Supplementary Information

Recreational activities affect resting site selection and foraging time of Eurasian lynx (*Lynx lynx*)

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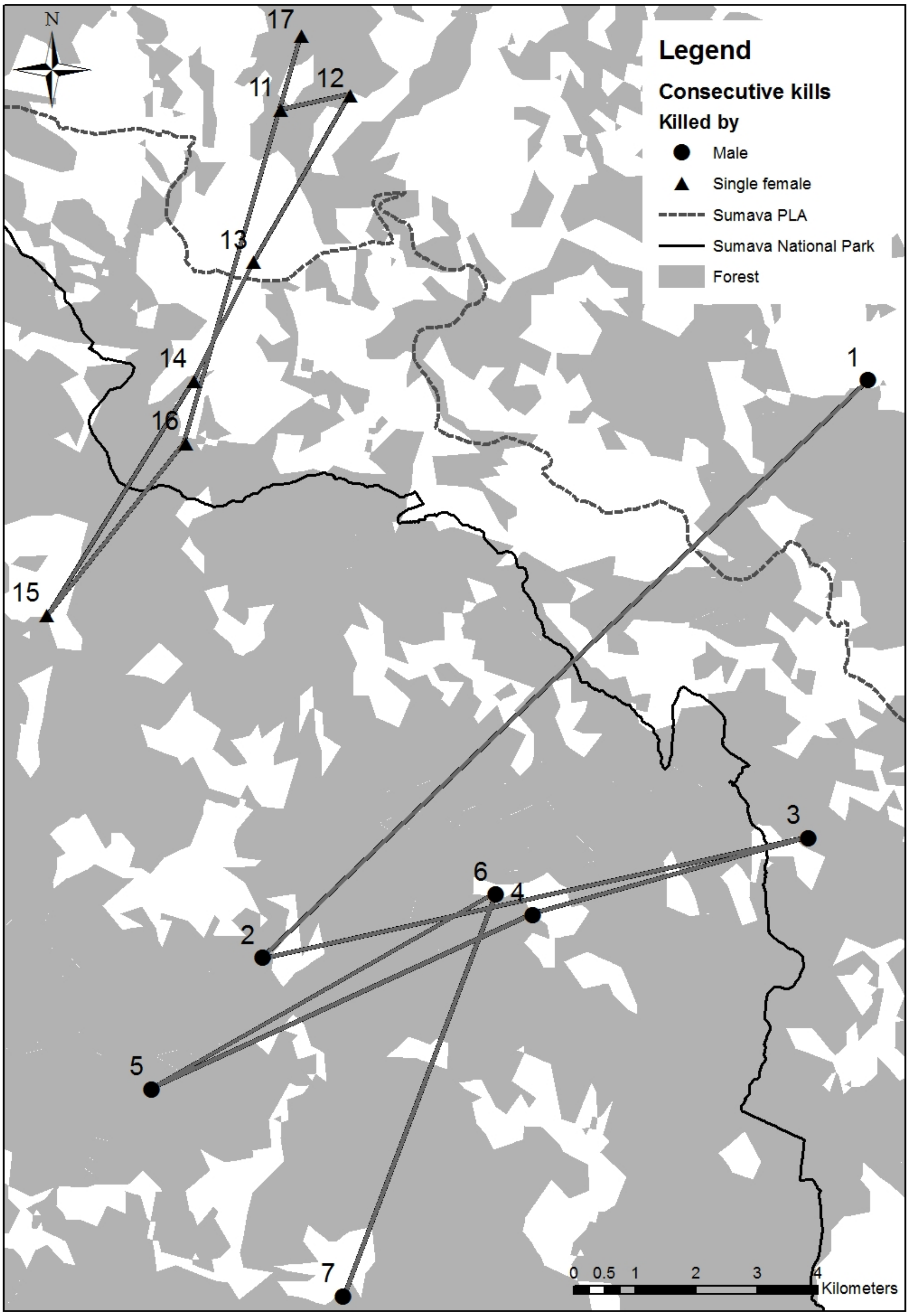
Figure S1: example of spatial distribution and distances between consecutive kills made by a male and a single female lynx between the end of March and the end of April. The sum of distances between points 1 and 7 (male lynx) is 48244 m, the sum of distances between points 11 and 17 (single female lynx) is 21658 m.



Supplemental material S2: Choice of environmental variables

In the BFE, previous studies indicated habitat type, altitude, presence of human modified areas (Magg et al., 2015) and distance to protected areas (Mller et al., 2014) as the most important variables in determining lynx distribution at the population level. Furthermore, habitat type, terrain ruggedness, presence of rock formations, distance to trails and distance to human settlements proved important in determining lynx habitat selection within home-range (Filla et al., 2017), with differences in the importance of these variables between times of the day (daytime vs. nighttime) and seasons (summer vs. winter). Estimations of relative roe and red deer densities are available for the BFE only for the winter season, thus cannot be tested on year-long datasets (Filla et al., 2017). In winter, only red deer densities proved to have a significant effect on lynx space use, while roe deer densities gave contrasting results, positively influencing lynx space usage within National Parks (Belotti et al., 2014) but showing no clear effect on lynx habitat selection within home ranges in the entire BFE (Filla et al., 2017). Regarding the distribution of lynx kills, our previous studies showed an effect of habitat heterogeneity, forest cover, mean altitude, distance to human settlements, terrain ruggedness and prey occurrence, with the relative importance of these variables also varying from summer to winter (Belotti et al., 2013, 2014, 2015). In this study, we focused exclusively on those variables whose values were available for the whole study area year-long, and which were most likely to influence both lynx space usage and the behavior of lynx at kill sites, by influencing the level of "human-related" risk perceived by lynx. Namely, we tested for the effects of:

- forest cover, because forested habitats proved to be preferred by resting lynx (e.g. Sunde et al., 1998; Filla et al., 2017) and they represent habitat cover that provides security (e.g. Sunde et al., 1998; Bouyer et al., 2015a);
- slope, as steep terrain proved to be preferred by resting lynx (e.g. Sunde et al., 1998) and increasing slope proved to increase the time lynx spent feeding upon a killed prey and to reduce the distance from kill sites walked by lynx during daytime in Sweden (Falk, 2009, but see also Belotti et al., 2012), all of which suggests that steep slope also provides security;
- level of legal protection of the area (protected/unprotected), as the intensities and relative roles of different human activities potentially affecting lynx behavior (namely forestry, hunting, farming, recreation) change substantially between the protected and unprotected part of the study area (e.g. Heurich et al., 2015), and the risk to meet humans that represent predators for lynx (i.e. poachers) is likely higher outside than inside protected areas (Mller et al., 2014).

Besides distinguishing between protected and unprotected parts of the study area, we could have introduced a further spatial subdivision between the Czech and the German part of the BFE, because the variable country (Czech Republic vs. Germany) has already shown to substantially influence deer distribution (Heurich et al., 2015), and differences in game and forest management practices exist between the two sides of the national border (e.g. Belotti et al., 2014). In order to keep the complexity of our models at a reasonable scale, however, we checked for an effect of country on lynx behaviour preliminarily. No effect was actually found (p=0.181 and p=0.382 for nights and hours at the prey, respectively), implying that the differences between the two countries could not affect the outcomes of our analyses.

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Figure S3: Spatial variation in the recreational activity index in the study area in summer (A) and winter (B).

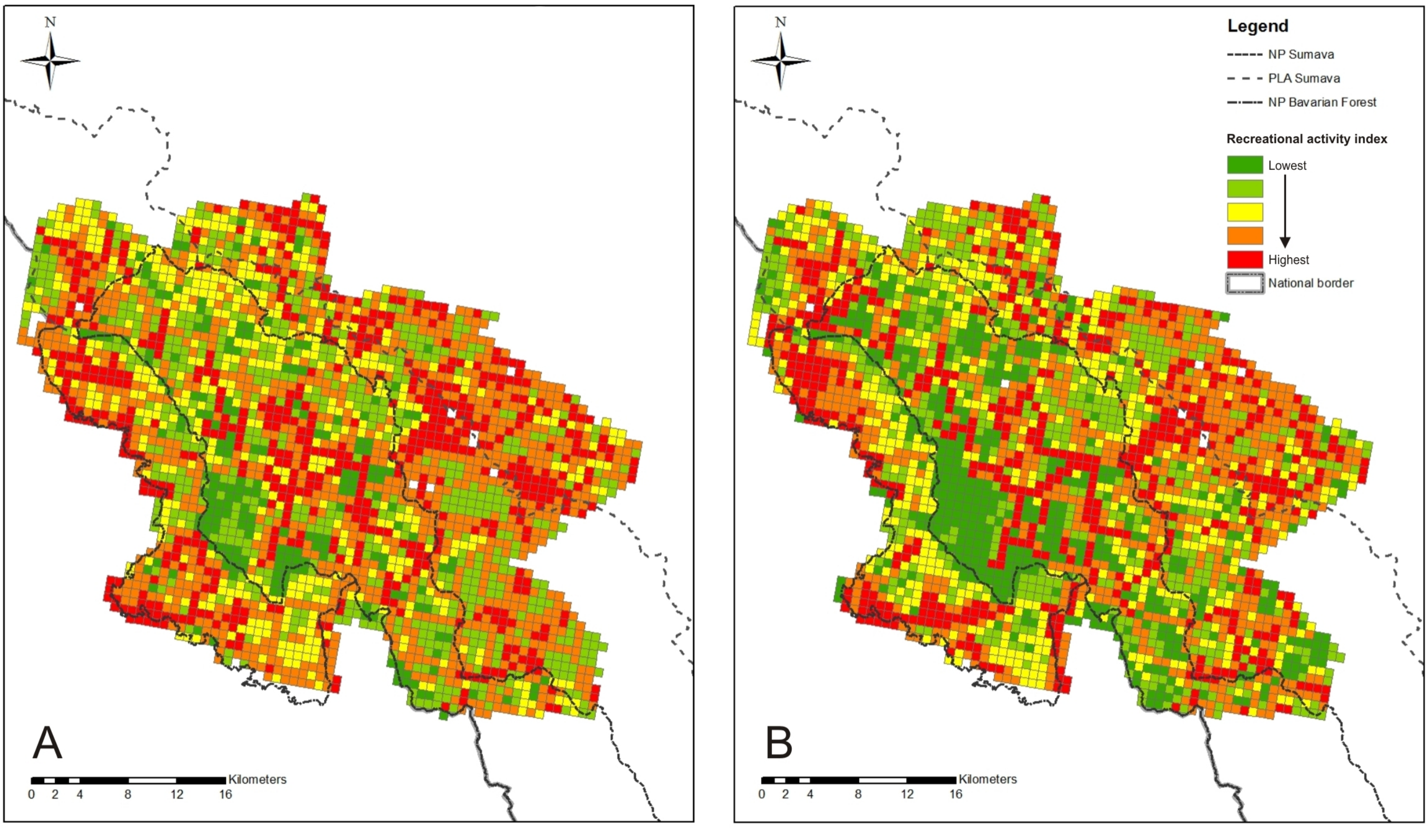

Table S4: Likelihood ratio-based significance of individual predictors on A) nights that lynx spent at killed prey, B) hours spent at killed prey (in a single night), C) presence/absence of midday and D) midnight lynx GPS-locations in each of the 50-hectare grid cells included in the study area (see text for more details). Table shows changes in degrees of freedom (Df) and model deviances (χ^2) after the deletion of given term. Resulting probability values (p-value) are presented as well. Predictors that were included into minimal adequate models (see the main text) are in bold. Empty cells indicate that the predictor was not considered in the given analysis.

		A) Nights at the prey		**B) Hours at the prey**		**C) Presence/absence of midday positions**		**D) Presence/absence of midnight positions (nights with no prey)**	
	Df	χ^2	p-value	χ^2	p-value	χ^2	p-value	χ^2	p-value
Season	1	**5.183**	**0.023**	**4.304**	**0.038**	**8.337**	**0.005**	**1.986**	**0.344**
Recreational activity index	1	1.207	0.272	**7.247**	**0.007**	**21.747**	**<0.001**	1.114	0.3
Prey type	2	**29.159**	**<0.001**	0.346	0.557				
Forest cover	1	3.445	0.064	0.013	0.908	**82.301**	**<0.001**	0.036	0.849
Slope	1	0.34	0.56	7.103	0.008	**12.066**	**<0.001**	0.832	0.654
Level of protection	1	0.065	0.799	1.732	0.188	**12.066**	**<0.001**	**1.086**	**0.263**
Lynx sex and reproductive status	2	0.957	0.62	4.931	0.085				
Time since kill event				**4.852**	**0.028**				
Prey type:Season	2	0.622	0.733						
Forest cover:Season	1	0.4	0.527			1.153	0.284	0.531	0.46
Slope:Season	1	0.118	0.732			0.021	0.885	0.885	0.347
Level of protection:Season	1	0.013	0.909			3.601	0.049	**13.261**	**<0.001**
Recreational activity index:Season	1	**21.352**	**<0.001**			0.003	0.958	0.0201	0.886