

**Supplementary material**

## Appendix 1

Table A1. Univariate models testing for sex specific differences in habitat use with regard to the environmental variables. Positive estimates indicate a relative preference of the respective variable by (males) and vice versa. Only variables which were retained in the final models (Table 3, 4) are shown.

Summer				Winter			
Variable	Estimate	Std.Error	Pr(> z )	Variable	Estimate	Std.Error	Pr(> z )
Altitude	-0.003	0.025	0.891	Slope	0.024	0.399	0.952
Outer Forestedge	3.189	12.290	0.979	Northing	-0.435	24.244	0.986
Inner Forestedge	-1.818	14.954	0.903	Forestedge	-28.180	136.980	0.837
Road_dist	13.450	9.551	0.888	Temperature_W	-0.072	0.724	0.920
Settlement_dist	-0.209	8.335	0.980	Road_dist	2.204	7.439	0.767
Bike_dist	-1.054	10.707	0.922	Recreation_W	-1.507	17.916	0.933
Restaurant_dist	1.104	5.819	0.850	Parking_dist	0.775	7.338	0.916
Hike_dist	2.272	15.420	0.883	Suc_Regeneration	-1.112	16.509	0.300
Stand_spruce-mix	0.641	8.270	0.938	Suc_Thicket	1.231	17.505	0.944
Stand_beech-mix	2.061	9.870	0.835	Suc_Pole	0.984	17.695	0.956
Structure_2layers	0.022	6.026	0.997	Suc_Tree	0.180	16.647	0.991
Structure_>2Layers	-0.725	9.289	0.938	Suc_Old	0.522	16.755	0.975
Canopy_cover	-0.025	0.240	0.917	Structure_2Layers	-1.071	5.701	0.851
Canopy_cover^2	0.000	0.002	0.925	Structure_>2Layers	-0.878	5.367	0.870
Canopy_gaps	0.192	2.080	0.927	Stand_spruce-mix	1.224	0.003	0.869
Shrub_distr_Single	0.239	30.610	0.994	Stand_beech-mix	-0.720	5.639	0.898
Shrub_distr_Sgroup	2.042	34.860	0.953	Stand_beech	-0.298	8.955	0.973
Shrub_distr_Lgroup	1.677	29.910	0.955	Softwoods	0.003	0.235	0.990
Shrub_distr_Spread	-1.817	20.230	1.000	Shrub_distr_Single	-0.912	5.567	0.870
Shrub_cover	0.020	0.183	0.913	Shrub_distr_Sgroup	-0.946	10.273	0.927
Ground_cover	-0.009	0.131	0.945	Shrub_distr_Lgroup	-0.231	6.087	0.970
Herbs	0.018	0.257	0.945	Shrub_distr_Spread	0.387	13.460	0.977
Grasses	-0.009	0.248	0.971	Bilberry	0.003	0.110	0.981
				Canopy_cover	-0.016	0.237	0.945
				Canopy_cover^2	0.000	0.002	0.957
				Shrub_height	-0.005	0.042	0.899
				Fern	-0.035	0.227	0.876
				Herbs	-0.006	0.176	0.974
				Grass	0.009	0.148	0.952
				Moss	0.022	0.208	0.917

Table A2. Models for homerange selection within the study area (a) and habitat selection within homerange (b) calculated based on a reduced dataset, subsampling the first 25 locations from each individual.

		(a) Winter in study area SD (Individual): 0.258			(b) Winter in home range SD (Individual): <0.001		
Type	Variable	Estimate	SE	Sign.	Estimate	SE	Sign
	Intercept	-0.708	5.730		0.683	1.342	
Landscape	Slope	-0.075	0.017	***	-0.047	0.014	**
	Forestedge	5.077	0.914	***			
	Temperature_W	-0.160	0.040	***			
	Northing				-1.011	1.049	
Human	Road_dist	-0.228	0.346		-0.901	0.277	**
	Recreation_W	-2.982	0.871	***	1.567	0.696	*
	Parking_dist	2.147	0.346	***	0.961	0.306	**
Vegetation	Shrub_distr_Single	-0.083	0.332		-0.014	0.249	
	Shrub_distr_Sgroup	-1.266	0.448	***	-1.267	0.350	***
	Shrub_distr_Lgroup	0.116	0.505		0.093	0.317	
	Shrub_distr_Spread	-2.045	1.154	.	-3.131	0.748	***
	Bilberry	0.009	0.006		<0.001	0.005	
	Canopy_cover	0.110	0.153				
	Canopy_cover^2	-0.001	0.001				
	Shrub_height	-0.007	0.013				
	Fern	0.003	0.012				
	Herbs	0.012	0.009				
	Grass				0.010	0.008	
	Moss				0.015	0.010	
	Stand_spruce-mix				-0.581	0.309	.
	Stand_beech-mix				-0.484	0.465	
	Structure_2Layers				-0.533	0.236	*
	Structure_>2Layers				-0.004	0.238	
	Softwoods				-0.005	0.014	
	Suc_Thicket				-0.548	1.282	
	Suc_Pole				-1.419	1.263	
	Suc_Tree				-0.058	1.234	
	Suc_Old				-0.087	1.243	

Figure A1. A schematic overview how random locations were generated in the different areas within (grey points) and outside (white points) the homerange. Locations outside the homerange were generated up to a maximum of 3.9 km.

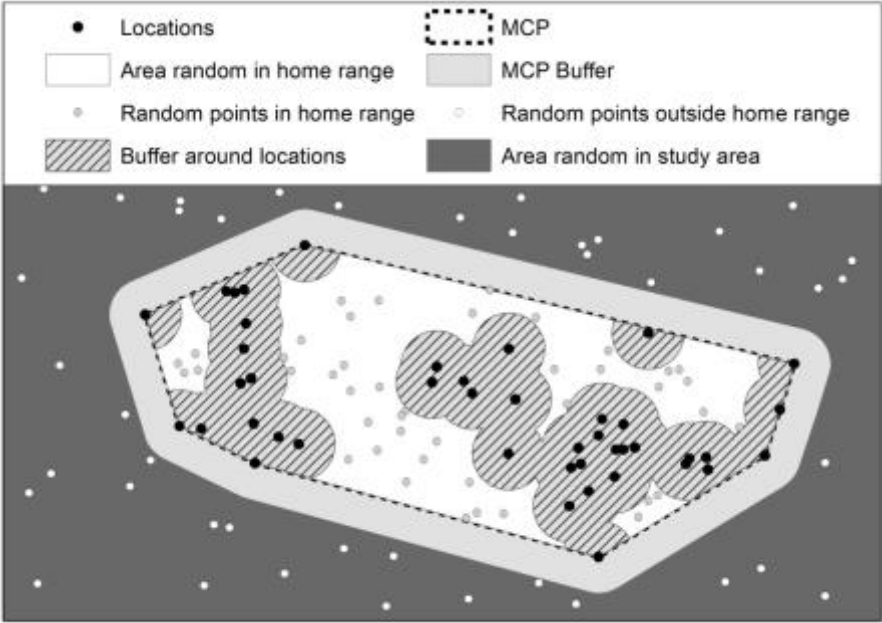


Figure A2. Capercaillie distribution in the Black Forest, Southwestern Germany and proportion of habitat affected by summer recreation. Shown are all 1 km<sup>2</sup> squares with capercaillie presence, with colors indicating the proportion of habitat within the respective square that is located within 145 m distance from mountain bike trails.

