

III MAMMALS OF BADJALING NATURE RESERVE, SOUTH BADJALING NATURE RESERVE, YOTING TOWN RESERVE AND YOTING WATER RESERVE

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The mammal survey of these reserves is part of an integrated survey of the vertebrate fauna of the Western Australian Wheatbelt which is detailed in Kitchener (1976).

Mammals were collected in Badjaling Nature Reserve (BNR), South Badjaling Nature Reserve (SBR), Yoting Town Reserve (YR) and Yoting Water Reserve (YWR) between 11-18 November 1974 and 5-11 May 1975. The 4 reserves were trapped simultaneously with traplines 1-5 on BNR, trapline 6 on SBR, traplines 7, 8 on YR and trapline 9 on YWR. Sites where traplines were deployed are shown in Figs 2, 3, 4 and 5 in Muir (this report). The types of traps, manner of their positioning in 'standard' traplines, and the bait used, are described in Kitchener & Chapman (1976). The trapping effort is detailed in Appendix 1. Descriptions of vegetation, soil and litter at each trapline are presented in Muir (this report); these data are summarised in Appendix 2. Weight was recorded in the field for all specimens, and all females were dissected in the laboratory and their reproductive organs examined *in situ*. In the annotated list below the numbers of animals captured at each trapline are indicated in brackets. All specimens are in the Western Australian Museum with registration numbers M13037-13138 and M13700-13704.

Annotated List

Common Dunnart (*Sminthopsis murina*)

A juvenile female was collected in a pit trap in *Melaleuca lateriflora* shrubland (trapline 3) on BNR, and a juvenile male from under a piece of tin in rubbish tip in *Casuarina campestris* shrubland, loc. 3.1, on YR in November 1974. An adult male was trapped in Salmon Gum (*Eucalyptus salmonophloia*) woodland (trapline 9) on YNR in May 1975. Its stomach contained remains of beetles (Carabidae), weevils, an adult moth and a spider.

Gould's Wattled Bat (*Chalinolobus gouldii*)

Three adult females were shot on edge of *Xylomelum angustifolium*, *Acacia acuminata* woodland, loc. 1.1, on BNR in November 1974. A male was shot over samphire flat, loc. 7.2, on BNR in May 1975. One of the females (wt = 14.5 g) was lactating; it had partially involuted uteri and obvious implantation scars and had recently bred. The other female (wt = 19.0 g) was pregnant with a foetus in both uterine horns; crown-rump

lengths of these fetuses were 16 mm and 11 mm. Kitchener (1975) records seasonal breeding for *C. gouldii* in south-west Western Australia, with the period of births late November to early December. The female collected on 15 November suggests that in the wheatbelt births begin in early November.

House Mouse (*Mus musculus*)

The distribution and abundance of *Mus* on these reserves are shown in Table 1. Traplines were set over the same 7 days during each survey.

TABLE 1
Distribution and abundance of *Mus musculus* on BNR, SBR,
YR, YWR.

Trapline No.	No. of <i>Mus musculus</i> trapped	
	November 1974	May 1975
1	7	63
2	17	35
3	8	36
4	14	63
5	18	67
6	13	33
7	5	54
8	12	34
9	3	20

In November, 13 of the 50 females collected were pregnant (11.5-26.5 g weight range) with between 2 and 10 fetuses. None were pregnant in May. During autumn 1975 there was an irruption of *Mus* numbers over much of southern Western Australia. This is reflected in the high numbers trapped in May 1975. This irruption is being described more fully by Chapman (in prep.).

Black Rat (*Rattus rattus*)

Three females were trapped at traplines 5(1) and 3(2) on BNR in May. We have only recorded *Rattus* previously on two wheatbelt reserves; Yornaning Nature Reserve (Morris & Kitchener 1979) and Yorkrakine Rock Reserve (Kitchener & Chapman, 1980). Unlike *Mus*, *R. rattus* does not seem to maintain residual populations in virgin, wheatbelt vegetation, but probably colonises bush from farm buildings etc.

European Rabbit (*Oryctolagus cuniculus*)

Rabbits were present on BNR and SBR, they were particularly abundant on the latter.

Fox (*Vulpes vulpes*)

A fox skeleton was collected on SBR, none were seen.

DISCUSSION

The mammal fauna of these reserves, of 6 species, includes only 2 native species: *Sminthopsis murina* and *Chalinolobus gouldii*. The reserves' small size, isolation and degree of degradation of habitat — in particular destruction of ground cover vegetation on SBR and YWR — undoubtedly are factors which have contributed to the impoverished native mammal fauna within them. *Sminthopsis murina* appears to be the only terrestrial native mammal which continues to survive on small, isolated reserves.

The abundance of *Mus musculus* and the presence of *Rattus rattus* in May 1975 were unusual. This was part of a widespread phenomenon caused in part by the good rainfall received in 1973 and 1974.

APPENDIX 1

Number of trap nights on Badjaling Nature Reserve (traplines 1-5), South Badjaling Nature Reserve (trapline 6), Yoting Town Reserve (trapline 7, 8) and Yoting Water Reserve (trapline 9). BB = breakback trap, E = Elliott trap, C = cage trap, P = pit trap.

Trapline No.	May 1975				November 1974			
	BB	E	C	P	BB	E	C	P
1	70	70	14	35	70	70	14	35
2	70	70	14	35	70	70	14	35
3	70	70	14	35	70	70	14	35
4	70	70	14	35	70	70	14	35
5	70	70	14	0	70	70	14	0
6	70	70	14	35	70	70	14	35
7	70	70	14	0	70	70	14	0
8	70	70	14	0	70	70	14	0
9	70	70	14	0	70	70	14	0
Totals	1,695				1,695			

APPENDIX 2

Codified vegetation and soil descriptions and leaf litter density, with vegetation location numbers for each trapline on BNR, SBR, YR, YWR. See Muir (this report) for detailed trapline descriptions.

Trapline No.	Vegetation Location No.	Vegetation and soil code	Leaf Litter
1	3.3	n ₁ Sr.n ₂ SAr/FSL	sparse, scattered
2	1.4	xLBi.xSBI/FSL	moderately abundant, clumped
3	4.1	xSCi.mSDc/SL	
4	1.8	eMr.xGLd/SCL	sparse, scattered
5	7.2	n ₁ SDc/SL	
6	1.2	n ₁ n ₂ LAI.n ₃ SCR/FSL	abundant, continuous
7	3.1	cSd/SL	moderate, continuous
8	1.1	eLAI.xSBr.xJVLc/SCL	moderately abundant, clumped
9	1.1/1.2	eMi/SC	abundant clumped or continuous