



Muskwa-Kechika Management Area Parks and Protected Areas

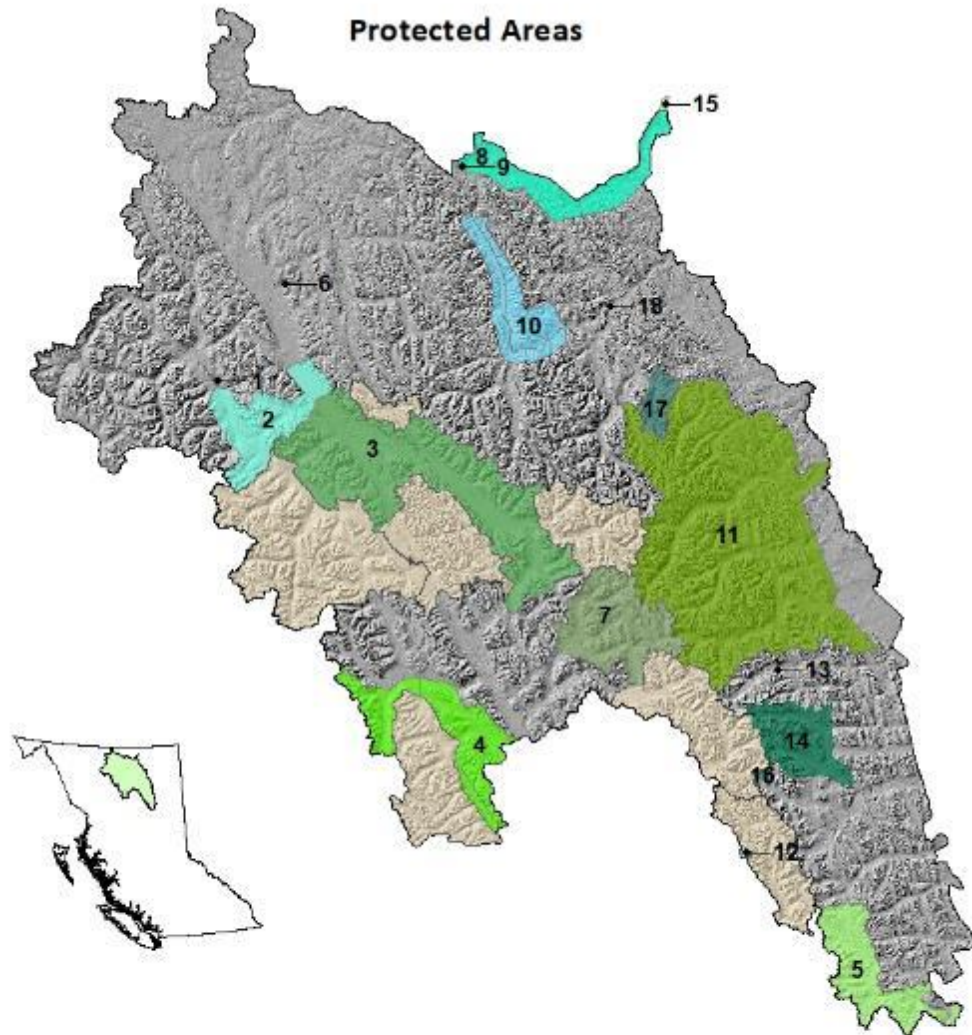
CONSERVATION ASSESSMENT

Tool Objectives

- Enable a focus on conservation outcomes
 - Are we achieving biodiversity outcomes?
 - Move beyond 'paper parks'
- Help identify:
 - Inventory gaps
 - Strengths & areas of improvement
- Serve as an accountability mechanism
- Opportunity to tell the story publicly
- Inform management planning



Protected Areas



Legend

- | | |
|---------------------------------|---|
| 1, Dall River Old Growth Park | 10, Muncho Lake Park |
| 2, Denetlah | 11, Northern Rocky Mountains |
| 3, Dune Za Key th | 12, Ospika Cones Ecological Reserve |
| 4, Finlay Russel Park | 13, Prophet River Hotspings Park |
| 5, Graham-Laurier Park | 14, Redfern-Kelly Park |
| 6, Homeline Creek Park | 15, Scatter River Old Growth Park |
| 7, Kwadacha Wilderness Park | 16, Silkanni Chief River Ecological Reserve |
| 8, Liard River Coridor Park | 17, Stone Mountain Park |
| 9, Liard River Hot Springs Park | 18, Toad River Hotspings Park |
| | Special Wildland Zone |

0 15 30 60
Km

BC Albers projection/NAD 83



Confluence



date created:
8/24/2020

Values at Risk Summary

M-KMA Complex Summary VARIABLES	Original Score	Total Points Possible	Standardized Conservation Value	State of Value
Structural Variables				
Ecosystem Representation				
Terrestrial Ecosystems	4	4	100	Excellent
Species of Concern				
Rare/Tracked Species (Species of Conservation Concern)	4	4	100	Excellent
Diversity of Rare/Tracked Species	4	4	100	Excellent
Degree of Endemism (Uniqueness)	3	4	75	Moderately high
Range Extension Species	U	4	UNKNOWN	Unknown
Remnant Species or Communities	3	4	75	Moderately high
Species Loss	0	0	100	Excellent
Keystone Species	2	2	100	Excellent
Apex Predators	2	2	100	Excellent
Special or Unique Habitats				
Rare Habitats/Ecological Communities	U	4	Unknown	Unknown
Legal or Policy Defined Critical Habitats				
Legally Defined Critical ('Essential') Habitat	0	4	0	Unknown
Wildlife Habitat Features/Focal Habitats	4	4	100	Excellent
Special Features				
Special Landforms/Features	4	4	100	Excellent
Ecological Function				
Number of Movement Corridors	2	2	100	Excellent
Significance of Movement Corridors	3	3	100	Excellent
Source/Sink	4	4	100	Excellent
Hydrologic Function				
Watershed Completeness	4	4	100	Excellent
Lotic Connectivity	5	5	100	Excellent

Key Values

- ▶ Ecosystem rarity/diversity (VH)
 - ▶ State: excellent with likely threats only CC. Note, under-represented variants in Graham
- ▶ Full species complement
 - ▶ One of few places left in NA
 - ▶ Limited data, however
 - ▶ Caribou counts suggest almost all herds in decline
- ▶ Keystone species, Apex predators, trophic cascades intact. State: excellent
- ▶ Rare habitats/ecological communities – undoubtedly but unmapped/inventoried (surely around the Tufa /hot springs at least)
- ▶ No legally defined habitat within PPA but not because not present – simply not mapped/defined
- ▶ VH rankings for significance/diversity of wildlife habitat features/focal habitats

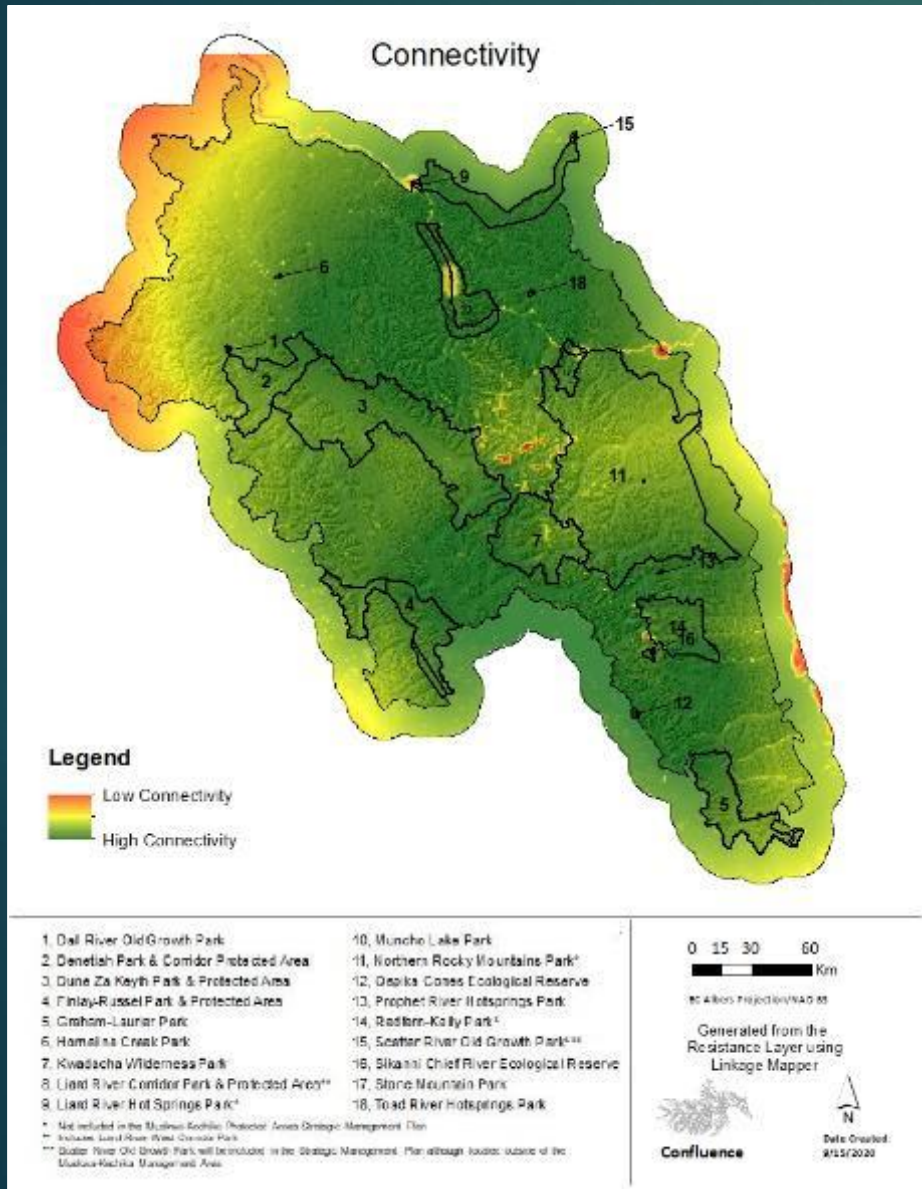
Key Values (cont'd)

- ▶ Special landforms/features
 - ▶ No inventory but those reported in documents already max the scale of VH.
 - ▶ Condition excellent – threats generally just CC although some may be threatened by increasing recreational use (e.g., heli-landings/access to tufa springs)
- ▶ Movement corridors
 - ▶ With the notable exception of the AK highway there are limited specific impediments to movement
 - ▶ Motorized use including jet boats, and ATV trails have some likely impact on effectiveness of movement
- ▶ Watershed intactness is VH with over 50, 3rd order watersheds intersecting the PPA. A number of watersheds are fully contained within PPA. As less than .77% of the PPA has a physical human footprint it is sufficient to conclude that all watersheds within the MK PPA are intact (VH).

Design Risks

- ▶ Scores 12 on Design Risks where the best score is 8 and the worst is 41.
- ▶ Human footprint <10% (in fact just .77% of PPA excluding ephemeral impacts)
- ▶ Shape index of 3/5 (although size/intactness of entire region compensates)
- ▶ Contains 3 BEC variants with insufficient replication
- ▶ Ranks VH for size
- ▶ Ranks VH for adjacency
- ▶ Ranks VH for resistance and connectivity because as yet there is very minimal development within the M-KMA

Connectivity (View 1)



Connectivity Between PPA

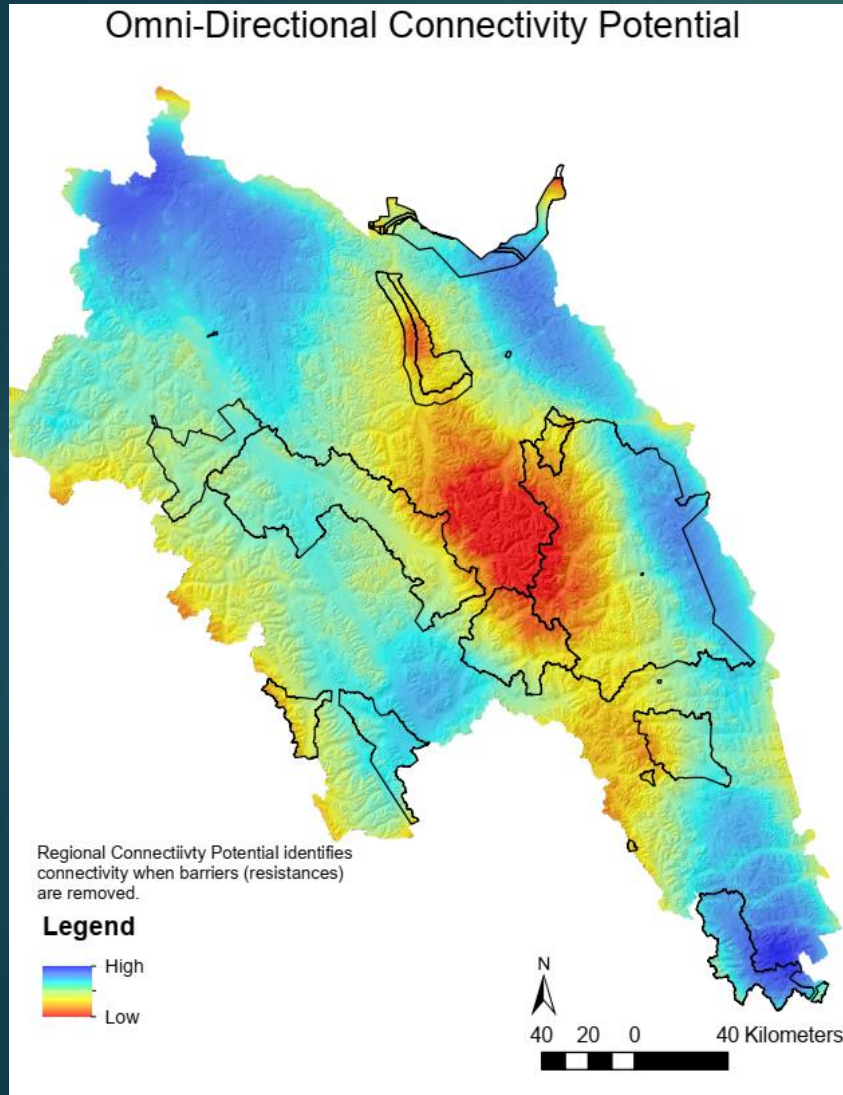
Circuitscape's Linkage Mapper.

For this analysis, since some of the PPA (Liard, Finlay, Graham) are on the edge of the MK I buffered it by 15km.

The M-KMA is HIGHLY CONNECTED.

- Within the centre of the MK, slope and land covers (snow/ice etc) that are generally the impediments to movement.
- Small bits of human footprint, mostly on the AK highway and the ATV trails (SE edge) are impediments.
- NOTE: The "low" connectivity on the edges of the map to the NW is an artefact of the tool we used. We asked it to analyze the connectivity of these protected areas...since we didn't give it a protected area to the NW of the MK it returns a 'low connectivity' artefact.

Connectivity (View 2)



Overall Connectivity

There are two main pathways of connectivity (N/S) in the MK...the first up the Rocky Mountain Trench and the second up the eastern flank of the MK.

Any human use in these areas that impedes movement will threaten connectivity regionally and across the cordillera.

Overall Threat Rating = Low-Medium

Higher External Threats

- ▶ Climate change
- ▶ Oil and gas (seismic)
- ▶ Roads & motorized access
- ▶ Logging and wood harvesting

Medium-Low External Threats

- ▶ Tourism and recreation areas
- ▶ Utility and service lines
- ▶ Hunting
- ▶ Fishing
- ▶ Recreational activities (all)
- ▶ Fire (and fire suppression) (THREAT OR BENEFIT?)
- ▶

Higher Internal Threats

- ▶ Climate change
- ▶ Roads & motorized access

Medium-Low Internal Threats

- ▶ Tourism and recreation areas
- ▶ Utility and service lines
- ▶ Hunting, gathering, collecting
- ▶ Fishing
- ▶ Recreational activities (all)
- ▶ Fire (and fire suppression) (THREAT OR BENEFIT?)
- ▶ Invasives

Challenges

- ▶ Existing PPA did not capture some of highest valued lands for species, landforms and climate adaptiveness
- ▶ Limited resourcing for the M-KAB and direct on the ground management
- ▶ Unmonitored growth in recreation use (motorized use/access)
- ▶ Declines in caribou herd numbers
- ▶ Anecdotal reports of declines in other species (predator and prey)
- ▶ Connectivity/climate issues exacerbated if development happens in critical connectivity places
- ▶ AK highway use/mortalities

Future: Two potential trajectories for the M-KMA

- ▶ Management of the M-KMA under current model
 - ▶ Eventual 'nodal' resource development
 - ▶ Temporary development/restored
 - ▶ Theoretically held to high standard
 - ▶ However, potential development in Protected Areas will put PPA at risk
- ▶ Designation of approx. 2/3 of upper portion of M-KMA surrounding the PPA as part of a proposed Kaska Indigenous Protected and Conserved Area (KIPCA)
 - ▶ More likely to maintain high conservation values and minimize risks