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Wildlife Research

Supplementary Material

Niche separation of three species of tree-rat (black-footed tree-rat, *M. gouldii*, golden-backed tree-rat, *Mesembriomys macrurus*, and brush-tailed rabbit-rat, *Conilurus penicillatus*) on the Mitchell Plateau, Western Australia

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Table S1. Trap site location, altitude, trapping effort and broad habitat description, Mitchell Plateau WA.

Site Number	Location and altitude	Trapping Effort (#trapnights)	Broad vegetation description
1	14°35'11.8" S; 125°45'47" E; 241 m asl	240	Vine thicket and adjacent <i>Eucalyptus miniata</i> woodland
2	14°35'46" S; 125°46'46.9" E; 241 m asl	168	<i>Eucalyptus miniata</i> woodland
3	14°35'46" S; 125°46'6" E; 255 m asl	112	Vine thicket & <i>E. miniata</i> open forest with sparse understorey with spinifex and grasses along plateau edge
4	14°35'33" S; 125°46'3" E; 254 m asl	56	<i>E. miniata</i> open forest on edge of Lone Dingo outlier; large boulders with spinifex and grasses.
5	14°35'32" S; 125°45'59" E; 259 m asl	188	<i>E. miniata</i> open forest on edge of Lone dingo outlier, sparse shrub understorey. On edge of vine thicket.
6	14°35'7" S; 125°45'36" E; 238 m asl	192	Vine thicket along boulder/cliff edge of Lone Dingo outlier.
7	14°35'50" S; 125°46'11" E; 264 m asl	280	<i>E. miniata</i> open woodland with sparse understorey, laterite with sparse groundcover, logs on ground from bauxite exploration. Vine thicket nearby.
8	14°37'43" S; 125°48'16" E; 309 m asl	320	<i>E. miniata</i> open forest along edge of Mitchell Plateau escarpment, vine thicket down slope
9	14°36'1" S; 125°47'14" E; 245 m asl	160	Mixed eucalypt woodland in saddle between Lone Dingo outlier and the main Mitchell Plateau.

Table S2. Mammal species and number of individuals trapped and observed during the survey. Obs = species observed at sites but not trapped, **Observed on basalt outlier.

Species Name	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9
Dasyurus hallucatus					Obs	2			
Phascogale tapoatafa		Obs			Obs		1	5	
Isoodon macrurus	5	1	3		2	4	1	6	1
Petaurus ariel		Obs	Obs			Obs		Obs	
Macropus robustus**									
Rattus tunneyi		4	1					28	17
Mesembriomys gouldii								2	
Mesembriomys macrurus	2		2			2		2	
Conilurus penicillatus		Obs			5		9		12
Zyomys argurus	3		5	1	2	10	7	3	
Zyomys woodwardi	4		1		2	5	3		
Pseudomys nanus									13
Pseudomys johnsoni		1							
Melomys burtoni	32								
Canis familiaris**									
Macroderma gigas**									
Bos taurus**									
No. species trapped	5	6	6	1	6	6	5	7	4
No. trapnights	246	243	112	56	118	216	334	382	160
Trapping success (%)	18.6	2.4	10.7	1.8	9.3	10.6	6.0	11.8	26.3

Table S3. Diagnostic structural variables for the five Groups generated from 30 vegetation plots as determined by PATN analysis.

Group	Variable	Minimum	Median	Maximum
Group I: <i>C. penicillatus</i> plots C1, C5, C6	Cover at 20cm	0.24	0.33	0.38
	Cover at 70cm	0	0	0.05
	Cover at 80cm	0	0	0.05
	Cover at 90cm	0	0	0
	Litter cover	1.33	2.1	2.19
	Rock substrate	1	1	1
	Biomass > 5m	40	45	55
	Stems <10cm dbh	10	15	15
	Stems>10cm dbh	9	10	11
	Species diversity	9	10	11
	Mean dbh	22	22.6	28.3
	Canopy height	15	15	18
Group II: <i>C. penicillatus</i> plots C2, C3, C7, C4, & <i>M. macrurus</i> plots M7, M8, M9	Cover at 20cm	0.24	0.38	0.76
	Cover at 70cm	0	0.14	0.43
	Cover at 80cm	0	0.1	0.24
	Cover at 90cm	0	0.05	0.14
	Litter cover	1.52	2.29	3.19
	Rock substrate	0.67	1	1
	Biomass > 5m	10	20	30
	Stems <10cm dbh	6	18	33
	Stems>10cm dbh	8	11	14
	Species diversity	10	11	20
	Mean dbh	13.8	25.2	34.1
	Canopy height	10	18	20
Group III: <i>M. macrurus</i> plots: M1, M2, M4, M5, M10, M3, M6	Cover at 10cm	0.48	0.76	0.95
	Cover at 20cm	0.29	0.43	0.57
	Cover at 70cm	0.1	0.19	0.38
	Cover at 80cm	0.1	0.19	0.38
	Cover at 90cm	0	0.1	0.38
	Litter cover	2.57	3.71	4.48
	Rock substrate	0.1	0.38	0.52
	Biomass > 5m	25	35	50
	Stems <10cm dbh	11	18	32
	Stems>10cm dbh	8	16	22
	Species diversity	8	12	15
	Mean dbh	21.5	27.7	38

Group	Variable	Minimum	Median	Maximum
	Canopy height	20	25	25
<p style="text-align: center;">Group IV: <i>C. penicillatus</i> plots C10, C8, C9</p>	Cover at 10cm	0.71	0.76	0.9
	Cover at 20cm	0.57	0.67	0.67
	Cover at 70cm	0.33	0.33	0.43
	Cover at 80cm	0.24	0.33	0.43
	Cover at 90cm	0.05	0.33	0.33
	Litter cover	2.86	3	3.48
	Rock substrate	0.19	0.33	0.38
	Biomass > 5m	10	10	10
	Stems <10cm dbh	11	37	39
	Stems>10cm dbh	9	9	11
	Species diversity	14	15	16
	Mean dbh	15	19.5	23
	Canopy height	10	10	15
	<p style="text-align: center;">Group V: All <i>M. gouldii</i> plots G1-G10</p>	Cover at 10cm	0.86	0.95
Cover at 20cm		0.38	0.57	0.86
Cover at 70cm		0.05	0.19	0.38
Cover at 80cm		0.05	0.19	0.38
Cover at 90cm		0.05	0.14	0.43
Litter cover		3.76	4.57	5.14
Rock substrate		0	0.05	0.48
Biomass > 5m		15	35	40
Stems <10cm dbh		12	22	40
Stems>10cm dbh		12	15	20
Species diversity		9	14	18
Mean dbh		19.6	25.4	29.4
Canopy height		17	18	20

Table S4. Vascular plant species recorded from the 30 by 0.1 ha vegetation plots assessed on the Mitchell Plateau Study area during August 1987.

Acacia aulacocarpa	Grass sp. 2
Acacia bidwillii	Grass sp. 3
Acacia platycarpa	Grass sp. 4
Acacia sp.	Grass sp. 5
Acacia tumida	Grevillea heliosperma
Albizia lebbeck	Grevillea mimosoides
Brachychiton diversifolius	Grevillea sp.
Bridelia tomentosa	Hakea arborescens
Buchanania obovata	Heteropogon contortus
Canarium australianum	Hibiscus sp.
Corymbia confertiflora	Hypoestes floribunda
Corymbia latifolia	Indigofera sp.
Corymbia polycarpa	Livistona humilis
Cymbopogon bombycinus	Lysophyllum cunninghamii
Cymbopogon procerus	Melhania oblongifolia
Denhamia obscura	Merremia quinata
Diospyros humilis	Mnesithea rottbellioides
Distichostemon hispidulus	Moonia sp.
Drypetes deplanchei	Opilia amentacea
Ehretia saligna	Parsonsia velutina
Eragrostis japonica	Persoonia falcata
Eriachne avenacea	Petalostigma pubescens
Erythrina vespertilio	Planchonia careya
Erythrophloeum chlorostachys	Sersalisia sericea
Eucalyptus miniata	Psoralea viminalis
Eucalyptus sp. 1	Terminalia pterocarya
Eucalyptus sp. 2	Themeda triandra
Eucalyptus sp. 3	Trachymene sp.
Eulalia aurea	Triodia sp.
Flagellaria indica	Vitex accuminata
Gardenia fucata	Xanthostemon paradoxus
Grass sp. 1	