

SUPPLEMENTARY INFORMATION

Avian top predator and the landscape of fear: responses of mammalian mesopredators to risk imposed by the golden eagle

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Table S1. The results of selected GAMM models for red fox and pine marten. Linear and additive variables are reported separately. Abbreviation acc.days refers to snow-track accumulation time in days, letters E and N denote the latitudinal and longitudinal coordinates, and DNN is the distance to nearest eagle nest. Letter σ is the amount of smoothing in the Gaussian kernel when calculating the territory and fledgling densities of golden eagle. EDF stands for estimated degrees of freedom.

Red fox					Pine marten				
Territory density (σ 4km)	Fixed effects	Estimate	t	P	Territory density (σ 5km)	Fixed effects	Estimate	t	P
	intercept	1.858	146.014	<0.001		intercept	0.102	5.121	<0.001
	territory density	0.022	2.305	0.0212		forest	0.080	3.219	0.001
	acc.days	0.126	22.961	<0.001		acc.days	0.197	21.868	<0.001
	Additive effects	EDF	F	P		Additive effects	EDF	F	P
	s(E,N)	25.27	40.019	<0.001		s(territory density)	2.16	5.3	0.004
	s(farmland)	2.44	8.413	<0.001		s(E,N)	24.43	14.506	<0.001
	s(forest)	1.62	15.326	<0.001		s(red fox)	3.94	23.763	<0.001
	s(mountain hare)	4.93	408.155	<0.001		s(farmland)	3.27	9.155	<0.001
						s(mountain hare)	4.70	86.185	<0.001
Fledgling density (σ 5km)	Fixed effects	Estimate	t	P	Fledgling density (σ 5km)	Fixed effects	Estimate	t	P
	intercept	1.858	146.064	<0.001		intercept	0.102	5.102	<0.001
	fledgling density	-0.006	-0.777	0.437		fledgling density	0.017	1.412	0.158
	acc.days	0.126	22.979	<0.001		forest	0.079	3.159	0.002
	Additive effects	EDF	F	P		acc.days	0.197	21.88	<0.001
	s(E,N)	25.30	40.206	<0.001		Additive effects	EDF	F	P
	s(farmland)	2.42	8.112	<0.001		s(E,N)	24.58	14.2	<0.001
	s(forest)	1.58	15.483	<0.001		s(red fox)	3.94	24.75	<0.001
	s(mountain hare)	4.93	408.331	<0.001		s(farmland)	3.31	9.39	<0.001
						s(mountain hare)	4.70	86.03	<0.001
Distance to nearest nest	Fixed effects	Estimate	t	P	Distance to nearest nest	Fixed effects	Estimate	t	P
	intercept	1.858	146.44	<0.001		intercept	0.101	5.056	<0.001
	acc.days	0.126	22.93	<0.001		forest	0.084	3.38	<0.001
	Additive effects	EDF	F	P		acc.days	0.196	21.817	<0.001
	s(DNN)	3.33	6.337	<0.001		Additive effects	EDF	F	P
	s(E,N)	25.35	37.71	<0.001		s(DNN)	4.78	5.008	<0.001
	s(farmland)	2.76	8.055	<0.001		s(E,N)	24.24	11.309	<0.001
	s(forest)	1.47	15.756	<0.001		s(red fox)	3.95	23.695	<0.001
	s(mountain hare)	4.93	409.588	<0.001		s(farmland)	3.24	8.593	<0.001
						s(mountain hare)	4.70	86.491	<0.001