Supplementary Materials

Appendix S1. List of studies that looked at feral cat home range size with the country where the study was carried out, the data collection methods, the data analysis methods, sample size (Females: Males), climate, if competitors are present in the environment, if prey information was provided by the study and if the study was included in our meta-analysis.

Study	Country/Region	Data Collection	Data analysis methods	Sample	Climate	Competitors present?	Prey information?	Included in meta-analysis?
Australia								
Molsher et al. 2017	Lake Burrendong, New South Wales	VHF	95% MCP	11 Summer, 32 Winter	Temperate	Yes	No	Yes
McGregor et al. 2015	Kimberley	GPS	95% KDE	7F:25M	Steppe	Yes	No	Yes
Johnston et al. 2014	Roxby Downs	GPS	95% MCP	7F:10M	Arid	Yes	Track counts done of rabbits	Yes
Johnston et al. 2013	Pilbara	GPS	95% MCP	1F:5M	Semi-arid	Yes	No	Yes
Bengsen et al. 2012	Kangaroo Island	GPS	100% MCP, 100% LoCoH	1F:5M	Mediterranean	No	No	Yes
Bengsen et al. 2012	Kangaroo Island	GPS	100% MCP, 100% LoCoH	3F:4M	Mediterranean	No	No	Yes
Johnston 2012	Wilsons Promontory, Australia	GPS	95% MCP	1F:6M	Temperate	Yes	Rabbits occupancy determined from camera traps	Yes
Johnston et al. 2012	Flinders Ranges	GPS	95% MCP	0F:5M	Semi-arid	Yes	Rabbit spotlighting surveys	Yes
Buckmaster 2011	Gippsland	Both	100% MCP, 50% MCP, 95% KDE, 50% KDE	4F:4M	Temperate	Yes	Live trapping of prey sized animals	Yes
Hilmer 2010	Dirk Hartog Island	GPS	95% MCP, 50% MCP	4F:11M	Semi-arid	No	No	Yes
Moseby et al. 2009	Roxby Downs -Arid Reserve, Northern SA	GPS	95% MCP, 95% KE60	3F:7M	Arid	Yes	Rabbit spotlight counts	Yes
Robley et al. 2008	Anglesea	GPS	100% KDE, UD circular, UD ellipse	1F:6M	Temperate	Yes	No	Yes
Watson 2006	Kosciuszko National Park, New South Wales	VHF		1F:2M	Alpine	Yes	No	Yes
Molsher et al. 2005	Central-Western New South Wales	VHF	100% MCP, 95% MCP, 95% KDE, 50% MCP, 50% KDE	4F:11M	Temperate	Yes	No	Yes
Burrows et al. 2003	Gibson Desert	VHF	100% MCP	1F:2M	Arid	Yes	No	Yes
Edwards et al. 2001	Central Australia	VHF	100% MCP, 100% KDE, 95% KDE, Kernal core	0F:4M /17M 24H	Semi-arid	Yes	No	Yes
Schwarz 1995	Tasmania	VHF	100% MCP, 95% HMA	1F:2M	Temperate	Yes	No	Yes
Jones & Coman 1982	Victorian Mallee	VHF	100% MCP	2F:4M	Semi-arid	Yes	Rabbit transect counts	No
New Zealand								
Strang 2018	Poinui	VHF	100% MCP, 95% MCP, 50% MCP, 95% KDE, 50% KDE	3F:5M	Temperate	No	Yes	Yes

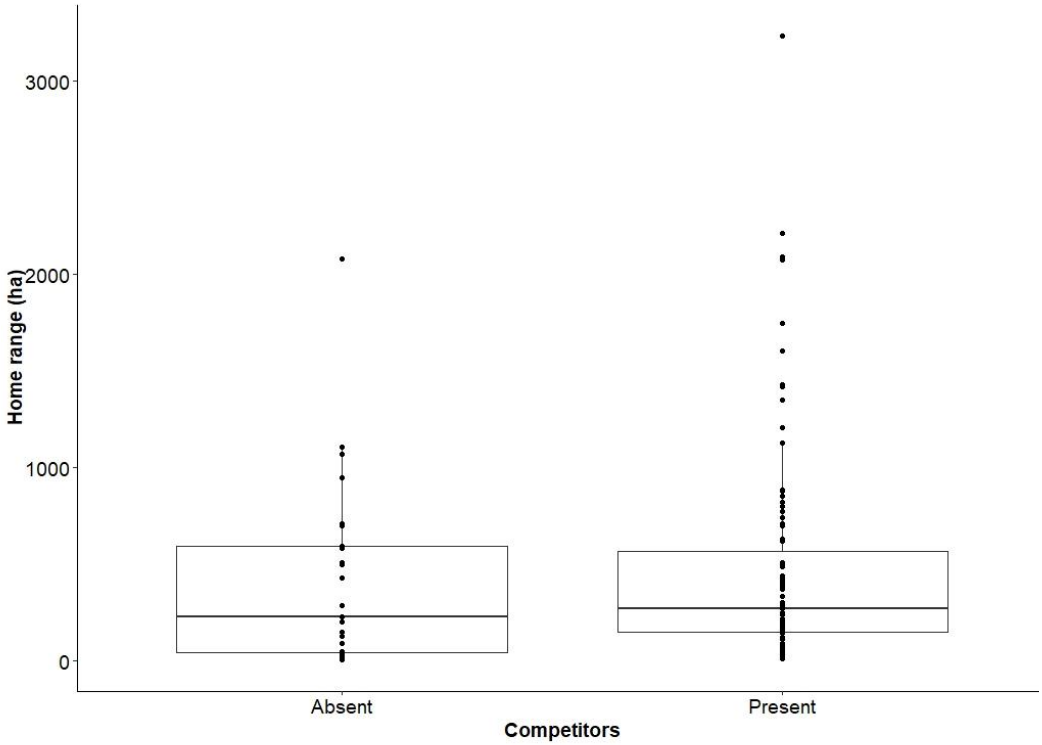
Appendix S1. Continued.

Study	Country/Region	Data Collection	Data analysis methods	Sample	Climate	Competitors present?	Prey information?	Included in meta-analysis?
Hansen et al. 2018	Canterbury	GPS	95% MCP	1F:0M	Temperate	Yes	No	Yes
Cruz et al. 2014	Upper Ohau River, Mackenzie Basin	GPS	100% MCP	4F:12M	Temperate	Yes	No	Yes
Recio & Seddon 2013	Godley Valley	GPS	100% MCP, 100% LoCoH, 50% LoCoH	16F:17M	Temperate	Yes	Transects done and used to model rabbit abundance	Yes
Recio et al. 2010	Tasman Valley	GPS	100% MCP	1F:4M	Temperate	Yes	No	Yes
Gillies et al. 2007	Trounson Kauri Park, Northland	VHF	100% MCP, 70% PCP	7F:14M	Temperate	Yes	No	Yes
Harper 2004	Stewart Island	VHF	100% MCP, 95% KDE	3F:4M	Sub-alpine	No	Relative abundance of rats	Yes
Moller & Alterio 1999	Otago Peninsula	VHF	100% MCP	3F:7M	Maritime temperate	Yes	No	Yes
Dowding 1998	Motuihe Island	VHF	100% MCP, 70% Core	7F:7M	Temperate	No	Rabbit density pre and post poisoning	Yes
Norbury et al. 1998	Mackenzie Basin & Otago	VHF	100% MCP	13F:9M	Temperate	Yes	Rabbits (spot light number given)	Yes
Langham & Porter 1991	Hawkes Bay	VHF	100% MCP	4F:9M	Temperate	Yes	No	No
Langham & Charleston 1990	Hawkes Bay	VHF	100% MCP	7F:6M	Temperate	Yes	No	No
Fitzgerald & Karl 1986	Rimutaka Range, Wellington	VHF	Area based on range length and distance of cat to river	5F:4M	Temperate	Yes	No	Yes
North America								
Normand et al. 2019	Arkansas, USA	VHF	95% MCP, 95% KDE, 50% KDE	10F:8M	Temperate	Yes	No	Yes
Bridges et al. 2015	California, USA	GPS	100% MCP, 95% KDE, 50% KDE	5F:6M	Mediterranean	Yes	No	Yes
Gehrt et al. 2013	Illinois, USA	VHF	95% MCP, 95% fixed kernel, 100% LoCoH	12F:14M	Continental	Yes	No	Yes
Horn et al. 2011	Illinois, USA	VHF	95% MCP, 95% KDE	10F:6M	Continental	Yes	No	Yes
Luna-Mendoza et al. 2011	Guadalupe Island, Mexico	VHF	95% KDE, 50% KDE	2F:5M	Desert	No	No	Yes
Guttilla & Stapp 2010	California, USA	VHF	95% MCP, 95% Fixed kernel procedures (KHR)	8F:5M	Mediterranean	Yes	No	Yes
Schmidt et al. 2010	Texas, USA	VHF	95% MCP, 95% KDE, 50% KDE	7F:6M	Sub-tropical	Yes	No	Yes

Appendix S1. Continued.

Study	Country/Region	Data Collection	Data analysis methods	Sample	Climate	Competitors present?	Prey information?	Included in meta-analysis?
Goltz et al. 2008	Hawaii, USA	VHF	95% Fixed kernel procedures (KHR), 50% Fixed kernel procedures (KHR), 25% Fixed kernel procedures (KHR)	3F:4M	Sub-alpine	Yes	No	Yes
Smucker et al. 2000	Hawaii, USA	VHF	100% MCP, 95% MCP, 95% adaptive kernel	2F:3M	Subalpine	Yes	No	Yes
Hall et al. 2000	California, USA	VHF	95% MCP	5F:5M	Mediterranean	Yes	No	Yes
Asia								
Leo et al. 2016	Rota Island, Northern Mariana Islands	GPS	100% MCP	3F:2M	Tropical	No	No	Yes
Moon et al. 2013	South Korea	GPS	100% MCP, 95% KDE, 75% KDE, 50% KDE	2F:2M	Temperate		No	No
Yamane et al. 1994	Japan	Observation	100% MCP	23F:44M	Temperate	No	No	No
Europe								
Biro et al. 2004	Hungary	VHF	100% MCP	2F:1M	Continental	Yes	No	No
Genovesi et al. 1995	Italy	VHF	100% MCP	4F:2M	Temperate	Yes	No	Yes
Other								
Martin et al. 2013	Kerguelen main island	GPS	95% Movement-based kernel density estimator	0F:3M	Sub-Antarctic	No	No	No
Mirmovitch 1995	Israel	Observation	100% MCP	Autumn: 11F:14M/ Winter: 10F:16M	Mediterranean	Yes	No	No
Konecny 1987	Isabela, Galapagos Islands	VHF	100% MCP	2F:4M	Desert	No	No	No
Konecny 1987	Santa Cruz, Galapagos Islands	VHF	100% MCP	2F:6M	Desert	No	No	No
Apps 1986	Dassen Island, South Africa	VHF	100% MCP	3F:5M	Mediterranean	No	No	Yes

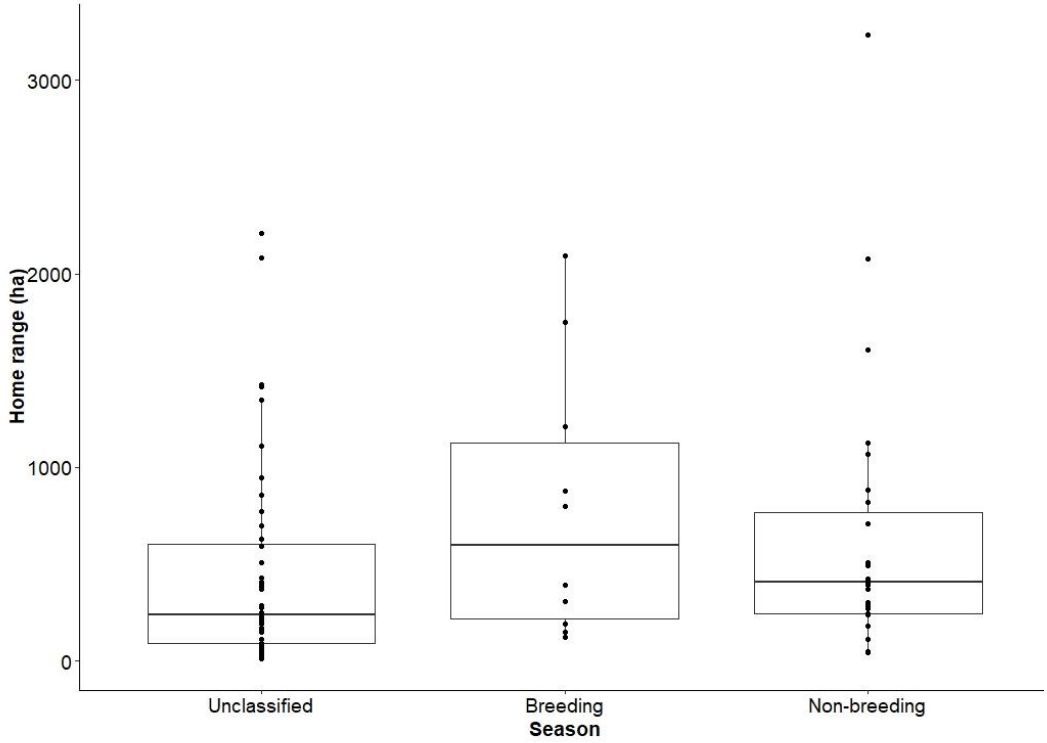
Appendix S2. Feral cat home range sizes where competitors were present or absent (n = 39 studies) using a range of home range estimation methods, 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), data collected from across all seasons; non-breeding (n = 14), breeding (n = 8) and unclassified (n = 29) and for male (n = 47) and female (n = 46) feral cats.



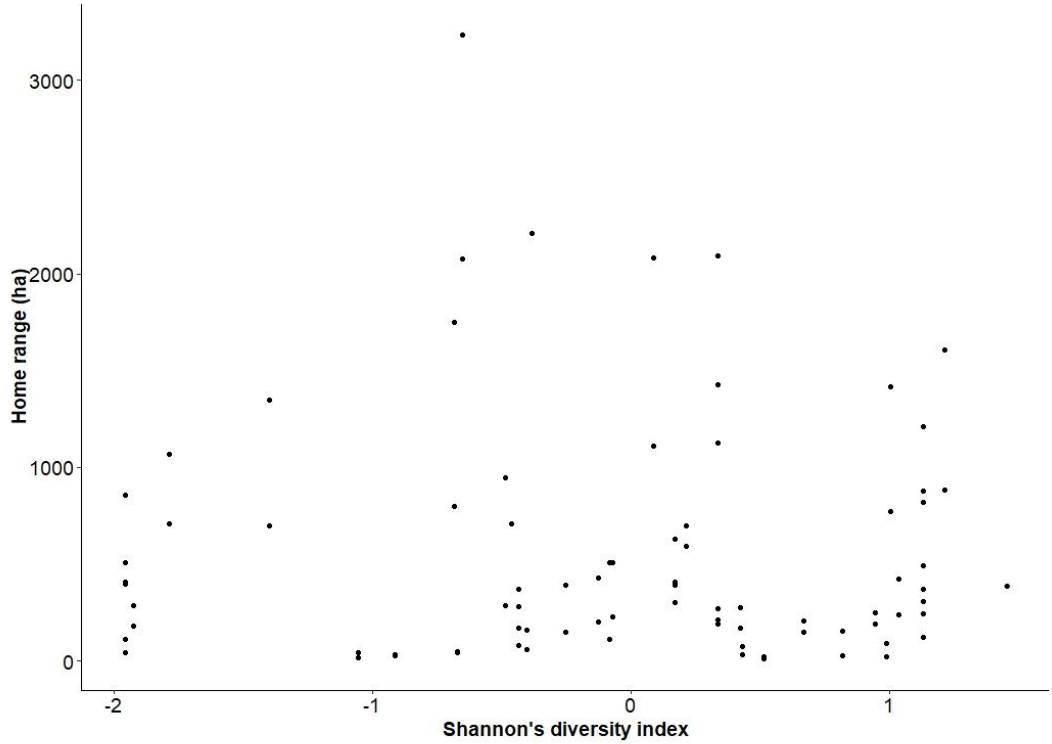
Appendix S3. The stated aim of each of the studies included in the analysis.

Purpose of Study	Number of Studies
Management	34
Impact native species	18
Effect of control operation	7
Disease	6
Home range	
Study habitat e.g, urban, forest, sub-ant	9
Meso-predator release, competition	3
Resources e.g. food	3
Comparison of land use types	2
Compare owned vs unowned	2
Population demographics	3
Habitat use	3

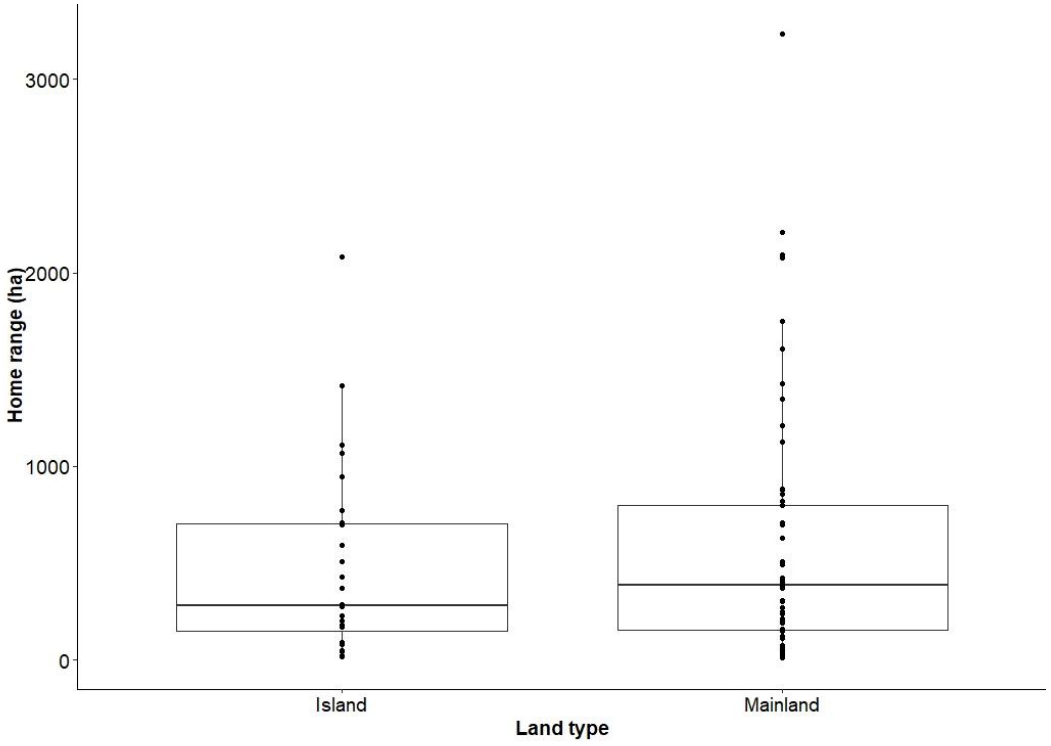
Appendix S4. Feral cat home range for when cats were likely to be in breeding or not, or when it was not possible to be classified for each of the studies included in the analysis (n = 39) using a range of home range estimation methods: 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), and for males (n = 16 [Non-breeding], 7 [Breeding], 24 [Unclassified]) and females (n = 15 [Non-breeding], 7 [Breeding], 24 [Unclassified]).



Appendix S5. Feral cat home range for the Shannon's Diversity Index (n = 39 studies) using a range of home range estimation methods, 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), data collected from across all seasons; non-breeding (n = 14), breeding (n = 8) and unclassified (n = 29) and for male (n = 47) and female (n = 46) feral cats. The diversity index was calculated based on land use heterogeneity.



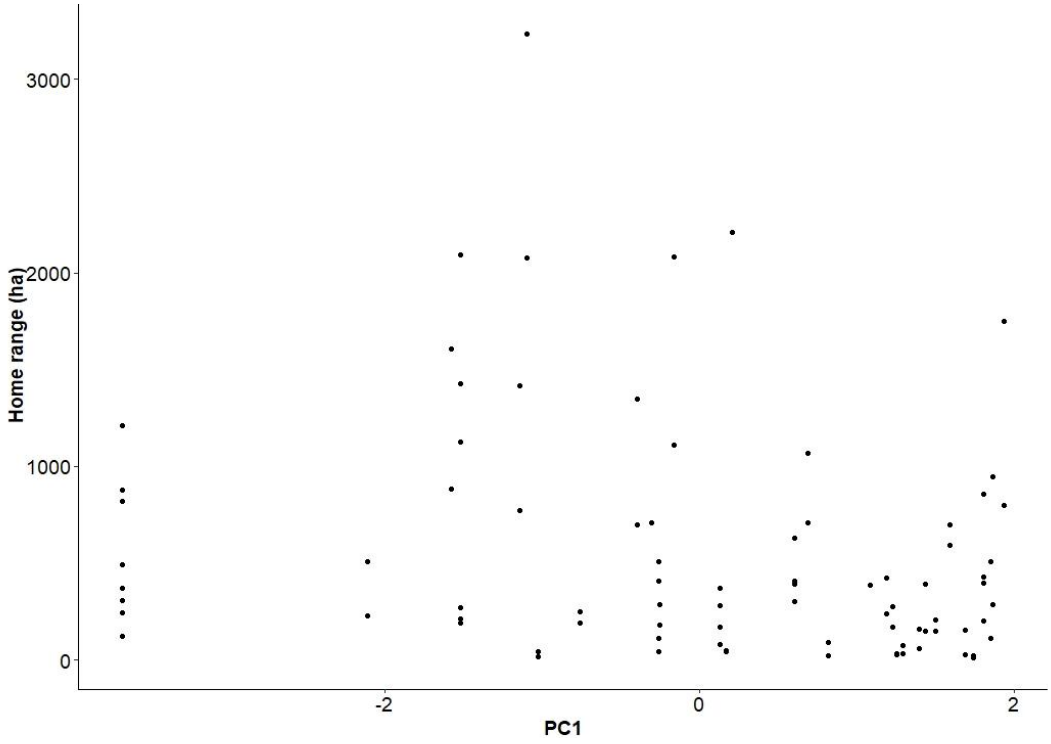
Appendix S6. Feral cat home range sizes either on islands (n = 12 studies) or the mainland (n = 27 studies) using a range of home range estimation methods, 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), data collected from across all seasons; non-breeding (n = 14), breeding (n = 8) and unclassified (n = 29) and for male (n = 47) and female (n = 46) feral cats.



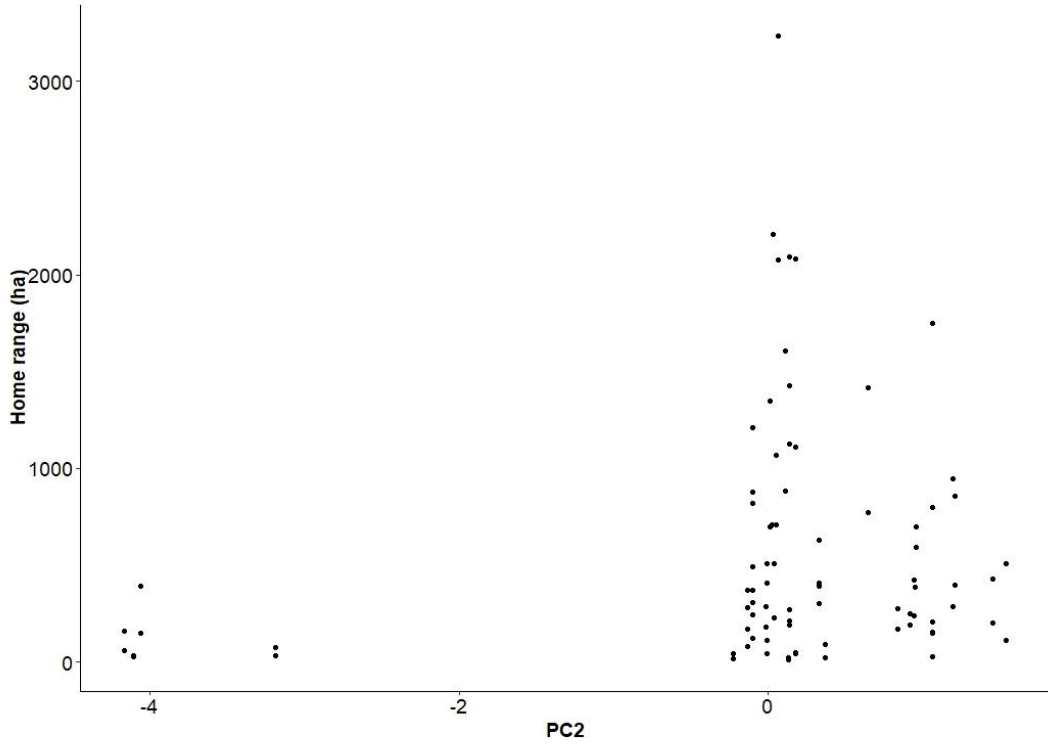
Appendix S7. The loadings of each of the land cover variables for each of the principal components. PC1, PC2, PC3 and PC4 were included in the model.

	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11
Developed	0.20	−0.58	0.21	−0.03	0.00	0.01	0.09	−0.17	−0.69	0.02	0.24
Forest - continuous	0.35	0.30	0.14	0.24	−0.11	−0.42	−0.34	−0.53	0.07	−0.09	0.34
Forest - diffuse	0.33	0.31	0.38	−0.02	−0.14	−0.04	0.25	0.64	−0.04	−0.10	0.38
Forest - sparse	0.07	0.25	0.40	−0.33	0.22	0.55	0.24	−0.44	0.14	0.18	0.10
Shrub - continuous	0.08	0.05	−0.39	0.49	0.60	0.11	0.33	−0.02	0.00	−0.07	0.33
Shrubs - diffuse	−0.16	0.07	−0.54	−0.52	−0.28	−0.04	0.12	−0.08	−0.02	0.01	0.55
Shrub - sparse	−0.38	0.06	0.20	−0.25	0.51	−0.02	−0.52	0.16	−0.12	−0.34	0.24
Grassland	−0.30	0.01	0.03	0.47	−0.39	0.55	−0.34	0.06	−0.03	0.15	0.32
Pond/River/Lake	−0.47	−0.02	0.24	0.17	−0.24	−0.11	0.45	−0.22	0.05	−0.61	0.01
Gravel/Rock/Sand	−0.47	0.00	0.26	0.09	0.12	−0.44	0.18	0.01	0.04	0.65	0.18
Crops	0.14	−0.63	0.13	−0.04	0.03	−0.01	−0.05	0.05	0.69	−0.06	0.28

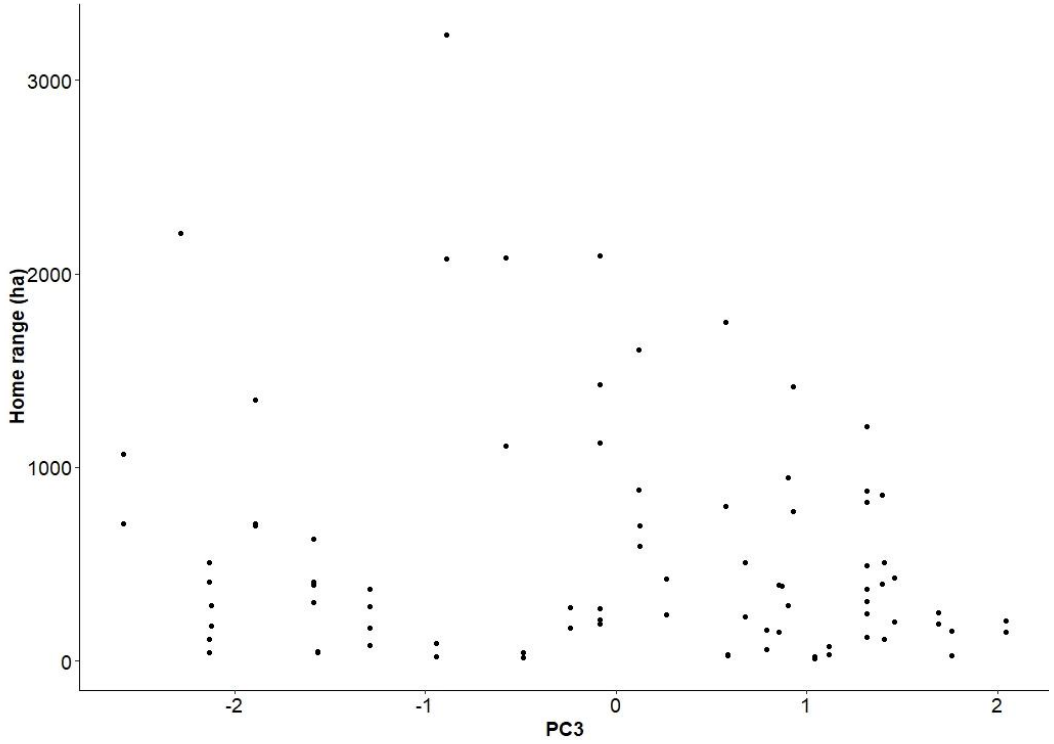
Appendix S8. Feral cat home range for PC1 (n = 39 studies) using a range of home range estimation methods, 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), data collected from across all seasons; non-breeding (n = 14), breeding (n = 8) and unclassified (n = 29) and for male (n = 47) and female (n = 46) feral cats.



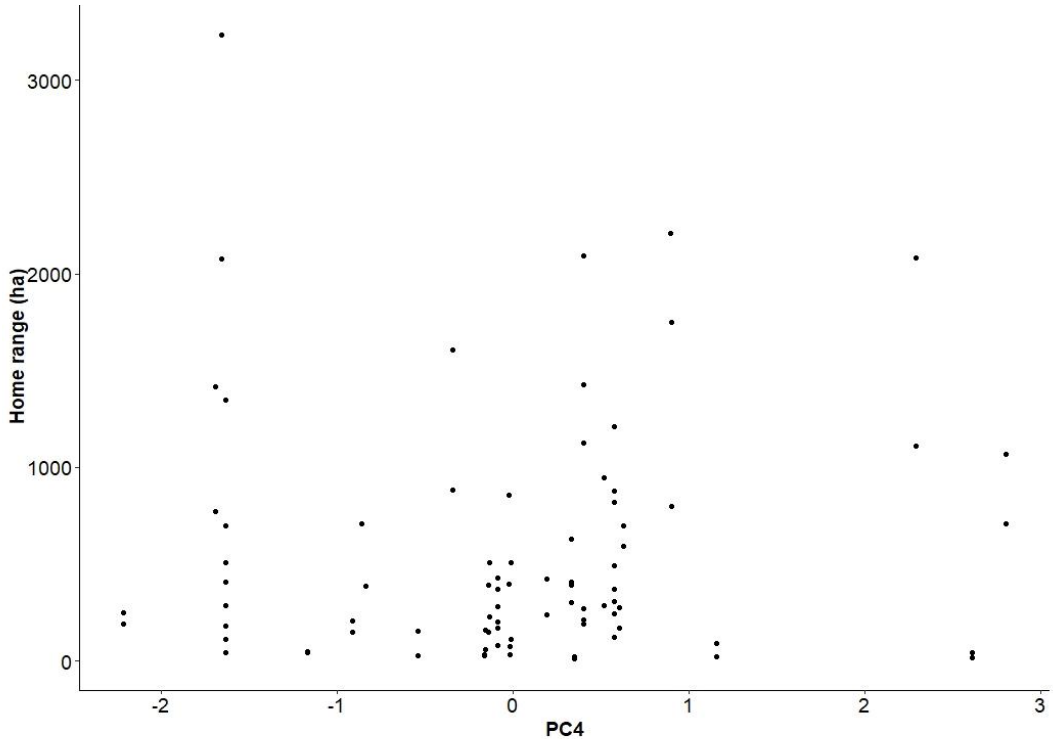
Appendix S9. Feral cat home range for PC2 (n = 39 studies) using a range of home range estimation methods, 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), data collected from across all seasons; non-breeding (n = 14), breeding (n = 8) and unclassified (n = 29) and for male (n = 47) and female (n = 46) feral cats.



Appendix S10. Feral cat home range for PC3 (n = 39 studies) using a range of home range estimation methods, 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), data collected from across all seasons; non-breeding (n = 14), breeding (n = 8) and unclassified (n = 29) and for male (n = 47) and female (n = 46) feral cats.



Appendix S11. Feral cat home range for PC4 (n = 39 studies) using a range of home range estimation methods, 100% MCP (n = 22), 95% MCP (n = 13), 100% KDE (n = 1), 95% KDE (n = 3), data collected from across all seasons; non-breeding (n = 14), breeding (n = 8) and unclassified (n = 29) and for male (n = 47) and female (n = 46) feral cats.



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