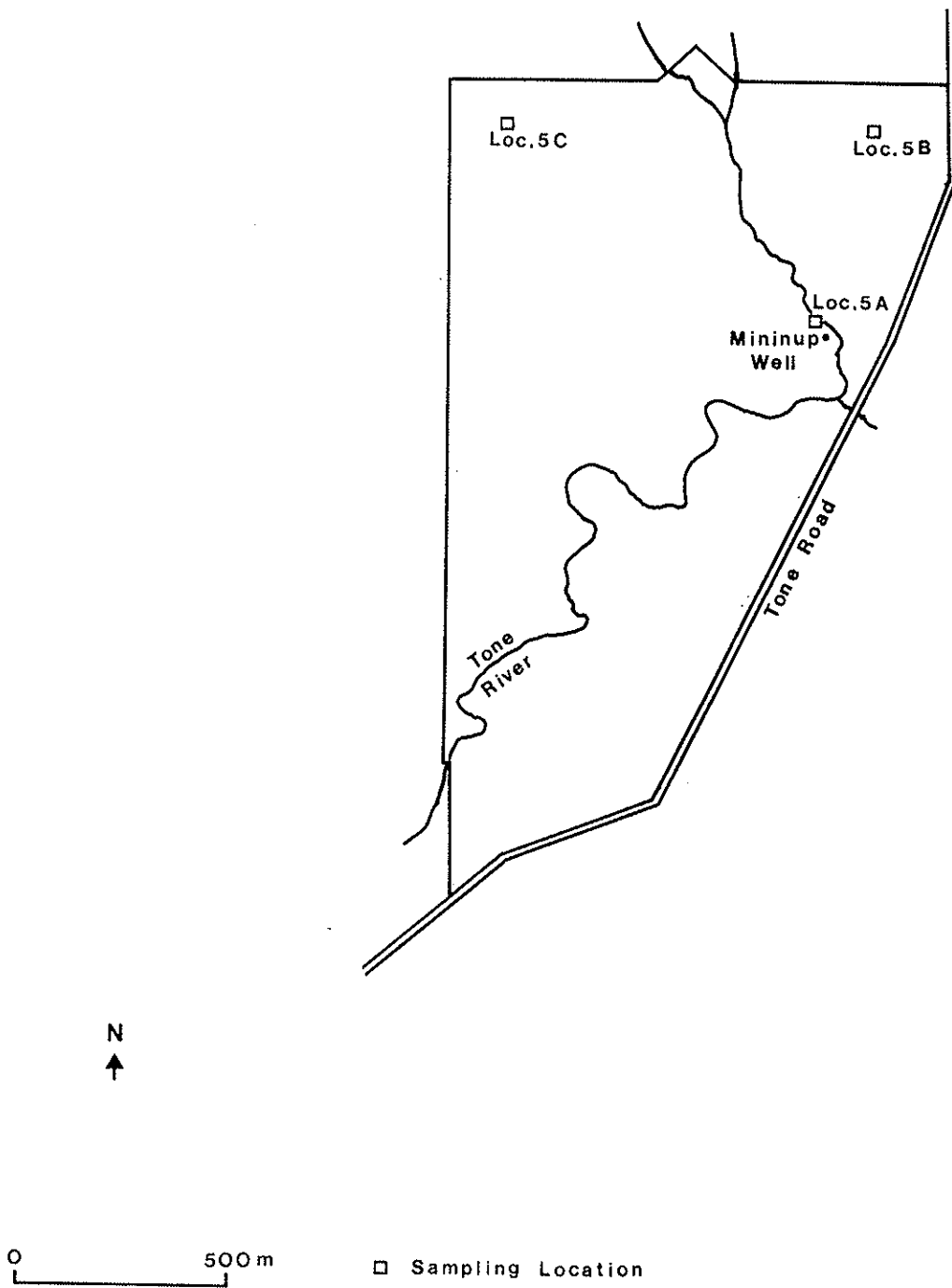
Location 5b



Location 5c



Figure 5 Reserve 2243 showing position of sampling locations and main features.



6.2 VERTEBRATE RESULTS

Table 18 Bird species recorded in the vegetation associations of Reserve 2243.

BIRD SPECIES	LOCATION		
	5A	5B	5C

PHALACROCORACIDAE			
Little Pied Cormorant			
- <u>Phalacrocorax melanoleucus</u>	5		
ARDEIDAE			
White-faced Heron			
- <u>Ardea novaehollandiae</u>	4		
ANATIDAE			
Black Duck - <u>Anas superciliosa</u>	2		
Grey Teal - <u>A. gibberifrons</u>	2		
FALCONIDAE			
Australian Hobby - <u>Falco longipennis</u>	1		
COLUMBIDAE			
Common Bronzewing - <u>Phaps chalcoptera</u>	3		4
PSITTACIDAE			
Purple-crowned Lorikeet			
- <u>Glossopsitta porphyrocephala</u>	30	10	
Regent Parrot - <u>Polytelis anthopeplus</u>			1
Ring-necked Parrot			
- <u>Platycercus zonarius</u>	7	3	8
Red-capped Parrot - <u>P. spurius</u>	3		
Western Rosella - <u>P. icterotis</u>	14	10	5
Elegant Parrot - <u>Neophema elegans</u>	1		
CUCULIDAE			
Fan-tailed cuckoo			
- <u>Cuculus flabelliformis</u>		1	

Table 18 - Cont.

BIRD SPECIES	LOCATION		
	5A	5B	5C
<hr/>			
AEGOTHELIDAE			
Australian Owlet-nightjar			
- <u>Aegotheles cristatus</u>	1		2
ALCEDINIDAE			
Laughing Kookaburra - <u>Dacelo gigas</u>	1		2
HIRUNDINIDAE			
Tree Martin - <u>Hirundo nigricans</u>	10		2
CAMPEPHAGIDAE			
Black-faced Cuckoo-shrike			
- <u>Coracina novaehollandiae</u>			3
PACHYCEPHALIDAE			
Jacky Winter - <u>Microeca leucophaea</u>			10
Scarlet Robin - <u>Petroica multicolor</u>	6	1	
Yellow Robin - <u>Eopsaltria australis</u>		2	3
White-breasted Robin - <u>E. georgiana</u>	1		
Golden Whistler			
- <u>Pachycephala pectoralis</u>	4		4
Rufous Whistler - <u>P. rufiventris</u>	2		1
Grey Shrike-thrush			
- <u>Colluricincla harmonica</u>	2		3
Crested Shrike-tit			
- <u>Falcunculus frontatus</u>	3		1
MONARCHIDAE			
Grey Fantail - <u>Rhipidura fuliginosa</u>	11	5	6
Willie Wagtail - <u>R. leucophrys</u>	6		
Restless Flycatcher - <u>Myiagra inquieta</u>	3		1
ACANTHIZIDAE			
Western Flyeater - <u>Gerygone fusca</u>	6	1	5
Weebill - <u>Smicrornis brevirostris</u>	6		5

Table 18 - Cont.

BIRD SPECIES	LOCATION		
	5A	5B	5C

Broad-tailed Thornbill			
- <u>Acanthiza apicalis</u>	10	3	1
Western Thornbill - <u>A. inornata</u>	2	9	3
Yellow-rumped Thornbill			
- <u>A. chrysorrhoa</u>	13		10
MALURIDAE			
Splendid Fairy-wren - <u>Malurus splendens</u>	11	3	3
DAPHOENOSITTIDAE			
Australian Sittella			
- <u>Daphoenositta chrysoptera</u>			10
CLIMACTERIDAE			
Rufous Tree-creeper - <u>Climacteris rufa</u>			19
PARDALOTIDAE			
Spotted Pardalote			
- <u>Pardalotus punctatus</u>	16	3	5
Striated Pardalote - <u>P. striatus</u>	3	3	8
ZOSTEROPIDAE			
Grey-breasted White-eye			
- <u>Zosterops lateralis</u>	3		
MELIPHAGIDAE			
Brown Honeyeater - <u>Lichmera indistincta</u>	1		2
Singing Honeyeater			
- <u>Meliphaga virescens</u>	6		3
Yellow-plumed Honeyeater - <u>M. ornata</u>			2
White-naped Honeyeater			
- <u>Melithreptus lunatus</u>	3		8
New Holland Honeyeater			
- <u>Phylidonyris novaehollandiae</u>	32		
Western Spinebill			
- <u>Acanthorhynchus superciliosus</u>	1	2	
Little Wattlebird			
- <u>Anthochaera chrysoptera</u>	1		
Red Wattlebird - <u>A. carunculata</u>	7		4

Table 18 - Cont.

BIRD SPECIES	LOCATION		
	5A	5B	5C

CRACTICIDAE			
Australian Magpie - <u>Cracticus tibicen</u>	2	1	1
Grey Currawong - <u>Strepera versicolor</u>			1
CORVIDAE			
Australian Raven - <u>Corvus coronoides</u>		4	3

Total number of species per location	40	16	34

Total number of species per reserve		50	

Table 19 Mammal species recorded in the vegetation associations of Reserve 2243.

S = scats; W = warren; X = scratchings/diggings; T = tracks;
C = calling

MAMMAL SPECIES	LOCATION		
	5A	5B	5C

MACROPODIDAE			
<u>Macropus fuliginosus</u>			
- Western Grey Kangaroo	4	S,T	4
MOLOSSIDAE			
<u>Tadarida australis</u>			
- White-striped Mastiff-bat	C		
VESPERTILIONIDAE			
<u>Nyctophilus major</u>			
- Greater Long-eared Bat	2		
<u>Eptesicus regulus</u>			
- King River Eptesicus	4		
MURIDAE			
<u>Rattus rattus</u> - Black Rat	2		
<u>Mus musculus</u> - House Mouse	8	9	5
LEPORIDAE			
<u>Oryctolagus cuniculus</u> - Rabbit		1,W	S
CANIDAE			
<u>Vulpes vulpes</u> - Fox	X		1
BOVIDAE			
<u>Ovis aries</u> - Sheep	1		

Total number of species per location	8	3	4

Total number of species per reserve		9	

Table 20 Amphibian and reptile species recorded in the vegetation associations of Reserve 2243.

F = skeletal fragments

AMPHIBIAN AND REPTILE SPECIES	LOCATION		
	5A	5B	5C

LEPTODACTYLIDAE - Ground Frogs			
<u>Limnodynastes dorsalis</u>		1	
GEKKONIDAE - Gekkos			
<u>Diplodactylus granariensis</u>			9
<u>D. polyophthalmus</u>		1	
<u>Phyllodactylus marmoratus</u>			1
SCINCIDAE - Skinks			
<u>Cryptoblepharus plagioccephalus</u>	1		2
<u>Ctenotus impar</u>	1	1	1
<u>Egernia napoleonis</u>	1		
<u>Leiopisma trilineatum</u>	2		
<u>Menetia greyii</u>	2		
<u>Morethia obscura</u>		1	
<u>Tiliqua r. rugosa</u>	1		
CHELUIDAE			
<u>Chelodina oblonga</u>	F		

Total number of species per location	7	4	4

Total number of species per reserve		12	

DISCUSSION OF RESULTS

Birds - Sixty-four species of bird were recorded during this survey with the maximum number of species on any one reserve being fifty (Res. 2243) and the minimum thirty-five (Res. 17760). This disparity in results can be attributed to the presence of a river system on Res. 2243 and the lack of large areas of productive Wandoo woodland on Res. 17760. Apart from the four aquatic species and the White-breasted Robin Eopsaltria georgiana on Res. 2243 (Table 18) it is likely that, given more survey effort, the remaining fifty-nine species will be found to be common to all reserves. Several more species which are either migratory, locally uncommon or at the limits of their southern distribution can also be expected. Examples of these are the Sacred Kingfisher Halcyon sancta, Rainbow Bee-eater Merops ornata, Grey Butcherbird Cracticus torquatus, White-cheeked Honeyeater Phylidonyris nigra, Blue-breasted Fairy-wren Malurus pulcherrimus and the Southern Scrub-robin Drymodes brunneopygia.

The presence of the White-breasted Robin Eopsaltria georgiana on Res. 2243 is of note since it represents the most inland known record of this species and aligns well with the results of recent work carried out by the authors in the north-eastern Darling Range where it was found that the vegetation and soils of the eastern headwaters of river systems tend to support an atypical suite of fauna when comparisons are made with the surrounding more arid country. These faunal corridors support elements more typical of the wetter, western Darling Range. This effect appears to be operating on a north-south basis at the Tone River. It is most unlikely that this bird will be present on any of the other reserves since its specialized habitat requirements are not met on them.

Two species of bird, the Crested Shrike-tit Falcunculus frontatus (Res. 2243) and the Peregrine Falcon Falco peregrinus (Res 15388) are gazetted as "rare, or otherwise in need of special protection" (Fisheries and Wildlife, 1983). The former appears to

be fairly common in the Eucalyptus wandoo and E. rudis woodlands of Res. 2243 and the latter is represented by a single bird on the boundary between E. wandoo woodland and farmland on Res. 15388.

Amphibians and Reptiles - Four amphibians and twenty reptiles were recorded during the survey, with Res. 17759 being the richest (16 species) and Res. 15388 being the poorest (7 species). All species should be common to all the reserves with the exception of the skink Leiopisma trilineatum which prefers wetter habitats such as that present in Res. 2243. The comments made about faunal corridors in the previous section apply to this species; this is also the most inland known record.

Autumn is a comparatively poor season in which to conduct an inventory survey of reptiles and amphibians. As a result, many more species can be expected from the area. Some examples of species which are almost certainly present but were not recorded are the frogs Heleioporus albopunctatus, H. barycragus, H. psammophilus, Ranidella pseudinsignifera, Litoria moorei and the reptiles Pseudonaja a. affinis, Rhinoplocephalus nigriceps, Python spilotus imbricatus, Pogona minor, Delma fraseri and Lialis burtonis.

Mammals - Nine native and seven introduced species were recorded - a fairly poor return considering the sampling effort. Several factors probably account for the lack of native mammals, the most obvious being the small size of the reserves, their isolation in large tracts of farmland, their fire history, the timing of the survey and the presence of large numbers of the House Mouse Mus musculus which would tend to discourage the smaller terrestrial native mammals from entering traps. Given further survey work in a different season (eg. spring) several more mammals could be expected. Examples are: Sminthopsis gilberti, S. crassicaudata,

Antechinus flavipes, Hydromys chrysogaster (both restricted to Res. 2243), Chalinolobus gouldii, Mormopterus planiceps and Pipistrellus tasmaniensis.

The presence of the Common Brushtail Possum Trichosurus vulpecula and the Numbat Myrmecobius fasciatus was confirmed from grooming hairs found in scats of the former and hair found in hollow logs in the case of the latter. The Possum scats appeared to be fresh and were found in an exposed position under a tree; it is therefore reasonable to assume that this species is present in the area in low numbers. The Numbat hair presented some initial difficulties since it did not match precisely with the known reference samples. Since reference samples come from known positions on the animal's body, the range of variation in structure is usually covered adequately. Unknown samples come from anywhere on the body and in fact are usually a mixture, sometimes with other species thrown in for good measure. Further analysis of the hair in terms of its structure, width and length eventually eliminated other species, leaving a hair sample which, while it did not precisely match Numbat, was unlikely to be anything else. The continuing presence of Numbats on Res. 8617 and Res. 15388 should be considered as a remote possibility at this stage since there is no information on how long hair can last in a hollow log. Periodic checking of Wandoo woodland on these reserves by departmental staff could be potentially productive.

Taken as a whole, the results of this survey represent a typical suite of fauna from the inland periphery of the Darling System. Elements of the extreme western and southern portions such as the White-breasted Robin Eopsaltria georgiana and the skink Leiopisma trilineatum are present, as are species more typical of the drier Wheatbelt such as the reptiles Diplodactylus granariensis, Aprasia repens and the following birds: Regent Parrot Polytelis anthopeplus, Crested Shrike-tit Falcunculus

frontatus, Brown-headed Honeyeater Melithreptus brevirostris, Yellow-plumed Honeyeater Meliphaga ornata. The area can best be described as the interzone between the Darling System and the Wheatbelt.

All the reserves are in fairly good condition and act as valuable conservation areas for a broad range of fauna, especially birds, and are of further note since they lie in the previously mentioned interzone. Reserve 2243 is particularly interesting and deserves special management attention since it is one of the few peripheral Wheatbelt conservation reserves encompassing a river system.

8.0

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