



## **ORDER – NORTHERN CARIBOU HIGH ELEVATION UNGULATE WINTER RANGE**

### **#U-7-025**

#### **Mackenzie Natural Resource District**

This order is given under the authority of sections 9(1), 9(2) and 12(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004).

1. The Deputy Minister of Forests, Lands and Natural Resource Operations, being satisfied that
  - i. the following area contains habitat that is necessary to meet the winter habitat requirements for northern caribou (*Rangifer tarandus*); and
  - ii. the habitat requires special management that is not otherwise provided for under GAR or another enactment;

orders that

- a) the areas shown in the map set out in the attached Schedule A (U-7-025) and contained in the ungulate winter range (UWR) spatial layer stored in the Land and Resource Data Warehouse (WHSE\_WILDLIFE\_MANAGEMENT.WCP\_UNGULATE\_WINTER\_RANGE\_SP) are established as ungulate winter range U-7-025 for northern caribou. The centre point of the line on the attached Schedule A is what establishes the UWR boundary; and
- b) if there is a discrepancy between the areas shown in the map set out in the attached Schedule A and the UWR spatial layer stored in the Land and Resource Data Warehouse (WHSE\_WILDLIFE\_MANAGEMENT.WCP\_UNGULATE\_WINTER\_RANGE\_SP), the areas as detailed in the UWR spatial layer will take precedent.

2. The Deputy Minister of Forests, Lands and Natural Resource Operations, being satisfied that
  - i. the general wildlife measures (GWMs) described below are necessary to protect and conserve northern caribou and northern caribou habitat; and
  - ii. GAR or another enactment does not otherwise provide for that protection or conservation;

orders that

- a) the GWMs outlined in Schedule 1 are established for UWR U-7-025, and
- b) the GWMs 3 and 4, Schedule 1, are applied to the areas specified in those GWMs.

## Schedule 1 – General Wildlife Measures

### Definitions

In this schedule:

- Word and expressions not defined in this order have the meaning to them in the *Forest and Range Practices Act* and regulations made thereunder, unless context indicates otherwise,
- “northern caribou high elevation winter range” are those winter range polygons established by way of this Order,
- “northern caribou high elevation specified area” are those specified area polygons established by way of this Order,
- “preferred winter moose browse” is the following species; trembling aspen (*Populus tremuloides*), red-osier dogwood, (*Cornus stolonifera*), paper birch (*Betula papyrifera*), high-bush cranberry (*Viburnum edule*) and willow (*Salix spp.*), and
- “early seral moose winter range potential” is defined as ≤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 Natural Resource 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                                                                  |
| 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 | dk1 | 01 | SM | Sw - Knight's plume - Step moss                                                                  |
| BWBS | dk1 | 06 | SR | Sw - Scouring-rush - Step moss                                                                   |
| BWBS | dk1 | 07 | BC | Sb - Lingonberry - Coltsfoot                                                                     |
| BWBS | dk1 | 08 | SC | Sw - Currant - Horsetail                                                                         |
| BWBS | dk1 | 09 | BH | Sb - Horsetail - Sphagnum (Wb09 - Sb - Common Horsetail - Peat Moss)                             |
| BWBS | dk1 | 00 | CC | Sw - Currant - Horsetail / Sb - Lingonberry - Coltsfoot / WF                                     |
| BWBS | dk1 | 00 | SO | Sw - Oak fern                                                                                    |
| BWBS | dk1 | 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 and vegetative cover within the northern caribou high elevation winter range, except as provided in GWM 2.
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; or,
  - b) trees are felled in accordance with section 2(3) of the *Forest Planning and Practices Regulation*; and,
  - c) trees felled for the purposes in (a) and (b) that fall within the designated northern caribou high elevation winter range are retained on-site.
3. 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).
4. Primary forest activities that occur within northern caribou high elevation specified area polygons 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 and within early seral moose winter range potential will limit the production of preferred winter moose browse to not more than 5%  $\pm$  3% cover.

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Signed this \_\_\_\_ day of \_\_\_\_\_, 2013

Dave Peterson, A/Deputy Minister

Ministry of Forests, Lands and Natural Resource Operations

## **Appendix 1**

These appendices are not part of the legal Order for U-7-025. They are intended to provide guidance for meeting the General Wildlife Measures addressed in the Order.

1. As per section 2(2) of the *Government Actions Regulation*, the Order entitled “ORDER – NORTHERN CARIBOU HIGH ELEVATION UNGULATE WINTER RANGE #U-7-025” does not apply in respect of;
  - a. any of the following entered into before the order takes effect;
    - i. a cutting permit;
    - ii. a road permit;
    - iii. a timber sale licence that does not provide for cutting permits;
    - iv. a forest licence to cut issued by a timber sales manager under section 47.6(3) of the *Forest Act*;
    - v. subject to subsection (3), a minor tenure.
  - b. a declared area
  - c. areas described in section 196(1) of the *Forest and Range Practices Act*; and
  - d. areas referred to in section 110 of the *Forest Planning and Practices Regulation*.
2. Authority to consider an exemption from these general wildlife measures is provided in Section 92(1) of the *Forest Planning and Practices Regulation*. In instances where it is not practicable to comply with these measures, a person proposing to conduct forestry activities should consider seeking an exemption from the requirements to comply with the applicable General Wildlife Measures.
3. An exemption application should be submitted to the Minister’s delegate (Director, Resource Management – Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) for the Omineca Region) with a rationale describing the nature of the problem and options to integrate winter range conservation with proposed forest practices (a template for exemption requests is available at: <http://www.env.gov.bc.ca/wld/frpa/index.html>). This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination for exemptions will be handled within 15 working days of arrival at the MFLNRO Regional office. Incomplete packages will be returned to the proponent for resubmission.
4. Exemptions for salvage of dead timber (non-infectious) resulting from severe natural disturbance may only be considered if the proposal is a net benefit to the Ungulate Winter Range species being managed for, as opposed to taking no action.

## **Appendix 2 – Supporting Information**

### **Guidelines for Northern Caribou Ungulate Winter Range**

#### **Ungulate Winter Range #U7-025, Mackenzie Natural Resource District**

These guidelines are important practices while planning and operating within and around UWRs. Professionals preparing operational plans have site-specific discretion and flexibility in prescribing methods to achieve desired habitat condition.

*Please note that research is currently ongoing around the best strategies to ensure maintenance and/or recruitment of northern caribou habitat. As such, forest practitioners should always seek out the most recent research to ensure that are aware of, considering, incorporating and applying the best information available.*

Woodland caribou are found and range within 75-80% of the Mackenzie Resource District. In British Columbia, only the Fort Nelson and Dease Lake areas support comparable populations of this species. The recovery action plan for northern caribou herds in north-central British Columbia identifies an elevated risk of predation to be a significant risk to recovery and management of these northern herds. This risk of predation is increased in areas where the presence of moose and the corresponding draw of wolves provides predation pressure on moose populations and on caribou where ranges overlap (Whittington *et al.* 2011).

#### **To Minimize Predation:**

1. To reduce the overall landscape-scale impacts on caribou, new forest openings should be concentrated in time and space into areas where habitat suitability values have already been compromised through previous harvest and road access (eg, aggregate cutblocks and harvesting in already-fragmented habitat). Develop a harvest pattern (spatially and temporally) that maintains large contiguous patches of mature forest balanced by large contiguous patches of regenerating forest, such that caribou have the ability to occur at low density and in locations distant from the predators attracted to moose using young seral habitats. This is important where spatial configurations of early seral forests depart from that expected under natural disturbance.
2. Accelerate the development of suitable connective habitat for caribou in managed forests to facilitate movement between foraging habitats and predator avoidance.
3. When planning winter harvesting or silviculture activities for approved Category A cutblocks within high elevation winter range polygons, consider timing activities for early winter (November 1<sup>st</sup> to January 30<sup>th</sup>) to reduce sensory disturbance and potential displacement of caribou from critical habitats during the physiologically stressful late winter period.

#### **Further to GWM 3:**

#### **To Minimize Predation:**

Strategies that may create conditions to make unfavourable future conditions for wolf and snowmobile travel may include:

1. Adjacent to high elevation winter range polygons, reclaim or rehabilitate road surfaces to support tree growth.
2. Plant road surfaces (or strategic sections of road surfaces) with a suitable, fast-growing non-preferred species (such as alder) that will inhibit movement in future years.

**Further to GWM 4:**

**To limit the production of preferred winter moose browse potential:**

Strategies that may limit the production of preferred moose browse may include:

1. Avoid harvesting or site preparation activities that enhance shrub species such as Red-osier dogwood (*Cornus stolonifera*), willow (*Salix* spp), paper birch (*Betula papyrifera*), trembling aspen (*Populus tremuloides*), or high-bush cranberry (*Viburnum edule*).
2. Protect mature deciduous stems (particularly aspen and birch) during harvest to limit the amount of suckering.
3. Assess trembling aspen and paper birch 1-2 years after harvest. then space aspen and birch to 200 st/ha if necessary. Treat the stems when they are 1 cm in diameter, and ≤3m tall (<1m height, ignore).
4. Manually brush stems in early spring, just as they are starting to leaf out (eg. half leaf-out is best). When they are fully leafed out, it will be too late, as photosynthesis and recovery will be starting in earnest. (Rea and Gillingham 2001, Terry Chow, FLNRO stand development specialist, *pers. comm.*)
5. Red-osier dogwood does not sucker very well. Cut stems low to the ground.
6. Reduce inter-tree spacing to reduce time to stand crown closure.
7. Minimize regeneration delay.
8. Use large “plus” stock, especially on more productive sites. This will reduce time to crown closure of the stand.

**Measurement of preferred winter moose browse percent cover:**

Measurement of success for Specified Area outcomes for amount of preferred moose browse species will be measured using a line intercept methodology (Caratti 2006).

[http://www.fs.fed.us/rm/pubs/rmrs\\_gtr164/rmrs\\_gtr164\\_11\\_line\\_inter.pdf](http://www.fs.fed.us/rm/pubs/rmrs_gtr164/rmrs_gtr164_11_line_inter.pdf)

### **Appendix 3 – Cross reference to Proposed UWR U-7-028**

Proposed Stone's sheep Ungulate Winter Range Specified Area Unit # 12 within U-7-028 overlaps with the following U-7-025 northern caribou units:

Unit # 44, 45, 46, 49, 55, 60, 62, 106.

These Units have northern caribou listed as the primary species, and Stone's sheep listed as the secondary species. To reduce the considerable risk of disease introduction from domestic sheep and goats to naive native Stone's sheep populations, the Specified Area Unit #12 as identified in U-7-028 will apply adjacent to those northern caribou units that have Stone's sheep as a secondary species.

### **References and links for more information:**

Additional information on northern caribou management initiatives can be found at:

<http://www.centralbccaribou.ca/crg/9/northcentral+bc>

Rea, R.V. and M.P. Gillingham. 2001. The impact of the timing of brush management on the nutritional value of woody browse for moose *Alces alces*. J. Appl. Ecol. **38**: 710-719.

JMJ Holdings Inc. 2000. Moose. Chilcotin West IFPA Wildlife Species Accounts.

Johnson, C.J., K.L. Parker, D.C. Heard, and D.R. Seip. 2004. Movements, foraging habits, and habitat-use strategies of northern woodland caribou: Implications for forest practices in British Columbia. *BC Journal of Ecosystems and Management* 5(1): 22-35. Accessed Apr 30, 2013.  
<http://www.forrex.org/jem/2004/vol5/no1/art4.pdf>

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.

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.

McNay, R.S. 2011. Silviculture options for use in ranges designated for the conservation of northern caribou in British Columbia. *BC Journal of Ecosystems and Management* **12**(2):55-72.  
<http://jem.forrex.org/index.php/jem/article/view/79/89>

Whittington, J. M. Hebblewhite, N.J. DeCesare, L. Neufeld, L. Bradley, M. 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.