

## **Pre-eradication assessment of feral cat density and population size across Kangaroo Island, South Australia**

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**Table S1. Composition of camera arrays used in the current survey.**

Habitat	Area	Array	Number of cameras	Number of transects	Number of cameras paired	Average detection distance (Km)	Number of detections per cat	Number of "uncertain" passes	Number of "unmarked" passes
Border	South Coast Highway	1	20	2	0	1139	2.29	9	0
Border	West End Highway	2	20	2	0	739	2.00	12	0
Border	Walsh's Track	3	16	2	0	836	2.10	15	0
Forest	West Bay Track	1	14	2	0	1428	3.22	26	0
Forest	West bay Road	2	26	2	0	1181	2.22	14	0
Forest	Simpson Conservation Park	3	16	3	4	348	1.86	4	0
Farm	Buck's Farm	1	31	3	0	1404	2.89	17	0
Farm	Dudley Isthmus	2	44	7	0	1323	2.29	30	0
Farm	Wilson's Farm	3	36	7	0	309	1.60	42	2

**Table S2. The top four models with AIC values and weights for all camera arrays in each habitat type.**

Array	Model		Log likelihood	AIC	AICc	Delta AICc	AICc weight
	g0 <sup>+</sup>	Sigma <sup>#</sup>					
Border1	1	1	-170.67	347.34	355.34	0.00	0.99
	V1	1	-167.95	343.90	363.90	8.56	0.01
	1	T	-169.38	346.76	366.76	11.42	0.00
	T	1	-169.79	347.59	367.59	12.25	0.00
Border2	V1	1	-190.58	389.16	397.16	0.00	0.89
	1	1	-196.19	398.38	402.38	5.22	0.07
	1	h2	-189.52	389.04	404.04	6.88	0.03
	b	1	-194.77	397.53	405.53	8.37	0.01
Forest 1	1	h2	-529.14	1068.28	1080.28	0.00	1.00
	V1	1	-545.93	1099.86	1106.53	26.25	0.00
	1	1	-550.93	1107.87	1111.30	31.01	0.00
	T	1	-550.07	1108.14	1114.80	34.52	0.00
Forest 2	1	h2	-484.35	978.71	983.71	0.00	1.00
	V1	1	-494.80	997.60	1000.68	16.97	0.00
	1	1	-497.91	1001.83	1003.54	19.83	0.00
	b	1	-497.42	1002.85	1005.92	22.21	0.00
Forest 3	1	1	-130.28	266.57	274.57	0.00	1.00
	b	1	-129.83	267.66	287.66	13.09	0.00
	T	1	-130.28	268.56	288.56	13.99	0.00
	1	h2	-130.28	270.57	330.57	56.00	0.00
Farm 1	V1	1	-301.73	611.47	619.47	0.00	0.53
	1	1	-305.33	616.66	620.66	1.19	0.29
	1	T	-303.19	614.38	622.38	2.91	0.12
	T	1	-304.53	617.07	625.07	5.60	0.03
Farm 2	1	h2	-645.33	1300.67	1304.00	0.00	1.00
	b	1	-674.23	1356.45	1358.56	54.56	0.00
	T	1	-682.03	1372.06	1374.17	70.17	0.00
	1	1	-683.63	1373.25	1374.45	70.46	0.00
Farm 3	T	1	-791.55	1593.10	1595.60	0.00	0.53
	1	T	-791.66	1593.31	1595.81	0.21	0.47
	1	1	-800.73	1609.47	1611.07	15.47	0.00
	b	1	-800.70	1611.41	1613.91	18.31	0.00

\*Variables that influence g0 include: 'b', a learned response to cameras; 't', variation in detection with time; and 'v1', variation in detection between cameras on roads or cameras on trackways.

#Variables that influence sigma include: 't', variation in home range though time; and 'h2', variation in home range size between individuals.

**Figure S1. Detection function curves for the best fitting models of all arrays including: a.) Border array 1 b.) Border array 2 c.) Forest array 1 d.) Forest array 2 e.) Forest array 3 f.) Farm array 1 g.) Farm array 2 h.) Farm array 3.**

