

Supplementary material

Appendix 1

Age, sex, litter size, and 95% minimum convex polygon (MCP) size for 12 black bears in the Massif de la Jacques-Cartier region between 20 May to 30 June, which corresponds to the period of high vulnerability for ungulate neonates.

Bear Id	Age	Sex	Litter size	95% MCP (km ²)
1	3.5	F	2	174.95
2	10	M	–	243.17
3	7	M	–	60.98
4	7	F	3	35.09
5	4	F	0	24.56
6	6.5	M	–	207.39
7	5.5	M	–	194.07
8	7.5	F	0	68.48
9	11.5	F	2	13.40
10	9.5	M	–	173.99
11	9.5	F	1	14.05
12	6.5	M	–	73.40

Appendix 2

Supplementary information regarding vegetation surveys and plant abundance

Table S1. Vegetation biomass of graminoids and forbs, total biomass, and relative (0–1) biomass in 4 m² for each land cover type in the Massif de la Jacques-Cartier during the period of high ungulate neonate vulnerability (20 May–30 June).

Land cover type	Graminoid biomass (g m ⁻²)	Forb biomass (g m ⁻²)	Total biomass (g m ⁻²)	Relative biomass
Roadside	0.612	2.586	3.198	0.695
Bog	3.692	0.908	4.600	1.000
Shrub	0.952	1.453	2.405	0.523
Regenerating	0.431	1.341	1.772	0.385
Young mixed	0.581	0.982	1.563	0.340
Mature mixed	0.000	1.810	1.810	0.394
Young conifer	0.000	1.431	1.431	0.311
Recent clear-cut	0.000	0.692	0.692	0.150
Mature conifer	0.000	0.843	0.843	0.183

Table S2. Relative abundance of graminoids and forbs (Herbs), and trees estimated during vegetation surveys conducted in 9 land cover types. An abundance index is also provided for each land cover type based on the availability of items and weighted according to their relative importance in black bear diet (Boileau et al. 1994, Samson 1995). Standardized indices and the final index were scaled between 0 and 1.

Land cover type	Herbs	Trees	Index 1 ¹	Index 2 ²	Index 1 standardized	Index 2 standardized	Mean	Final index
Roadside	0.695	1.000	48.194	53.127	0.741	1.000	0.871	1.000
Bog	1.000	0.000	65.000	34.700	1.000	0.653	0.827	0.949
Shrub	0.523	0.633	35.886	36.510	0.552	0.687	0.620	0.712
Regenerating	0.385	0.549	26.681	29.273	0.410	0.551	0.481	0.552
Young mixed	0.340	0.268	22.885	19.567	0.352	0.368	0.360	0.414
Mature mixed	0.394	0.113	25.919	16.939	0.399	0.319	0.359	0.412
Young conifer	0.311	0.210	20.853	16.880	0.321	0.318	0.319	0.367
Recent clear-cut	0.150	0.238	10.490	12.127	0.161	0.228	0.195	0.224
Mature conifer	0.184	0.000	11.908	6.357	0.184	0.120	0.152	0.174

¹ Index 1 was estimated as $65 \times \text{Herbs} + 3 \times \text{Trees}$ (Boileau et al. 1994).

² Index 2 was estimated as $34.7 \times \text{Herbs} + 29 \times \text{Trees}$ (Samson 1995).

Appendix 3

Results of contingency table analysis of observed and expected (in parentheses) frequencies of black bear transitions between patches according to the richness of resources in the starting and ending patches for each individual, with its associated G-value. The pooled G-value is the value obtained while performing an analysis pooling all individuals. The total G-value is the summation for all individuals. The heterogeneity G-value is the difference between total and pooled G-values. We expected individuals to perform more directional movements between high-quality patches (i.e. High-High transitions) and fewer movements between low-quality (Low-Low) than according to random expectation (i.e. p should be lower than the 0.004 expected under Bonferroni adjustment).

Black bear id	Vegetation				G-value	p
	Low-Low	High-Low	Low-High	High-High		
1	0.49 (0.52)	0.18 (0.16)	0.18 (0.16)	0.15 (0.16)	0.60	0.896
2	0.26 (0.57)	0.23 (0.16)	0.23 (0.17)	0.28 (0.10)	117.84	< 0.001
3	0.06 (0.37)	0.14 (0.22)	0.16 (0.23)	0.64 (0.18)	80.07	< 0.001
4	0.02 (0.36)	0.19 (0.21)	0.18 (0.21)	0.61 (0.22)	94.36	< 0.001
5	0.22 (0.37)	0.24 (0.19)	0.25 (0.19)	0.29 (0.25)	14.23	0.003
6	0.54 (0.48)	0.14 (0.18)	0.13 (0.17)	0.19 (0.17)	2.58	0.461
7	0.06 (0.41)	0.23 (0.21)	0.23 (0.21)	0.48 (0.17)	204.49	< 0.001
8	0.12 (0.40)	0.20 (0.20)	0.20 (0.20)	0.48 (0.20)	90.19	< 0.001
9	0.01 (0.44)	0.16 (0.19)	0.16 (0.20)	0.67 (0.17)	220.08	< 0.001
10	0.07 (0.41)	0.20 (0.22)	0.18 (0.22)	0.55 (0.15)	46.84	< 0.001
11	0.04 (0.46)	0.20 (0.19)	0.19 (0.19)	0.57 (0.16)	153.37	< 0.001
12	0.03 (0.36)	0.23 (0.24)	0.23 (0.23)	0.51 (0.17)	29.6	< 0.001
Pooled G	0.16 (0.45)	0.20 (0.19)	0.20 (0.19)	0.44 (0.17)	773.71	< 0.001
Total G					1054.25	< 0.001
Heterogeneity G					280.54	< 0.001

Black bear id	Caribou				G-value	p
	Low-Low	High-Low	Low-High	High-High		
1	0.09 (0.23)	0.18 (0.12)	0.18 (0.12)	0.55 (0.53)	16.42	0.002
2	0.25 (0.25)	0.20 (0.17)	0.19 (0.17)	0.36 (0.41)	4.06	0.255
3	0.79 (0.45)	0.07 (0.14)	0.07 (0.14)	0.07 (0.27)	33.44	< 0.001
4	0.57 (0.65)	0.12 (0.11)	0.13 (0.11)	0.18 (0.13)	2.69	0.442
5	0.15 (0.46)	0.25 (0.14)	0.24 (0.14)	0.36 (0.26)	58.55	< 0.001
6	0.16 (0.22)	0.18 (0.14)	0.19 (0.14)	0.47 (0.50)	3.35	0.340
7	0.27 (0.28)	0.17 (0.14)	0.17 (0.14)	0.39 (0.44)	3.93	0.270
8	0.30 (0.37)	0.12 (0.10)	0.12 (0.10)	0.46 (0.43)	3.95	0.267
9	0.46 (0.51)	0.20 (0.10)	0.20 (0.11)	0.14 (0.28)	30.42	< 0.001
10	0.55 (0.52)	0.16 (0.16)	0.18 (0.16)	0.11 (0.16)	0.84	0.840
11	0.27 (0.42)	0.23 (0.10)	0.24 (0.11)	0.26 (0.37)	40.87	< 0.001
12	0.48 (0.47)	0.23 (0.16)	0.23 (0.18)	0.06 (0.19)	4.55	0.208
Pooled G	0.31 (0.57)	0.18 (0.21)	0.18 (0.21)	0.33 (0.01)	67.22	< 0.001
Total G					203.67	< 0.001
Heterogeneity G					135.85	< 0.001

Black bear id	Moose				G-value	p
	Low-Low	High-Low	Low-High	High-High		
1	0.47 (0.28)	0.13 (0.16)	0.13 (0.16)	0.27 (0.40)	17.37	0.001
2	0.02 (0.02)	0.06 (0.07)	0.06 (0.06)	0.86 (0.85)	0.49	0.921
3	0.20 (0.23)	0.20 (0.20)	0.20 (0.20)	0.40 (0.37)	0.32	0.957
4	0.52 (0.51)	0.18 (0.15)	0.18 (0.15)	0.12 (0.19)	3.82	0.282
5	0.15 (0.25)	0.22 (0.16)	0.21 (0.15)	0.42 (0.44)	10.57	0.014

6	0.33 (0.20)	0.19 (0.18)	0.18 (0.17)	0.30 (0.45)	9.81	0.020
7	0.85 (0.73)	0.07 (0.09)	0.07 (0.09)	0.01 (0.09)	36.29	< 0.001
8	0.61 (0.57)	0.15 (0.14)	0.15 (0.14)	0.09 (0.15)	3.97	0.264
9	0.12 (0.34)	0.25 (0.17)	0.25 (0.17)	0.38 (0.32)	35.29	< 0.001
10	0.61 (0.53)	0.10 (0.16)	0.11 (0.16)	0.18 (0.15)	3.05	0.385
11	0.18 (0.30)	0.23 (0.16)	0.24 (0.17)	0.35 (0.37)	13.19	0.004
12	0.13 (0.21)	0.13 (0.20)	0.13 (0.21)	0.61 (0.38)	6.86	0.076
Pooled G	0.36 (0.36)	0.15 (0.14)	0.15 (0.14)	0.34 (0.36)	2.69	0.442
Total G					141.03	< 0.001
Heterogeneity G					138.34	< 0.001
