

Ecography

**ECOG-03984**

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**Supplementary material**

## Appendix 1.

Table A1. Parameter estimates for final Structural Equation Models (Fig. 5), for (a) low winters winters, (b) pre-peak winters, (c) post-peak. DIC are also detailed for each of the models. For each iteration, weak prior distributions (for which  $\nu = 0.002$ ) were used to let the parameters being inferred by the observations. For each MCMC simulation, four chains were drawn to assess the convergence of our models. According to Gelman-Rubin criterion, all simulations converged when the criterion was below 1.1.

<b>(a) Phase: Low</b>						
<b>Effect on arctic fox</b>	<b>DIC=144.61</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
Altitude		0.00288	0.00159	-0.00015	0.00286	0.00603
R-NDVI		1.89779	1.65648	-1.23591	1.89884	5.13251
Red fox		0.06810	0.02757	0.01094	0.06897	0.12094
Wolverine		-0.10520	0.06916	-0.24332	-0.10497	0.03271
Westness		0.00208	0.00550	-0.00878	0.00210	0.01295
<b>Effect on red fox</b>	<b>DIC=337.98</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
Altitude		-0.00732	0.00815	-0.02325	-0.00732	0.00858
R-NDVI		3.58567	8.64537	-12.99525	3.53970	20.62346
Wolverine		0.35049	0.36660	-0.36527	0.35219	1.08925
Westness		0.07913	0.02725	0.02557	0.07881	0.13137
<b>Effect on wolverine</b>	<b>DIC=224.86</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
Altitude		0.00195	0.00289	-0.00368	0.00197	0.00772
R-NDVI		3.63020	3.10433	-2.39305	3.64381	9.74463
Westness		0.01629	0.00972	-0.00299	0.01644	0.03558
<b>Effect on ptarmigan</b>	<b>DIC=353.12</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
Altitude		-0.01487	0.01015	-0.03489	-0.01481	0.00518
R-NDVI		16.88850	10.37431	-3.60913	16.77467	37.06160
Arctic fox		-0.60585	0.87521	-2.43329	-0.59209	1.07924
Red fox		-0.04839	0.17324	-0.38447	-0.04632	0.28499
Wolverine		0.51558	0.41618	-0.31276	0.51266	1.32679
Westness		0.10258	0.03246	0.04091	0.10217	0.17048
<b>Effect on R-NDVI</b>	<b>DIC=-189.35</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
Altitude		-0.00071	0.00010	-0.00090	-0.00071	-0.00051
Westness		-0.00030	0.00032	-0.00092	-0.00031	0.00035
<b>(b) Phase: Pre-peak</b>						
<b>Effect on arctic fox</b>	<b>DIC=-38.95</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
Altitude		0.00008	0.00061	-0.00113	0.00008	0.00131
R-NDVI		-0.47689	0.55257	-1.58929	-0.48276	0.58778
Red fox		-0.00168	0.01630	-0.03287	-0.00130	0.02980
Wolverine		-0.20929	0.03090	-0.27169	-0.20877	-0.14937
Westness		-0.00080	0.00120	-0.00313	-0.00081	0.00160
<b>Effect on red fox</b>	<b>DIC=238</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>

	<b>Altitude</b>	-0.00453	0.00456	-0.01330	-0.00458	0.00465
	<b>R-NDVI</b>	5.20653	4.60835	-3.97449	5.25920	13.95988
	<b>Wolverine</b>	0.34562	0.25435	-0.15250	0.34422	0.84016
	<b>Westness</b>	0.00507	0.01183	-0.01849	0.00519	0.02816
<b>Effect on wolverine</b>	<b>DIC=160.34</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
	<b>Altitude</b>	0.00097	0.00257	-0.00397	0.00096	0.00598
	<b>R-NDVI</b>	-0.72203	2.52605	-5.68058	-0.76498	4.15984
	<b>Westness</b>	0.01242	0.00592	0.00068	0.01236	0.02427
<b>Effect on ptarmigan</b>	<b>DIC=276</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
	<b>Altitude</b>	-0.00486	0.00598	-0.01628	-0.00485	0.00680
	<b>R-NDVI</b>	2.61047	6.22901	-9.57203	2.46701	15.26107
	<b>Arctic fox</b>	0.04612	0.63679	-1.21377	0.05166	1.33860
	<b>Red fox</b>	0.35008	0.17282	0.01612	0.34915	0.69140
	<b>Wolverine</b>	0.14535	0.34305	-0.56224	0.15039	0.82994
	<b>Westness</b>	0.03454	0.01580	0.00365	0.03472	0.06554
<b>Effect on R-NDVI</b>	<b>DIC=-189.36</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
	<b>Altitude</b>	-0.000708	0.00010	-0.00091	-0.00071	-0.00052
	<b>Westness</b>	-0.000296	0.00034	-0.00096	-0.00029	0.00037
<b>(c) Phase: Post-peak</b>						
<b>Effect on arctic fox</b>	<b>DIC=197.56</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
	<b>Altitude</b>	0.00603	0.00270	0.00070	0.00598	0.01150
	<b>R-NDVI</b>	3.29471	2.61508	-1.85701	3.29678	8.42452
	<b>Red fox</b>	0.04712	0.03145	-0.01438	0.04621	0.10826
	<b>Wolverine</b>	-0.04458	0.17635	-0.38427	-0.04448	0.30383
	<b>Westness</b>	0.00344	0.00861	-0.01335	0.00316	0.02057
<b>Effect on red fox</b>	<b>DIC=361.41</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
	<b>Altitude</b>	-0.03408	0.01146	-0.05615	-0.03424	-0.01135
	<b>R-NDVI</b>	-9.57197	12.03807	-32.80659	-9.39525	14.41222
	<b>Wolverine</b>	0.78152	0.76770	-0.73721	0.77427	2.27097
	<b>Westness</b>	0.09493	0.03370	0.03126	0.09299	0.16328
<b>Effect on wolverine</b>	<b>DIC=163.21</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
	<b>Altitude</b>	-0.00210	0.00194	-0.00571	-0.00213	0.00184
	<b>R-NDVI</b>	-1.60237	2.12515	-5.78758	-1.70969	2.62302
	<b>Westness</b>	0.00015	0.00601	-0.01203	0.00014	0.01163
<b>Effect on ptarmigan</b>	<b>DIC=381.14</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
	<b>Altitude</b>	0.00845	0.01299	-0.01667	0.00863	0.03440
	<b>R-NDVI</b>	23.42275	12.26572	0.02792	22.94685	47.46561
	<b>Arctic fox</b>	-1.88580	0.64093	-3.14863	-1.87145	-0.62852
	<b>Red fox</b>	0.44377	0.15244	0.14490	0.44719	0.74273
	<b>Wolverine</b>	0.01287	0.84089	-1.57473	0.00143	1.68957
	<b>Westness</b>	0.07483	0.03810	0.00538	0.07388	0.15118

<b>Effect on R-NDVI</b>	<b>DIC=-189.42</b>	<b>Mean</b>	<b>SD</b>	<b>2.50%</b>	<b>Median</b>	<b>97.50%</b>
<b>Altitude</b>		-0.00071	0.00010	-0.00090	-0.00071	-0.00052
<b>Westness</b>		-0.00029	0.00032	-0.00093	-0.00029	0.00035