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Wildlife Research

Supplementary Material

Increasing the target specificity of the canid-pest ejector for red fox (*Vulpes vulpes*) control by using a collar to exclude larger canids

Lauren I. Young^{A,}, Kirsten Skinner^A, John Tyne^A, and Glenn Edwards^A*

^AFlora and Fauna Division, Department of Environment, Parks and Water Security, Alice Springs, NT 0871, Australia.

*Correspondence to: Lauren I. Young Flora and Fauna Division, Department of Environment, Parks and Water Security, Alice Springs, NT 0871, Australia Email: lauren.young496@gmail.com

Supplementary Information

Table S1. Ethogram describing the behaviours scored from each video

Behaviour class	Behaviour	Description
Ignore	Defecate	Defecate away from CPE
	Forage	Forage around site without interfering with CPE
	Groom	Groom self
	Interact with camera	Interact with the camera-trap, including investigating, biting, rubbing against, standing on
	Lie down	Lie down in front of the camera
	Playing	Playing with other individuals
	Sit	Sit down
	Stand	Stand
	Vocalise	Howl, bark, sing
	Walk away	Walk away from the CPE and site
	Walk past on track	Walk past on the vehicle track
	Walk through site	Walk through the site without approaching or investigating the CPE
Approach	Approach	Approach the CPE without touching it
	Dig	Dig around the CPE
	Sniff CPE	Sniff the CPE without further interaction
	Sniff site	Sniff the site around the CPE
	Urinate	Urinate on or close to the CPE
Interact	Bite collar	Bite the CPE collar
	Chew CPE	Chew the CPE baithead

Behaviour class	Behaviour	Description
	Interact with CPE	Interact with the CPE - could not identify the behaviour any further
	Lick CPE	Lick the CPE baithead
	Paw at CPE	Paw at the CPE
	Peck CPE	Peck the CPE
	Pull CPE	Pull on the CPE baithead
	Pull out CPE	Pull uncollared CPE out of the ground
	Take CPE away	Take the CPE out of the camera-trap field of view
Unclear	CPE obscured by animal	Behaviour could not be identified as an animal was standing between the camera-trap and CPE

Table S2. Pairwise comparisons of the proportion of events in which each behaviour class was observed as the first behaviour in an event for red foxes, wild dogs, cats, corvids and varanids

Taxon	Contrast	Odds ratio	SE	z ratio	p-value
Red fox	Approach / Ignore	314.63	354.58	5.10	<0.0001
	Approach / Interact	416.47	481.97	5.21	<0.0001
	Ignore / Interact	1.32	1.55	0.24	0.97
Wild dog	Approach / Ignore	158.81	17.24	46.69	<0.0001
	Approach / Interact	146.94	15.51	47.29	<0.0001
	Ignore / Interact	0.93	0.11	-0.63	0.80
Cat	Approach / Ignore	26.05	11.73	7.24	<0.0001
	Approach / Interact	390.15	414.62	5.61	<0.0001
	Ignore / Interact	14.97	16.04	2.53	0.03
Corvid	Approach / Ignore	0.35	0.25	-1.46	0.31
	Approach / Interact	0.00	0.00	-7.92	<0.0001
	Ignore / Interact	0.01	0.01	-9.14	<0.0001
Varanid	Approach / Ignore	61.04	32.47	7.73	<0.0001
	Approach / Interact	41.79	19.64	7.94	<0.0001
	Ignore / Interact	0.68	0.40	-0.65	0.79

Table S3. Pairwise comparisons of the interaction between collar type and behaviour class for all behaviours observed for red foxes and wild dogs, and between behaviour classes for cats, corvids and varanids

Taxon	Contrast	Odds			
		ratio	SE	z ratio	p-value
Red fox	Collar-Approach / No collar-Approach	1.14	2.35	0.06	1.00
	Collar-Approach / Collar-Ignore	1.00	2.06	<0.0001	1.00
	Collar-Approach / No collar-Ignore	6.28	10.13	1.14	0.86
	Collar-Approach / Collar-Interact	139.46	213.45	3.23	0.02
	Collar-Approach / No collar-Interact	12.60	19.60	1.63	0.58
	No collar-Approach / Collar-Ignore	0.88	1.81	-0.06	1.00
	No collar-Approach / No collar-Ignore	5.51	8.92	1.06	0.90
	No collar-Approach / Collar-Interact	122.38	188.03	3.13	0.02
	No collar-Approach / No collar-Interact	11.06	17.26	1.54	0.64
	Collar-Ignore / No collar-Ignore	6.28	10.13	1.14	0.86
	Collar-Ignore / Collar-Interact	139.46	213.45	3.23	0.02
	Collar-Ignore / No collar-Interact	12.60	19.60	1.63	0.58
	No collar-Ignore / Collar-Interact	22.20	18.43	3.73	0.003
	No collar-Ignore / No collar-Interact	2.01	1.75	0.80	0.97
	Collar-Interact / No collar-Interact	0.09	0.06	-3.37	0.01
Wild dog	Collar-Approach / No collar-Approach	0.98	0.19	-0.08	1.00
	Collar-Approach / Collar-Ignore	1.14	0.21	0.73	0.98
	Collar-Approach / No collar-Ignore	2.33	0.39	5.09	<0.0001
	Collar-Approach / Collar-Interact	28.67	4.09	23.50	<0.0001
	Collar-Approach / No collar-Interact	20.68	2.99	20.95	<0.0001
	No collar-Approach / Collar-Ignore	1.16	0.22	0.77	0.97
	No collar-Approach / No collar-Ignore	2.37	0.42	4.87	<0.0001
	No collar-Approach / Collar-Interact	29.12	4.51	21.77	<0.0001
	No collar-Approach / No collar-Interact	21.00	3.29	19.46	<0.0001
	Collar-Ignore / No collar-Ignore	2.04	0.33	4.45	0.0001
	Collar-Ignore / Collar-Interact	25.10	3.40	23.77	<0.0001
	Collar-Ignore / No collar-Interact	18.10	2.49	21.08	<0.0001
	No collar-Ignore / Collar-Interact	12.31	1.39	22.26	<0.0001

Taxon	Contrast	Odds			
		ratio	SE	z ratio	p-value
Cat	No collar-Ignore / No collar-Interact	8.88	1.02	18.99	<0.0001
	Collar-Interact / No collar-Interact	0.72	0.06	-4.23	0.0003
	Approach / Ignore	1.31	1.51	0.24	0.97
	Approach / Interact	177.76	155.68	5.92	<0.0001
Corvid	Ignore / Interact	135.62	113.36	5.87	<0.0001
	Approach / Ignore	0.01	0.01	-7.70	<0.0001
	Approach / Interact	0.00	0.00	-7.65	<0.0001
Varanid	Ignore / Interact	0.12	0.09	-2.77	0.02
	Approach / Ignore	0.38	0.33	-1.10	0.51
	Approach / Interact	10.52	4.97	4.99	<0.0001
	Ignore / Interact	27.79	22.40	4.12	0.0001

Table S4. Pairwise comparisons of the interaction between collar type and behaviour class for the ultimate behaviour observed in each event for red foxes and wild dogs, and between behaviour classes for cats, corvids and varanids

Taxon	contrast	Odds			
		ratio	SE	z ratio	p-value
Red fox	Collar-Approach / No collar-Approach	11.07	7.90	3.37	0.01
	Collar-Approach / Collar-Ignore	139.46	213.45	3.23	0.02
	Collar-Approach / No collar-Ignore	122.38	188.03	3.13	0.02
	Collar-Approach / Collar-Interact	8.10	5.33	3.18	0.02
	Collar-Approach / No collar-Interact	0.73	0.52	-0.44	1.00
	No collar-Approach / Collar-Ignore	12.60	19.60	1.63	0.58
	No collar-Approach / No collar-Ignore	11.06	17.26	1.54	0.64
	No collar-Approach / Collar-Interact	0.73	0.52	-0.44	1.00
	No collar-Approach / No collar-Interact	0.07	0.05	-3.55	0.01
	Collar-Ignore / No collar-Ignore	0.88	1.81	-0.06	1.00
	Collar-Ignore / Collar-Interact	0.06	0.09	-1.86	0.43
	Collar-Ignore / No collar-Interact	0.01	0.01	-3.38	0.01
	No collar-Ignore / Collar-Interact	0.07	0.10	-1.77	0.49
	No collar-Ignore / No collar-Interact	0.01	0.01	-3.28	0.01
	Collar-Interact / No collar-Interact	0.09	0.06	-3.37	0.01
Wild dog	Collar-Approach / No collar-Approach	1.36	0.10	3.95	0.001
	Collar-Approach / Collar-Ignore	111.60	29.54	17.81	<0.0001
	Collar-Approach / No collar-Ignore	236.48	97.56	13.25	<0.0001
	Collar-Approach / Collar-Interact	1.38	0.10	4.31	0.0002
	Collar-Approach / No collar-Interact	0.99	0.08	-0.10	1.00
	No collar-Approach / Collar-Ignore	82.25	21.85	16.60	<0.0001
	No collar-Approach / No collar-Ignore	174.28	72.01	12.49	<0.0001
	No collar-Approach / Collar-Interact	1.01	0.08	0.17	1.00
	No collar-Approach / No collar-Interact	0.73	0.06	-3.89	0.001
	Collar-Ignore / No collar-Ignore	2.12	1.03	1.55	0.63
	Collar-Ignore / Collar-Interact	0.01	0.00	-16.61	<0.0001
	Collar-Ignore / No collar-Interact	0.01	0.00	-17.78	<0.0001
	No collar-Ignore / Collar-Interact	0.01	0.00	-12.48	<0.0001

Taxon	contrast	Odds			
		ratio	SE	z ratio	p-value
	No collar-Ignore / No collar-Interact	0.00	0.00	-13.25	<0.0001
	Collar-Interact / No collar-Interact	0.72	0.06	-4.23	0.0003
Cat	Approach / Ignore	165.74	144.95	5.84	<0.0001
	Approach / Interact	12.81	4.86	6.72	<0.0001
	Ignore / Interact	0.08	0.07	-2.92	0.01
Corvid	Approach / Ignore	1.00	1.17	0.00	1.00
	Approach / Interact	0.00	0.00	-7.46	<0.0001
	Ignore / Interact	0.00	0.00	-7.46	<0.0001
Varanid	Approach / Ignore	75.81	79.03	4.15	<0.0001
	Approach / Interact	0.82	0.26	-0.61	0.81
	Ignore / Interact	0.01	0.01	-4.34	<0.0001