

III MAMMALS OF WILROY NATURE RESERVE

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INTRODUCTION AND METHODS OF SURVEY

The mammal survey of Wilroy Reserve is part of an integrated survey of the vertebrates of the Western Australian wheatbelt involving some 25 reserves (Kitchener, 1976). Mammal surveys of 8 of these reserves have previously been published in reports cited in Dell (Introduction, this publication). In addition, surveys of two coastal areas near to the wheatbelt have been conducted for zoogeographic comparison (Kitchener & Chapman, 1975 and Chapman & Kitchener, 1977). At conclusion of these separate reports, information on each species will be summarised; therefore no attempt is made to record detailed measurements and summary observations on individual species in these interim reports.

Prior to our survey no information was available on the mammals of this Reserve. Our surveys were conducted between the following dates: 7-15 July 1975, 14-20 May 1976 and 20-26 September 1976. The annotated list below includes mammals sighted, and those collected and lodged in the Western Australian Museum. Registration numbers of those collected are as follows: M13739-13821 and M15433 (July), M14532-39, M14547-8 (May) and M15419-26 (September).

The types of traps, the manner of positioning small mammal traps as 'standard traplines' and the bait used are described in Kitchener & Chapman (1976). Sites where traplines were deployed are shown in **Map 1** in Muir (this publication). The trapping effort is detailed in **Appendix 1**. The numbers of animals captured at each trapline are indicated in brackets. Weight was recorded for all specimens, and body measurements recorded for those specimens made into study skins. All females were dissected and their reproductive organs examined *in situ*.

Detailed descriptions of the vegetation, soil and litter at each trapline are presented in Muir (this publication). These data are summarised in **Appendix 2**.

ANNOTATED LIST

Euro (*Macropus robustus*)

A skull collected from road side on main road through Reserve. In July a pair in fields near the northern boundary; in May a pair at Wilroy railway siding and 2 sightings of a single animal at loc. 3.4 and the rubbish tip in loc. 3.29; 1 in September in loc. 3.20.

Grey Kangaroo (*Macropus fuliginosus*)

A single animal sighted at loc. 2.1 by B.G. Muir in June 1976.

Common Dunnart (*Sminthopsis murina*)

In July, 4 females and 8 males were collected from traplines 1(2), 2(4), 3(5) and 6(1); and in September 1 female and 1 male were collected from traplines 2(1-released) and 4(1). Most specimens were collected from shrubland, dominated by *Melaleuca* and *Acacia* shrubs on sandy loam or sandy clay soils.

The 4 females collected in July were reproductively inactive: they had tiny teats, undeveloped pouch area and small uteri. The single female from September had a developing pouch area and was pregnant in both horns. These horns had dimensions of *ca* 6 x 8 x 11 mm.

The stomach contents of 3 males and 3 females from May included the following insects: Diptera, Lepidoptera (larvae and adults), Orthoptera (Gryllidae), Hymenoptera (micro wasps), and Coleoptera (Scarabaeidae, Carabidae?, Curculionidae); the stomach of the female collected in September contained Araneida and Hymenoptera.

Spinifex Hopping Mouse (*Notomys alexis*)

Fifteen females, 17 males and 1 specimen which could not be sexed were collected in July from traplines 1(7), 2(6), 4(3), 5(5), 6(7), 8(3) and 9(2); 5 females and 4 males were collected in May from traplines 1(2), 4(6) and 10(1); and 3 females, 5 males and 1 not sexed were collected in September from traplines 1(2, 1 male released), 4(5, 3 males released), 9(1) and 10(1).

When populations of *Notomys* are large, as they appeared to be in July, they are widespread on this Reserve; the only vegetation formation trapped from which they were not captured was a heath comprising a mixed assemblage of dense shrubs 0.5-1.5 m tall. Muir (pers. comm.) considers that because of the immaturity of the shrubs in this heath (loc. 4.1) there had been little seed fall at the time of the surveys providing little feed for *Notomys*. This may explain their apparent absence from that part of the Reserve. In May and September, when population numbers appeared to be lower, most were collected from the two traplines placed in vegetation dominated by *Acacia signata* and *A. resinomarginea* on sandy or silty loam.

In May and July, none of the females were pregnant or showed any indications of reproductive activity. All 4 females collected in May, and 8 of the females collected in September, had very thin 'thread' uteri suggesting that they were non-parous. These had a weight range of 28.5-36.5 gm and were not appreciably lighter than the 7 females collected in July (26.5-44.0 gm), which had 'mature' uteri — 3 with uterine implantation scars. All females collected in May and July appeared to be in good general health and had considerable deposits of mesenteric fat. In September 2 of the 5 females collected were pregnant with 3 and 5 fetuses. The crown to rump lengths of these fetuses were *ca* 11.5 and 21 mm.

Weights of adult males indicate no seasonal trends in general body condition: in July the average weight was 35.8 gm (24.0-47.0 gm), N = 13, in May, 29.3 (27.5-32.5 gm) N = 3; and in September, 31.5 (25.0-35.5 gm), N = 5.

Pebble Mound Mouse (*Pseudomys hermannsburgensis*)

An adult female was collected on 15 July from trapline 3, a Very Open Shrub Mallee of *Eucalyptus redunca* over a mixed Open Low Scrub on sandy clay.

Gould's Wattled Bat (*Chalinolobus gouldii*)

An adult male was shot at 1845 hrs on 20 September in Low Woodland of *Eucalyptus loxophleba* in loc. 1.3. Two adult males were shot at 1805 hrs on 17 May in a mosaic of mallee associations in loc. 2.4.

White Striped Bat (*Tadarida australis*)

An adult male was mist-netted on 24 September in Open Low Woodland of *Eucalyptus loxophleba* in loc. 1.2.

Echidna (*Tachyglossus aculeatus*)

Their characteristic faeces and diggings were seen in all vegetation formations (loc. 1.1, 2.4, 3.2, 3.37, 4.1).

House Mouse (*Mus musculus*)

In July 268 were collected from traplines 1(33), 2(22), 3(19), 4(52), 5(36), 6(17), 7(20), 8(34), 9(25), 10(10); in May 14 were collected from traplines 1(1), 2(2), 4(2), 5(1), 6(2), 7(5), 11(1); and in September 2 were collected from traplines 7(1) and 10(1).

During Autumn and Winter 1975 there was a major irruption of House Mice numbers in the wheatbelt and other areas of Western Australia (unpublished data). It is apparent from the trapping results that this irruption also occurred at Wilroy and that numbers were still high at the time of the July survey when they appeared to be distributed throughout the Reserve. By May the following year considerably fewer mice were captured, although they were still widely distributed; in September only 2 were caught.

None of the females retained in July (14), May (4) September (1) showed signs of reproductive activity.

European Rabbit (*Oryctolagus cuniculus*)

Several seen in shrubland on Reserve in May and September in loc. 3.30, 3.46 and 3.37 and on boundary of Reserve near loc. 3.50 and 3.53.

Domestic Cat (*Felis catus*)

Sighted in shrubland on Reserve in May in loc. 3.53 and September in loc. 3.13, 3.49 and 3.51.

Fox (*Vulpes vulpes*)

Sighted in May and September in mallee and shrubland in loc. 3.37, 3.12, 2.4 and 3.13.

DISCUSSION

Wilroy Reserve has 8 native and 4 introduced species of mammals—a predictable number in view of surveys elsewhere in the wheatbelt.

The presence of *Pseudomys hermannsburgensis* and *Notomys alexis* indicates a drier country faunal element in this Reserve, reflecting its position on the northern fringe of the wheatbelt.

Apart from the large macropods, which are very mobile species, the other mammals on the Reserve were of small size. Almost certainly the size of the Reserve contributed to the absence of species such as *Macropus irma*, *Dasyurus geoffroii*, and *Trichosurus vulpecula*. Lack of suitable habitat probably accounts for the absence of *Tarsipes spencerae*, *Cercartetus concinnus*, *Sminthopsis granulipes* and *S. crassicaudata*. The presence of *Pseudomys hermannsburgensis* is the first record from within the wheatbelt, although they have been collected at the eastern edge of the wheatbelt at Beacon (M12609). It is likely that the Red Kangaroo, *Megaleia rufa*, is also occasionally on the Reserve as it has been reported in this locality by farmers, and a specimen has been collected 10 km north at Mullewa (M712). The bat, *Eptesicus regulus* is another mammal not recorded but almost certainly present on the Reserve.

APPENDIX 1

Number of trapnights for each trapline at Wilroy Nature Reserve, during (a) July 1975, (b) May 1976 and (c) September 1976 (BB = breakback, E = Elliott, C = cage, and P = pit traps). A trapnight is one trap set for 24 hours.

Trapline No.	NUMBER OF TRAPNIGHTS											
	BB			E			C			P		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
1	60	50	50	60	50	50	12	10	10	18	15	15
2	60	50	50	60	50	50	12	10	10	18	0	15
3	60	50	50	60	50	50	12	10	10	18	0	0
4	60	50	50	60	50	50	12	10	10	18	15	0
5	60	50	50	60	50	50	12	10	10	18	12	15
6	45	50	50	45	50	50	10	10	10	15	12	15
7	50	50	50	50	50	50	10	10	10	15	12	15
8	50	50	50	50	50	50	10	10	10	15	10	15
9	50	50	50	50	50	50	10	10	10	15	15	15
10	50	50	50	50	50	50	10	10	10	15	0	0
11	0	30	0	0	30	0	0	0	0	0	0	0
Totals	545	530	500	545	530	500	110	100	100	165	91	105

APPENDIX 2

Codified vegetation and soil descriptions and leaf litter density, and vegetation location numbers for each trapline at Wilroy (see Muir, this report, for details).

Trapline No.	Vegetation Location No.	Vegetation and Soil Code	Leaf Litter
1	3.50	aSd/SiL	moderately abundant
2	3.35	mSi.nSBr/SC	mod. abundant, scattered debris
3	2.8	eKSr.xSBr/SC	moderately abundant, clumped
4	3.45	aSr.nVLi/SL	moderately abundant, clumped
5	2.7	eKSr.xSr.n Hc/LSCL	very abundant
6	3.37	xSc.nVLi/FSL	moderate, large debris
7	4.1	xSBd/FSL	twigs and large debris
8	2.4	eKSr.xSBI/FSL	moderately abundant
9	3.53	xSc.xSBr/SL	abundant
10	3.19	xSc.xSBI/K-FSL	moderately abundant, clumped
11	1.2	eLAr/LSCL	moderately abundant, clumped