

Online Resource 5

Landscape Ecology

Daily and monthly movement patterns shape bobcat home range size in two different landscapes

Authors: Ellen M. Audia^{1*}, Katherine M. Buckman¹, Nicole T. Gorman², Abigail M. Weber³, Brent S. Pease⁴, Clayton K. Nielsen^{1,4}, Guillaume Bastille-Rousseau¹

Affiliations: ¹Center for Wildlife Sustainability Research, Southern Illinois University Carbondale, Carbondale, IL; ²Department of Fish and Wildlife Conservation, Virginia Tech, Blacksburg, VA; ³Pennsylvania Cooperative Fish and Wildlife Research Unit, Pennsylvania State University, University Park, PA; ⁴School of Forestry and Horticulture, Southern Illinois University Carbondale, Carbondale, IL

*Corresponding author: ellen.audia@siu.edu, 231-838-9051, ORCID: 0000-0003-4168-8705

Candidate models for annual and bi-annual period 95% wAKDE and KDE home range size of bobcats GPS collared in northern and southern Illinois, USA, during 2018-2024.

Type	Model	AICc	dAICc	AICc weight
Annual	sex + weight + forest PLAND	75.88	0.00	0.98
	sex + weight + forest AREA_MN	84.20	8.32	0.02
	sex + weight + forest ED	99.69	23.82	0.00
	sex + weight + forest PD	101.76	25.88	0.00
	sex + weight + forest PARA_MN	102.44	26.56	0.00
	sex + weight	102.88	27.00	0.00
	sex + weight + forest FRAC_MN	104.03	28.15	0.00
	null model	104.75	28.87	0.00
	sex + weight + road density	105.69	29.81	0.00
Bi-annual	null model	64.89	0.00	0.85
	sex:period + weight + forest PLAND	68.46	3.57	0.14
	sex:period + weight + forest ED	76.17	11.28	0.00
	sex:period + weight + road density	77.32	12.43	0.00
	sex:period + weight	77.83	12.94	0.00
	sex:period + weight + forest AREA_MN	79.41	14.52	0.00
	sex:period + weight + forest PARA_MN	81.37	16.49	0.00
	sex:period + weight + forest PD	81.47	16.58	0.00
	sex:period + weight + forest FRAC_MN	81.88	16.99	0.00

PLAND = percent forest within home ranges; AREA_MN = mean patch area; ED = edge density; PD = patch density; PARA_MN = mean perimeter to area ratio; FRAC_MN = mean fractal dimension index