



**ORDER – Ungulate Winter Range # U-9-002**  
**DAWSON CREEK TSA AND TFL 48**

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

The Deputy Minister of Environment orders that:

1. the ungulate winter range shown in the map set out in the attached Schedule A (#U-9-002) is established;
2. the ungulate winter range is established for Caribou (*Rangifer tarandus*), Mountain Goat (*Oreamnos americanus*), and Bighorn Sheep (*Ovis canadensis*);
3. the general wildlife measures outlined in Schedule 1 are established for the ungulate winter range as shown on the attached Schedule A (Ungulate Winter Range U-9-002);
4. where there is any discrepancy between the ungulate winter range boundaries shown in the attached Schedule A and the GIS file *tuwra\_bc*, the boundaries as detailed in the GIS file will take precedent. The centre point of the line on the map denoting the ungulate winter range is what establishes the boundary;
5. for the purposes of section 2(3)(a) of the *Government Actions Regulation*, the general wildlife measures outlined in Schedule 1 apply to minor tenures;
6. pursuant to section 7(3) of the *Forest Planning and Practices Regulation* the person(s) required to prepare a forest stewardship plan are hereby 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 Caribou, Mountain Goat and Bighorn Sheep in the Dawson Creek TSA and TFL 48; and
7. the general wildlife measures outlined in Schedule 1 do not apply for the purposes of exploration, development and production activities when these activities have been authorized for the purpose of subsurface resource exploration, development or production by the *Mineral Tenure Act*, the *Coal Act*, the *Mines Act*, the *Petroleum and Natural Gas Act*, the *Pipeline Act* or the *Geothermal Resources Act*.

## **Definitions**

**Pine-leading stands:** > 50% lodgepole pine

**Pine-lichen forest stands:** Within the Redwillow UWR - in general, stands with the following attributes:

- about 25 -55% crown closure;
- 50-110 years of age;
- pine of 7-17 m in height;
- a site index  $\leq$  13;
- a slope of about 5%; and
- a duff layer < 5 cm.

Note: there are exceptions to the above noted attributes and a thorough walk-through of pine-leading stands will determine whether key lichen communities are present. Single stands may not possess all of these attributes, however, the potential to support key lichens increases if one or more of these criteria are met.

**Mainline road:** permanent, all-weather roads including, but not limited to, Forest Service Roads (FSR). These roads serve as the main access into an operational area.

**Secondary road:** spur roads from mainlines; may be seasonal or all season roads.

**“Material adverse”** in the context of disturbance or impacts: “material” means that the disturbance must be real, substantive or significant. “Adverse” means the disturbance must have negative consequences for the affected species.

**Maximum allowable disturbance** for the purposes of GWM 8 for Caribou in SPC-009 is defined as forest cover that is reverted to early seral condition from harvesting or from natural disturbance events. Development that causes permanent land alienation, such as permanent roads, oil and gas lease sites, etc. do not contribute to the % disturbance of Crown forested area.

## **Schedule 1 – General Wildlife Measures**

***Caribou, Mountain Goat, and Bighorn Sheep: High Elevation Winter Ranges: polygons SPC-001 –008, 010, 011, 013-017, 019-032, 034-048, and OVCA-1 - 7***

### **Management of Vehicular Access:**

- 1) Primary forest activities will not result in the construction of roads or trails within the ungulate winter ranges established by this order.
- 2) Upon completion of silviculture obligations on previously harvested cutblocks, forest practices will result in permanent deactivation of in-block roads within the ungulate winter ranges established by this order.

### **Timber Harvesting and Silviculture:**

- 3) Primary forest activities will not result in material adverse disturbance of caribou during the period November 01 through April 30.
- 4) Primary forest activities will result in the retention of all forest cover within the ungulate winter ranges established by this order.
- 5) Primary forest activities within previously harvested cutblocks will not result in a material adverse impact to the productivity of key lichen communities (key lichen communities as defined in Appendix 2).

### **Recreation:**

- 6) Primary forest activities will not result in the development of recreation sites or trails.

***Caribou: Low Elevation Winter Ranges: polygon SPC-009 (Redwillow)***

### **Management of Vehicular Access:**

- 1) Wherever possible, road layout and construction will result in utilization of existing linear corridors.
- 2) Permanent roads will not be located in pine-lichen forest stands.
- 3) Where practicable, provide adequate visual screening along access corridors.
- 4) Unless there is no other practicable option, roads and trails will not cross natural meadows and wetlands and will not be constructed within the riparian management area of wetlands.
- 5) Primary forest activities will result in access management.

### **Timber Harvesting and Silviculture:**

- 6) Primary forest activities will result in the maintenance or enhancement of the productivity of key lichen communities (key lichen communities as defined in Appendix 2).
- 7) Primary forest activities will result in large patches and at least equivalent size connected leave areas of appropriate forest stand types as suitable for the natural disturbance regime for the area.

- 8) Primary forest activities will result in a maximum allowable disturbance of 33% of the Crown forested area being less than 3 meters.
- 9) Primary forest activities will result in maintaining the species composition of pine-leading stands.

**Recreation:**

- 10) Primary forest activities will not result in the development of recreation sites or trails.

***Caribou: Low Elevation Winter Ranges: polygon SPC-018 (Chinook Ridge)***

**Management of Vehicular Access:**

- 1) Primary forest activities will not result in the construction of mainline roads.
- 2) Wherever possible, secondary and in-block road layout and construction will result in utilization of existing linear corridors.
- 3) Where practicable, provide adequate visual screening along access corridors.
- 4) Unless there is no other practicable option, roads and trails will not cross natural meadows and wetlands and will not be constructed within the riparian management area of wetlands.
- 5) Primary forest activities will result in access management.

**Timber Harvesting and Silviculture:**

- 6) Primary forest activities will result in the maintenance or enhancement of the productivity of key lichen communities (key lichen communities as defined in Appendix 2).
- 7) Primary forest activities will result in large patches and at least equivalent size connected leave areas of appropriate forest stand types as suitable for the natural disturbance regime for the area.
- 8) Primary forest activities will result in the retention of at least 60% of the pine-leading stands > 60 years of age.
- 9) Primary forest activities will result in a minimum 100-year rotation for pine-leading stands.
- 10) Primary forest activities will result in maintaining the species composition of pine-leading stands.

**Recreation:**

- 11) Primary forest activities will not result in the development of recreation sites or trails.

***Mountain Goat: Low Elevation Winter Range: polygon SPC-033***

**Management of Vehicular Access:**

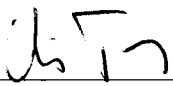
- 1) Primary forest activities will not result in the construction of roads or trails within the ungulate winter ranges established by this order.
- 2) Upon completion of silviculture obligations on previously harvested cutblocks, forest practices will result in permanent deactivation of secondary and in-block roads within the ungulate winter ranges established by this order.

**Timber Harvesting and Silviculture:**

- 3) Primary forest activities will not result in material adverse disturbance of mountain goat during the period November 01 through April 30.
- 4) Primary forest activities will result in the retention of all forest cover within the ungulate winter ranges established by this order.

**Recreation:**

- 5) Primary forest activities will not result in the development of recreation sites or trails.

  
Signed this 22<sup>nd</sup> day of October, 2006  
Chris Trumpy, Deputy Minister  
Ministry of Environment

## **Appendix 1.0: General Information**

The contents of this Appendix are not part of the legal Order U-9-002, and are intended to provide clarification or further information regarding the intent of the Order.

- 1) Authority to consider an exemption from the requirement to comply with these General Wildlife Measures is provided in section 92(1) of the *Forest Planning and Practices Regulation*. Where there is no practicable means of complying with these General Wildlife Measures, a person may choose to apply to the Delegate Decision Maker for an exemption that may be granted with conditions.
- 2) An exemption is not required for:
  - a. any harvesting and/or road construction activities related to an approved cutblock (Category A), or
  - b. any harvesting and/or road construction activities related to a Special Use Permit by a person who holds a permit under Section 10 of the *Mines Act*.
- 3) When considering access development for approved Category A cutblocks consider:
  - a. constructing to the lowest standard possible (as long as safety elements are met),
  - b. minimizing ploughing of access routes within and adjacent to caribou habitat to reduce predator use,
  - c. promptly deactivating upon completion of activity, and
  - d. upon completion of silviculture obligations, permanently deactivating to the highest standard possible on secondary and in-block roads.
- 4) When considering how to best implement the GWMs consider adopting the principle of adaptive management and employ the most appropriate methods to reduce impacts to northern caribou.

**Considerations for selection of practices: GWMs associated with *Caribou, Mountain Goat, and Bighorn Sheep: High Elevation Winter Ranges: polygons SPC-001 –008, 010, 011, 013-017, 019-032, 034-048, and OVCA-1 - 7***

- 1) When implementing requirements under GWM 5 (*Forestry and Silviculture*), consideration should be given to:
  - a. minimizing adverse impacts to lichen communities in both previously harvested and Category A cutblocks,
  - b. expediting the regeneration of lichen-bearing coniferous stands within cutblocks,

- c. timing harvesting activities on Category A cutblocks for early winter (November 1 to January 30) to reduce sensory disturbance and potential displacement of caribou from critical habitats during the physiologically stressful late winter period,
- d. timing harvesting activities on Category A cutblocks during frozen ground conditions with sufficient snow cover to improve terrestrial lichen survival and regeneration,
- e. controlling slash build-up within previously harvested and Category A cutblocks to improve lichen survival and regeneration,
- f. retaining Wildlife Tree Patches (WTPs) as islands within Category A cutblocks to serve as dispersal sources for lichen propagules. In clearcut areas maintain a minimum of 10% representative pre-harvest mature/old forest in WTPs, or where non-conventional silviculture systems are used, (e.g. strip/shelterwood/selection cutting) retain a minimum of 44% of the representative stand in mature/old seral stage (> 120 years old).

***Caribou: Low Elevation Winter Ranges: polygons SPC-009 and SPC-018***

- 1) When considering access development under GWM 1 (SPC-009) and GWM 2 (SPC-018) (*Access*) low impact, low maintenance winter roads are considered appropriate and preferred. Licensees should utilize existing linear corridors such as seismic lines, pipeline right-of-ways and access routes developed by/for other industries such as oil and gas to the extent practicable and minimize the construction of new access. Further, minimal ploughing of access routes within and adjacent to caribou habitat is preferred to reduce predator use.
- 2) When considering access development under GWM 2 (SPC-009) (*Access*) avoid development of access through pine-leading stands with the following attributes:
  - a. 25 – 55% crown closure,
  - b. 50 – 110 years old
  - c. 7 – 17 m in height
  - d. A site index  $\leq$  13,
  - e. A duff layer < 5 cm.

Note: stands containing key lichen communities may not possess all of the above attributes.

- 3) When considering access development under GWM 3 (SPC-009 and 018) (*Access*), adequate visual screening along access corridors is preferred to aid in reducing the line of sight of predators as well as to mitigate harassment or disturbance of caribou by humans. In general, an adequate visual screen is comprised of vegetative cover capable of hiding 90% of a standing adult caribou from view at a distance of 200 ft (60 m). Topographical features may minimize the amount of vegetative visual screening required along access routes.

- 4) Further to GWM 4 (SPC-009 and 018) (*Access*), caribou wintering in low elevation forests make use of natural clearings and meadows as secondary feeding sites. Natural meadows provide a large grass and sedge component, which likely supplements a lichen-based diet. A 250 m buffer around natural meadows and openings is likely adequate to minimize disturbance to caribou foraging within and near these openings.
- 5) When considering access development under GWM 5 (SPC-009 and 018) (*Access*), licensees should coordinate access planning and development with other users operating within the UWR areas. Consideration should be given to employing techniques that reduce line of sight and reduce the efficiency and speed of predators such as wolves on access corridors (e.g. minimizing snow ploughing). Further, licensees should consider reclamation techniques on access corridors beyond stream crossing deactivation that can help limit or inhibit predator and human (recreational) movement.
- 6) When implementing requirements under GWM 6 (SPC-009 and 018) (*Forestry and Silviculture*), timing harvesting activities for early winter (November 1 to January 30) is preferred to reduce sensory disturbance and potential displacement of caribou from critical habitats during the physiologically stressful late winter period. Further, conducting harvesting under frozen ground conditions with sufficient snow cover will improve lichen survival and regeneration. Additionally, licensees should employ appropriate silvicultural techniques (e.g. reducing slash, suitable placement of WTPs to maintain/enhance lichen key communities that may occur in the stand, stand thinning, and employing appropriate vegetation management treatments, where required) to expedite the regeneration of lichen-bearing coniferous stands within blocks.
- 7) When implementing requirements under GWM 7 (SPC-009 and 018) (*Forestry and Silviculture*) consideration should be given to maintaining appropriate forest stand types (leave areas) that are large and contiguous. Appropriate forest types should contain attributes required by caribou for winter survival (i.e. terrestrial/arboreal forage, adequate security cover). Large patches or block clusters  $\geq 600$  ha's and at least equal sized leave areas are recommended. Where practicable, planners should arrange patches or clusters in a manner that does not fragment the UWR area (e.g. harvesting activities may progress sequentially across the landscape allowing for areas of intensive management and large leave areas in an unmanaged state). Large patches or block clusters within a patch should accommodate connectivity for movement of caribou between the openings. Restricting access and restricting the creation of new roads for all industries through large leave areas is also recommended.



**Appendix 2.0:**

**Table 1. List of documented key lichen species utilized by northern ecotype caribou (species most commonly consumed are in bold)**

<b>Terrestrial Lichens</b>	<b>Arboreal Lichens</b>
<b><i>Cladonia</i> spp.</b>	<i>Bryoria</i> spp.
<b><i>Cladina</i> spp.</b>	<i>Usnea</i> spp.
<i>Peltigera</i> spp.	
<b><i>Stereocaulon</i> spp.</b>	
<b><i>Cetraria</i> spp.</b>	
<i>Cladina mitis</i>	
<i>Peltigera aphthosa</i>	
<i>Peltigera malacea</i>	
<i>Cladonia rangiferina</i>	
<i>Cladonia gracilis</i>	
<i>Cladonia uncialis</i>	
<i>Cetraria cuculatta</i>	
<i>Cetraria islandica</i>	
<i>Cetraria ericetorum</i>	
<i>Cetraria nivalis</i>	

### **Appendix 3: Desired Future Conditions.**

#### **High Elevation Caribou Winter Habitat:**

No habitat thresholds are available to provide direction on northern caribou range management. In the absence of such information a conservative approach must be taken to ensure caribou requirements are met. An important feature of high quality caribou habitat is ample space to allow caribou to occur at relatively low densities. The desired future condition of the high elevation *South Peace Caribou Ungulate Winter Range* areas is as follows:

- Retain sufficient quantities of unfragmented, high capability/high suitability northern caribou habitat to meet immediate and future needs and allow for range rotation due to stochastic events, (e.g., wildfire, insect infestations, and extreme climatic conditions), and habitat alteration and disturbance and displacement of caribou due to human activities. Habitat configuration should allow caribou to maintain spatial separation from both alternate ungulate prey species and predators,
- Retain intact alpine/subalpine complexes and associated subalpine forests to provide critical winter habitat for caribou, free from disturbance from industrial and recreational activities,
- Retain sufficient large, contiguous blocks of mid-to high-elevation spruce-fir and lodgepole pine (dry pine) forests in mature and old ages classes (81-251+ yrs) to provide a perpetual forage supply of both arboreal and terrestrial lichens.

#### **Low Elevation Caribou Winter Habitat:**

Management objectives within this habitat type are to ensure that there is a perpetual supply of large patches of suitable habitat within the range of the caribou local population. This broad objective may be met by maintaining large, unfragmented and roadless forested areas that provide for the life requisites of wintering caribou. These areas need to be of sufficient size to allow caribou to spatially segregate themselves from other caribou as well as from early seral ungulates and wolves.

Access management to minimize fragmentation, to reduce the risk of predation by wolves and to reduce the risk of harassment by humans is key to the long-term success of caribou in these UWR areas. Early seral forage production and permanent land alienation should be minimized. These areas require a long term continuous supply of unfragmented caribou habitat. Habitat conditions that reduce predation risk (e.g. minimal access/linear corridor development, low maintenance seasonal (winter) access only, visual screening, etc.) should be employed by licensees working in these areas.

### **High and Low Elevation Mountain Goat Winter Habitat:**

Mountain goat winter ranges are steep and tend to shed snow. Goat winter habitat is also found on warm aspect (southeast- to west-facing) escarpments of the forested lower sections and tributaries of several streams/rivers within the Peace Region.

Desired future conditions for mountain goat winter range include undisturbed windswept ridges and mountain peaks with an undisturbed forested buffer or forested habitat in close proximity to escape terrain. Generally, they use open habitats for foraging, forested stands for thermal and escape cover, and steep rock or cliff terrain for predator avoidance. The most critical factor of goat winter range is the availability of escape terrain with sufficient forage quality and abundance. Escape terrain is usually within 400m of forage sites.

### **Bighorn Sheep:**

Bighorn sheep winter range is comprised of undisturbed high-elevation (> 1,400 m) alpine ridges and mountains within the Alpine Tundra (AT) biogeoclimatic zone. Topography includes steep rugged terrain with wind-swept vegetated warm-aspect slopes interspersed with rocky outcrops or cliffs. Vegetation is dominated by dwarf willows (*Salix* spp.), graminoid species, and lichens.

