Supplementary Material

Fox and cat responses to fox baiting intensity, rainfall and prey abundance in the Upper Warren, Western Australia

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Supplementary Information

Appendix 1: Covariate development

Table A1: R-squared and mean squared error values (mean +/- standard error) from the k-fold cross validation used to validate whether the prey activity index was being appropriately predicted by the fitted GAM for the development of the prey covariate

	Mean	Standard Error
R-squared	0.02	0.005
Mean Squared Error (MSE)	0.95	0.001

Table A2: Table of Spearman correlation coefficients for each of the predictors included in modelling of red fox and feral cat activity.

	Precipitation	*DistToAgriculture*	*FoxBaitingIntensity*	*PreyAbundance*	*FoxActivity*
Precipitation	1.00	0.03	0.06	-0.04	0.00
DistToAgriculture	0.03	1.00	0.27	-0.16	0.00
FoxBaitingIntensity	0.06	0.27	1.00	-0.42	-0.03
PreyAbundance	-0.04	-0.16	-0.42	1.00	0.06
FoxActivity	0.00	0.00	-0.03	0.06	1.00

Appendix 2: Model selection tables

Table A3: Model selection table for model of red fox activity with combitions of covariates, including distance to agriculture (DistAg), baiting intensity (Bait), prey abundance (Prey), rainfall in the previous 12 months (Rain). Model diagnostics including degrees of freedom (df), log likelihood (logLik), Akaike's Information Criterion adjusted for small sample size (AICc), the delta AIC (delta) and model weight (weight) are also provided.

Model	Int	DistAg	Bait	Prey	Rain	df	logLik	AICc	delta	weight
15	-2.11		0.15	0.25	-0.09	3	-2243.07	4494.16	0.00	0.57
16	-2.11	-0.03	0.15	0.25	-0.09	5	-2242.50	4495.03	0.87	0.37
7	-2.11		0.14	0.25		2	-2246.86	4499.73	5.56	0.04
8	-2.11	-0.04	0.15	0.24		3	-2246.20	4500.43	6.26	0.02
13	-2.10			0.17	-0.08	3	-2252.35	4510.72	16.56	0.00
14	-2.10	-0.02		0.17	-0.08	3	-2252.22	4512.45	18.29	0.00
5	-2.11			0.17		2	-2255.79	4515.58	21.41	0.00
6	-2.10	-0.02		0.17		2	-2255.60	4517.22	23.05	0.00
9	-2.09				-0.08	2	-2267.48	4538.96	44.80	0.00
12	-2.09	-0.05	0.04		-0.08	4	-2265.55	4539.11	44.95	0.00
10	-2.09	-0.04			-0.08	3	-2266.64	4539.29	45.12	0.00
11	-2.09		0.04		-0.09	2	-2266.74	4539.50	45.34	0.00
1	-2.10					1	-2270.98	4543.97	49.80	0.00
2	-2.10	-0.04				2	-2270.05	4544.10	49.94	0.00
4	-2.10	-0.05	0.04			2	-2269.08	4544.16	50.00	0.00
3	-2.10		0.03			2	-2270.36	4544.72	50.56	0.00

Table A4: Model selection table for interaction models of red fox activity with combitions of covariates, including distance to agriculture (DistAg), baiting intensity (Bait), prey abundance (Prey),

rainfall in the previous 12 months (Rain). Model diagnostics including degrees of freedom (df), log likelihood (logLik), Akaike's Information Criterion adjusted for small sample size (AICc), the delta AIC (delta) and model weight (weight) are also provided.

Model	Int	Bait	Rainfall	Bait*Rainfall	Prey	Bait*Prey	DistAg	Bait*DistAg	df	logLik	AICc	delta	weight
3	-2.18	0.05			0.24	-0.12			3	-2239.18	4486.37	0.00	1.00
2	-2.10	0.03	-0.08	0.03					4	-2266.39	4540.80	54.43	0.00
4	-2.11	0.04					-0.06	0.05	3	-2267.67	4543.36	56.99	0.00
1	-2.10								1	-2270.98	4543.97	57.60	0.00

Table A5: Model selection table for model of feral cat activity with combinations of covariates, including distance to agriculture (DistAg), fox activity (FoxRR), baiting intensity (Bait), prey abundance (Prey), rainfall in the previous 12 months (Rain). Model diagnostics including degrees of freedom (df), log likelihood (logLik), Akaike's Information Criterion adjusted for small sample size (AICc), the delta AIC (delta) and model weight (weight) are also provided.

Model	Int	DistAg	FoxRR	Bait	Prey	Rainfall	df	logLik	AICc	delta	weight
13	-3.06			0.21	0.10		3	-1290.03	2586.07	0.00	0.20
15	-3.06		-0.05	0.22	0.10		4	-1289.51	2587.04	0.97	0.13
5	-3.06			0.17			1	-1291.66	2587.33	1.27	0.11
29	-3.06			0.21	0.10	0.03	4	-1289.83	2587.67	1.60	0.09
14	-3.06	0.02		0.21	0.10		3	-1289.93	2587.87	1.80	0.08
7	-3.06		-0.04	0.17			2	-1291.34	2588.69	2.62	0.06
31	-3.06		-0.05	0.22	0.10	0.03	5	-1289.34	2588.70	2.63	0.05
16	-3.06	0.02	-0.05	0.21	0.10		4	-1289.42	2588.86	2.79	0.05
21	-3.06			0.17		0.03	2	-1291.45	2588.91	2.84	0.05
6	-3.06	0.01		0.17			2	-1291.62	2589.25	3.18	0.04
30	-3.06	0.02		0.21	0.10	0.03	5	-1289.73	2589.49	3.42	0.04
23	-3.06		-0.04	0.17		0.03	4	-1291.15	2590.31	4.24	0.02
32	-3.06	0.02	-0.05	0.21	0.10	0.03	6	-1289.25	2590.54	4.47	0.02
8	-3.06	0.01	-0.04	0.17			4	-1291.30	2590.62	4.55	0.02
22	-3.06	0.01		0.17		0.03	4	-1291.41	2590.83	4.76	0.02
24	-3.06	0.01	-0.04	0.17		0.03	4	-1291.11	2592.25	6.18	0.01
1	-3.04						1	-1300.51	2603.02	16.95	0.00
2	-3.04	0.05					2	-1299.93	2603.87	17.80	0.00
17	-3.04					0.04	2	-1300.20	2604.40	18.34	0.00
3	-3.04		-0.03				2	-1300.29	2604.58	18.51	0.00
9	-3.04				-0.02		2	-1300.42	2604.84	18.77	0.00
18	-3.04	0.05				0.04	2	-1299.64	2605.30	19.23	0.00
4	-3.04	0.05	-0.03				3	-1299.73	2605.47	19.40	0.00
10	-3.04	0.05			-0.01		3	-1299.89	2605.80	19.73	0.00
19	-3.04		-0.03			0.04	3	-1300.00	2606.01	19.94	0.00
25	-3.04				-0.02	0.04	2	-1300.10	2606.22	20.15	0.00
11	-3.04		-0.03		-0.02		2	-1300.22	2606.45	20.38	0.00
20	-3.04	0.05	-0.03			0.03	3	-1299.46	2606.94	20.87	0.00
26	-3.04	0.05			-0.01	0.04	4	-1299.60	2607.22	21.16	0.00
12	-3.04	0.05	-0.03		-0.01		3	-1299.70	2607.42	21.35	0.00
27	-3.04		-0.03		-0.02	0.04	4	-1299.93	2607.87	21.80	0.00
28	-3.04	0.05	-0.03		-0.01	0.03	4	-1299.43	2608.89	22.82	0.00