

SUPPLEMENTARY MATERIAL 1. Detection function model sets for each mammal species. Resolution of the model is specified as either global or stratum level. For models without covariates, all 3 key functions (negative exponential [NE], half-normal [HN], and hazard rate [Haz]) were estimated, and the key function with the lowest AIC value was selected. For models with covariates, the negative exponential function was not estimated. The number in parentheses following the key function corresponds with the number of adjustment terms. For half-normal models, a cosine adjustment was used; whereas, for hazard-rate and negative exponential models, simple polynomial adjustments were used.

Species	Model	Covariates	Key function	k	$\Delta$ AIC	EDR <sup>a</sup>
<i>Peromyscus</i>	Global	—	NE (2)	3	0.00	38.3
	Global	Shrub cover	Haz (2)	5	1.72	43.2
	Global	Stratum	Haz (2)	13	18.29	41.6
	Global	Year	HN (2)	4	18.55	56.3
	Stratum	—	Variable	21	33.19	—
<i>Perognathus</i>	Global	—	NE (2)	3	0.00	30.8
	Global	Year	Haz (2)	5	6.34	25.6
	Stratum	—	Haz (0–1)	11	7.74	—
	Global	Shrub cover	HN (2)	4	18.26	50.5
	Global	Stratum	Haz (1)	11	50.87	72.3
<i>Lemmyscus</i>	Global	—	NE (2)	3	0.00	23.6
	Global	Shrub cover	Haz (1)	4	0.28	21.7
	Global	Year	HN (1)	3	6.10	36.9
<i>Tamias</i>	Global	Detection type	Haz (0)	2	0.00	14.1
	Global	Det. type/shrub	Haz (0)	4	4.71	12.5
	Stratum	—	Haz (0)/HN	7	8.20	—
	Global	—	Haz (0)	2	9.32	11.4
	Global	Stratum	Haz (0)	6	11.36	12.3
<i>Urocitellus</i>	Global	Time	Haz (0)	3	12.96	14.0
	Global	Det. type	Haz (2)	5	0.00	68.3
	Global	Det. type/shrub	Haz (2)	6	1.44	65.9
	Global	—	Haz (0)	2	38.92	58.2
	Stratum	—	Haz/HN	7	40.99	—
	Global	Shrub cover	Haz (0)	3	41.27	57.5
	Global	Time	Haz (0)	3	41.27	57.7
Global	Stratum	Haz (0)	6	42.97	59.3	

<sup>a</sup>Effective detection radius