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ORDER – Ungulate Winter Range
 # U-9-009
Boreal Caribou –Fort St. John Timber Supply Area

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

1. The Deputy Minister of Forests, Lands and Natural Resource Operations (FLNRO), being satisfied that
   i. the following area contains habitat that is necessary to meet the habitat requirements for boreal caribou (*Rangifer tarandus caribou*); 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-9-009) and contained in the ungulate winter range (UWR) spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER _RANGE_SP) are established as ungulate winter range U-9-009 for boreal 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 As and the UWR spatial layer stored in the Geographic Warehouse (WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER _RANGE_SP), the areas as detailed in the UWR spatial layer will take precedent; and
   c) pursuant to section 7(3) of the *Forest Planning and Practices Regulation* (FPPR) 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 FPPR for boreal caribou in the Notice for the Fort St. John TSA.

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 boreal caribou and the habitat of boreal caribou; 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-9-009.

3. The Deputy Minister of Forests, Lands and Natural Resource Operations, being satisfied that
    1. the ungulate winter range requires special management that has not otherwise been provided for under GAR or another enactment;

orders that

b) the objective outlined in Schedule 2 is established for UWR U-9-009.

Definitions

Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act* (FRPA) and the regulations made under it, unless context indicates otherwise.

access structure: a road, landing, pit, quarry, excavated or bladed trail or other logging trail.

adequate visual screening: 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).

black spruce bogs: treed peatlands or muskegs (black-spruce leading) with 10 – 60% crown closure, extremely low gradients (0.0° to 0.3° slope), and poorly drained, organic soils.

Coordinated Access planning: any and all activities that are designed to reduce the proliferation of access corridors in the WHA area, including but not limited to: coordinated access planning, coordinating development and deactivation schedules with other users operating on the WHA; use of existing linear corridors and shared access among users to minimize the creation of new access routes and overall road density

corridor: any anthropogenic removal of forest cover that results in the creation of linear disturbances, such as roads, motor-vehicle trails, transmission lines, seismic lines, pipelines, and secondary roads.

disturbance: indirect or direct negative impacts. Indirect disturbance includes non-physical, sensory stimuli associated with ground or aerial mechanized activity. Direct disturbance includes industrial activities that result in a physical, adverse alteration of habitat used by caribou.

early seral forage species: forage species for early seral ungulates such as moose, including (but not limited to) willows, red-osier dogwood, Saskatoon, trembling aspen, high bush cranberry, snowberry, bog birch, paper birch, and mountain ash.

Historic trail: a trail given heritage designation under the *Heritage Conservation Act.*

key terrestrial lichen: list of documented key lichen species utilized by boreal caribou in the muskeg bogs and peatlands of the Boreal White and Black Spruce (BWBSmw2, site series 02, 04, 06, 08, 09) biogeoclimatic zone includes:

- *Cladina* spp.
- *Stereocaulon* spp.
- *Cetraria* spp.
- *Cladina mitis*
- *Cladina rangiferina*
- *Cladina stellaris*

lake clusters: two or more lakes 1 – 20 ha in size that are within 200 m of each other, and buffered around the perimeter by 250 m, associated with extremely low-gradient areas.

large bog-fen complexes: large mosaics of bog, fen and treed peatland habitats.

late winter period: February 1 through April 15.

low-impact roads: low grade/standard roads that have minimal deactivation requirements since their construction involves minimal alteration of the surficial hydrology. These roads are substantially self-sustaining and pose a low erosion hazard.

material adverse disturbance: 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.

permanent, all-weather, high-grade roads: high order/standard roads, intended for long-term (more than one season) use that provide future access for timber harvesting or other activities.

pine-leading stands: > 50% lodgepole pine.

pre-calving, calving, post-calving (post-parturition) periods: subject to annual variation, but includes the period from March 15 through June 30.

rutting period: subject to annual variation, but includes the period from September 15 through October 31.

secondary access: spur roads from mainlines (excluding in-block roads); may be seasonal, but not all-season roads.

Schedule 1 – General Wildlife Measures

Within UWR Units CHIN-001 to CHIN-006 (UWR Type A)

A) Management of Vehicular Access:

1. Do not construct new access structures.

B) Timber Harvesting and Silviculture:

2. Do not conduct timber harvesting or silviculture activities.
3. Do not disturb caribou during the late winter period.

C) Recreation:

4. Do not develop recreation sites and trails.
5. Establishment of existing sites or trails is permitted where:
   a) the trail is designated a Historic trail; and
   b) establishment of the site or trail does not have material adverse disturbance to caribou or their habitat.

Within UWR Units CHIN-007 to CHIN-011 (UWR Type B)

A) Management of Vehicular Access:

1. Do not construct permanent, all-weather, high-grade roads.
2. Wherever practicable, construct secondary access as low-impact roads.
3. Wherever practicable, use existing corridors during layout and construction of access structures.
4. Wherever practicable, provide adequate visual screening along access structures.
5. Wherever practicable, minimize line-of-sight on new access structures.
6. Wherever practicable, avoid constructing access structures through black spruce bogs, large bog-fen complexes, or lake clusters.
7. Maintain natural drainage patterns during road construction.
8. Minimize primary forest activities during periods that require snow removal.
9. Minimize disturbance to caribou during the late winter period.

B) Timber Harvesting and Silviculture:

10. Wherever practicable, cluster blocks and access structures to produce large openings (approximately 100 ha or greater), with leave areas of at least equivalent size that are connected and comprised of appropriate forest stand types.
11. Minimize growth of early seral forage species within harvested cutblocks.
12. Harvesting and silviculture activities must not cause material adverse disturbance to the productivity of key terrestrial lichen.

13. Wherever practicable, avoid timber harvesting in black spruce bogs, large bog-fen complexes, or lake clusters.
14. Wherever practicable, maximize forest retention adjacent to black spruce bogs, large bog-fen complexes, and lake clusters.
15. Maintain natural drainage patterns during harvesting and silviculture activities.
16. Ensure that pre-harvest pine-leading stands are re-established as pine-leading stands.
17. Complete timber harvesting and silviculture activities in as short a timeframe as practicable.
18. Minimize disturbance to caribou during the late winter period.
19. Whenever practicable, avoid harvesting pine-leading stands in late winter.
20. Minimize primary forest activities during periods that require snow removal.

C) Recreation:

21. Do not development recreation sites and trails.
22. Establishment of existing sites or trails is permitted where:
    a) The trail is designated a Historic trail; and
    b) Establishment of the site or trail does not have material adverse disturbance to caribou or their habitat.

Schedule 2 – Ungulate Winter Range Objective

Within UWR Units CHIN-007 to CHIN-011 (UWR Type B)

A) Planning:

1. Manage access through coordinated access planning.

Signed this 25 day of March, 2013
Doug Konkin, Deputy Minister
Ministry of Forests, Lands and Natural Resource Operations

Appendix 1:

The following information is provided as background information and support to the order establishing UWR U-9-009. This appendix is not part of the order.

1. **Activities to which the order does not apply:** Section 2(2) of the *Government Actions Regulation* states
   An order under any of sections 5 to 15 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 forestry 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 Act, and
   (d) areas referred to in section 110 of the Forest Planning and Practices Regulation.
   (e) areas referred to in Section 81(1)(i) and 81(1)(e) of the *Fort St. John Pilot Project Regulation* (FSJPPR) and in Table 16 of the Forest Operations Schedule in effect at the time of the approval

2. Authority to consider an exemption from these GWMs is provided in section 92(1) of the *Forest Planning and Practices Regulation* and section 25(1) of the *Fort St. John Pilot Project Regulation* (FSJPPR). An exemption may be provided if the Minister's delegate is satisfied that the intent of the GWM will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

   An exemption application should be submitted to the Minister's delegate (Director of Resource Management, Northeast) with a rationale describing the nature of the problem and options to integrate UWR conservation with proposed forest practices. 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 will normally be made within 14 days of arrival. Incomplete packages will be returned to the proponent for re-submission.

3. Regarding **GWMs 1, 2 and 3,** an exemption should be submitted to access timber outside of the no harvest zone only if construction of any new access structures is conducted to the minimum extent necessary to access this area, and there is no other practicable option to access the area outside of the no harvest zone. An exemption to access isolated timber would normally be granted when (i) the cost associated to access isolated timber is significantly greater than compliance with the

General Wildlife Measures of the Ungulate Winter Range; (ii) impacts on the ecosystem outside of the UWR would be intensified by compliance with the General Wildlife Measures, or (iii) established linear corridors are already present within the UWR, and thus additional road construction would not pose further threat to boreal caribou populations. Submissions for an exemption to the GWMs should be submitted to the Director of Resource Management, Northeast, following the direction in #2, above.

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.

5. An exemption is not required for any harvesting and/or road construction activities related to an approved cutblock (either meeting definition of Section 196.1 or Section 196.2 as of December 12, 2008).

6. When reviewing options on how to best implement the GWMs, licensees should consider adopting the principle of adaptive management and employing the most appropriate methods to reduce impacts to boreal caribou.

7. MFLNRO acknowledges that, due to improved inventory data, there was a significant increase in timber harvesting land base (THLB) between timber supply review (TSR) 2 and TSR3. Timber supply impacts for this order were assessed and found consistent with current government policy. If government's policy, with respect to timber supply impacts, is revised then it is recommended that this order be reviewed and amended as necessary to ensure it remains consistent with that new policy.

Appendix 2 – Considerations for Selection of Practices:
The following information is provided by the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) as background information and support to the order establishing UWR U-9-009. The following guidelines are intended to provide information to consider when implementing the general wildlife measures for U-9-009. Professionals preparing operational plans and carrying out practices have site-specific discretion and flexibility in prescribing methods to achieve the desired habitat condition. This appendix is not part of the order.

Regarding GWMs 1 through 5:

1. When planning access development for approved Section 196 (1) cutblock, or a cutblock meeting definition of Section 196 (2) as of December 12, 2008, licensees should consider, to the extent practicable, the following:
    a. avoiding the construction of permanent, all weather, high-grade roads;
    b. constructing secondary access as low-impact roads;

c. utilizing existing linear corridors or disturbances (e.g., seismic lines, roads, right-of-ways, etc.);
d. providing adequate visual screening along roads and minimizing line-of-sight on new roads;
e. minimizing snow removal of access routes within and adjacent to caribou habitat to reduce predator use and minimize predation risk;
f. maintaining natural drainage patterns (surface hydrology and flow patterns);
g. promptly deactivating access corridors upon completion of activity;
h. permanently deactivating secondary and in-block roads to the highest standard possible upon completion of silviculture obligations;
i. maintaining critical habitat features, such as large, intact, treed fen-bog complexes with adequate thermal cover, security cover and forage species by:
    i. avoiding road construction through black spruce bogs, bog-fen complexes or lake clusters;
    ii. maximizing forested buffers proximal to these areas;
    iii. restricting access or using multiple use roads through large leave areas;
    iv. maintaining connected forest cover;
j. minimizing disturbance during sensitive periods (pre-calving, calving, post-calving, and rutting periods); and
k. completing activities in as short a timeframe as practicable.

2. For any harvesting activities within an approved Section 196 (1) cutblock, or cutblock meeting definition of Section 196 (2) as of December 12, 2008, licensees should consider, to the extent practicable, the following:
    a. minimizing growth of early-seral forage species within harvested cutblocks
    b. minimizing adverse impacts to lichen communities;
    c. timing harvesting activities during frozen ground conditions with sufficient snow cover to improve terrestrial lichen survival and regeneration;
    d. controlling slash build-up to improve lichen survival and regeneration;
    e. retaining Wildlife Tree Patches (WTPs) as island to serve as dispersal sources for lichen propagules;
    f. maintaining representative pre-harvest forest type as WTPs within harvest areas, according to Landscape Unit specific targets;
    g. expediting the regeneration of lichen-bearing coniferous stands/patches within cutblocks, recognizing that cutblocks will be reforested to pre-harvest conditions (e.g., deciduous stands will be reforested to deciduous stands);
    h. promoting regeneration of natural, pre-harvest ecosystems by avoiding artificial seeding of grass- and legume-based mixes. The use of herbicides may be used to promote natural regeneration;
    i. maintaining natural drainage patterns;
    j. completing activities in the shortest timeframe practicable; and
    k. minimizing disturbance during sensitive periods for boreal caribou (pre-calving, calving, post-calving, and rutting periods).

Regarding GWMs 6 through 27:

B) When implementing access development under **GWM 6 and 7,** construction and use of low grade, low maintenance, temporary winter access routes under frozen ground conditions and/or on a substrate of packed snow is recommended to improve terrestrial lichen survival and regeneration. Low grade access roads should be constructed to minimize disturbance in space and time, such as using reduced road right of way clearing widths and deactivating promptly upon completion of activity, as operationally practicable.

3. When implementing access development under **GWM 8**, licensees should consider utilizing existing corridors such as seismic lines, pipeline right-of-ways and access routes developed by or for other industries to the extent practicable to minimize the construction of new access and resultant habitat loss, fragmentation, alteration or degradation of caribou habitat.

4. When implementing access development under **GWM 9 and 10**, adequate visual screening along roads is required to aid in reducing the line-of-sight of predators. 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. Licensees should also consider employing other techniques (e.g. doglegs, sight-line screens), ideally at least every 200 m, that reduce line-of-sight along access structures, and decrease caribou visibility to predators.

5. When implementing access development under **GWM 8, 11 and 12,** maintaining the integrity of large, intact, treed fen-bog complexes with adequate thermal cover, security cover, and forage species is critical to caribou winter survival. Caribou use dense patches of black spruce within undisturbed open bogs for security cover from predators. Contiguous, unfragmented, suitable habitats allow caribou to employ effective anti-predator strategies (e.g. maintain dispersion and avoid high predation risk areas such as linear corridors). Caribou utilize winter green vascular plants within wetland areas (e.g. along lake margins) to supplement winter diets. Maintaining habitat integrity for fine scale features, such as lake complexes used for caribou calving, are also important considerations within ungulate winter ranges, given the seasonal overlaps in habitat use within boreal caribou ranges.

6. When implementing access development under **GWM 13 and 25,** it is recommended minimizing the length of time that a winter road is active to reduce the risk of increased predation on caribou by wolves and other predators. Minimizing ploughed winter access, especially proximal to or within

highly suitable caribou habitats, decreases permeability and mobility of predators and thus predation risk in the winter. Creating aligned (opposite) breaks every 500 m in snow berms exceeding 1.5 m high would help to facilitate caribou movement across roads, where snow ploughing is unavoidable.

7. Severe weather conditions (e.g. declining temperatures, increased snow load) combined with increased energetic costs, decreased movements and foraging times makes late winter physiologically stressful for boreal caribou, and disruptions to foraging can impede achieving daily energy requirements or impact on calf survival to parturition. When implementing timber harvesting and silviculture requirements under **GWM 14 and 23,** avoiding activities during the biologically sensitive late winter period and minimizing (spatially and temporally) activities outside of this period would help to avoid causing material adverse disturbance to caribou or their foraging habitat.

8. By timing activities earlier in winter and/or considering site-specific conditions, licensees might be best able to balance the risks to caribou associated with late winter activity (e.g. **GWMs 14 and 23**) with the advantages of maintaining key terrestrial lichen by operating under frozen ground conditions (**GWM 17**).

9. When implementing timber harvesting/silviculture requirements under **GWM 15**, licensees should give consideration to maintaining appropriate forest stand types (leave areas) that are large and contiguous. Appropriate forest types should contain attributes required by boreal caribou for winter survival (i.e. terrestrial forage, adequate security cover). This would primarily include, but is not limited to, the wet, black spruce (*Picea mariana*) leading, muskeg, and peatland areas of the BWBS biogeoclimatic zone. Boreal caribou, however, will also make use of small patches of mature lodgepole pine (*Pinus contorta*) or white spruce (*P. glauca*) forests during periods of heavy snow loads or extreme winter conditions. Where practicable, incorporating mature pine and spruce stands into large leave areas would provide additional habitat for boreal caribou. Using large openings/patches or clusters of blocks approximately 100 hectares (or larger) and at least equal sized leave areas is recommended. Where practicable, planners should arrange openings or clusters of blocks 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 clusters of blocks within a patch should accommodate connectivity for movement of caribou between the openings. Restricting access and adopting or constructing multiple-use roads through large leave areas is also recommended. Following these principles of cluster harvest is an important component of caribou habitat management, and results in fewer new linear corridors, more confined early seral habitats over space and time, and the maintenance of connected patches of mature forest cover and habitats suitable for boreal caribou.

10. When implementing timber harvesting/silviculture requirements under **GWM 16,** licensees should give consideration to techniques that will minimize the growth of early seral forage species used by alternative prey species (e.g. moose) of caribou predators.

11. To avoid creating a material adverse disturbance to lichen from timber harvesting or silviculture activities under **GWM 17**, licensees should consider:
    a. minimizing or clustering disturbance footprints;
    b. avoiding altering surface hydrology and flow patterns;
    c. timing harvesting activities during frozen ground conditions with sufficient snow cover to improve terrestrial lichen survival and regeneration;
    d. controlling slash build-up to improve lichen survival and regeneration;
    e. retaining Wildlife Tree Patches (WTPs) as island to serve as dispersal sources for lichen propagules;
    f. maintaining representative pre-harvest forest type as WTPs within harvest areas, according to Landscape Unit specific targets;
    g. where practicable, expediting the regeneration of lichen-bearing coniferous stands within cutblocks, recognizing that cutblocks will be reforested to pre-harvest conditions (e.g., deciduous stands will be reforested to deciduous stands); and
    h. promoting regeneration of natural, pre-harvest ecosystems by avoiding artificial seeding of grass- and legume-based mixes. The use of herbicides may be used to promote natural regeneration.

12. When implementing timber harvesting or silviculture requirements under **GWM 18, 19, and 20,** maintaining the integrity of large, intact, treed fen-bog complexes with adequate thermal cover, security cover, and forage species is critical to caribou winter survival. Caribou use dense patches of mature black spruce within undisturbed open bogs for security cover from predators, or as thermal cover and arboreal foraging opportunities during high snow accumulation periods. Caribou utilize winter green vascular plants within wetland areas (e.g. along lake margins) to supplement winter diets. Maintaining habitat integrity for fine scale features such as lake complexes used for calving, are also important considerations within ungulate winter ranges, given the seasonal overlaps in habitat use within boreal caribou ranges.

13. When implementing timber harvesting/silviculture requirements under **GWM 22**, licensees should complete activities in the shortest timeframe that is reasonable to minimize impacts to wildlife and other values.

14. When implementing timber harvesting or silviculture requirements under **GWM 19, 21, and 24,** licensees should time harvest of lodegpole pine-leading stands to avoid the critical late winter period, as practicable (especially for those pine-leading stands proximal to intact peatland complexes), to avoid disruption of groups of animals using mature pine stands as late-winter habitat

for snow-interception. Boreal caribou show opportunistic use of these upland areas, especially during unfavourable or extreme winter conditions (e.g. deep snow packs, crusted snow surfaces, cold temperatures).

15. When implementing access development under **Objective 1**, licensees should discuss and consider access planning, development and deactivation schedules with other users operating within the UWR areas to minimize total road densities and the cumulative impacts of access structures within boreal caribou ranges.

References:

The management direction and consideration for selection of practices was developed using information from the following sources:

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