

### III MAMMALS OF BILLYACATTING HILL NATURE RESERVE

A. CHAPMAN & D.J. KITCHENER

Mammals were surveyed on Billyacatting Hill Nature Reserve between 30 October and 7 November 1972, and 30 March and 6 April 1974. Small mammals were trapped according to the method of Kitchener & Chapman (1976). Female specimens were dissected for information on reproduction. Stomach contents of chiropterans and dasyurids were identified wherever possible. Detailed descriptions of vegetation, soils and leaf litter at traplines, as well as their location are presented in Muir (this publication), and are summarized in **Appendix 2**. Trapping effort is detailed in **Appendix 1**. All specimens are in the Western Australian Museum with registration numbers M9545-9549 and M11390-11422. In the annotated list the number in parentheses refers to number of specimens.

#### ANNOTATED LIST

##### Western Grey Kangaroo (*Macropus fuliginosus*)

A pair was seen near a granite outcrop in November 1972, and in woodland at loc. 1.7/1.8; several others were in stubble paddocks on north and east boundaries of reserve in April 1974.

##### Euro (*Macropus robustus*)

Euros were occasionally seen during November 1972 during evening and daylight traverses of the reserve boundaries. Crania and skeletal material were collected.

##### Common Dunnart (*Sminthopsis murina*)

Five males (8.5 g-17.2 g) and 1 female (11.9 g) were collected in April 1974 from traplines 1(2), 4(2), and 9(2). These were heath, shrubland and heath formations respectively. Another animal captured in bulldozer spoil in mallee formation loc. 2.4 was released. The female was reproductively inactive with its teats only barely discernible and very thin uteri. Five specimens had empty stomachs, one had masticated remains including arachnids, coleopterans and lepidopteran eggs.

##### Gould's Wattled Bat (*Chalinolobus gouldii*)

One male was collected in loc. 2.5/5.2 in November 1972 and a male and female in Salmon Gum (*Eucalyptus salmonophloia*)/Wandoo (*E. wandoo*) woodland loc. 1.7/1.8 in April 1974. The uterine horns were not enlarged. Stomach contents of the November specimen included masticated remains of embiopterans and hemipterans.

### Little Flat Bat (*Tadarida planiceps*)

One female was mist-netted in Wandoo and Salmon Gum woodland between 1930 and 2100 hrs in April 1974. Stomach contents were finely masticated, partially digested insect remains.

### Echidna (*Tachyglossus aculeatus*)

One Echidna was seen at night foraging in mallee formation loc. 2.4 in November 1972, and another in a hollow log in woodland loc. 1.7/1.8 in April 1974. Diggings were recorded in loc. 4.3

### House Mouse (*Mus musculus*)

In October/November 1972, 4 were collected from trapline 2(1) and additional traps set in shrubland in loc. 3.9/3.10(1) and lithic complex in loc. 5.2(2). In April 1974, 44 were collected with similar trapping effort to October/November. These were from traplines 2(8), 3(8), 4(3), 5(7), 6(7), 7(4), 8(4), 9(1) and 10(2), in woodland, mallee, shrubland and heath formations and lithic complex. Highest numbers were recorded from woodland and mallee formations.

Higher numbers were collected in autumn than in spring due to late spring-summer breeding. One November female (wt 22.1 g) was pregnant with 8 foetuses. No pregnant females were collected in autumn, though the capture of 15 juveniles weighing less than 10.0 g in April indicates breeding had only recently ceased by that month. Similar differences in numbers collected have been recorded elsewhere in the wheatbelt, e.g. Tarin Rock and North Tarin Rock Reserves (Kitchener & Chapman 1976), and on the coast at Jurien Bay (Chapman & Kitchener 1977).

### European Rabbit (*Oryctolagus cuniculus*)

Present during both surveys, but particularly common in October/November 1972 when the Agriculture Protection Board was conducting a shooting campaign around the reserve. Most rabbits were seen from roads and in vegetation close to the edge of the reserve.

### Feral Cat (*Felis catus*)

One seen on edge of loc. 1.1 in November 1972.

### Fox (*Vulpes vulpes*)

One seen crossing road in September 1977, mallee formation loc. 2.9 adjacent. A cranium was collected from rock shelter in granite outcrop.

## DISCUSSION

All species are frequently recorded on wheatbelt reserves with the exception of *Tadarida planiceps* which has only been collected in the wheatbelt at three localities, viz. Morawa, Woodanilling and Boyagin (W.A. Museum records), and recently on the eastern edge of wheatbelt near Lake Moore (Youngson & McKenzie 1977).

Other reserves of similar size have considerably more species of mammals; for example, West Bending Reserve (1062 ha) has 15 species (Kitchener & Chapman 1977). However, Billyacatting Hill Nature Reserve is 66% granite outcrop, its vegetated area is only 705 ha. The apparent absence of the native rodents *Notomys mitchellii* and *Pseudomys occidentalis*, or *P. albocinereus* may be due to the absence of heath and shrubland on deep sandy soils.

*Macropus fuliginosus* and *M. robustus* are not abundant. For their continued survival on the reserve they probably require a tolerant attitude on the part of adjoining landholders as they are largely confined to the margins of the reserve.

## APPENDIX 1

Codified vegetation and soil descriptions and leaf litter density after Muir (1977) for traplines on Billyacatting Hill Nature Reserve.

Trapline no.	Vegetation location no.	Vegetation and soil code	Leaf litter
1	4.3	xSBc.n <sub>1</sub> Jc/SCL	Absent to very sparse
2	1.3	xLAr.xSi.n <sub>1</sub> VLc/SCL	Abundant, continuous
3	2.1	eKSi.xVLR.n <sub>1</sub> Jr/CLS	Moderately abundant, clumped
4	3.3	shrubland mosaic	not recorded
5	5.1	n <sub>1</sub> Sd	not recorded
6	3.7	aLAI.cSd/	not recorded
7	1.8	eMi	not recorded
8	1.7	eMi.xSr/quartz pebbles	not recorded
9	4.1	xSBd/SCL	sparse
10	1.10	eLAr.xSr/SCL	not recorded

## APPENDIX 2

Trapping effort (in trapnights) for Billyacatting Hill Nature Reserve for November 1972 and April 1974. BB = breakback trap, E = Elliott trap, C = cage trap, P = pit trap.

Trapline no.	November 1972				April 1974			
	BB	E	C	P	BB	E	C	P
1	70	70	14	0	70	70	14	0
2	70	70	14	0	70	70	14	0
3	70	70	14	0	70	70	14	0
4	70	70	14	0	70	70	14	0
5	60	60	12	0	60	60	12	0
6	25	25	10	0	60	60	12	0
7	25	25	10	0	35	35	7	0
8	25	25	5	0	35	35	7	0
9	0	0	0	0	30	30	0	0
10	0	0	0	0	30	30	0	0
Miscellaneous	16	20	8	55	0	0	0	0