



# UNGULATE WINTER RANGE SUMMARY

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## *For two Northern Caribou UWRs in the Mackenzie and Fort St. James Forest Districts<sup>1</sup>(UWRs U-7-025 and U-7-026)*

These Ungulate Winter Ranges (UWRs) have been approved under the *Forest and Range Practices Act (FRPA)* and the *Oil and Gas Activities Act (OGAA)*, and are consistent with existing policies and directives for the establishment of UWRs. They are consistent with direction provided within the Mackenzie and Fort St. James *Land and Resource Management Plans (LRMPs)*,<sup>2,3</sup> the recovery action plan for northern caribou herds in north-central British Columbia<sup>4</sup>, and much of the federal *Recovery Strategy for the Woodland Caribou, Southern Mountain population (Rangifer tarandus caribou) in Canada* (hereafter referred to as the federal *Recovery Strategy for Woodland Caribou*).<sup>5</sup>

### *1. Biological Justification / Supporting Rationale*

Certain populations of woodland caribou (*Rangifer tarandus caribou*) in Canada are listed as *threatened* under the federal *Species at Risk Act*, requiring management actions. Threats to caribou may vary based on ecotype; however, human activities associated with resource extraction are the ultimate threats to caribou in British Columbia. Human development fragments and alters caribou habitat and creates more browse and young forests. This type of vegetation facilitates the increase in moose, deer and elk, which in turn attract more predators such as wolves and bears. The increased presence of predators heightens the predation risk to caribou.<sup>6</sup> Also, linear corridors such as roads and seismic lines associated with human activities enhance predator movements into caribou habitat.<sup>7</sup>

Northern caribou found in the Mackenzie Natural Resource District and the Fort St. James portion of the Stuart Nechako Natural Resource District are an ecotype of woodland caribou that generally utilize low elevation forests with abundant ground lichens, and/or higher elevation windswept alpine areas and subalpine forests to survive the winter. These caribou require large areas of relatively undisturbed habitat to enable them to reduce predation by “spacing away” from moose and wolves. High elevation winter habitat is recognised as critical to northern caribou conservation objectives, and predation risk from wolves preying on alternate prey sources such as moose is recognised as the main cause of

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<sup>1</sup> Note that while the ‘Mackenzie Natural Resource District’ and ‘Stuart Nechako Natural Resource District’ names are in common usage, the ‘Mackenzie Forest District’ and ‘Fort St. James Forest District’ are currently the correct legal terms. Depending on context, both district names may appear in this document.

<sup>2</sup> Province of British Columbia (1999). *Fort St. James Land and Resource Management Plan*. [www.for.gov.bc.ca/tasb/slrp/lrmp/pdf/LRMP/Fort%20St%20James\\_LRMP.pdf](http://www.for.gov.bc.ca/tasb/slrp/lrmp/pdf/LRMP/Fort%20St%20James_LRMP.pdf)

<sup>3</sup> Province of British Columbia (2000). *Mackenzie Land and Resource Management Plan*. [www.for.gov.bc.ca/tasb/slrp/lrmp/princegeorge/mackenzie/plan/files/lrmp/Mackenzie\\_LRMP\\_Feb2001.pdf](http://www.for.gov.bc.ca/tasb/slrp/lrmp/princegeorge/mackenzie/plan/files/lrmp/Mackenzie_LRMP_Feb2001.pdf)

<sup>4</sup> McNay, S., D. Heard, R. Sulyma, and R. Ellis. 2008. A recovery action plan for northern caribou herds in north-central British Columbia. Forrex Serries 22.

<sup>5</sup> Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (*Rangifer tarandus caribou*) in Canada . Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. viii +103pp.

<sup>6</sup> Wittmer, H.U., A.R.E. Sinclair and B.N. McLellan. 2005. The role of predation in the decline and extirpation of woodland caribou. *Oecologia* 144:257-267.

<sup>7</sup> Whittington, J., M. Hebblewhite, N.J. DeCesare, L. Neufeld, M. Bradley, J. Wilmshurst and M. Musiani. 2011. Caribou encounters with wolves increase near roads and trails: a time-to-event approach. *J. Appl. Ecol.* 48:1535-1542.

caribou declines (see also Festa-Bianchet *et al.*<sup>8</sup>). Johnson *et al.* report significant caribou declines in the nearby Central Mountain northern caribou populations, associated with increasing levels of predation risk, tied to habitat loss and creation of increasing amounts of early successional forest.<sup>9</sup>

#### a) Conservation Status / Priority

- **Provincial / Federal Conservation Status:** Blue/Threatened, (Frog, Gataga and Finlay herds are Special Concern)
- **Conservation Framework Highest Score / Goal:** Priority 2 for Goal 2: Prevent species and ecosystems from becoming at risk

The Wolverine herd and much of the Chase herd are included as northern caribou ecotypes within the federal *Recovery Strategy for Woodland Caribou*.<sup>10</sup> The Finlay, Gataga and Frog herds that are part of U-7-025 are not included in this federal recovery strategy.

#### b) Expected Conservation Achievements /Outcome

This species was recognized as a priority for conservation and management within both the Mackenzie and Fort St. James Land and Resource Management Plans (Sec. 6.8.1 and pg 36-38, respectively). Both U-7-025 and U-7-026 represent Type 2 UWRs; consistent with land use planning direction.

Predation risk from wolves is a major factor influencing recovery management of northern caribou in BC.<sup>11,12</sup> To help address this, road development and forest harvesting is excluded from core high elevation winter range units. As an additional measure to help address one important component of predation risk, specified area units are identified and will be managed adjacent (within 5 km) to the high elevation core winter range units; consistent with both recovery management action plan recommendations and the federal *Recovery Strategy for Woodland Caribou*. Within the specified area units, specific ecological site series with a moderate to high brush hazard will be managed to limit the production of preferred winter moose browse species. It is anticipated that the use of this specified area designation will help to address predation risk from wolves hunting moose attracted to new browse, without resulting in additional impacts to timber supply. At the same time roads, permanent access structures and mineral exploration activities are exempted from the specified area General Wildlife Measure (GWM) 5. This specified area designation is not applied near three First Nations communities (Takla Landing, Kwadacha and Tsay Keh Dene).

Predator management is considered a compliment to reducing habitat alteration and fragmentation, with a multi-tiered approach being recommended to support caribou recovery efforts. Ungulate winter range management is not about population management, but rather habitat management, with the intent to maximize the spatial separation between moose and caribou. Moose numbers are not currently in decline in the Mackenzie Natural Resource District. The management intent with respect to moose is not to reduce moose numbers, but rather not allow moose numbers to increase beyond

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<sup>8</sup> Festa-Bianchet, M., J.R. Ray, S. Boutin, S.D. Côté and A. Gunn. 2010. Caribou conservation in Canada: an uncertain future. *Canadian Journal of Zoology*, 89:419-434.

<sup>9</sup> Johnson, C.L., L.P.H. Ehlers and D. Seip. 2015. Witnessing extinction – Cumulative impacts across landscapes and the future loss of an evolutionarily significant unit of woodland caribou in Canada. *Biological Conservation* 186 (215): 176-186.

<sup>10</sup> Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (*Rangifer tarandus caribou*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. viii +103pp.

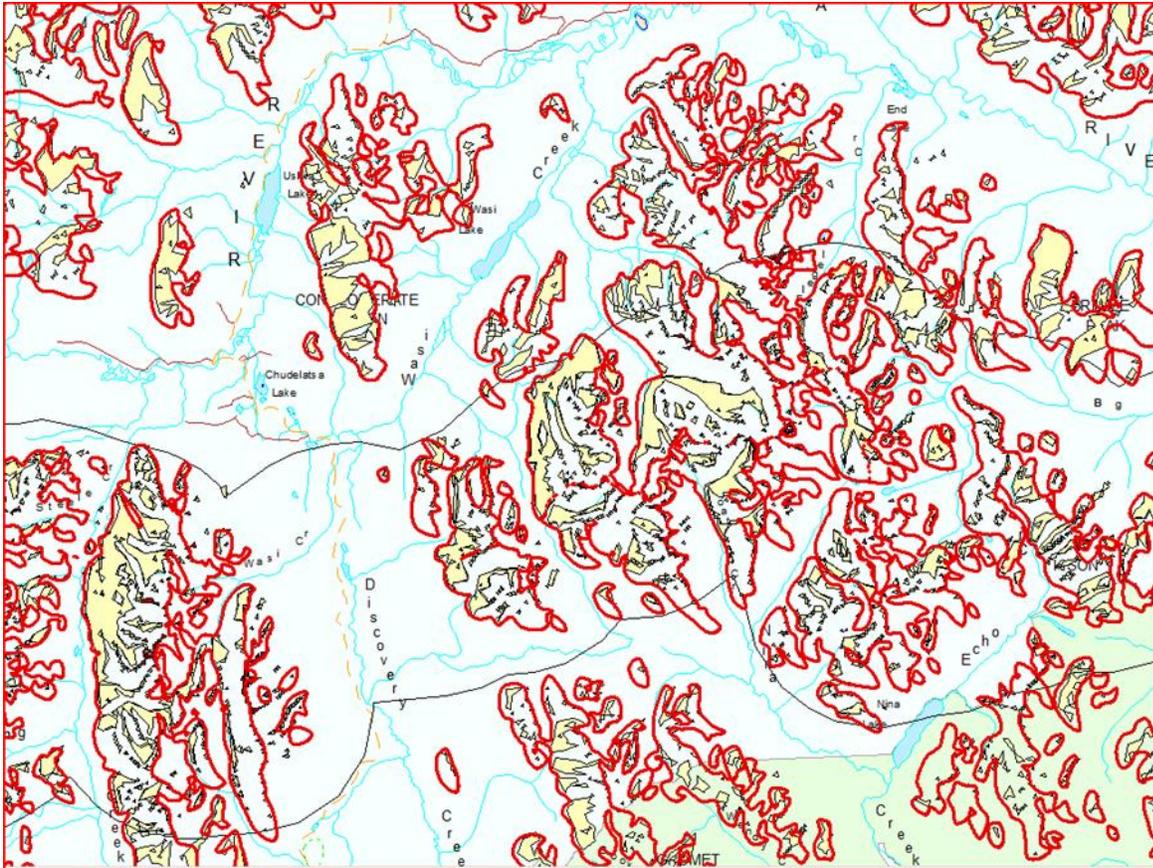
<sup>11</sup> McNay, R.S., D. Herd, R. Sulyma, and R. Ellis. 2008. A recovery action plan for northern caribou herds in north-central British Columbia. Forrex Series 22.

<sup>12</sup> Johnson, C.L., L.P.H. Ehlers and D. Seip. 2015. Witnessing extinction – Cumulative impacts across landscapes and the future loss of an evolutionarily significant unit of woodland caribou in Canada. *Biological Conservation* 186 (215): 176-186.



Lands), Peace Williston Fish and Wildlife Compensation Program, First Nations, Canfor and Abitibi Consolidated.

The recovery plan laid the groundwork for the identification of high elevation caribou habitat based on the CHASE model output (Run 1 - WI Contract cfwb11\_168), (Figure 2).



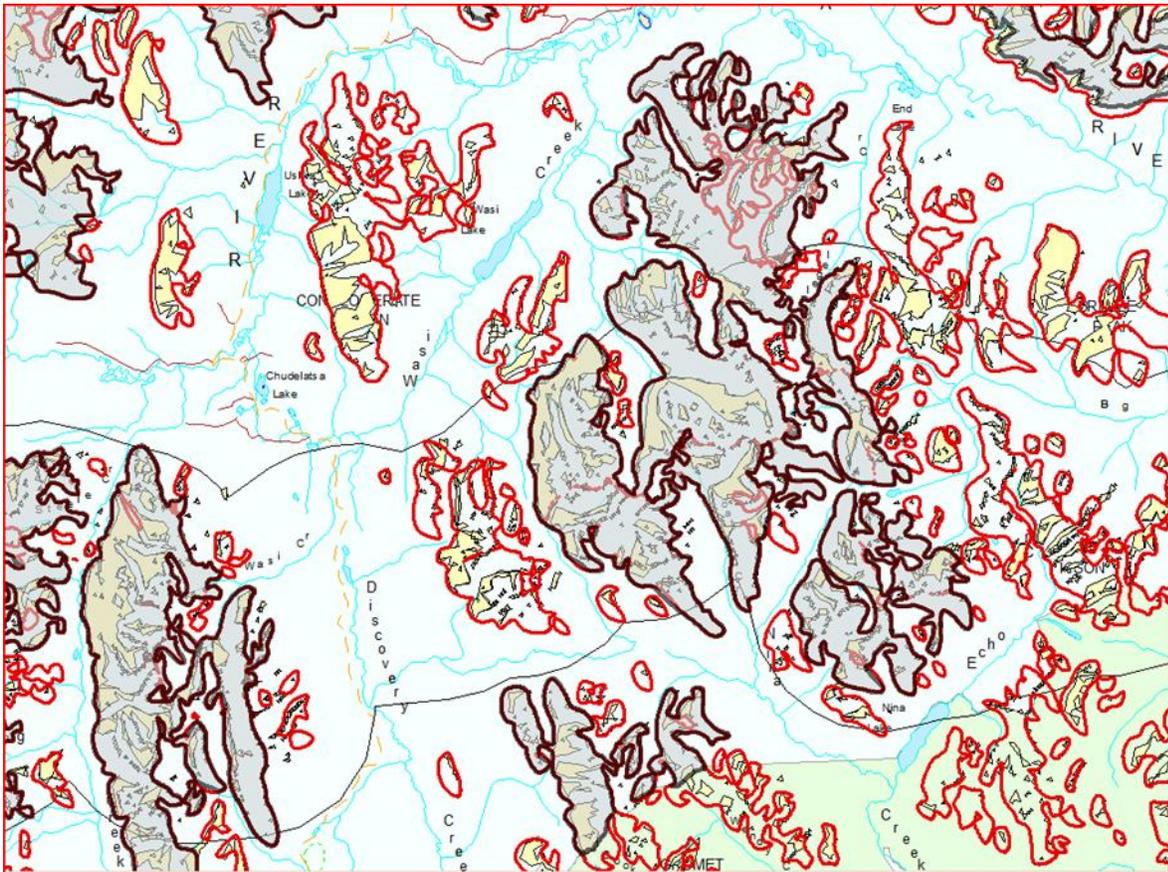
**Figure 2.** Example of Run 1 output for caribou high elevation winter range. Red polygons represent high elevation habitat after the CHASE model raster output has been smoothed, holes filled and isolated cells deleted. Light green = Omineca Park.

The Run 1 model output from the recovery strategy was felt by Ministry of Environment, Omineca Region Ecosystems staff to be unsupportable in terms of overlap with the Timber Harvesting Landbase (THLB) and subsequent impacts to timber supply. Another analysis run (Run 2) was completed based on amended inputs to:

- polygon size (polygons < 500ha removed and boundaries smoothed),
- removal of Parks and Protected Areas,
- forest cover
  - o Removed all modelled UWR polygons <500 ha in size,
  - o Rejected high elevation winter range polygons that were more than 20% THLB,
- and included professional judgement based on telemetry information and wildlife surveys (Gillis Mountain and an area south of Chase Mountain are known to be important to caribou. In these two cases the UWR polygons were restricted to habitat above 1400 metres in elevation).

This iterative process was completed in 2009 as a MoE/Canfor jointly-funded Forest Investment Account report<sup>16</sup> which delineated and tested the location of high quality winter range for woodland caribou within four recovery planning areas in the Mackenzie and Fort St. James Forest Districts. Forest licensees were actively involved in the development of the recovery plan.

After the completion of Run 2, Ecosystems staff proceeded to develop the high elevation northern caribou packages (Figure 3) in concert with three other UWRs proposed for mountain goat and Stone's sheep. U-7-025 and U-7-026 were based on the use of radio-telemetry information, winter surveys, and professional judgement (Scott McNay pers. comm.) to identify what was felt to be the highest value habitats for caribou, while reducing overlap with the THLB as much as possible. This final output was reduced by 34% from the original Run 1.



**Figure 3.** Example of Run 2-based final proposed UWR units for caribou high elevation winter range. U-7-025 UWR units are grey. Parks and protected areas were deleted from the proposal. Light green = Omineca Park

The irregular nature of the UWR units reflect an intent to minimize impact to timber supply, and can be seen to isolate less timber than the original Run 1.

Run 2 was applied equally to both the Mackenzie and Fort St. James portion of the Stuart Nechako Natural Resource Districts. It is important to note that approximately one third of the known caribou radio-telemetry locations occur outside of the core UWR units.

The low elevation specified area units are not included in these illustrations.

<sup>16</sup> McNay, R.S., V. Brumovsky, R. Sulyma and L. Giguere. 2009. Delineating high-elevation Ungulate Winter range for woodland caribou in north-central British Columbia. Wildlife Infometrics Report No. 299. Wildlife Infometrics Inc. Mackenzie, BC.

Timber Harvesting Landbase within already-approved Old Growth Management Areas or previously-approved UWRs or Wildlife Habitat Areas was removed from the timber supply assessment of U-7-025 or U-7-026 to avoid double-counting of these amounts. Some winter range habitat overlap occurs between caribou, mountain goat and Stone's sheep, and their associated UWRs.

In addition, the UWR units approved through these Orders are substantially less than what is recommended by Environment Canada's federal *Recovery Strategy Woodland Caribou*<sup>17</sup> (considered against Timber Supply Review #2 (TSR 2) for both Timber Supply Areas). Within the Chase herd, these UWRs encompass 22,715 hectares of high elevation winter range that overlaps THLB whereas the federal *Recovery Strategy for Woodland Caribou* proposes 93,966 ha. Likewise, the Wolverine herd includes 26,229 hectares within U-7-025 and U-7-026, while the federal *Recovery Strategy for Woodland Caribou* recommends protection of 80,960 ha of high elevation habitat within THLB.<sup>18</sup> The ungulate winter range units approved for these two herds are substantially different from the federal *Recovery Strategy Woodland Caribou* - 76% less high elevation habitat designated for the Chase herd and 68% less for the Wolverine herd; primarily to reduce impact to the THLB.

To further UWR development and address in part, the risk of predation, in 2010 a small workshop was held and numerous conversations were undertaken with foresters, silviculture specialists, caribou and habitat biologists and a vegetation management researcher to develop "GWM 5" for the specified area units. GWM 5 was developed to address management of moose browse within low elevation potential moose winter ranges, and was modified and amended a number of times based on feedback received and further investigations.

The moose browse level of 8 percent cover was derived from a review of existing terrestrial ecosystem mapping projects and moose species accounts undertaken within British Columbia which reported shrub percent cover values for winter habitat ratings. The provincial benchmark for winter moose habitat is found within the Peace River Lowland Ecoregion with habitat characterised by structural stage 3 (with adjacent mature stands of structural stage 6 or 7) and having > 3 % shrub cover, low mature tree density (< 200 stem/ha) and gentle slopes (< 7%) rated as class 1 for winter feeding habitat<sup>19</sup>. Other available reports were reviewed to provide guidance with respect to a reasonable percent cover value. JMJ Holdings used a winter feeding habitat rating assumption of class 3 (moderate) for shrub cover between 5-10%.<sup>20</sup> They do not specify that this number relates only to preferred shrub species, so presumably the percent cover of actual preferred browse species would be less. Poole and Stuart-Smith reported moose browse percent cover values of 9.5 – 18.8 percent in habitat plots selected by moose in three East Kootenay study areas.<sup>21</sup> A preferred moose browse percent cover of 5 percent ± 3 percent was chosen to represent a moderate level of browse management and was later amended to 'not more than 8 percent cover', based on forest licensee feedback and professional advice.

While there have been no formal evaluations of existing historic levels of moose browse in the specified area units, forest licensees do report on competing levels of aspen and birch within the RESULTS tracking system. Collaboration is underway with provincial silviculture specialists to assess

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<sup>17</sup> Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (*Rangifer tarandus caribou*) in Canada . Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. viii +103pp.

<sup>18</sup> Diane Roberge, FLNRO GIS Analyst, Resource Management Division, Omineca Region. Personal communication.

<sup>19</sup> Ministry of Environment. 2001. BC Wildlife Habitat Ratings Standards species accounts – moose.

<sup>20</sup> JMJ Holdings Inc. 2000. Moose. Chilcotin West IFPA Wildlife Species Accounts.

<sup>21</sup> Poole, K.G., and K. Stuart-Smith. 2004. Winter habitat selection by moose in the East Kootenay, British Columbia, final report. Tembec Industries Inc. 56pp.

monitoring of preferred moose browse levels within the context of the collaborative development of a GWM 5 implementation and monitoring protocol. Forest licensees were involved with this project, which was initiated in 2015. GWM 5 and associated management of preferred moose browse species will be further assessed within five years post-approval.

Maps of both approved ungulate winter ranges, designated under either *FRPA* or *OGAA*, are included in Appendix 1.

### 3. General Wildlife Measures

The following General Wildlife Measures (GWMs) were approved May 24, 2016. U-7-025, within the Mackenzie Natural Resource District, is outlined below. U-7-026 includes slightly different ecological units within Table 1.

In the event of any discrepancy between this summary report and the legal order (including any subsequent amendments), the legal order applies. It may be accessed at [http://www.env.gov.bc.ca/wld/frpa/uwr/approved\\_uwr.html](http://www.env.gov.bc.ca/wld/frpa/uwr/approved_uwr.html)

#### Schedule 1 – General Wildlife Measures

##### Definitions

In this schedule:

- a) Word and expressions not defined in this Order have the meaning given to them in the *Forest and Range Practices Act* and regulations made thereunder, unless context indicates otherwise.
- b) “primary forest activity”, “permanent access structure” and “temporary access structure” are defined as in the Forest Planning and Practices Regulation,
- c) “cutblock” is a specific area, with defined boundaries, authorized for harvest,
- d) “northern caribou high elevation winter range” are those winter range units established by way of this Order,
- e) “northern caribou high elevation specified area” are those specified area units established by way of this Order,
- f) “mineral exploration activity” means an activity involving the cutting of trees or construction and/or maintenance of roads and trails related to the exploration and development of a mineral or placer tenure under the *Mineral Tenures Act* and which requires a Notice of Work permit under the *Mines Act*,
- g) “mineral cell” means a Mineral Titles Online claim acquisition unit and is 16 to 21 hectares, depending on latitude,
- h) “preferred winter moose browse” is the following; trembling aspen (*Populus tremuloides*) less than or equal to 3 metres in height, paper birch (*Betula papyrifera*) less than or equal to 3 metres in height, willow (*Salix spp.*) stems less than or equal to 3 metres in height, red-osier dogwood (*Cornus stolonifera*) and high-bush cranberry (*Viburnum edule*),
- i) “percent cover” is the percent of the ground area covered by a vertical projection of the crown of the plant with foliage onto the ground surface, and
- j) “early seral moose winter range potential” is defined as area less than or equal to 1200 metres in elevation, less than 40 years in stand age, and within the mesic to subhygric ecological units identified within Table 1:

Table 1. High value ecological units for early seral moose winter range potential within the **Mackenzie Forest District**.

Biogeoclimatic Zone	Subzone/ Variant	Site Series		
		Number	Map code	Name
SBS	wk2	01	SO	Sxw-Oak fern
SBS	wk2	05	SD	Sxw-Devil's club
SBS	wk2	06	SH	Sxw-Horsetail
SBS	mk1	01	SB	Sxw-Huckleberry-Highbush cranberry
SBS	mk1	07	SO	Sxw-Oak fern
SBS	mk1	08	SD	Sxw-Devil's club
SBS	mk1	09	SH	Sxw-Horsetail
SBS	mk1	00	AA	Sx - Oak fern / Sx - Devil's club
SBS	mk1	00	AS	Mountain alder-Skunk cabbage- lady fern
SBS	mk1	00	DD	Sx Horsetail: Organic phase
SBS	mk1	00	CC	Sx Horsetail: Fluvial phase
SBS	mk2	01	SB	Sxw-Huckleberry-Highbush cranberry
SBS	mk2	05	SO	Sxw-Oak fern
SBS	mk2	06	SH	Sxw-Horsetail
SBS	mk2	00	BW	Sb - Horsetail – Willow
SWB	Mk	01	SB	Sw - Grey-leaved willow - Scrub birch
SWB	Mk	06	SS	Sw - Willow - Step moss
SWB	Mk	07	SC	Sw - Scrub birch – Bluejoint
SWB	Mk	08	SH	Sw - Shrubby cinquefoil - Horsetail
ESSF	mv3	01	FR	Bl - Rhododendron - Feathermoss
ESSF	mv3	04	FO	Bl - Oak fern - Knight's plume
ESSF	mv3	05	FD	Bl - Devil's club - Rhododendron
ESSF	mv3	06	SC	Sxw - Huckleberry - Highbush- cranberry
ESSF	mv3	07	FH	Bl - Horsetail – Feathermoss
ESSF	mv3	00	FV	Bl - Valerian – Arnica
ESSF	mv3	00	AA	Bl - Rhododendron - Feathermoss / Bl - Oak fern - Knight's plume
ESSF	mv3	00	CC	Bl- Oak fern - Knight's plume / Bl - Horsetail-Feathermoss
ESSF	mv3	00	DD	Bl - Horsetail - Feathermoss / Bl - Oak fern - Knight's plume
ESSF	mv3	00	EE	Bl - Horsetail-Feathermoss / Fluvial Willow
ESSF	mv3	00	GG	White spruce Wildrye - Feathermoss and/or Hybrid white spruce - Huckleberry - Highbush- cranberry
ESSF	mv4	01	FR	Bl - Rhododendron - Feathermoss

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Northern Caribou – U-7-025 and U-7-026

ESSF	mv4	04	RH	Bl - Rhododendron – Horsetail
ESSF	mv4	05	FH	Bl - Alder - Horsetail (Ws08 - Bl - Sitka valerian - Common horsetail)
ESSF	mv4	00	OT	Picea engelmannii - Salix sp - Equisetum arvense
ESSF	wk2	01	FO	Bl - Oak fern - Knight's plume
ESSF	wk2	03	FB	Bl - Oak fern – Bluebells
ESSF	wk2	04	FD	Bl - Devil's club - Rhododendron
ESSF	wk2	05	FR	Bl - Rhododendron - Lady fern
ESSF	wk2	06	FH	Bl - Horsetail – Sphagnum
ESSF	wk2	00	OT	Picea mariana - Salix sp - Carex aquatilis
BWBS	Dk	101a	SM	Sw - Soopolallie - Step moss
BWBS	Dk	101b	SR	Sw - Soopolallie - Step moss
BWBS	Dk	104b	BC	Sb - Labrador tea - Step moss
BWBS	Dk	110	SC	Sw - Currant – Horsetail
BWBS	Dk	Wb 09	BH	Sb - Horsetail - Peat Moss
BWBS	Dk	111	111	Sw - Mountain alder – Horsetail
BWBS	Dk	00	CC	Sw - Currant - Horsetail / Sb - Lingonberry - Coltsfoot / WF
BWBS	Dk	00	SO	Sw - Oak fern
BWBS	Dk	00	AA	Sw - Wildrye - Toadflax / Sw - Knight's plume - Step moss / Sw - Soopolallie – Twinflower

1. Primary forest activities must not result in the removal of forest cover within the northern caribou high elevation winter range, except as provided in GWM 2 or GWM 3.
2. GWM 1 does not apply where:
  - a) guyline anchors and tailholds are required to facilitate timber harvesting adjacent to the northern caribou high elevation winter range; and,
  - b) trees felled for the purposes in (a) that fall within the designated northern caribou high elevation winter range are retained on-site.
3. GWM 1 does not apply for the purposes of mineral exploration activities if:
  - a) exploration activities occur outside of the critical late winter and calving period of January 15<sup>th</sup> – July 15<sup>th</sup> ;
  - b) exploration activities use existing clearings, trails and roads unless it is not practicable to do so;
  - c) any necessary tree harvesting avoids mature stands (≥80 years old) and avoids the removal of lichen-bearing trees, unless it is not practicable to do so;
  - d) an individual forest opening (defined as the total tree harvested area created for the purposes of mineral exploration and mining activity) is not greater than 1 hectare, not including forest openings for the purposes of building trails and roads;
  - e) the total of individual forest openings (defined as the total tree harvested area created for the purposes of mineral exploration activity), including those created for the purposes of building trail and roads does not exceed:
    - i. 10 percent of the mineral cell, OR

- ii. 10 percent of any defined aggregate of mineral cells up to a maximum of 25 mineral cells;
  - f) new trails and roads do not have a running width greater than 3.5 metres except for the purposes of safety or culvert placement; and
  - g) actions are taken on newly constructed or reconstructed trails and roads to restrict access. This will be site-specific and could include, but is not limited to:
    - i. use of signage and gates on active trails and open roads where practicable,
    - ii. use of signage and safe (defined as large and clearly visible), impassable barricades across seasonal or permanently deactivated road surface widths.
4. Primary forest activities must not result in the construction of roads or trails within 100 metres of a northern caribou high elevation winter range, except as provided in GWM 2(a) or GWM 3.
5. Primary forest activities that occur within northern caribou high elevation specified area units SA1, SA2, SA3, SA4, SA5, SA6, SA7, SA8, SA9, SA10, SA11, SA12, SA13, SA14, SA15, SA16, SA17, SA18, SA19, SA20, SA21, SA22, SA23, SA24, SA25, SA26, SA27, SA28, SA29, SA30, SA31, SA32, SA33, SA34 or SA35 and within areas of early seral moose winter range potential within a cutblock must limit, up to the free growing declaration date, the production of preferred winter moose browse to not more than 8 percent cover, except as provided in GWM 6.
6. GWM 5 does not apply to:
- a) permanent access structures,
  - b) a road as defined in the Forest Planning and Practices Regulation, not including temporary access structures, or
  - c) mineral exploration activities authorised under the *Mines Act*.

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These GWMs are consistent with other previously-approved northern caribou UWR Orders as well as recent North Area wildlife guidelines for industrial development,<sup>22</sup> with the exception of GWM 5. GWM 5 is new and applies to the specified area associated with low elevation moose winter range. It is intended to reflect the operational objectives found within higher level recovery strategies that speak to the management of moose habitat or moose browse to help manage predation risk to caribou. The development of this GWM was facilitated through a silviculture workshop as well as extensive consultation with silviculture specialists, foresters, wildlife, range and ecosystem ecologists and Victoria habitat staff. The GWM was modified a number of times based on consultation feedback and further investigations prior to UWR approval. Particular attention was paid to ensure this GWM is clear and enforceable. Additional best available information is supplied within an appendix to the Order. A contract was undertaken during 2015-16 to develop an implementation protocol for this GWM, which will be tested and reviewed within 5 years following Order approval.

#### ***4. Natural Resource Impacts***

##### ***a) Forestry***

The overlap with the timber harvesting landbase for both northern caribou UWRs is summarized in Table 2. Timber supply assessments were based on the spatial intersect of the UWR units with the

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<sup>22</sup> Ministry of Forests, Lands and Natural Resource Operations. 2014. A Compendium of Wildlife Guidelines for Industrial Development Projects in the North Area, British Columbia. Interim Guidance.  
<http://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do?subdocumentId=9921>

timber harvesting landbase and associated management direction in the General Wildlife Measures – it is policy that the THLB amounts and associated resultant impacts of UWRs are calculated using numbers determined through Timber Supply Review #2 (TSR 2) for both Timber Supply Areas. The timber supply numbers are consistent with this policy direction.

**Table 2:** Northern caribou high elevation ungulate winter ranges in Mackenzie (U-7-025) and Fort St. James (U-7-026) Forest Districts

UWR #	UWR Name	Size (ha)	Total Ha	THLB overlap (ha)
U-7-025	Mackenzie high elevation northern caribou	Core winter range (746,086) Specified area (497,150)	1,243,236	53,964
U-7-026	Fort St. James high elevation northern caribou	Core winter range (39,828) Specified area (97,456)	137,284	15,975

*Mackenzie* - The Mackenzie Timber Supply Review was undertaken in 2013-2014, with an AAC decision made November 2014. Minimum harvest stand volume was set at 151m<sup>3</sup>/ha for conventional harvest operations. Stands on slopes greater than 46% were considered inoperable if volumes did not exceed 250m<sup>3</sup>/ha.<sup>23</sup> Further analysis in support of this UWR decision was undertaken by Forest Analysis and Inventory Branch during that time. Timber supply impact assessments were based on the spatial overlap of the UWR units with the THLB and associated management direction in the General Wildlife Measures.

The core UWR overlap of 53,964 hectares of THLB includes approximately 3.1 million m<sup>3</sup> of growing stock, which equates to approximately 52,000 m<sup>3</sup>/yr annually over 60 years. THLB impacts associated with this UWR proposal are limited, in that the average volume per hectare above 1200 metres in elevation in the Mackenzie TSA is 83m<sup>3</sup>/ha<sup>24</sup> (and not contributing to the allowable annual cut), with the core high elevation UWR units all above 1200 metres in elevation. Fifty-two percent of these stands are balsam-leading. Additionally, model Run 2 specifically excluded those forest cover polygons that included more than 20 percent THLB. As well, habitat co-location occurs with both mountain goat and Stone’s sheep within a number of these northern caribou UWR units, and these units are also expected to contributed significantly to legal aspatial old forest requirements.

U-7-025 and U-7-026 have been approved as Type 2 UWR plans, consistent with Land Use Planning direction (compared with a Type 1 plan based on Environmental Sensitive Area net downs or a Type 3 plan based on no previously-established timber supply net down). There is no pre-defined Type 2 amount in the Mackenzie Forest District. Several past attempts to have this defined by the Ministry of Forests – Integrated Land Management Bureau in and around 2005 did not result in clear establishment of a Type 2 number. The Mackenzie LRMP included no legal objectives or THLB amounts for protection of northern caribou. U-7-025 reflects the spirit and intent of the Mackenzie LRMP, consistent with a Type 2 proposal. TSR 2 amounts were originally provided for policy purposes and it was never assumed that the associated THLB numbers would provide an absolute cap on further UWR designations.<sup>25</sup>

<sup>23</sup> Barry Snowdon, senior analyst, Forest Analysis and Inventory Branch. Personal communication.

<sup>24</sup> Barry Snowdon, senior analyst, Forest Analysis and Inventory Branch. Personal communication.

<sup>25</sup> Hal MacLean, timber supply forester, Forest Analysis and Inventory Branch. Personal Communication

*Fort St. James* - Within the Fort St. James Forest District, the Chief Forester accounted for short- and long-term timber supply impacts of up to 1.1 percent in his incorporation of the Fort St. James Forest District caribou LRMP strategy. This equated to a long-term timber supply impact of up to 37,205 hectares of THLB. U-7-026 overlaps with 15,975 hectares of THLB. As 34,212 hectares were remaining and available to be applied to GAR for northern caribou, this proposal utilizes 15,975 hectares and leaves a balance of 18,237 hectares.

Forest licensees were concerned about the costs associated with GWM 5 to address caribou predation risk through the management of preferred moose browse species within the specified area. In response to comments received, permanent access structures, road permit roads and forest service roads were excluded from GWM 5. The definition of preferred moose browse species was amended to include a height limit on trembling aspen, paper birch, and individual willow stems. The percent cover of preferred moose browse was amended from 5 percent to not more than 8 percent cover. While more clarification was provided during the review and comment period and a number of changes were made to reflect review and comment feedback, it is anticipated that the implementation of the specified area GWM 5 will cost more money operationally to implement. How much at this time is not known, and substantive information in this regard was not provided by forest licensees within the consultation period. GWM 5 will be reviewed within 5 years following Order approval to assess implementation and compliance. Adaptive management will be necessary and one forest licensee has agreed to assist.

*b) Range:*

There are no anticipated range impacts.

*c) Mineral Interests:*

Mineral tenure holders requiring an Occupant License to Cut, Free Use Permit greater than 50m<sup>3</sup>, or Special Use Permit must be consistent with *Forest and Range Practices Act* Ungulate Winter Range GWMs. U-7-025 and U-7-026 includes a specific GWM (GWM 3) that exempts some mineral exploration activity under certain conditions (designed to minimize impacts to northern caribou populations and habitat), as well as an exemption from mineral exploration activities within the low elevation specified area units (GWM 6).

*d) Petroleum and Natural Gas Act:*

There are no agreement holders under the *Petroleum and Natural Gas Act*. The UWR units intersect with the proposed route of at least one LNG-related pipeline. Current risk is low. Only the core unit boundaries are applicable to Oil and Gas Activities and there are no associated general wildlife measures for activities under the *Oil and Gas Activities Act* (OGAA).

Although the Oil and Gas Commission may permit activities within these designations, they must meet the test of causing no material adverse impact to northern caribou within the boundaries. The OGC may therefore put specific conditions on those permitted activities to achieve Government's Environmental Objectives under OGAA

*e) Recreation:* There are no anticipated recreation impacts.

*f) Land Act:* There are no unresolved *Land Act* impacts.

## *5. Review and Comment / Consultation Summary*

Due diligence has been met regarding review and comment/consultation obligations for these two UWR proposals under the:

*Forest and Range Practices Act (FRPA), and the  
Oil and Gas Activities Act (OGAA).*

U-7-025 and U-7-026 were developed through a project involving a number of years of work and collaboration by Ministry of Environment, Ministry of Forests, forest licensees, local First Nations and consultant Wildlife Infometrics to identify high elevation habitat critical to the winter needs of northern caribou herds within the Fort St. James portion of the Stuart Nechako Natural Resource District and the Mackenzie Natural Resource District. The CHASE (Caribou Habitat Assessment and Supply Estimator) model<sup>26</sup> linked caribou habitat information, predation risks and forest management activities to forecast the distribution of caribou habitat and timber supply over time. The initial model Run 1 was completed in 2008, then refined and rerun in 2009 to further reduce impacts to timber supply; a 34% reduction.<sup>27</sup>

To further UWR development and address in part, the risk of predation, discussions were undertaken with foresters, silviculture specialists, caribou and habitat biologists and a vegetation management researcher to develop the specified area GWM 5 to address management of moose browse within low elevation potential moose winter ranges. This GWM was modified and amended a number of times based on feedback received and further investigations.

***a) Forest Act Agreement holders:***

Upon initiation of the review and comment period, in addition to phone calls and email communication, face-to-face meetings were held with eight forest licensees in Prince George, Mackenzie and Fort St. James. Subsequent questions and feedback was summarised in a document which was then provided to all forest licensees. No comments were received from either the First Nation woodlot holder or one First Nations forest licensee. Two extensions to the timeline for review and comment were given to all affected tenure holders. Forest licence agreement holders had 133 days (from 2013-09-06 to 2014-01-17) for review and comment. An additional meeting was held in Fort St. James with one forest licensee and senior Landbase Stewardship staff. The FLNRO Fish and Wildlife Recovery Implementation Manager provided additional clarification to one forest licensee on caribou recovery planning initiatives and herd status. Both the draft and final federal recovery strategy was provided to all forest licensees for information when it became available. Additional clarification and analysis information was provided by Barry Snowdon, timber supply analyst, as the Mackenzie Timber Supply Review was underway at the same time. This additional analysis work was shared with forest licensees. FLNRO staff presented the U-7-026 proposal to the Fort St. James Public Advisory Group (PAG) for Canfor's Sustainable Forest Management Plan, where it received support from PAG members.

Further written correspondence addressing forest licensee comments within initial review and comment letters were provided to two forest licensees which included a more detailed explanation of the research and analysis steps undertaken to develop the core UWR units. Additional engagement occurred with these forest licensees, including face-to-face meetings with senior and operational staff from FLNRO, followed by a further operational staff meeting with subsequent discussions to explore rationale

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<sup>26</sup> McNay, R.S., K.L. Zimmerman and R. Ellis. 2003. Caribou Habitat Assessment and Supply Estimator (CHASE): Using modeling and adaptive management to assist implementation of the Mackenzie LRMP in strategic and operational forestry planning. Wildlife Infometrics Inc. Report No. 55. Wildlife Infometrics Inc., Mackenzie BC.

<sup>27</sup> McNay, R.S., V. Brumovsky, R. Sulyma, and L. Giguere. 2009. Delineating high-elevation Ungulate Winter Range for woodland caribou in north-central British Columbia. Wildlife Infometrics Report No. 299. Wildlife Infometrics Inc., Mackenzie, British Columbia, Canada.

and wording for specific exemptions. GWM 5 was further modified to reflect both these discussions and further investigations.

Forest licensees were concerned about the costs associated with GWM 5 to address caribou predation risk through the management of preferred moose browse species within the specified area. More clarification was provided during the review and comment period and General Wildlife Measures were amended to reflect feedback, particularly with respect to the specified area GWM 5:

- a height limit was added to paper birch, trembling aspen and individual willow stems,
- a free-growing date was set to define the limit of responsibility for forest licensees,
- the physical area of responsibility (cutblock) was clarified,
- road permit roads, forest service roads, permanent access structures and mineral exploration activities were exempted, and
- the percent cover of preferred moose browse was amended from 5 percent to not more than 8 percent cover.

A project to develop a GWM 5 implementation and monitoring protocol was initiated in 2015. Resultant information will be reviewed within five years to assess testing and implementation. Collection of baseline browse species information was initiated with collaboration from provincial silviculture specialists. Average winter snow depths were investigated through review of available weather station information. While follow-up email discussions, phone calls and face-to-face meetings were held with two forest licensees, detailed and substantive information with respect to increased costs associated with implementation of GWM 5 was not provided by these forest licensees during the consultation period.

While it is anticipated that the implementation of the specified area GWM 5 will cost more money operationally to implement, appraisal information was obtained and outlines the process by which increased silviculture costs associated with GWM 5 may be recognised.<sup>28</sup>

As part of the ministry's extensive consultation on these two UWRs as well as three other proposed UWRs, significant changes were made to the Orders, including habitat co-location with other proposed UWRs, boundary revisions to address First Nation's input and specific exemptions for the mineral exploration sector.

With the exception of the vegetation management concern (GWM 5), all forest licensee issues have been substantively mitigated. Forest licensees have raised concerns that GWM 5 will result in additional post-harvest costs. However, this option will have considerably less impact than what is proposed in the federal *Recovery Strategy for Woodland Caribou*. These UWRs represent significantly less critical high elevation winter range than that identified within the federal *Recovery Strategy for Woodland Caribou*, while still maintaining harvesting opportunities in the range - 76% less high elevation habitat designated for the Chase herd and 68% less for the Wolverine herd. The application of GWM 5 is an important component of habitat management to address predation risk while at the same time mitigating impacts to timber supply. The ministry has agreed to work with forest licensees to utilize adaptive management strategies with the goal of maximizing operational efficiency and minimizing costs associated with GWM 5, and commits to re-examining GWM 5 within 5 years of implementation. If this strategy isn't effective at protecting caribou, the proposed Orders will be revisited.

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<sup>28</sup> Darius Low, Timber Pricing Coordinator, Omineca Region. Personal Communication.

**b) Range Act agreement holders:**

While there are no specific *Range Act* GWMs within these UWRs, one *Range Act* tenure holder did email FLNRO staff to express concern regarding the limitation on roads and trails within 100 metres of the core UWR units (GWM 4). This concern was resolved through a phone conversation. One other *Range Act* tenure holder phoned regarding clarification with respect to another proposed UWR, and did indicate support for U-7-025.

**c) Oil and Gas Activities Act:**

There are no agreement holders under the *Petroleum and Natural Gas Act*. A request for review and comment was sent to four organizations representing oil and gas industrial sectors, and well as the Oil and Gas Commission. A second request was forwarded to the organizations representing oil and gas industrial sectors, and responses were received from two. There are no unresolved concerns identified by the organizations representing oil and gas industrial sectors or the Oil and Gas Commission.

**d) Mineral tenure holders:**

Mineral tenure holders requiring an Occupant License to Cut, Free Use Permit greater than 50m<sup>3</sup>, or Special Use Permit must be consistent with *Forest and Range Practices Act* Ungulate Winter Range GWMs. Fifty-nine mineral tenure holders were contacted and communication undertaken through email and phone calls with 15 respondents, including the Association for Mineral Exploration BC (AME BC). Three mineral tenure holders expressed concern about the possible restrictions on exploration activities within their tenure, as well as concerns with respect to possible restrictions within the specified area. Eleven tenure holders either wanted to know which UWR proposal overlapped their tenure, or what the UWR designation would mean to their operations. Clarification was provided. AME BC requested to be included as a stakeholder and information was provided to them. Further discussion occurred between the AME BC representative and Ministry of Energy and Mines (MEM) senior staff. FLNRO staff assisted with the response. One mineral tenure holder opposed the UWR proposals.

MEM staff expressed concern about the extent of potential restrictions on mineral exploration activities within the UWRs. A meeting was held in Prince George with MEM staff, and the Order was amended with the addition of GWM 3 to include specific exemptions to some mineral exploration activity under certain conditions (designed to minimize impacts to northern caribou populations and habitat), as well as an exemption from mineral exploration activities within the low elevation specified area units (GWM 6). This Order is now consistent with respect to mineral tenure exemptions provided within other caribou UWRs in the Omineca, Thompson Okanagan and Cariboo Regions, the *Handbook for Mineral and Coal Exploration in British Columbia*,<sup>29</sup> and *A Compendium of Wildlife Guidelines for Industrial Development Projects in the North Area, British Columbia*.<sup>30</sup>

**e) Muskwa-Kechika Management Board:**

Communication was initiated between FLNRO and the Muskwa-Kechika Management Board, as portions of U-7-025 lie within the Muskwa-Kechika Management Area. While the Board did not participate in a detailed review of the proposal, they did indicate they support (in principle) the establishment of Ungulate Winter Ranges within the Muskwa-Kechika Management Area for the long term sustainability of wildlife populations. They also stressed the need for the Province to take adequate time for consultation with First Nations that are affected by these proposals, along with support for the

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<sup>29</sup> Ministry of Energy, Mines and Petroleum Resources. 2009. Handbook for Coal and Mineral Exploration in BC. [www2.gov.bc.ca/assets/gov/business/natural-resource-industries/mineral-exploration-and-mining/handbookformineralexploration0809.pdf](http://www2.gov.bc.ca/assets/gov/business/natural-resource-industries/mineral-exploration-and-mining/handbookformineralexploration0809.pdf)

<sup>30</sup> Ministry of Forests, Lands and Natural Resource Operations. 2014. A Compendium of Wildlife Guidelines for Industrial Development Projects in the North Area, British Columbia. Interim Guidance. <http://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do?subdocumentId=9921>

opportunity for stakeholder and industry engagement on these proposals before a decision is reached. Finally, they requested inclusion of the decision in the annual report by the Province to the Advisory Board.

*f) Lands:*

While the Lands Officer did not object to the UWR proposals, he did specifically request that a buffer be excluded from the Thutade Manson FSR in the vicinity of Manson Creek (within U-7-025) to enable future *Land Act* dispositions, as he felt the area was already compromised and would not represent prime caribou habitat. This requested buffer was not applied, as GWM 5 speaks only to limiting the production of preferred winter moose browse on crown land in connection with activities carried out under *FRPA*. The application of the specified area would not preclude any other *Land Act* alienations. The Manson Creek area lies between the summer/early winter habitat and the winter range of the Wolverine herd. As such, caribou need to move between the two ranges, and they do still migrate through this area. Caribou face higher predation risks when moving between winter and summer habitats as they move down into and through valley bottoms. Even though there is a small settlement there, the area still provides important connectivity at the landscape level.

*g) First Nations:*

• **Tsay Keh Dene:**

Extensive discussions with Tsay Keh Dene were held with respect to these and other UWR proposals within their traditional territory. Face-to-face meetings were held in Fort St. James, Prince George, and Tsay Keh Dene. FLNRO staff went to Tsay Keh Dene twice between 2013 and 2015 and participated in an open house for community members. Information on the UWR proposal was shared and feedback received. While no formal written letter of support was received from Tsay Keh Dene, strong interest and verbal support for this proposal was indicated. Landbase Stewardship have since engaged more fully with Tsay Keh Dene to establish a small, active northern caribou working group to further collaborate and explore northern caribou management issues.

• **Takla Lake First Nation:**

Consultation efforts consisted of phone calls, emails, and a face-to-face meeting in Prince George. The UWR proposal was presented to the Chief, who expressed interest, including the desire for FLNRO attendance at an open house in Takla Landing. While this open house did not occur, further communication with Takla Lake First Nation natural resource staff did occur, and a letter of support from Chief and Council was provided.

• **Nak'azd'li Band:**

Consultation efforts consisted of phone calls, emails, and two face-to-face meeting in Fort St. James. The UWR proposal was presented in an open house meeting, where general interest and verbal support was indicated.

• **Kaska Dena Council:**

FLNRO staff presented this and other UWR proposals at Kaska Dena SEA meeting in Prince George, and the FLNRO First Nations advisor continued discussion at another meeting in Kwadacha. While Kaska Dena Council indicated they would not be providing comments, they did indicate the project was OK to proceed.

• **McLeod Lake Indian Band:**

After initial engagement, the FLNRO First Nations advisor attempted to set up a meeting in McLeod Lake. Additional engagement was undertaken with the McLeod Lake Indian Band during February

2016 as part of a contract to engage stakeholders in the development of the GWM 5 implementation and monitoring protocol. Two additional meetings were held with McLeod Lake Indian Band in February and March 2016 to further discuss and review the proposed UWR. Interest and verbal support was received.

- **Halfway River, West Moberly and Salteau First Nations:**

These First Nations were provided the information and while verbal engagement occurred with West Moberly First Nation, no responses were received.

- **Tahltan and Gitksan First Nations:**

While there is limited overlap with the traditional territories of these two First Nations, the decision was made to consult through notification. This was chosen due to the nature of this proposed UWR, the location of the UWR units in relation to Gitksan and Tahltan traditional territories, and the fact that this UWR proposal is likely to enhance and protect ungulate habitat; further enabling First Nations to exercise their constitutional rights to hunt. No responses were received.

With respect to all affected tenure holders, a second request for review and comment was forwarded to those who did not respond to the initial referral. Table 3 identifies those stakeholders contacted, with a summary statement of their positions.

**Table 3.** Stakeholders contacted, a summary statement, and identification of outstanding concerns.

Stakeholder	Summary Statement
<b>Directly Affected Forest Act Agreement Holders:</b>	
Sinclar Group (Apollo Forest Products)	No outstanding concerns <sup>31</sup>
Canadian Forest Products Ltd (Canfor)	Outstanding concern regarding GWM 5 as it relates to impacts to silviculture management costs. <b>Government Position:</b> Significant effort was undertaken in these UWRs to minimize timber supply impacts, including completion of multiple modeling scenarios to refine core habitat and the development of a core habitat specified area (GWM 5) to reduce moose browse while allowing forest harvesting. This specified area is an attempt at stand level management for caribou, and differs from the recommended federal <i>Recovery Strategy for the Woodland Caribou, Southern Mountain population (Rangifer tarandus caribou) in Canada</i> of large scale landscape level management restrictions. Although this untested approach may place added vegetation management costs on forest licensees, it may also place caribou at additional risk if unsuccessful. An adaptive management strategy will be implemented, reviewed and adjusted over the next five years if necessary. If this strategy isn't effective at protecting caribou, the proposed Orders will be revisited.
Confex Inc. (Mackenzie and Fort St.	Outstanding concern regarding GWM 5 as it relates to

<sup>31</sup> No outstanding concerns - Concerns raised by the stakeholder were resolved through consultation.

James)	<p>impacts to silviculture management costs.</p> <p><b>Government Position:</b> Significant effort was undertaken in these UWRs to minimize timber supply impacts, including completion of multiple modeling scenarios to refine core habitat and the development of a core habitat specified area (GWM 5) to reduce moose browse while allowing forest harvesting. This specified area is an attempt at stand level management for caribou, and differs from the recommended federal <i>Recovery Strategy for the Woodland Caribou, Southern Mountain population (Rangifer tarandus caribou) in Canada</i> of large scale landscape level management restrictions. Although this untested approach may place added vegetation management costs on forest licensees, it may also place caribou at additional risk if unsuccessful. An adaptive management strategy will be implemented, reviewed and adjusted over the next five years if necessary. If this strategy isn't effective at protecting caribou, the proposed Orders will be revisited.</p>
Three Feathers Ltd. Partnership	No outstanding concerns
Chu Cho Ltd. Partnership	No outstanding concerns
Kwadacha Natural Resource Agency Ltd.	No response <sup>32</sup>
Mackenzie Fibre Ltd.	No outstanding concerns
BC Timber Sales (Mackenzie) response to U-7-025	No outstanding concerns
BC Timber Sales (Fort St. James) response to U-7-026	No comment <sup>33</sup>
Tsay Keh Dene A62375	No outstanding concerns
<b>Not Directly Affected Forest Act Agreement Holders:</b>	
Muskwa-Kechika Management Board	No comment
<b>Affected Range Act Agreement Holders:</b>	
Wicked River Outfitters	No response
Bear Paw Guide and Outfitters	No response
Besa River Outfitters	No comments received <sup>34</sup>
Tsay Keh Dene Outfitters	No comments received for U-7-025
Folding Mountain Outfitters	No response
Gundahoo River outfitters	No response

<sup>32</sup> No response - No direct communication with/from the stakeholder (e.g., return call/email/fax). This includes leaving a message with someone other than the contact person.

<sup>33</sup> No comment - Contact person explicitly stated that they will not provide comments.

<sup>34</sup> No comments received - Contact made by phone or in person. Or email/voicemail/fax from stakeholder acknowledging receipt of consultation package and/or follow-up calls, but no comments specific to the UWR proposal were received.

Finlay River Outfitters	Supports U-7-025 (no overlap with U-7-026)
Alpine Outfitters	No outstanding concerns
Pelly Lake Wilderness Outfitters	No response
Prophet Muskwa Enterprises Ltd.	No response to U-7-025 (no overlap with U-7-026)
Richard Solomanson	No response
Moose Valley Outfitters	No response
Scoop Lake Outfitters (1997) Ltd.	No response
Sikanni River Outfitting (1998) Inc.	No response
Tuchodi River Outfitters Ltd.	No response
<b>Directly affected <i>Petroleum and Natural Gas Act</i> Agreement Holders</b>	
None	N/A
<b>Not directly affected stakeholders under the <i>Petroleum and Natural Gas Act</i></b>	
Canadian Association of Geophysical Contractors	No comment
Canadian Association of Petroleum Producers	No response
Canadian Energy Pipeline Association	No response
Explorers and Producers Association of Canada	No comment, but wanted to ensure we had sent the referral to Canadian Association of Petroleum Producers
Lisa Helmer, BC Oil and Gas Commission	No concerns <sup>35</sup> - Commission reviewed Orders and maps and is satisfied the units will fit within the existing regulatory framework under <i>OGAA</i> . Commission is aware of the overlap of proposed LNG pipeline within some UWR Units.
<b>Affected IPPs, Mineral Interests, &amp; Other Occupiers of Land:</b>	
<b>Mineral Interests</b>	
John Chrisostom Bot	No comments received
John Bernard Kreft	No response
Rara Terra Capital Corp.	No response
American Manganese Inc.	No response
Speebo Inc.	No response
Robert A. Lane	No response
CJL Enterprises Inc.	No response
Brian William Scott	No comments received
Dorian Leslie	No response
Serengeti Resources Inc.	No response
Hard Creek Nickel Corporation	No response

<sup>35</sup> No concerns - Contact person stated that they have no concerns

Rimfire Minerals Corporation	No concerns (Kiska Metals)
Mardell Martindale	No response
Commander Resources Ltd.	No response
John Robert Grabavac	No outstanding concerns
Canada Zinc Metals Corp.	No outstanding concerns
Lorraine Copper Corp.	No response
Howard Peter Yearwood	No response
North American Stone Inc.	No outstanding concerns
Ecstall Mining Corporation	No outstanding concerns
Teck Resources Ltd.	No comments received
Christopher O. Nass	No comments received
Canasil Resource Inc.	No response
International Samuel Exploration Corp.	No response
Arthur Derry Halleran	No response
Ursula Grace Mowat	No outstanding concerns
Timothy Arthur Johnson	No response
Peter Michael Burjoski	No response
West Cirque Resources Ltd.	No comments received
Ralph Raymond Keefe	No response. Delivery failed, no other contact info.
Kelly Brent Funk	No response
Aurico Gold Inc.	No response
Bolero Resources Corp. (Canada Carbon Inc.)	No response
Cazador Resource Inc.	Opposes the UWR proposal. <sup>36</sup> Engagement with Association for Mineral Exploration BC (AME BC) undertaken as follow-up to concerns.
Logan Miller-Tait	No response
Cirque Operating Corp.	No response
Megastar Development Corp.	No response
Donald Keith Bragg	No response
Rudolph Mateo Durfeld	No response
Peter Edward Fox	No response
Gold Fields Canada Exploration Holdings Inc.	No response
Charles Edward Nunley	No response
Asiabasemetals Inc.	No response
Jeffery David Rowe	No response
James Hitchie	No response
John Charles Stojan	No response
David Pugh	No response
Charles James Greig	No response
Teck Mining Worldwide Holdings Ltd.	No comments received
Steven Jeffery Scott	No response

<sup>36</sup> Contact person stated that they oppose the proposal.

Robert Gordon Dyck	No response
Selkirk Metals Corp.	No response
Spanish Mountain Gold Ltd.	No response
Quinn Patrick Harper	No response
Cole Alexander Godfrey	No response. Delivery failed, no other contact info.
Redton Resources Inc.	No concerns
Lorne Brian Warren	No response
Gary Clarence Lee	No response
Patricia Lynn Grexton	No response
AME BC	No outstanding concerns
<b>First Nations:</b>	
Takla Lake First Nation	Supports the UWR <sup>37</sup>
Nak'azdli First Nation	Supports the UWR
Kaska Dena Council	No comment
Tsay Keh Dene First Nation	Supports the UWR
McLeod Lake Indian Band	Supports the UWR
West Moberly First Nations	No comments received
Halfway River First Nation	No comments received
Saulteau First Nations	No comments received
Gitksan First Nation	No response
Tahltan First Nation	No response
<b>Others:</b>	
Marnie Marchuk Fraser, Ministry of Energy and Mines	No outstanding concerns
Ryan Hall, FLNRO Lands Officer	No outstanding concerns.
Tom Peterson, Recreation Officer	No response
Jim Ladds, Recreation Officer	No concerns
Heather MacRae, FLNRO, Adventure Tourism Manager	No comments received
Dan Buillion, Peace Williston Fish and Wildlife Compensation Program	No response
Dale Seip, MOE Wildlife Ecologist	Supports the UWR proposal
Chris Ritchie, Fish and Wildlife Recovery Implementation Manager	No comments received
Cindy Haddow, Provincial Range Specialist	No comments received
Scott McNay, Wildlife Ecologist, Wildlife Infometrics	Supports the UWR proposal

## 7. Section 7 Notices

<sup>37</sup> Supports the UWR - Contact person stated that they support the proposal.

In 2004 a Notice under Section 7(2) of the *Forest Planning and Practices Regulation* and Section 9(3) of the *Woodlot Planning and Practices Regulation* was created for winter survival of northern caribou in the Mackenzie and Fort St. James Forest Districts. Approval of U-7-025 and U-7-026 high elevation northern caribou UWRs contribute to the amount and distribution of habitat required for the winter survival of northern caribou.

*U-7-025:*

Within the Mackenzie Forest District, pursuant to section 7(3) of the *Forest Planning and Practices Regulation*, a person required to prepare a forest stewardship plan will be exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* for the winter survival of northern caribou in the Mackenzie Forest District. With the approval of U-7-025, four ungulate winter ranges designated within the Mackenzie Forest District will contribute to the winter survival of this species.

*U-7-026:*

Within the Fort St. James Forest District, ungulate winter ranges U-7-003 and U-7-015 partially address the amount included for northern caribou in the Fort St. James Forest District. Previously, the Chief Forester accounted for short- and long-term timber supply impacts of up to 1.1 percent in his incorporation of the Fort St. James Forest District caribou LRMP strategy. This equated to a long-term timber supply impact of up to 37,205 hectares of THLB. U-7-026 overlaps with 15,975 hectares of THLB. As 34,212 hectares were remaining and available to be applied under the *Government Actions Regulations* for northern caribou, this proposal utilizes 15,975 hectares and leaves a balance of 18,237 hectares. In consideration of this Order and the Orders establishing U-7-003 and U-7-015, a person required to prepare a forest stewardship plan is exempted from the obligation to prepare results or strategies in relation to the objective set out in section 7(1) of the *Forest Planning and Practices Regulation* to the extent that the amount remaining for northern caribou in the Fort St. James Forest District is 18,237 hectares of timber harvesting landbase.

**8. Acknowledgements**

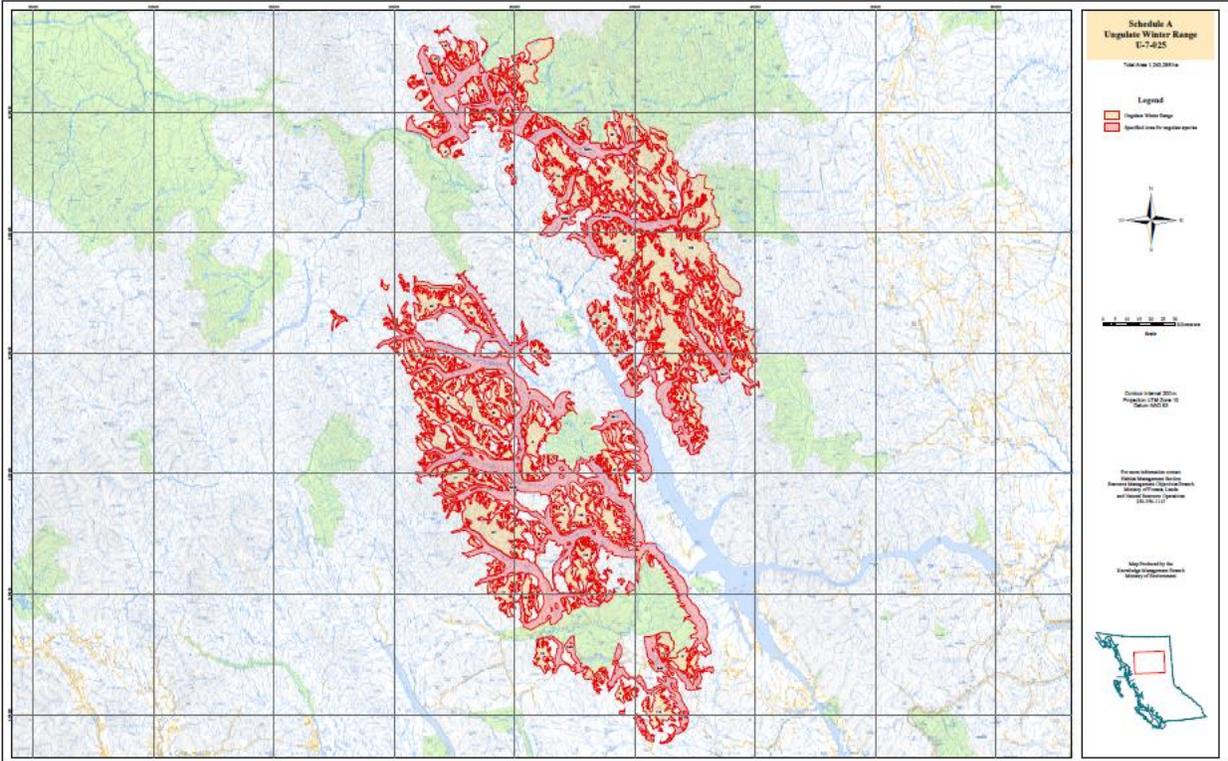
The development of U-7-025 and U-7-026 was a significant undertaking over a period of years, much of which would not have occurred without the support and competent involvement of Sr. Habitat Biologist Bill Arthur. Special thanks to Scott McNay and staff of Wildlife Infometrics for their CHASE model development and years of contributions to northern caribou management. Initial UWR modelling work and UWR development was supported by Canfor. Thanks to Doug Heard, Dale Seip, Chris Ritchie, Barry Snowdon, Leslie McKinley, Cindy Haddow, Duncan McColl, Jen Psyllakis, Steve Gordon, Kevin Astridge, Sandra Sulyma, Kevin Hoekstra, Darius Low, Neal Gooding, Ian Brown, Sam Davis, Luke Gleeson, Carly Gilchrist, Louise Bett, Steve Rooke, Stacy Perkins, Karen Tabe, Dave Radies, Norm Bilodeau and Brady Nelles for their support and involvement along the way. Thank you to the numerous stakeholders who provided review and input into the development of these UWRs. Finally, special thanks to James Jacklin for expert input and editorial skills.

**9. FLNRO Professional Biologist Endorsement**

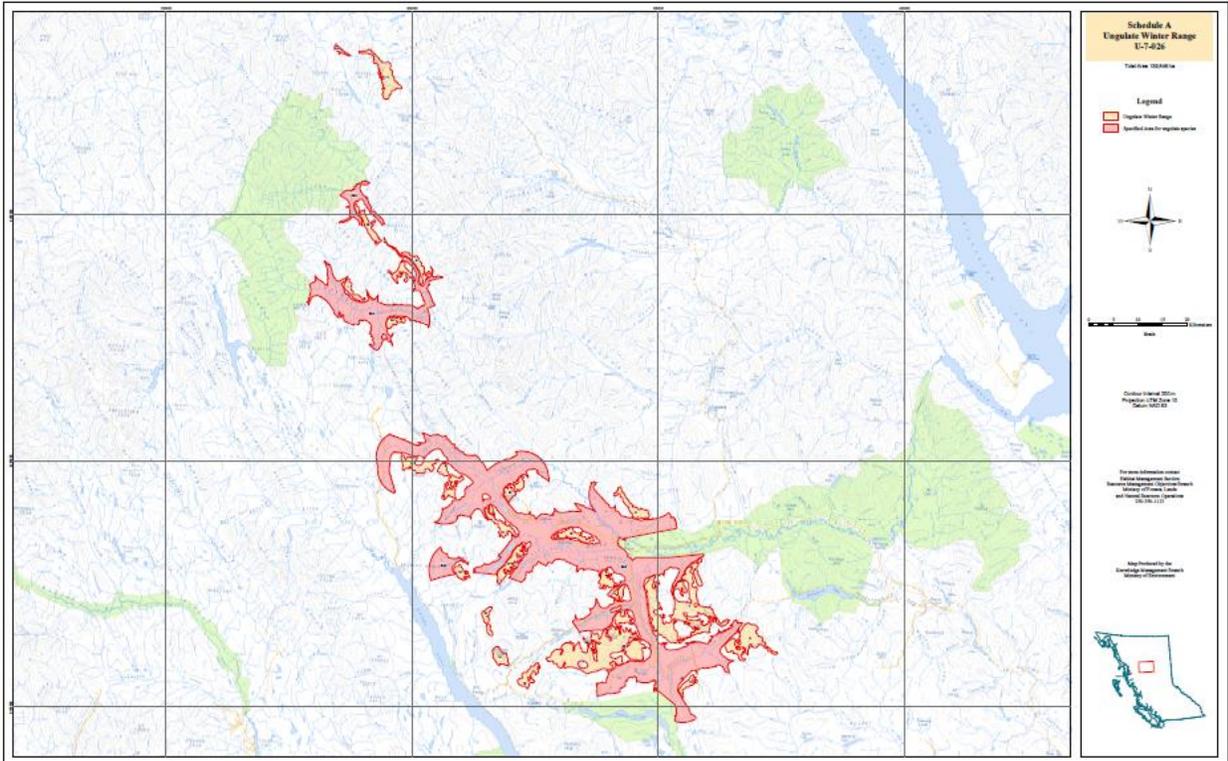
UWRs U-7-025 and U-7-026 meet the tests under the GAR and EPMP and the designations are necessary to meet the winter habitat requirements for northern caribou.

Name	Initials	Date
Joanne M. Vinnedge, MSc., RPBio Ecosystem Biologist, RPBio # 332		July 25, 2016

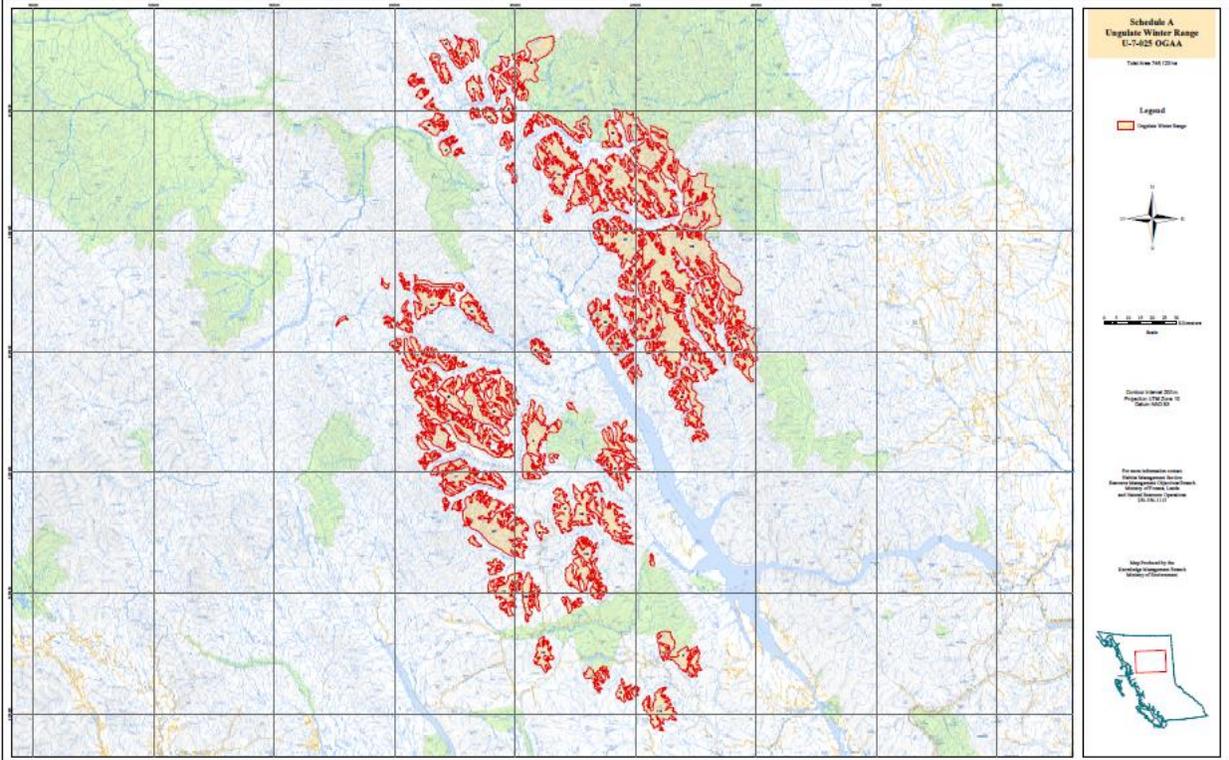
Appendix 1 – Maps of approved Northern Caribou UWRs U-7-025 and U-7-026



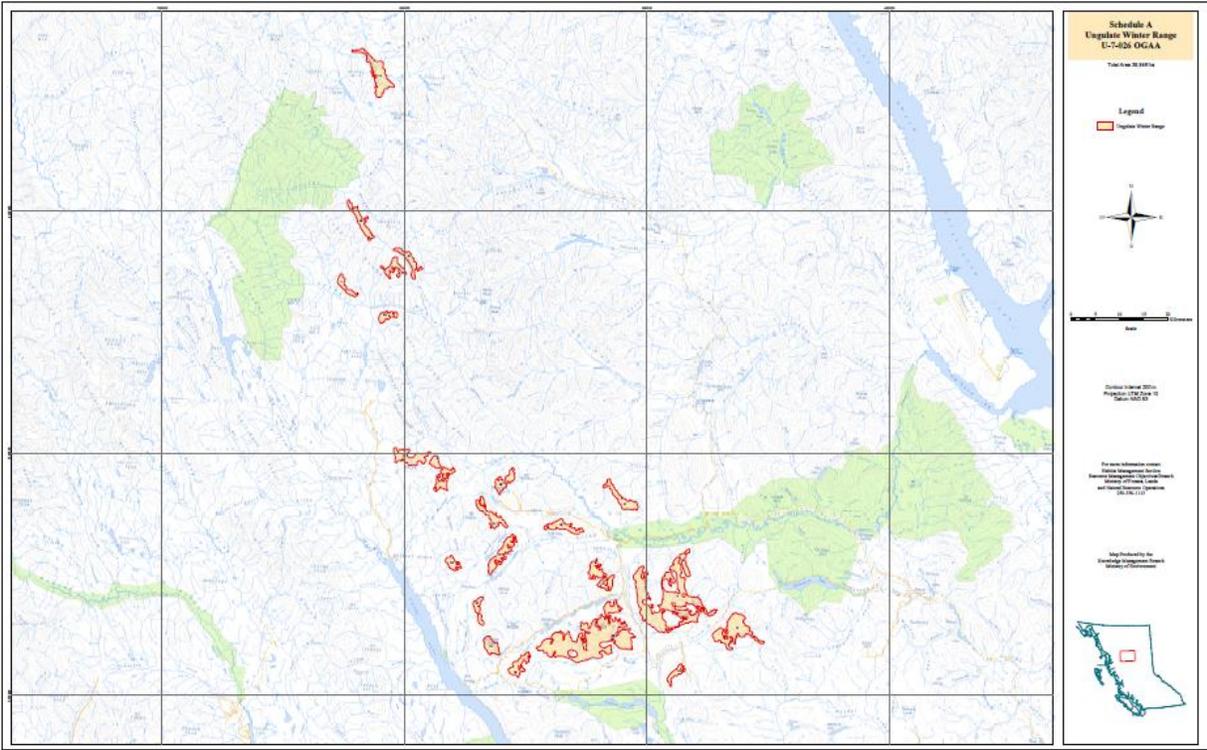
Ungulate Winter Range U-7-025, *Forest and Range Practices Act*. Mackenzie Natural Resource District



Ungulate Winter Range U-7-026, *Forest and Range Practices Act*. Fort St. James portion of Stuart Nechako Natural Resource District



Ungulate Winter Range U-7-025, *Oil and Gas Activities Act*. Mackenzie Natural Resource District.



Ungulate Winter Range U-7-026, *Oil and Gas Activities Act*. Fort St. James portion of Stuart Nechako Natural Resource District.