

## **Introduced cats eating a continental fauna: invertebrate consumption by feral cats (*Felis catus*) in Australia**

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**Table S1.** Collation of accounts of the frequency of occurrence (FOO) of invertebrates in the diet of feral cats in Australia. ‘Island’ indicates an island smaller than Tasmania. Abbreviations for Australian jurisdictions: NSW, New South Wales; NT, Northern Territory; Qld, Queensland; SA, South Australia; Tas., Tasmania; Vic., Victoria; WA, Western Australia. Column heading abbreviations: MAR, mean annual rainfall (mm); MAT, mean annual temperature; Rugged, ruggedness (SD of elevation [m]); Area, area of landmass.

Location	Source	Sample type	Sample size	FOO	Site type	Latitude	Longitude	MAR (mm)	MAT (°C)	Tree cover (%)	Rugged	Area (km <sup>2</sup> )
Kanandah, Nullarbor, WA	Algar and Friend (1995)	Stomach	76	17.1	Mainland, natural	-31.01	124.71	179	18.7	1.2	4.3	7590854
Purple Downs, SA	Bayly (1978)	Stomach	14	100	Mainland, natural	-30.77	137.12	182	19.9	0	11	7590854
Farina, SA	Bayly (1976)	Stomach	21	50	Mainland, natural	-30.12	139.43	394	16.1	0.8	140.6	7590854
Wedge Island, Tas	Beh (1995)	Scat	527	35.1	Island, natural	-43.13	147.68	713	12.5	62.5	56.4	0.44
East Gippsland, Vic	Buckmaster (2011)	Scat	22	4.5	Mainland, natural	-37.57	149.15	1014	13.8	64.7	37.3	7590854
Wet Tropics, Qld	Burnett (2001)	Scat	123	0	Mainland, natural	-16.27	145.03	2660	19.4	74.6	107.3	7590854
Gibson Desert, WA	Burrows <i>et al.</i> (2003)	Scat	19	25	Mainland, natural	-25	125.5	220	23	0.6	10.9	7590854
Various sites, Tas	Cahill (2005)	Stomach	91	18.6	Mainland, natural	-42.14	146.64	960	7.1	47.9	67	64519
Yathong, NSW	Catling (1988)	Stomach	112	42.5	Mainland, natural	-33.75	145.5	388	17.4	2	3.4	7590854
Various sites, Vic	Coman and Brunner (1972)	Stomach	27	14.8	Mainland, modified	-37.62	142.85	555	13.3	6	11.4	7590854
Various sites, Vic	Coman and Brunner (1972)	Stomach	53	15.1	Mainland, natural	-37.33	146.92	981	12.1	66.2	233.1	7590854
Reevesby Isand, SA	Copley (1991)	Scat	20	5	Island, natural	-34.52	136.28	320	16.8	16.6	5.3	4.1
Barkly Tableland, NT	Corbett (1995)	Both	7	29	Mainland, natural	-18.53	137.07	529	25.2	6.4	9.6	7590854
Central Desert, Erldunda, NT	Corbett (1995)	Both	38	44	Mainland, natural	-25.22	133.2	219	21.2	0.4	8.9	7590854
Northern Tropics, NT	Corbett (1995)	Both	49	4	Mainland, natural	-14.09	133.41	1123	26.1	14.5	21.4	7590854

South-east Highlands, NT	Corbett (1995)	Both	101	16	Mainland, natural	-22.64	135.24	331	22.1	0.9	8.8	7590854
Christmas Island	Corbett <i>et al.</i> (2003)	Scat	92	73.9	Island, natural	-10.5	105.67	2160	27.4	52.9	10	137
Southwestern Wheatbelt, WA	Crawford (2010)	Stomach	39	12	Mainland, natural	-33.89	117.11	509	15.2	1.2	20.2	7590854
Dirk Hartog Island	Deller <i>et al.</i> (2015)	Stomach	14	28.6	Island, natural	-25.83	113.02	253	21.3	2.1	21.6	620
Oberon, NSW	Denny (2005)	Scat	33	21.2	Mainland, natural	-33.7	149.85	881	10.6	20.3	39.4	7590854
Oberon, NSW	Denny (2005)	Scat	48	18.7	modified Mainland, natural	-33.7	149.85	881	10.6	20.3	39.4	7590854
Tibooburra, NSW	Denny (2005)	Scat	144	16.7	Mainland, natural	-29.43	142.02	264	20.6	0.2	14.6	7590854
Tibooburra, NSW	Denny (2005)	Scat	119	51.2	modified Mainland, natural	-29.43	142.02	264	20.6	0.2	14.6	7590854
Kellerberrin - Durokoppin, WA	Dickman, C. (unpubl.)	Stomach	48	35.4	Mainland, natural	-31.63	117.72	1171	16.1	38.8	46.1	7590854
Mt Isa - Cloncurry, Qld	Dickman, C. (unpubl.)	Stomach	26	42.3	Island, natural	-20	140.33	799	26.9	6.8	11.5	7590854
Rottnest Island, WA	Dickman, C. (unpubl.)	Scat	32	50	natural Mainland, natural	-32.01	115.53	317	17.9	2.9	19.6	18.9
Dwellingup, WA	Dickman, C. (unpubl.)	Stomach	14	42.9	Mainland, natural	-32.73	116.05	483	26.2	4.3	6.1	7590854
Katherine, NT	Dickman, C. (unpubl.)	Stomach	29	34.5	natural Mainland, natural	-15.2	131.57	619	18.6	7.3	6.9	7590854
Charles Darwin Reserve, WA	Doherty (2015)	Scat	123	42.3	Mainland, natural	-29.61	117	320	19.8	9.7	14.7	7590854
Burt Plain, NT	Edwards, G. (unpubl.)	Stomach	39	30.3	natural Mainland, modified	-23.1	133.8	338	20.6	1.5	18.5	7590854
Daly Basin, NT	Edwards, G. (unpubl.)	Stomach	13	9.1	Mainland, modified	-13.4	131.32	1344	26.6	13.5	15	7590854
Finke, NT	Edwards, G. (unpubl.)	Stomach	23	39.1	Mainland, natural	-25.15	132.92	245	20.9	0.6	6.8	7590854
Great Sandy Desert, NT	Edwards, G. (unpubl.)	Stomach	18	50	Mainland, natural	-22.7	130	286	23.6	0.2	6.9	7590854
Hamilton Downs, NT	Edwards, G. (unpubl.)	Scat	187	78.1	Mainland, natural	-23.65	133.5	449	18.7	1.5	61.1	7590854
MacDonnell Ranges, NT	Edwards, G. (unpubl.)	Stomach	144	35.8	Mainland, natural	-23.47	132.57	373	20.4	1.1	50.3	7590854

Mitchell Grass Downs, NT	Edwards, G. (unpubl.)	Stomach	207	25	Mainland, natural	-18.95	135.19	430	26.2	3	3.3	7590854
Pine Creek, NT	Edwards, G. (unpubl.)	Stomach	14	14.3	Mainland, natural	-13.42	131.98	1306	26.8	13.7	14.7	7590854
Tanami, NT	Edwards, G. (unpubl.)	Stomach	70	11.5	Mainland, natural	-20.91	133	373	24.6	1.4	6.7	7590854
Central Australia, NT	Eldridge <i>et al.</i> (2002)	Scat	44	16	Mainland, natural	-25.6	132.88	209	20.7	0.9	5	7590854
Irving Creek and Hale River, NT	Foulkes (2002)	Scat	35	51.4	Mainland, natural	-25.16	129.82	322	20.9	0.4	19.8	7590854
Barrington Tops, NSW	Glen <i>et al.</i> (2011)	Scat	49	3.2	Mainland, natural	-32.17	151.83	1328	16	60.4	140.5	7590854
Flinders Ranges, SA	Hart (1994)	Stomach	46	2.2	Mainland, natural	-31.44	138.83	373	16.3	1.5	117.5	7590854
Great Dog Island, Tas	Hayde (1992)	Scat	91	82.3	Island, natural	-40.25	148.25	736	13.6	46.7	23.4	3.6
Flinders Ranges, SA (before rabbit control)	Holden and Mutze (2002)	Stomach	70	24.1	Mainland, natural	-31.44	138.83	373	16.3	1.5	117.5	7590854
Flinders Ranges, SA (after rabbit control)	Holden and Mutze (2002)	Stomach	288	32.8	Mainland, natural	-31.44	138.83	373	16.3	1.5	117.5	7590854
Anglesea, Vic	Hutchings (2003)	Both	171	23.4	Mainland, modified	-38.43	144.15	668	14.5	47.5	38.4	7590854
Flinders Ranges, SA	Johnston <i>et al.</i> (2012)	Stomach	24	41.7	Mainland, natural	-31.44	138.83	373	16.3	1.5	117.5	7590854
Karijini National Park, WA	Johnston <i>et al.</i> (2013)	Scat	77	2.6	Mainland, natural	-22.68	118.35	414	24.1	2.7	22	7590854
Macquarie Island, Tas	Jones (1977)	Scat	756	0	Island, natural	-54.5	158.95	977	4.9	0	90	131
Eastern Highlands, Vic	Jones and Coman (1981)	Stomach	117	16	Mainland, natural	-37.27	146.93	1166	11.5	69.4	204.3	7590854
Kinchega National Park, NSW	Jones and Coman (1981)	Stomach	65	69	Mainland, natural	-32.55	142.3	264	18.7	0.1	2.5	7590854
Mallee, Vic	Jones and Coman (1981)	Stomach	131	42	Mainland, natural	-34.88	141.63	297	16.8	11.6	7.5	7590854
Phillip Island, Vic	Kirkwood <i>et al.</i> (2005)	Stomach	277	20	Island, natural	-38.48	145.24	777	14.5	15.7	15.2	99
Inland NE Qld	Kutt (2011)	Stomach	169	62.8	Mainland, natural	-22.17	145.17	444	23.8	0.8	1.8	7590854
Lambert Station, SW Qld	Lapidge and Henshall (2001)	Stomach	23	25	Mainland, natural	-25.33	145.4	480	21.5	2.6	23	7590854

Mt Field and Tasman Peninsula, Tas	Lazenby (2012)	Stomach	27	7	Mainland, natural	-42.68	146.72	992	9.6	65.3	218.9	64519
Northern Simpson Desert, Qld 'Pastoral' (mostly Pilbara and Murchison), WA	Mahon (1999)	Scat	377	60	Mainland, natural	-23.6	138.48	192	23.8	0	3.9	7590854
	Martin <i>et al.</i> (1996)	Stomach	50	75	Mainland, natural	-26.08	116.9	188	23	0.2	6.7	7590854
'Rural' (mostly wheatbelt), WA Tjoritja–West Macdonnell National Park, NT	Martin <i>et al.</i> (1996)	Stomach	40	51.3	Mainland, natural	-33.12	118.28	353	16.4	1.4	17.8	7590854
	McDonald <i>et al.</i> (2018)	Scat	76	46.1	Mainland, natural	-23.75	133.12	355	20.2	2	55	7590854
Piccaninny Plains, Qld	McGregor <i>et al.</i> (2016)	Stomach	18	22.2	Mainland, natural	-13.22	142.77	203	20.2	0	4.8	7590854
Mitchell Grass Downs, Qld	Mifsud and Woolley (2012)	Stomach	199	52.8	Mainland, natural	-21	142	436	25.2	1.1	4	7590854
Lake Burrendong, NSW	Molsher <i>et al.</i> (1999)	Scat	600	41.5	Mainland, natural	-32.67	149.17	698	15.9	21.4	89.7	7590854
Fitzgerald River National Park, WA	O'Connell (2010)	Stomach	41	30.1	Mainland, natural	-34.2	119.37	569	16.2	26.6	25.7	7590854
North Kimberley, WA	Myers, C. and Palmer, R. (unpubl.)	Scat	23	17.4	Mainland, natural	-15	126.15	1332	25.7	14.9	17.6	7590854
Astrebla Downs, Qld	Palmer, R. (unpubl.)	Both	217	11.5	Mainland, natural	-24.17	140.53	218	23.8	0.2	6.7	7590854
Blackall, Qld	Palmer, R. (unpubl.)	Stomach	30	63.3	Mainland, natural	-24.9	145	461	22.2	2.5	11.9	7590854
Davenport Downs, Qld	Palmer, R. (unpubl.)	Both	184	57.1	Mainland, natural	-24.18	140.92	209	23.9	0.1	2.5	7590854
Denham Dump, WA	Palmer, R. (unpubl.)	Scat	53	50.9	Mainland, modified	-25.92	113.57	222	21.9	0.5	10.4	7590854
Diamantina Lakes, Qld	Palmer, R. (unpubl.)	Both	257	84	Mainland, natural	-23.72	141.02	233	24.2	0.1	4.1	7590854
Great Western Woodlands, WA	Palmer, R. (unpubl.)	Scat	11	36.4	Mainland, natural	-30.17	119.5	301	18.5	13.9	15.8	7590854
Inglewood, Qld	Palmer, R. (unpubl.)	Scat	22	18.2	Mainland, natural	-28.5	150.92	639	18.9	24.1	20.7	7590854
Monkey Mia, WA	Palmer, R. (unpubl.)	Scat	19	26.3	Mainland, modified	-25.8	113.72	208	22.2	0	11.5	7590854
Mulyungarie, SA	Palmer, R. (unpubl.)	Stomach	40	50	Mainland, natural	-31.55	140.79	207	19.2	0	3.1	7590854
Muncoonie Lakes, Birdsville, Qld	Palmer, R. (unpubl.)	Scat	27	33.3	Mainland, natural	-25.2	138.68	163	23.4	0.2	4.8	7590854

Offham, SW Qld	Palmer, R. (unpubl.)	Stomach	23	60.9	Mainland, natural	-27.55	145.91	371	21.1	0.6	2	7590854
Pannawonica, WA	Palmer, R. (unpubl.)	Scat	85	32.9	Mainland, natural	-21.72	116.03	369	26.1	1.6	16.3	7590854
Kintore, NT	Paltridge (2002)	Scat	70	38.6	Mainland, natural	-19.2	132.67	404	26	0.6	14.6	7590854
Tennant Creek, NT	Paltridge (2002)	Scat	76	35.5	Mainland, natural	-22.85	129.95	298	23.3	0.1	8.9	7590854
Barkly Tablelands, NT	Paltridge <i>et al.</i> (1997)	Stomach	130	23.8	Mainland, natural	-19.73	136.92	384	25.5	1.8	2.5	7590854
Tanami, NT	Paltridge <i>et al.</i> (1997)	Stomach	130	10	Mainland, natural	-20.37	131.9	380	25	0.2	5.3	7590854
Watarrka, NT	Paltridge <i>et al.</i> (1997)	Stomach	130	30.7	Mainland, natural	-24.25	131.57	325	20.9	1.5	63.3	7590854
West Pellew Island, NT	Paltridge <i>et al.</i> (2016)	Scat	11	45.5	Island, natural	-15.59	136.55	1002	25.9	18.7	9.1	129
Simpson Desert, NT	Pavey <i>et al.</i> (2008)	Scat	44	25	Mainland, natural	-25.93	134.12	231	21.2	0	11.8	7590854
Roxby Downs, SA	Read and Bowen (2001)	Stomach	360	30.3	Mainland, natural	-26.08	132.21	294	19.6	0.8	32.9	7590854
APY Lands, SA	Read <i>et al.</i> (2019)	Stomach	103	42.8	Mainland, natural	-30.57	136.9	200	20	0	6.5	7590854
Great Victoria Desert, WA	Riley, J. and Turpin, J. (unpubl.)	Scat	17	76.5	Mainland, natural	-29.26	124.29	206	19.4	1.4	11.4	7590854
Heirisson Prong, WA	Risbey <i>et al.</i> (1999)	Stomach	109	33.3	Mainland, natural	-26.33	113.38	265	21.5	0.3	15.1	7590854
Sandford, Tas	Schwarz (1995)	Scat	47	40.4	Mainland, natural	-42.94	147.5	569	12.5	24.6	38.1	64519
Simpson Desert, Qld	Spencer <i>et al.</i> (2017)	Scat	254	29.5	Mainland, natural	-23.77	138.47	178	23.8	0	6.4	7590854
Kakadu, NT	Stokeld <i>et al.</i> (2018)	Scat	84	7.1	Mainland, natural	-12.6	132.35	1296	26.7	10.8	37.3	7590854
Southern NT	Strong and Low (1983)	Stomach	22	55	Mainland, natural	-23.7	133.88	307	20.2	1.5	37.3	7590854
Christmas Island	Tidemann <i>et al.</i> (1994)	Both	95	62	Island, natural	-10.5	105.67	2160	27.4	52.9	10	137
Croajalingalong, Vic	Triggs <i>et al.</i> (1984)	Scat	48	22.9	Mainland, natural	-37.42	149.75	1013	14.6	77.8	52.5	7590854
Armidale, NSW	van Herk (1980)	Stomach	26	46.2	Mainland, natural	-30.47	151.57	799	12.8	14.3	38.3	7590854

Melbourne, Vic	Wallis <i>et al.</i> (1996)	Scat	273	24	Mainland, natural	-38	145.2	765	14.6	6.7	15.6	7590854
Kosciuszko, NSW	Watson (2006)	Both	17	5.9	Mainland, natural	-36.4	148.42	1846	5.6	64.4	183.8	7590854
King Island, Tas	Whisson (2009)	Stomach	73	7	Island, natural	-39.88	143.98	1057	13.3	21.4	16.8	1091
Witchelina, SA	Woinarski <i>et al.</i> (2017)	Stomach	404	66.3	Mainland, natural	-30.1	137.9	177	20.3	0	18.8	7590854
Matuwa (Lorna Glen), WA	Wysong (2016)	Scat	337	25.2	Mainland, natural	-26.23	121.56	215	22	0.2	5.7	7590854
Western Qld ('boom' period)	Yip <i>et al.</i> (2015)	Stomach	152	21.1	Mainland, natural	-23.43	144.25	393	23.4	2.2	3.9	7590854
Western Qld ('bust' period)	Yip <i>et al.</i> (2015)	Stomach	35	68.6	Mainland, natural	-23.43	144.25	393	23.4	2.2	3.9	7590854

**Table S2.** Frequency of occurrence of invertebrates in feral cat dietary samples for studies reporting by invertebrate family. ‘Total FOO’ is the total invertebrate frequency of occurrence reported in each study; ‘No. inverts’ is the total number of invertebrate individuals reported in cat dietary samples in each study; FOO is also reported for individual taxonomic groups, with invertebrate group abbreviations: CG – crickets and grasshoppers, Cent – centipedes, Spid – spiders, Beet – beetles, BM – butterflies and moths (including caterpillars), Mant – mantids, Scor – scorpions, Was – wasps, Cica – cicadas and other hemiptera, Drag – dragonflies, Phas – phasmids, Roach – cockroaches, AT – ants and termites, Crus – crustaceans, Other/unID – other or unidentified invertebrates. NA indicates where FOO was not given for the group considered but possibly may have been included under other/unidentified group. Note that total FOO is not necessarily the sum of the FOO’s for individual groups, as more than one group may occur in a dietary sample. \* indicates study using scat samples, all other studies use stomach samples.

Location	Source	Total FOO	No. inverts	CG	Cent	Spid	Beet	BM	Mant	Scor	Was	Cica	Drag	Phas	Roach	AT	Flies	Crus	Other /unID
Kellerberrin - Durokoppin, WA	Dickman, C. (unpubl.)	35.4	22	10.4	4.2	4.2	8.3	0	0	2.1	0	0	2.1	0	0	0	0	0	2.1
Mt Isa - Cloncurry, Qld	Dickman, C. (unpubl.)	42.3	58	38.5	15.4	7.7	3.8	0	0	0	0	3.8	0	0	0	0	0	0	0
Rottneest Island, WA	Dickman, C. (unpubl.)*	50	29	15.6	9.4	12.4	18.8	0	0	0	0	0	0	0	0	0	0	0	0
Dwellingup, WA	Dickman, C. (unpubl.)	42.9	9	14.3	0	7.1	14.3	0	0	0	0	0	0	0	0	0	0	7.1	0
Katherine, NT	Dickman, C. (unpubl.)	34.5	47	17.2	13.8	3.4	3.4	0	0	3.4	0	6.9	3.4	0	0	0	0	0	0
Great Dog Island, Tas	Hayde (1992)*	82.3	402	68.9	0	5.5	5.5	20.9	16.5	2.2	1.1	0	0	0	0	0	0	0	0
Flinders Ranges, SA	Johnston <i>et al.</i> (2012)	41.7	18	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
‘Pastoral’ (mostly Pilbara and Murchison), WA	Martin <i>et al.</i> (1996)	75	181	50	18	22	3	2	NA	2	2	NA	NA	NA	3	2	2	NA	8
‘Rural’ (mostly wheatbelt), WA	Martin <i>et al.</i> (1996)	51.3	71	27.5	5	15	5	0	NA	2.5	0	NA	NA	NA	3	0	0	NA	7.5
Mitchell Grass Downs, Qld	Mifsud and Woolley (2012)	52.8	657	41.1	24.1	6	0	0.5	0	0	0	0.5	0	0	0	0	0	0	0
Fitzgerald River National Park, WA	O’Connell (2010)	30.1	79	0	0	2.4	9.8	9.8	0	2.4	0	0	9.8	0	0	0	0	0	0
West Pellew Island, NT	Paltridge <i>et al.</i> (2016)*	45.5	7	NA	NA	NA	18.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.1	9.1
Roxby Downs, SA	Read and Bowen (2001)	30.3	285	22.2	7.8	1.1	2.2	0.3	0	4.2	0.6	0	0	0	0.3	0	0	0	0
APY Lands, SA	Read <i>et al.</i> (2019)	42.8	179	27	12.6	1	3.9	0	0	5.8	0	0	0	0	0	0	0	0	0
Great Victoria Desert, WA	Riley, J. and Turpin, J. (unpubl.)*	76.5	139	23.5	5.9	0	52.9	5.9	0	11.8	0	0	0	0	0	0	0	0	0
Heirisson Prong, WA	Risbey <i>et al.</i> (1999)	33.3	61	8.1	6.4	0.9	7.3	NA	NA	6.4	NA	NA	0.9	NA	0.9	NA	NA	0.9	7.3
Armidale, NSW	van Herk (1980)	46.2	148	50.3	3.8	3.8	3.8	0	11.5	0	0	0	0	0	0	0	0	0	0
Witchelina, SA	Woinarski <i>et al.</i> (2017)	66.3	2873	60.1	26.2	10.6	8.2	4.7	3	0.5	1.2	0.7	0.2	0.4	0	0	0	0	0
Western Qld ('boom' period)	Yip <i>et al.</i> (2015)	21.1	58	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.3	18.4
Western Qld ('bust' period)	Yip <i>et al.</i> (2015)	68.6	185	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.6	65.7
Totals			5508	2651	1035	443	384	243	169	75	44	28	17	11	9	4	4	2	23



**Table S3.** Frequency of occurrence (%) of invertebrates in dietary samples from studies of three co-occurring mammalian predators in Australia; the feral cat, European red fox, and dingo (including wild dogs). Sample size is indicated in parentheses. Abbreviations for Australian jurisdictions: NSW, New South Wales; NT, Northern Territory; Qld, Queensland; SA, South Australia; Tas, Tasmania; Vic, Victoria; WA, Western Australia. 'NA' indicates that the relevant information was not provided in the original source.

Source	Location	Predator		
		Cat	Fox	Dingo
Bayly (1978)	Farina, SA	50.0 (21)	25.0 (29)	NA
Catling (1988)	Yathong, NSW	42.5 (112)	70.2 (288)	NA
Coman and Brunner (1972)	Various sites, Vic	15.1 (53)	45.1 (153)	NA
Doherty (2015)	Charles Darwin Reserve, WA	42.3 (123)	NA	8.1 (37)
Eldridge <i>et al.</i> (2002)	Alice Springs region, NT	16.0 (44)	45.0 (208)	NA
Hart (1994)	Flinders Ranges, SA	24.0 (50)	19.0 (126)	NA
Johnston <i>et al.</i> (2013)	Karijini NP, WA	2.6 (77)	NA	0 (68)
Kirkwood <i>et al.</i> (2005)	Phillip Island, Vic	7.2 (277)	19.0 (147)	NA
Mahon (1999)	Northern Simpson Desert, Qld	59.4 (377)	74.1 (382)	NA
Mifsud and Woolley (2012)	Mitchell Grass Downs, Qld	56.1 (187)	61.5 (52)	NA
Molsher <i>et al.</i> (1999)	Lake Burrendong, NSW	41.5 (600)	70.7 (263)	NA
Myers, C. and Palmer, R. (unpubl.)	North Kimberley, WA	17.4 (23)	NA	17.0 (88)
Palmer, R. (unpubl.)	Astrebla Downs, Qld	11.5 (217)	NA	14.8 (756)
Palmer, R. (unpubl.)	Blackall, Qld	63.3 (30)	NA	NA
Palmer, R. (unpubl.)	Davenport Downs, Qld	57.1 (184)	NA	7.1 (28)
Palmer, R. (unpubl.)	Diamantina Lakes, Qld	84 (257)	NA	29.4 (17)
Palmer, R. (unpubl.)	Great Western Woodlands, WA	36.4 (11)	38.9 (18)	1.0 (105)
Palmer, R. (unpubl.)	Inglewood, Qld	18.2 (22)	28.3 (53)	NA
Palmer, R. (unpubl.)	Mulyungarie, SA	50 (40)	NA	NA
Palmer, R. (unpubl.)	Muncoonie Lakes, Birdsville, Qld	33.3 (27)	NA	25.0 (64)
Palmer, R. (unpubl.); Palmer (1995)	Offham, SW Qld	60.9 (23)	95.4 (74)	NA
Palmer, R. (unpubl.)	Pannawonica, WA	32.9 (85)	NA	7.8 (258)
Paltridge (2002)	Kintore, NT	38.6 (70)	64.3 (70)	NA
Paltridge (2002)	Tennant Creek, NT	35.5 (76)	60.4 (53)	9.1 (77)
Pavey <i>et al.</i> (2008)	Simpson Desert, NT	25.0 (44)	22.2 (63)	26.6 (316)
Spencer <i>et al.</i> (2017)	Simpson Desert, Qld	5.5 (254)	5.2 (572)	5.1 (236)
Stokeld <i>et al.</i> (2018)	Kakadu, NT	7.1 (85)	NA	0.3 (1100)
Wallis <i>et al.</i> (1996)	Melbourne, Vic	24.0 (273)	40.0 (1992)	NA
Woinarski <i>et al.</i> (2017)	Witchelina, SA	66.3 (404)	74.5 (51)	9.1 (11)

### References for Tables S1, S2, S3

- Algar, D. and Friend, J. A. (1995). Methods of broadscale control of feral cats and fox control at a numbat re-introduction site. *Year 2, final report, March 1995: Feral Pests Program*, 46.
- Bayly, C. P. (1976). Observations on the food of the feral cat (*Felis catus*) in an arid environment. *South Australian Naturalist* **51**, 22-24.
- Bayly, C. P. (1978). A comparison of the diets of the red fox and the feral cat in an arid environment. *South Australian Naturalist* **53**, 20-28.
- Beh, J.C.L., 1995. The winter ecology of the feral cat, *Felis catus* (Linnaeus 1758), at Wedge Island, Tasmania. B.Sc. (Hons.) thesis, University of Tasmania, Hobart.
- Buckmaster, A. J. (2011) Ecology of the feral cat (*Felis catus*) in the tall forests of Far East Gippsland. Ph.D. thesis, University of Sydney, Sydney.
- Burnett, S. E. (2001) Ecology and conservation status of the northern spot-tailed quoll, *Dasyurus maculatus*, with reference to the future of Australia's marsupial carnivores. Ph.D. thesis, James Cook University, Townsville.
- Burrows, N. D., Algar, D., Robinson, A. D., Sinagra, J., Ward, B., and Liddelow, G. (2003). Controlling introduced predators in the Gibson Desert of Western Australia. *Journal of Arid Environments* **55**, 691-713. doi: 10.1016/s0140-1963(02)00317-8.
- Cahill, K. (2005) Morphometrics, diet and aspects of disease, in Tasmanian feral and stray cats. B.Sc. (Hons.) thesis, University of Tasmania, Hobart.
- Catling, P. C. (1988). Similarities and contrasts in the diets of foxes, *Vulpes vulpes*, and cats, *Felis catus*, relative to fluctuating prey populations and drought. *Wildlife Research* **15**, 307-317. doi: <https://doi.org/10.1071/WR9880307>.
- Coman, B. J. and Brunner, H. (1972). Food Habits of the Feral House Cat in Victoria. *The Journal of Wildlife Management* **36**, 848-853. doi: 10.2307/3799439.
- Copley, P. (1991). Feral and domestic cats in South Australia. In 'The impact of cats on native wildlife. Proceedings of a workshop 8-9 May 1991'. (Ed. C. Potter) pp. 53-59. (Australian National Parks and Wildlife Service: Canberra.)
- Corbett, L. K. (1995) 'The Dingo in Australia and Asia.' (University of New South Wales Press: Sydney.)
- Corbett, L., Corome, F., and Richards, G. (2003) 'Fauna survey of mine lease applications & National Park reference areas, Christmas Island, August 2002.' (EWL Sciences Pty Ltd for Phosphate Resources Limited: Darwin.)
- Crawford, H. (2010) A comparison of the red fox (*Vulpes vulpes*) and feral cat (*Felis catus*) diets in the south west region of Western Australia. Ph.D. thesis, Murdoch University, Perth.
- Deller, M., Mills, H. R., Hamilton, N., and Algar, D. (2015). Diet of feral cats, *Felis catus*, on Dirk Hartog Island. *Journal of the Royal Society of Western Australia* **98**, 37-43.
- Denny, E. A. (2005) Ecology of free-living cats exploiting waste disposal sites: Diet, morphometrics, population dynamics and population genetics. Ph.D. thesis, University of Sydney, Sydney.

- Doherty, T. S. (2015). Dietary overlap between sympatric dingoes and feral cats at a semiarid rangeland site in Western Australia. *Australian Mammalogy* **37**, 219-224. doi: 10.1071/AM14038.
- Eldridge, S. R., Shakeshaft, B. J., and Nano, T. J. (2002) 'The impact of wild dog control on cattle, native and introduced herbivores and introduced predators in central Australia. Final report to the Bureau of Rural Sciences.' (Parks and Wildlife Commission of the Northern Territory: Alice Springs.)
- Foulkes, J. (2002) The ecology and management of the common brushtail possum (*Trichosurus vulpecula*) in central Australia. Ph.D. thesis, University of Canberra, Canberra.
- Glen, A. S., Pennay, M., Dickman, C. R., Wintle, B. A., and Firestone, K. B. (2011). Diets of sympatric native and introduced carnivores in the Barrington Tops, eastern Australia. *Austral Ecology* **36**, 290-296. doi: 10.1111/j.1442-9993.2010.02149.x.
- Hart, S. (1994) The diet of foxes (*Vulpes vulpes*) and feral cats (*Felis catus*) in the Flinders Ranges National Park, South Australia. B.Sc. (Hons.) thesis, University of Adelaide, Adelaide.
- Hayde, K. A. (1992) Ecology of the feral cat *Felis catus* on Great Dog Island. B.Sc. (Hons.) thesis, University of Tasmania, Hobart.
- Holden, C. and Mutze, G. (2002). Impact of rabbit haemorrhagic disease on introduced predators in the Flinders Ranges, South Australia. *Wildlife Research* **29**, 615-626. doi: <https://doi.org/10.1071/WR00101>.
- Hutchings, S. (2003). The diet of feral house cats (*Felis catus*) at a regional rubbish tip, Victoria. *Wildlife Research* **30**, 103-110. doi: 10.1071/WR99067.
- Johnston, M., Gigliotti, F., O'Donoghue, M., Holdsworth, M., Robinson, S., Herrod, A., and Eklom, K. (2012) 'Field assessment of the Curiosity® bait for management of feral cats in the semi-arid zone (Flinders Ranges National Park). Technical Report Series no. 234.' (Arthur Rylah Institute for Environmental Research.)
- Johnston, M., O'Donoghue, M., Holdsworth, M., Robinson, S., Herrod, A., Eklom, K., Gigliotti, F., Bould, L., and Little, N. (2013) 'Field assessment of the Curiosity® bait for managing feral cats in the Pilbara. Technical Report Series No. 245.' (Arthur Rylah Institute for Environmental Research.)
- Jones, E. (1977). Ecology of the feral cat, *Felis catus* (L.), (Carnivora: Felidae) on Macquarie Island. *Australian Wildlife Research* **4**, 249-262.
- Jones, E. and Coman, B. J. (1981). Ecology of the feral cat, *Felis catus* (L.), in south-eastern Australia I. Diet. *Australian Wildlife Research* **8**, 537-547.
- Kirkwood, R., Dann, P., and Belvedere, M. (2005). A comparison of the diets of feral cats *Felis catus* and red foxes *Vulpes vulpes* on Phillip Island, Victoria. *Australian Mammalogy* **27**, 89-93.
- Kutt, A. S. (2011). The diet of the feral cat (*Felis catus*) in north-eastern Australia. *Acta Theriologica* **56**, 157-169.
- Lapidge, S. J. and Henshall, S. (2001). Diet of foxes and cats, with evidence of predation on yellow-footed rock-wallabies (*Petrogale xanthopus celeris*) by foxes in southwestern Queensland. *Australian Mammalogy* **23**, 47-51.

- Lazenby, B. T. (2012) Do feral cats affect small mammals? A case study from the forests of southern Tasmania. Ph.D. thesis, University of Sydney, Sydney.
- Mahon, P. S. (1999) Predation by feral cats and red foxes and the dynamics of small mammal populations in arid Australia. Ph.D. thesis, University of Sydney, Sydney.
- Martin, G. R., Twigg, L. E., and Robinson, D. J. (1996). Comparison of the diet of feral cats from rural and pastoral Western Australia. *Wildlife Research* **23**, 475-484.
- McDonald, P. J., Brim-Box, J., Nano, C. E. M., Macdonald, D. W., and Dickman, C. R. (2018). Diet of dingoes and cats in central Australia: does trophic competition underpin a rare mammal refuge? *Journal of Mammalogy* **99**, 1120-1127. doi: 10.1093/jmammal/gyy083.
- McGregor, H. W., Cliff, H. B., and Kanowski, J. (2016). Habitat preference for fire scars by feral cats in Cape York Peninsula, Australia. *Wildlife Research* **43**, 623-633. doi: <https://doi.org/10.1071/WR16058>.
- Mifsud, G. and Woolley, P. A. (2012). Predation of the Julia Creek dunnart (*Sminthopsis douglasi*) and other native fauna by cats and foxes on Mitchell grass downs in Queensland. *Australian Mammalogy* **34**, 188-195. doi: 10.1071/AM11035.
- Molsher, R., Newsome, A., and Dickman, C. (1999). Feeding ecology and population dynamics of the feral cat (*Felis catus*) in relation to the availability of prey in central-eastern New South Wales. *Wildlife Research* **26**, 593-607. doi: 10.1071/WR98058.
- O'Connell, G. J. (2010) The diet of feral cats (*Felis catus*) in the Fitzgerald River National Park, south-western Australia. B.Sc. (Hons.) thesis, University of Western Australia, Perth.
- Palmer, R. A. (1995). Diet of the red fox (*Vulpes vulpes*) in south-western Queensland. *Rangeland Journal*, **17**, 99-108.
- Paltridge, R. (2002). The diets of cats, foxes and dingoes in relation to prey availability in the Tanami Desert, Northern Territory. *Wildlife Research* **29**, 389-403. doi: 10.1071/WR00010.
- Paltridge, R., Gibson, D., and Edwards, G. (1997). Diet of the feral cat (*Felis catus*) in central Australia. *Wildlife Research* **24**, 67-76. doi: 10.1071/WR96023.
- Paltridge, R., Johnston, A., Fitzpatrick, S., and Goodman, C. (2016) 'Reversing the decline of mammals in northern Australia: response of native mammals to cat management on the Pellew Islands 2011-2015.' (Desert Wildlife Surveys: Alice Springs.)
- Pavey, C. R., Eldridge, S. R., and Heywood, M. (2008). Population dynamics and prey selection of native and introduced predators during a rodent outbreak in arid Australia. *Journal of Mammalogy* **89**, 674-683. doi: 10.1644/07-mamm-a-168r.1.
- Read, J. and Bowen, Z. (2001). Population dynamics, diet and aspects of the biology of feral cats and foxes in arid South Australia. *Wildlife Research* **28**, 195-203.
- Read, J. L., Dagg, E., and Moseby, K. E. (2019). Prey selectivity by feral cats at central Australian rock-wallaby colonies. *Australian Mammalogy* **41**, 132-141. doi: 10.1071/AM17055.
- Risbey, D. A., Calver, M. C., and Short, J. (1999). The impact of cats and foxes on the small vertebrate fauna of Heirisson Prong, Western Australia. I. Exploring potential impact using diet analysis. *Wildlife Research* **26**, 621-630.

- Schwarz, E. (1995) Habitat use in a population of mainland Tasmanian feral cats, *Felis catus*. Grad. Dip. (Hons) thesis, University of Tasmania, Hobart.
- Spencer, E. E., Newsome, T. M., and Dickman, C. R. (2017). Prey selection and dietary flexibility of three species of mammalian predator during an irruption of non-cyclic prey. *Royal Society Open Science* **4**, 170317. doi: doi:10.1098/rsos.170317.
- Stokeld, D., Fisher, A., Gentles, T., Hill, B., Triggs, B., Woinarski, J. C. Z., and Gillespie, G. R. (2018). What do predator diets tell us about mammal declines in Kakadu National Park? *Wildlife Research* **45**, 92-101. doi: 10.1071/WR17101.
- Strong, B. W. and Low, W. A. (1983) 'Some observations of feral cats *Felis catus* in the southern Northern Territory.' (Conservation Commission of the Northern Territory: Alice Springs.)
- Tidemann, C. R., Yorkston, H. D., and Russack, A. J. (1994). The diet of cats, *Felis catus*, on Christmas Island, Indian Ocean. *Wildlife Research* **21**, 279–286.
- Triggs, B., Brunner, H., and Cullen, J. (1984). The food of fox, dog and cat in Croajingalong National Park, south-eastern Victoria. *Wildlife Research* **11**, 491-499. doi: 10.1071/WR9840491.
- van Herk, P. (1980) A dietary study of the feral cat, *Felis catus*, in a rural environment with emphasis on its ecology. B. Nat. Res. Thesis, University of New England, Armidale.
- Wallis, R. L., Brunner, H., and Seebeck, J. H. (1996). Diet of red foxes and cats: their impact on fauna living in parks near Melbourne. *The Victorian Naturalist* **113**, 300-305.
- Watson, K. (2006) Aspects of the history, home range and diet of the feral cat (*Felis catus*) in the Perisher Range resort area of Kosciuszko National Park, New South Wales. M.Sc thesis, University of Sydney, Sydney.
- Whisson, D. (2009) 'Diet and potential impacts of feral cats *Felis catus* on native wildlife on King Island, Tasmania. Final report submitted to the King Island Natural Resource Management Group.' (Deakin University: Burwood.)
- Woinarski, J. C. Z., South, S. L., Drummond, P., Johnston, G. R., and Nankivell, A. (2017). The diet of the feral cat (*Felis catus*), red fox (*Vulpes vulpes*) and dog (*Canis familiaris*) over a three-year period at Witchelina Reserve, in arid South Australia. *Australian Mammalogy* **40**, 204-213. doi: 10.1071/AM17033.
- Wyson, M. L. (2016) Predator ecology in the arid rangelands of Western Australia: spatial interactions and resource competition between an apex predator, the dingo *Canis dingo*, and an introduced mesopredator, the feral cat *Felis catus*. Ph. D. thesis, University of Western Australia, Perth.
- Yip, S. J. S., Rich, M.-A., and Dickman, C. R. (2015). Diet of the feral cat, *Felis catus*, in central Australian grassland habitats during population cycles of its principal prey. *Mammal Research* **60**, 39-50. doi: 10.1007/s13364-014-0208-7.