Potential Conflict between Future Development of Natural Resources and High-Value Wildlife Habitats in Boreal Landscapes

Biodiversity and Conservation

Nobuya Suzuki[1], Katherine L. Parker[1]

[1]Natural Resources and Environmental Studies Institute, University of Northern British Columbia, 3333 University Way, Prince George, BC V2N 4Z9, Canada

Nobuya Suzuki (Corresponding Author)
Email: nobi.suzuki@unbc.ca

Online Resource 7. High-Value Wildlife Habitats, Resource Potentials, and their Overlap in the Muskwa-Kechika Management Area, northeast British Columbia.

I. Percent areas of high-value habitats of 7 large mammal species by season in Special Resource Management Zones of the Muskwa-Kechika Management Area overlapping areas with different levels of:
    1) cumulative resource potential (Table S7.1)
    2) resource potential diversity (Table S7.2)
    3) road potential (Table S7.3)
    4) forest resource potential (Table S7.4)
    5) oil and gas potential (Table S7.5)
    6) mineral potential (Table S7.6)
    7) wind power potential (Table S7.7)

II. Areas of high resource potential within Special Resource Management Zones, expressed as % area of the entire Muskwa-Kechika Management Area (Table S7.8)

III. Areas of overlap between high-value habitats by season for 7 species of large mammals and high resource potentials in Special Resource Management Zones, expressed as % area of the entire Muskwa-Kechika Management Area for:
    1) cumulative resource potential, resource potential diversity, and road potential (Table S7.9)
    2) forest resources, oil and gas, minerals, and wind power (Table S7.10)

Table S7.1 Area (%) of high-value habitats in 10 classes of <u>cumulative resource potential</u> within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Species[a]	Seasonal habitat[b]	Cumulative Resource Potential (10 percentile interval)[c]									
		0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Wolf	Growing	5.4	4.9	4.8	10.2	12.2	13.0	14.5	13.9	13.3	8.0
	Winter	3.3	2.9	2.4	6.6	8.2	12.2	15.6	17.4	17.0	14.4
Grizzly	Early-Gr	9.0	9.8	8.4	11.9	15.1	13.8	12.0	10.9	7.0	2.1
	Mid-Gr	8.9	9.4	8.3	11.6	15.5	14.1	12.3	10.9	7.1	1.8
	Late-Gr	7.2	6.0	6.1	10.2	13.8	15.0	14.7	12.9	10.3	4.0
Elk	Growing	5.0	6.3	5.5	9.8	11.9	12.0	14.1	12.6	12.9	9.8
	Winter	1.2	2.1	1.6	5.3	6.6	11.3	14.2	14.9	18.6	24.2
Moose	Growing	0.4	0.7	0.7	3.1	7.0	10.5	14.5	17.6	20.8	24.6
	Winter	0.2	0.6	0.4	2.4	5.1	7.9	13.3	17.1	23.4	29.6
Caribou	Growing	10.4	12.2	11.4	13.4	14.4	11.5	10.4	9.0	5.5	1.8
	Winter	3.8	5.4	4.7	5.4	6.7	9.0	11.9	15.9	17.0	20.2
Goat	Growing	16.9	26.0	25.6	17.0	9.0	3.5	1.4	0.6	0.0	0.0
	Winter	12.1	19.9	22.8	16.8	12.1	8.3	4.4	2.9	0.7	0.1
Sheep	Growing	11.9	22.9	24.0	16.4	12.1	7.0	3.9	1.6	0.2	0.0
	Winter	10.2	19.8	22.1	15.5	12.3	8.5	6.4	4.1	1.1	0.0

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep
[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat
[c] Ten classes of cumulative resource potential with 10 percentile intervals, where the class 0–10 percentiles represents the lowest resource potential and the class 90–100 percentiles represents the highest resource potential. Cumulative resource potential is the sum of resource potentials among forest resources, oil and gas, mineral, and wind power

Table S7.2 Area (%) of high-value habitats in 10 classes of <u>resource potential diversity</u> within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Species[a]	Seasonal habitat[b]	Resource Potential Diversity (10 percentile interval)[c]									
		0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Wolf	Growing	3.4	4.6	4.8	5.8	10.6	12.0	14.4	15.3	16.2	12.9
	Winter	1.9	3.6	4.3	4.6	10.2	13.3	15.1	14.7	16.7	15.7
Grizzly	Early-Gr	7.3	8.5	9.6	10.1	11.2	9.6	13.3	13.4	10.5	6.5
	Mid-Gr	7.1	8.5	9.3	9.7	12.1	10.0	12.8	12.6	10.7	7.0
	Late-Gr	6.0	7.2	7.8	8.7	10.9	10.2	13.0	14.8	12.8	8.7
Elk	Growing	4.7	5.4	5.9	6.9	10.2	11.0	14.6	16.4	13.6	11.3
	Winter	0.7	1.8	2.8	3.7	7.0	11.0	17.3	18.1	18.3	19.3
Moose	Growing	0.6	2.8	4.6	5.4	10.2	13.3	13.6	14.1	18.5	17.0
	Winter	0.1	1.8	2.8	2.1	6.5	12.1	15.4	15.5	20.6	23.2
Caribou	Growing	8.9	9.0	9.3	8.3	10.6	10.9	13.0	11.6	10.4	7.9
	Winter	2.7	3.4	6.0	5.5	8.4	11.1	14.8	14.6	17.2	16.3
Goat	Growing	20.0	18.2	24.5	10.0	8.4	7.1	6.9	3.5	0.9	0.5
	Winter	16.2	16.6	24.1	9.7	7.2	6.6	9.1	7.5	2.2	0.8
Sheep	Growing	12.6	16.4	23.4	9.8	8.0	8.1	10.9	7.5	2.4	1.0
	Winter	10.6	15.1	22.4	8.8	7.3	8.1	13.0	9.6	3.7	1.3

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep
[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat
[c] Ten classes of resource potential diversity with 10 percentile intervals, where the class 0–10 percentiles represents the lowest resource potential and the class 90–100 percentiles represents the highest resource potential. Resource potential diversity is calculated using the Shannon Diversity Index (Magurran 1988) of resource potentials among forest resources, oil and gas, mineral, and wind power

Table S7.3 Area (%) of high-value habitats in 10 classes of <u>road potential</u> within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Species[a]	Seasonal habitat[b]	Road Potential (10 percentile interval)[c]									
		0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Wolf	Growing	0.2	1.8	4.1	7.7	12.6	15.6	17.2	17.1	13.7	10.1
	Winter	0.1	0.6	1.3	3.8	9.9	13.2	16.0	17.6	19.0	18.4
Grizzly	Early-Gr	1.3	5.5	9.8	12.9	17.0	17.4	15.6	12.2	7.0	1.2
	Mid-Gr	1.2	5.6	9.7	12.9	17.3	17.5	16.1	11.8	6.8	1.1
	Late-Gr	0.9	4.4	7.9	11.1	15.6	18.2	17.1	14.7	8.5	1.6
Elk	Growing	0.2	2.6	5.1	6.9	11.9	15.2	17.8	18.6	15.0	6.7
	Winter	0.1	0.7	1.3	2.3	6.7	12.7	16.3	21.2	20.7	18.0
Moose	Growing	0.0	0.5	0.9	2.7	6.9	10.3	13.3	18.0	21.9	25.7
	Winter	0.0	0.1	0.3	0.9	3.5	7.4	11.8	16.8	26.5	32.7
Caribou	Growing	1.3	5.9	9.1	12.1	15.3	15.7	15.8	13.4	8.4	3.0
	Winter	0.4	2.2	3.9	5.1	7.6	10.9	13.8	15.6	20.5	19.9
Goat	Growing	13.1	19.9	19.2	20.2	11.1	7.9	5.9	2.4	0.3	0.0
	Winter	11.4	17.6	15.7	17.4	12.0	12.4	6.9	4.6	1.8	0.2
Sheep	Growing	7.5	15.1	17.5	19.8	12.9	12.0	8.5	4.8	1.8	0.2
	Winter	8.8	13.9	15.2	17.1	11.6	12.8	10.5	6.7	2.7	0.7

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep
[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat
[c] Ten classes of road potential with 10 percentile intervals, where the class 0–10 percentiles represents the lowest road potential and the class 90–100 percentiles represents the highest road potential

Table S7.4 Area (%) of high-value habitats in 10 classes of <u>forest resource potential</u> within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Species[a]	Seasonal habitat[b]	Forest Resource Potential (10 percentile interval)[c]									
		0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Wolf	Growing	5.7	6.6	9.7	11.7	13.5	15.5	13.6	10.7	8.7	4.3
	Winter	2.8	3.7	6.4	8.9	12.1	14.5	13.8	12.5	12.3	12.9
Grizzly	Early-Gr	15.0	10.6	13.0	13.7	12.4	11.1	10.1	7.3	4.8	2.0
	Mid-Gr	13.8	10.0	12.5	13.8	12.4	11.7	11.1	7.6	5.1	2.0
	Late-Gr	8.4	7.7	10.9	13.1	13.0	13.9	12.7	9.5	7.3	3.5
Elk	Growing	8.7	7.1	9.5	11.4	11.8	12.3	11.8	9.1	9.3	9.0
	Winter	1.2	2.7	6.0	9.0	12.5	15.0	14.2	14.0	13.5	11.8
Moose	Growing	1.5	3.0	3.4	3.2	6.3	10.1	12.4	16.7	19.0	24.4
	Winter	1.7	2.8	3.2	3.8	6.6	9.8	12.7	17.1	19.4	22.8
Caribou	Growing	20.9	12.6	13.8	14.2	11.6	10.2	8.2	4.7	2.7	1.0
	Winter	10.1	7.2	6.3	6.9	6.7	9.1	10.9	11.9	14.1	16.7
Goat	Growing	58.1	20.2	12.8	6.6	1.8	0.3	0.1	0.1	0.0	0.0
	Winter	48.0	17.7	12.5	9.3	6.7	3.4	1.8	0.5	0.2	0.1
Sheep	Growing	49.7	19.2	14.2	10.0	4.7	2.0	0.1	0.0	0.0	0.0
	Winter	45.2	17.3	13.8	11.2	7.0	4.3	1.2	0.1	0.0	0.0

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep
[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat
[c] Ten classes of forest resource potential with 10 percentile intervals, where the class 0–10 percentiles represents the lowest resource potential and the class 90–100 percentiles represents the highest resource potential

Table S7.5 Area (%) of high-value habitats in 10 classes of <u>oil and gas potential</u> within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Species[a]	Seasonal habitat[b]	Oil and Gas Potential (10 percentile interval)[c]									
		0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Wolf	Growing	35.5	2.1	5.6	5.4	6.1	5.6	9.0	13.8	11.4	5.5
	Winter	35.9	1.1	3.4	4.2	3.7	4.1	8.7	14.3	14.7	10.0
Grizzly	Early-Gr	41.7	3.3	8.8	6.8	7.5	5.6	6.1	10.7	8.0	1.6
	Mid-Gr	44.0	3.2	9.5	6.6	8.0	4.8	5.7	9.9	6.8	1.6
	Late-Gr	44.4	1.8	7.0	6.5	5.4	3.3	7.7	14.4	7.9	1.6
Elk	Growing	34.8	2.5	6.0	3.2	6.1	4.8	6.7	20.5	10.8	4.6
	Winter	23.9	1.0	2.0	1.5	1.7	3.1	8.7	20.1	21.2	16.9
Moose	Growing	37.0	1.1	2.4	5.4	5.5	4.7	5.5	15.1	10.1	13.2
	Winter	24.9	0.9	1.8	7.3	6.9	5.9	4.6	12.8	16.4	18.6
Caribou	Growing	37.2	5.3	9.1	5.4	8.0	6.5	7.4	10.3	8.5	2.4
	Winter	23.8	2.5	4.7	4.1	6.8	7.9	7.8	13.1	15.1	14.3
Goat	Growing	31.2	20.6	19.9	6.8	7.2	8.7	1.5	1.7	2.5	0.1
	Winter	29.9	15.7	17.4	6.6	5.3	6.8	4.1	7.6	5.9	0.8
Sheep	Growing	21.9	19.4	19.5	7.2	7.4	9.7	3.3	5.4	5.6	0.7
	Winter	18.9	16.2	18.5	6.4	6.7	9.7	4.6	8.0	9.1	1.8

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep
[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat
[c] Ten classes of oil and gas potential with 10 percentile intervals, where the class 0–10 percentiles represented the lowest resource potential and the class 90–100 percentiles represented the highest resource potential

Table S7.6 Area (%) of high-value habitats in 10 classes of <u>mineral potential</u> within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Species[a]	Seasonal habitat[b]	Mineral Potential (10 percentile interval)[c]									
		0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Wolf	Growing	10.9	14.1	10.0	10.7	17.0	11.2	9.6	6.4	2.9	7.2
	Winter	15.4	14.1	9.6	14.4	17.5	9.1	8.9	3.2	2.4	5.5
Grizzly	Early-Gr	7.0	15.1	10.0	9.1	13.0	12.6	7.6	11.0	3.4	11.1
	Mid-Gr	7.1	14.3	8.5	9.3	14.2	12.6	7.9	10.9	3.6	11.5
	Late-Gr	6.2	13.6	10.9	9.6	14.3	11.6	8.0	9.6	3.5	12.7
Elk	Growing	7.8	16.8	12.8	9.6	11.3	12.0	9.7	7.9	3.5	8.5
	Winter	19.4	19.1	13.4	10.9	8.4	8.7	9.0	2.9	2.4	5.9
Moose	Growing	13.5	12.8	9.4	12.8	15.0	7.6	8.0	4.8	8.3	7.7
	Winter	19.3	13.7	8.2	15.4	16.7	5.1	8.0	1.9	8.0	3.7
Caribou	Growing	8.4	14.2	9.3	9.8	14.8	14.0	8.6	9.0	3.8	8.0
	Winter	17.9	17.6	11.0	14.8	12.6	5.8	9.2	3.4	4.4	3.3
Goat	Growing	5.4	9.6	5.0	9.3	3.4	24.2	7.8	18.4	6.9	10.0
	Winter	4.6	12.7	9.2	7.2	2.5	21.0	7.9	18.6	6.2	10.0
Sheep	Growing	6.4	13.0	8.3	4.1	5.2	23.0	7.6	18.2	6.7	7.4
	Winter	6.3	15.6	10.2	6.8	3.5	20.7	8.1	16.4	6.4	6.0

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep
[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat
[c] Ten classes of mineral potential with 10 percentile intervals, where the class 0–10 percentiles represents the lowest resource potential and the class 90–100 percentiles represents the highest resource potential

Table S7.7 Area (%) of high-value habitats in 10 classes of <u>wind power potential</u> within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Species[a]	Seasonal habitat[b]	Wind Power Potential (10 percentile interval)[c]									
		0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80	80–90	90–100
Wolf	Growing	10.5	13.2	13.4	12.8	12.0	9.4	8.8	7.3	7.1	5.5
	Winter	8.0	9.5	11.4	10.8	11.9	9.5	10.3	9.7	9.4	9.4
Grizzly	Early-Gr	20.8	20.6	15.5	11.6	9.6	6.2	4.9	4.4	4.0	2.3
	Mid-Gr	19.6	20.0	15.1	12.0	10.5	6.9	5.3	4.4	3.9	2.4
	Late-Gr	16.2	18.5	14.6	12.1	10.9	7.8	6.4	5.4	5.1	2.9
Elk	Growing	14.5	16.7	14.5	11.1	10.2	8.6	7.0	6.4	6.5	4.5
	Winter	8.6	10.0	12.0	10.3	10.0	10.0	9.3	9.1	9.4	11.3
Moose	Growing	6.1	7.2	8.3	8.4	10.6	11.4	11.0	13.2	11.7	12.0
	Winter	4.1	5.2	7.5	7.3	10.6	9.7	12.2	13.8	13.4	16.1
Caribou	Growing	19.6	20.6	15.2	11.3	9.1	7.4	5.1	4.4	4.5	2.9
	Winter	11.9	12.5	10.9	8.5	9.7	7.9	8.8	9.7	8.8	11.3
Goat	Growing	46.4	34.3	12.1	3.5	1.6	1.2	0.6	0.2	0.1	0.0
	Winter	50.0	32.9	10.2	3.3	1.6	1.1	0.4	0.3	0.0	0.0
Sheep	Growing	44.5	33.4	12.3	4.2	2.7	1.4	1.0	0.3	0.1	0.0
	Winter	45.3	31.6	12.3	4.9	2.5	1.5	0.9	0.6	0.3	0.0

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep
[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat
[c] Ten classes of wind power potential with 10 percentile intervals, where the class 0–10 percentiles represents the lowest resource potential and the class 90–100 percentiles represents the highest resource potential.

Table S7.8 Areas of highest resource potential (top 30 percentiles shown in 3 classes) within Special Resource Management Zones of the Muskwa-Kechika Management Area, northeast British Columbia, Canada. Area is expressed as % area of the entire Muskwa-Kechika Management Area and given in hectares in parentheses

| Resource Potential | Top 30 percentiles in 3 classes of resource potential | | | Top 30 percentiles (70-100) |
	70–80	80–90	90–100	
Forest Resources	6.0 (380,099)	5.6 (359,702)	5.8 (369,886)	17.4 (1,109,687)
Oil and Gas	5.0 (317,897)	4.8 (303,312)	4.3 (273,594)	14.0 (894,803)
Minerals	5.3 (339,392)	3.8 (240,224)	5.5 (351,760)	14.6 (93,1376)
Wind Power	4.5 (289,279)	4.3 (277,375)	4.3 (272,210)	13.1 (838,863)
Cumulative Resources	6.8 (433,339	7.2 (458,031)	6.8 (433,449)	20.8 (1,324,818)
Resource Potential Diversity	6.9 (441,279)	7.2 (460,958)	7.2 (462,160)	21.4 (1,364,396)
Roads	7.6 (483,530)	7.8 (498,096)	7.8 (497,384)	23.2 (1,479,011)

Table S7.9 Areas of overlap between high-value habitats by season for 7 species of large mammals and high cumulative resource potential, high resource potential diversity, and high road potential in Special Resource Management Zones of the Muskwa-Kechika Management Area, British Columbia, Canada. Areas of overlap are expressed as % area of the entire Muskwa-Kechika Management Area. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Resource Potential	Species[a]	Season[b]	Top 30 percentiles of resource potential in 3 classes[c]			Top 30 percentiles (70–100)
			70–80	80–90	90–100	
Cumulative Resources	Wolf	Growing	2.8	2.6	1.6	7.0
Cumulative Resources	Wolf	Winter	3.7	3.6	3.1	10.4
Cumulative Resources	Grizzly	Early-Growing	1.8	1.1	0.3	3.2
Cumulative Resources	Gizzly	Mid-Growing	1.8	1.2	0.3	3.2
Cumulative Resources	Grizzly	Late-Growing	2.2	1.7	0.7	4.6
Cumulative Resources	Elk	Growing	2.3	2.4	1.8	6.5
Cumulative Resources	Elk	Winter	2.9	3.7	4.8	11.4
Cumulative Resources	Moose	Growing	3.5	4.2	4.9	12.7
Cumulative Resources	Moose	Winter	3.8	5.2	6.6	15.6
Cumulative Resources	Caribou	Growing	1.6	1.0	0.3	2.8
Cumulative Resources	Caribou	Winter	3.1	3.3	4.0	10.4
Cumulative Resources	Goat	Growing	0.1	0.0	0.0	0.1
Cumulative Resources	Goat	Winter	0.3	0.1	0.0	0.4
Cumulative Resources	Sheep	Growing	0.2	0.0	0.0	0.2
Cumulative Resources	Sheep	Winter	0.5	0.1	0.0	0.7
Resource Potential Diversity	Wolf	Growing	3.1	3.2	2.6	8.9
Resource Potential Diversity	Wolf	Winter	3.1	3.6	3.4	10.0
Resource Potential Diversity	Grizzly	Early-Growing	2.2	1.7	1.1	4.9
Resource Potential Diversity	Grizzly	Mid-Growing	2.1	1.8	1.1	5.0
Resource Potential Diversity	Grizzly	Late-Growing	2.5	2.2	1.5	6.1
Resource Potential Diversity	Elk	Growing	3.0	2.5	2.1	7.5
Resource Potential Diversity	Elk	Winter	3.6	3.6	3.8	11.0
Resource Potential Diversity	Moose	Growing	2.8	3.7	3.4	10.0
Resource Potential Diversity	Moose	Winter	3.4	4.6	5.1	13.1
Resource Potential Diversity	Caribou	Growing	2.0	1.8	1.4	5.2
Resource Potential Diversity	Caribou	Winter	2.9	3.4	3.2	9.4
Resource Potential Diversity	Goat	Growing	0.4	0.1	0.1	0.6
Resource Potential Diversity	Goat	Winter	0.9	0.3	0.1	1.2
Resource Potential Diversity	Sheep	Growing	1.0	0.3	0.1	1.4
Resource Potential Diversity	Sheep	Winter	1.2	0.5	0.2	1.9

Road Potential	Wolf	Growing	3.4	2.7	2.0	8.2
Road Potential	Wolf	Winter	3.8	4.0	3.9	11.7
Road Potential	Grizzly	Early-Growing	2.0	1.1	0.2	3.3
Road Potential	Grizzly	Mid-Growing	1.9	1.1	0.2	3.2
Road Potential	Grizzly	Late-Growing	2.5	1.4	0.3	4.2
Road Potential	Elk	Growing	3.4	2.7	1.2	7.4
Road Potential	Elk	Winter	4.2	4.1	3.6	11.8
Road Potential	Moose	Growing	3.6	4.4	5.2	13.2
Road Potential	Moose	Winter	3.7	5.9	7.3	16.8
Road Potential	Caribou	Growing	2.3	1.5	0.5	4.3
Road Potential	Caribou	Winter	3.1	4.0	3.9	11.0
Road Potential	Goat	Growing	0.3	0.0	0.0	0.3
Road Potential	Goat	Winter	0.6	0.2	0.0	0.8
Road Potential	Sheep	Growing	0.6	0.2	0.0	0.9
Road Potential	Sheep	Winter	0.9	0.3	0.1	1.3

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep

[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat

[c] Top 30 percentiles of resource potential (high resource potential) among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Table S7.10 Areas of overlap between high-value habitats by season for 7 species of large mammals and high resource potentials for forest resources, oil and gas, minerals, and wind power in Special Resource Management Zones of the Muskwa-Kechika Management Area, British Columbia, Canada. Areas of overlap are expressed as % area of the entire Muskwa-Kechika Management Area. High-value habitat is assigned to the top 30 percentiles of habitat suitability among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area

Resource Potential	Species[a]	Season[b]	Top 30 percentiles of resource potential in 3 classes[c]			Top 30 percentiles (70-100)
			70–80	80–90	90–100	
Forest Resources	Wolf	Growing	2.1	1.7	0.9	4.7
Forest Resources	Wolf	Winter	2.7	2.6	2.7	8.1
Forest Resources	Grizzly	Early-Growing	1.2	0.8	0.3	2.3
Forest Resources	Grizzly	Mid-Growing	1.2	0.8	0.3	2.4
Forest Resources	Grizzly	Late-Growing	1.6	1.2	0.6	3.4
Forest Resources	Elk	Growing	1.7	1.7	1.7	5.0
Forest Resources	Elk	Winter	2.8	2.7	2.3	7.8
Forest Resources	Moose	Growing	3.3	3.8	4.9	12.1
Forest Resources	Moose	Winter	3.8	4.3	5.1	13.2
Forest Resources	Caribou	Growing	0.8	0.5	0.2	1.5
Forest Resources	Caribou	Winter	2.3	2.8	3.3	8.4
Forest Resources	Goat	Growing	0.0	0.0	0.0	0.0
Forest Resources	Goat	Winter	0.1	0.0	0.0	0.1
Forest Resources	Sheep	Growing	0.0	0.0	0.0	0.0
Forest Resources	Sheep	Winter	0.0	0.0	0.0	0.0
Oil and Gas	Wolf	Growing	2.8	2.3	1.1	6.1
Oil and Gas	Wolf	Winter	3.0	3.1	2.1	8.3
Oil and Gas	Grizzly	Early-Growing	1.7	1.3	0.3	3.3
Oil and Gas	Grizzly	Mid-Growing	1.6	1.1	0.3	3.0
Oil and Gas	Grizzly	Late-Growing	2.4	1.3	0.3	4.0
Oil and Gas	Elk	Growing	3.7	2.0	0.8	6.6
Oil and Gas	Elk	Winter	4.0	4.2	3.3	11.5
Oil and Gas	Moose	Growing	3.0	2.0	2.7	7.7
Oil and Gas	Moose	Winter	2.8	3.6	4.1	10.6
Oil and Gas	Caribou	Growing	1.8	1.5	0.4	3.7
Oil and Gas	Caribou	Winter	2.6	3.0	2.8	8.3
Oil and Gas	Goat	Growing	0.2	0.3	0.0	0.5
Oil and Gas	Goat	Winter	0.9	0.7	0.1	1.7
Oil and Gas	Sheep	Growing	0.7	0.7	0.1	1.5
Oil and Gas	Sheep	Winter	1.0	1.2	0.2	2.4
Minerals	Wolf	Growing	1.3	0.6	1.4	3.3

Minerals	Wolf	Winter	0.7	0.5	1.2	2.4
Minerals	Grizzly	Early-Growing	1.8	0.5	1.8	4.1
Mineral	Grizzly	Mid-Growing	1.8	0.6	1.9	4.2
Minerals	Grizzly	Late-Growing	1.6	0.6	2.1	4.4
Minerals	Elk	Growing	1.5	0.6	1.6	3.6
Minerals	Elk	Winter	0.6	0.5	1.2	2.2
Minerals	Moose	Growing	1.0	1.7	1.5	4.2
Minerals	Moose	Winter	0.4	1.8	0.8	3.0
Minerals	Caribou	Growing	1.6	0.7	1.4	3.6
Minerals	Caribou	Winter	0.7	0.9	0.7	2.2
Minerals	Goat	Growing	2.3	0.9	1.2	4.4
Minerals	Goat	Winter	2.2	0.7	1.2	4.2
Minerals	Sheep	Growing	2.4	0.9	1.0	4.2
Minerals	Sheep	Winter	2.1	0.8	0.8	3.6
Wind Power	Wolf	Growing	1.5	1.4	1.1	4.0
Wind Power	Wolf	Winter	2.1	2.0	2.0	6.1
Wind Power	Grizzly	Early-Growing	0.7	0.6	0.4	1.7
Wind Power	Grizzly	Mid-Growing	0.7	0.6	0.4	1.7
Wind Power	Grizzly	Late-Growing	0.9	0.9	0.5	2.3
Wind Power	Elk	Growing	1.2	1.2	0.8	3.2
Wind Power	Elk	Winter	1.8	1.8	2.2	5.9
Wind Power	Moose	Growing	2.7	2.4	2.4	7.4
Wind Power	Moose	Winter	3.1	3.0	3.6	9.6
Wind Power	Caribou	Growing	0.8	0.8	0.5	2.1
Wind Power	Caribou	Winter	1.9	1.7	2.2	5.8
Wind Power	Goat	Growing	0.0	0.0	0.0	0.0
Wind Power	Goat	Winter	0.0	0.0	0.0	0.0
Wind Power	Sheep	Growing	0.0	0.0	0.0	0.1
Wind Power	Sheep	Winter	0.1	0.0	0.0	0.1

[a] Wolf = Gray Wolf, Grizzly = Grizzly Bear, Elk = Rocky Mountain Elk, Caribou = Woodland Caribou, Goat = Mountain Goat, Sheep = Stone's sheep

[b] Winter = winter habitat, Growing = growing-season habitat, Early-Gr = early-growing habitat, Mid-Gr = mid-growing habitat, Late-Gr = late-growing habitat

[c] Top 30 percentiles of resource potential (high resource potential) among 500-ha planning units across the entire land area of the Muskwa-Kechika Management Area