BRITISH COLUMBIA

MATERIAL SUPPORTING THE NOTICE, BUT NOT PART OF THE NOTICE.

INFORMATION CONCERNING WILDLIFE HABITAT FOR THE WINTER SURVIVAL OF UNGULATE SPECIES IN THE MACKENZIE TIMBER SUPPLY AREA

This document is intended to provide background information and support to the legal framework of the notice of indicators of the amount, distribution and attributes of wildlife habitat required for the winter survival of ungulate species in Mackenzie TSA. This document is not part of the legal notice. Its purpose is to provide additional information for consideration by delegated decision makers and by those persons required to prepare results and strategies consistent with section 7(1) of the Forest Planning and Practices Regulation and section 9 (3) of the Woodlot Licence Planning and Practices Regulation.

Mackenzie Timber Supply Area

Northern Caribou:
Amount:

The total amount included in the Notice for northern caribou habitat in the Mackenzie Forest District is formed by:

a) Mackenzie TSA portion of Northern Caribou UWR (U-7-007), Low Elevation Winter Range (LEWR) UWR. Gross Area 307,423 ha, with ~ 173,872 ha of THLB with a net THLB impact to be determined by MOF Timber Supply Branch and with ~ 133,551 ha Forested Exclusions and Non-forested exclusions.
b) High Elevation Winter Range (HEW). Gross Area 2,228,503 ha, with ~ 181,121 ha of THLB with a net THLB impact to be determined by MOF Timber Supply Branch and with ~ 1,817,082 ha Forested Exclusions and Non-forested exclusions.
c) Pine Pass UWR (U-7-009). Gross Area 25,897 ha, with ~ 8039 ha of THLB and 17,948 ha of Forested exclusions and Non-forested exclusions.

Distribution:
Figure 1 shows the ungulate winter range polygons for low elevation winter range and **Figure 2** Pine Pass high elevation winter range proposed by the Ministry of Water, Land and Air Protection within the Mackenzie TSA. Boundaries and placement of the proposed polygons will be refined using information from Caribou Habitat Assessment and Supply Estimator (CHASE)

model and the Northern Caribou Recovery Implementation Group for North-Central and Northern Rockies - British Columbia.

High elevation habitat will be selected based upon use of the "Caribou Habitat Assessment and Supply Estimator" (CHASE) model to assist in the identification of ungulate winter range polygons for high elevation winter range to be proposed by the Ministry of Water, Land and Air Protection within the Mackenzie TSA. Boundaries and placement of the proposed polygons will be refined using information from Caribou Habitat Assessment and Supply Estimator (CHASE) model and the Northern Caribou Recovery Implementation Group for North-Central British Columbia.

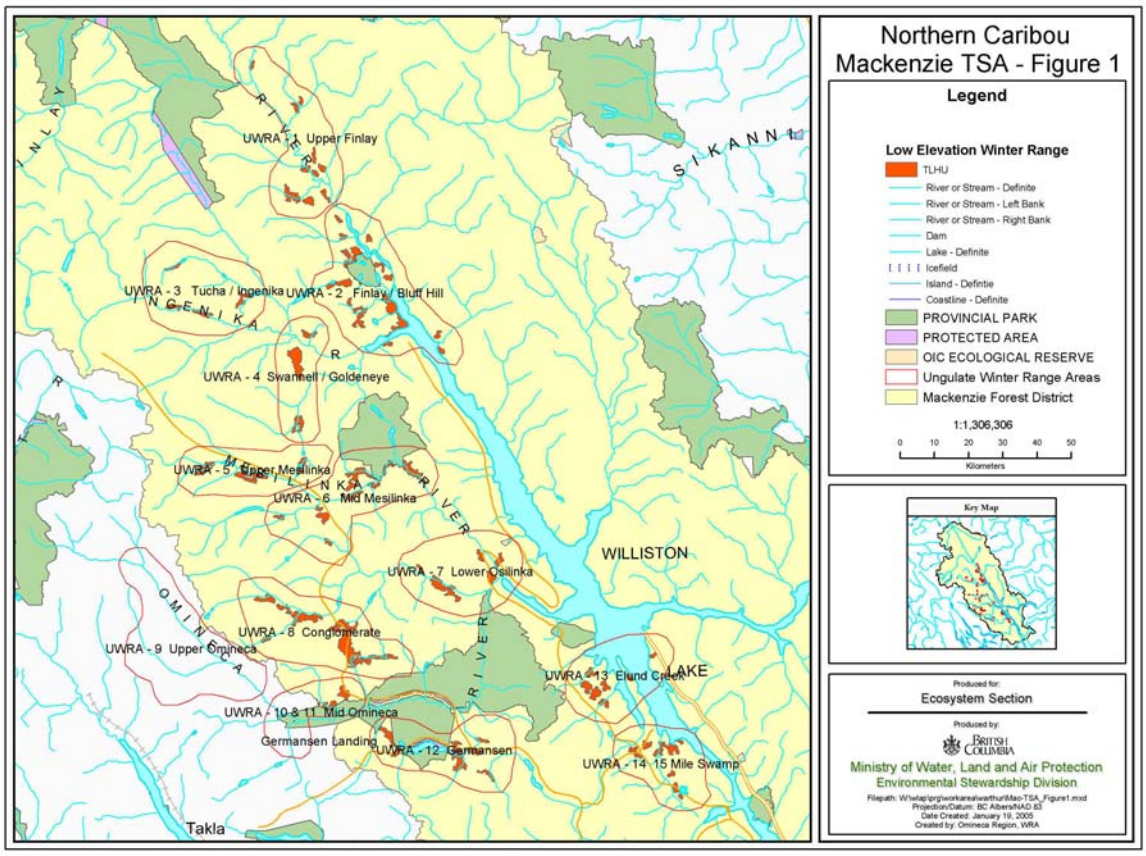

Figure 1 – Northern Caribou Low Elevation Winter Range

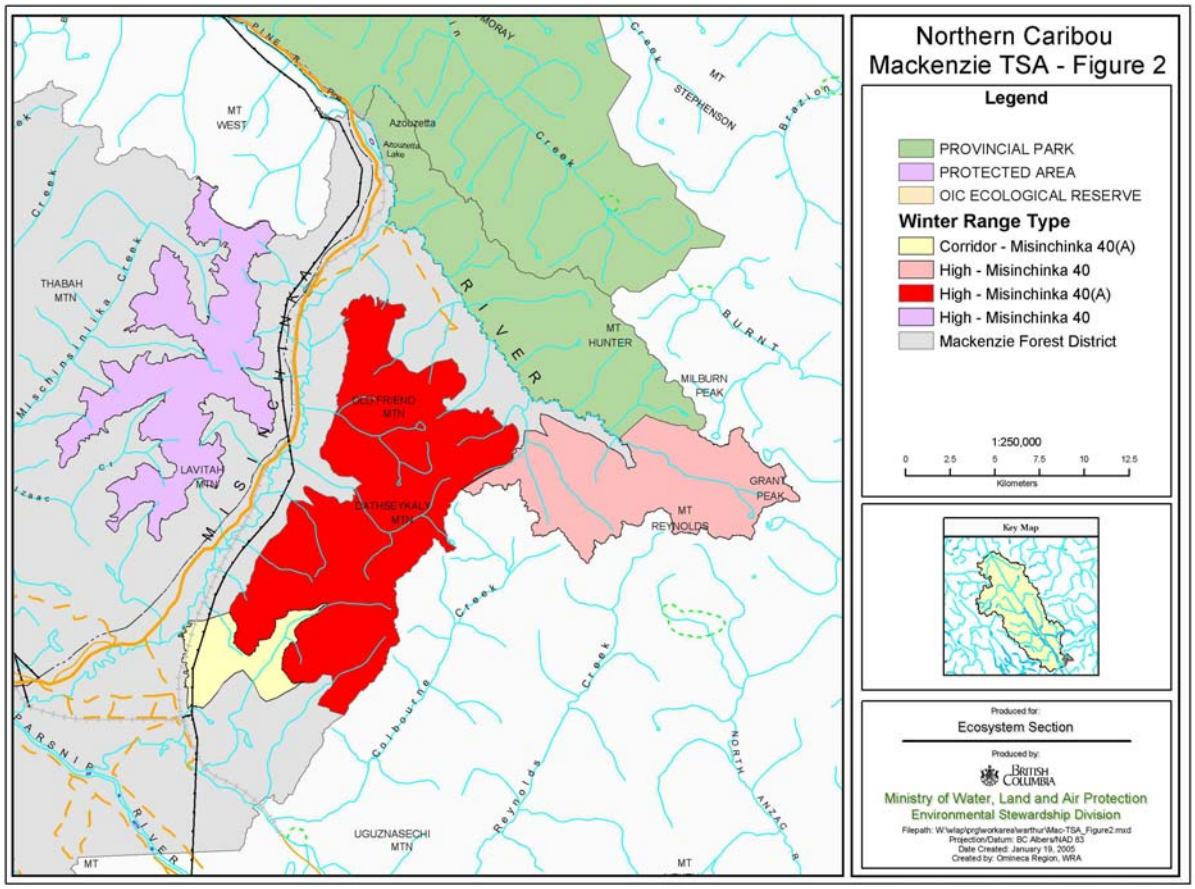

Figure 2 – Northern Caribou Pine Pass Winter Range

Attributes:
In addition to attributes identified within the notice, the following management practices should be considered for the conservation of habitat for northern caribou.

1) Low elevation winter range (Figure 1)

1 Desired Habitat Condition to Minimize Predation

1.1 Within each UWRA, minimize fragmentation caused by harvesting activities so that in the winter, caribou have the opportunity to space away from and to minimize encounters with predators (wolves).

1.1.1 Objectives under Section 1.1 to be met simultaneously with Objectives under Sections 2.1.2 and 2.1.3.

1.1.2 Manage the forests within the TLHU of each UWRA on a two pass, 140 year rotation.

1.1.3 Develop a spatial and temporal plan which identifies the first and second pass of harvesting activities such that large (250 to 5000 ha+), contiguous patches of regenerating forest (0 to 70 years old) are created and are balanced with large contiguous patches of mature forest (70 to 140 years old). The contiguous patches of first pass forest are to preferentially group Terrestrial Lichen Habitat Units (TLHU) that are close together such that all first pass harvesting activities are concentrated on one side or portion of the UWRA, or the other.

1.2 Within all UWRA, limit the increase of predator efficiency.

1.2.1 Minimize road or other access development subject to operational and safety constraints.

1.2.2 Upon completion of harvesting and silviculture activities, permanently rehabilitate all roads than are not necessary to access timber beyond the TLHU. Prescribe measures for rehabilitation of the roads that will make it undesirable, in 70 years time, for wolves to use them for travel corridors.

2 Desired Habitat Condition to Maintain Food

2.1 Within each Ungulate Winter Range Area (UWRA), maintain a sustainable supply of terrestrial lichen habitat.

2.1.1 Within each UWRA (include TLHU) where terrestrial lichen habitat exists, ensure harvesting and silviculture activities maintain forest floor conditions and/or a soil matrix that promotes terrestrial lichen growth over bryophytes and vascular plants.

2.1.2 Within each UWRA, spatially and temporally plan and schedule the first and second pass harvesting and silviculture activities such that:

2.1.2.1 This objective (2.1.2) is met simultaneously with objectives in Section 1.1.

2.1.2.2 Each individual THLU remains intact (is not fragmented)

2.1.2.3 Half, or a close to half as possible, of the delineated THLU polygons/units are part of the first pass volume and associated area. From the year 2004 to 2074, these TLHU will be part of the ‘non-functioning’ half or portion of the UWRA, or the portion of the UWRA where harvesting and silviculture activities will occur.

2.1.2.4 Half, or as close to half as possible (between 30 to 70%) of the total hectares of the delineated Terrestrial Lichen Habitat Units (TLHU) are part of the first pass volume and associated area.

2.1.2.5 The remaining TLHU polygons not identified as part of the first pass area are managed as part of the second pass area. From the year 2004 to 2074, these TLHU will be part of the 'functioning' half or portion of the UWRA.

2.1.3 If a beetle epidemic makes it impossible to manage to a stand age within an TLHU, this objective (2.1.3) takes priority over 2.1.2. Within each UWRA, spatially and temporally plan and schedule harvesting and silviculture activities such that:

2.1.3.1 This objective (2.1.3) is met simultaneously with objectives in Section 1.1.

2.1.3.2 Each individual THLU remains intact (is not fragmented)

2.1.3.3 Half, or a close to half as possible, of the delineated THLU polygons/units are in a successional stage that will provide, for a period from now and for 70 years (Year 2004 to 2074), moderate (Class 3) or high (Class 4) lichen value, as defined in 'Methods for assessing caribou forage lichen in the Fort St. James Forest District' (Lance & Eastland., 1999). From the year 2004 to 2074, these TLHU will be part of the 'functioning' half or portion of the UWRA.

2.1.3.4 Half, or as close to half as possible (between 30 to 70%) of the total hectares of the delineated Terrestrial Lichen Habitat Units (TLHU), are in a successional stage that will provide, for a period from now and for 70 years (Year 2004 to 2074), moderate (Class 3) or high (Class 4) lichen value, (Lance & Eastland., 1999).

2.1.3.5 The remaining TLHU polygons not identified through Objective 2.1.3.3 and 2.1.3.4 are managed so that in 70 years time and for the subsequent 70 years (Year 2074 to 2114), they are in a successional stage that will provide moderate (Class 3) or high (Class 4) lichen value (Lance & Eastland., 1999). From the year 2004 to 2074, these TLHU will be part of the 'non-functioning' half or portion of the UWRA, or the portion of the UWRA where harvesting and silviculture activities will be occurring.

2.1.4 Once industrial activities (e.g. harvesting and silviculture activities) begin within TLHU, all activities associated with economically harvestable timber not tied up in riparian management areas are to be completed within 20 years. Interstitial areas are to be managed on the same pass and rotation as the entire TLHU, regardless of their development status (age, operability, etc). What is not harvested in the first pass will not be available for harvest until the first pass of the next rotation (140 year rotation). An existing main haul road that runs

through a patch and is necessary to access timber beyond the patch is excluded from this objective.

3 Desired Habitat Condition to Minimize Displacement of caribou from their preferred winter habitats

3.1 Within TLHU in the Mackenzie Forest District, plan the location and design of new access routes to minimize the potential to displace caribou from and/or to limit the potential for predator access to TLHU.

3.2 Minimize new roads (any size) through a TLHU and keep new roads (any size) as far away as possible from TLHU if other viable alternatives exist.

3.3 Within TLHU that have main road passing through to access timber, develop and implement road building, harvesting and hauling schedule to minimize industrial activities when caribou are using TLHU.

4 Forest Health

4.1 Within each UWRA, maintain desired habitat conditions (all objectives under Sections 1, 2, and 3) by managing forest health epidemics (e.g., bark beetle populations) in a manner that is consistent with the TLHU objectives.

4.1.1 Sanitation and salvage activities cannot contravene maintenance of an un-fragmented distribution (Objective 1.1) of terrestrial lichen habitat or maintenance of a sustainable supply of terrestrial lichen habitat (Objective 2.1).

5 Fire Management

5.1 In appropriate fire management plans, spatially identify TLHU and develop objectives and strategies that are consistent with Sections 1, 2 and 3.

5.2 Within TLHU where forest development is currently not viable or operational, consider the use of prescribed fire to achieve a sustainable supply of terrestrial lichen habitats. This objective to be met simultaneously with Objective 1.1

6 Range (Livestock)

6.1 Where existing range tenures overlap with TLHU, manage for pine lichen to reduce conflicts between caribou and livestock.

6.1.1 Address range use and timing (duration of use) so that livestock and associated range activities do not result in:

6.1.1.1 displacement of caribou from the TLHU

6.1.1.2 damage or degradation (i.e. trampling, fragmentation, etc.) of pine lichen habitat

6.1.1.3 conversion of pine lichen habitat to forbe or moss cover

6.1.2 New range development features such as, but not limited to, waterholes, fences, salt blocks/sites, corrals, access roads, and trails, that would result in concentration of livestock in the TLHU, will not be developed within the TLHU.

6.2 Where new range tenures overlap with TLHU, reduce conflicts between caribou and livestock.

6.2.1 No livestock grazing or browsing within the TLHU.

6.2.2 Range development features such as but not limited to, waterholes, fences, salting blocks/sites, corrals, access roads, and trails, will not be developed within the TLHU.

6.3 Within all TLHU, do not introduce animals that pose a proven health risk to caribou.

2) Pine Pass high elevation winter range (Figure 2)

In areas identified as **Corridor**, maintain a minimum of 20% of the forest in each corridor as 100+ years of age in a contiguous, windfirm corridor where no more than 20% of the area is in less than 3m green-up condition at any time by:

a. managing forest health to reduce conflicts between caribou and bark beetle management. In the event of a bark beetle outbreak, limit harvesting to forest health sanitation activities which maintain the habitat attributes of the Corridor UWR
b. encouraging fire suppression within ungulate winter range units to maintain age class distribution and contiguity functions of the UWR, and reflect UWR objectives in appropriate Fire Management Plans.

In areas identified as **High**, maintain old forests that provide arboreal lichens for forage by:

1) prohibiting forest harvesting, except Category A approved cut blocks and associated roads authorized at the time of ungulate winter range designation
2) maintaining contiguous, unfragmented forests that provide habitat types that minimize predation; human access and disturbances which can lead to mortality or displacement to less favourable habitats by following management practices to:
    a. control access and human disturbance:
        i. plan the location and design of major/secondary access routes to avoid the winter range units unless there are no other practicable alternatives for required access. No new roads will be approved without written consultation with the Environmental Stewardship Division of the Ministry of Water, Land and Air Protection;

ii. where road/trails are constructed within this winter range, reclaim or plant road/trails to limit access;
iii. within adjacent winter range, limit permanent road access within 2 km of this winter range by access restrictions or road deactivation (to reduce human disturbance and illegal caribou harvest);

b. practice forest health activities only where the District Manager determines that no action would result in a significant negative impact on adjacent timber values. The District Manager may use a similar evaluation to that used for harvesting in a Riparian Reserve.

c. limit fire suppression within ungulate winter range units which do not pose a significant risk to adjacent forest lands and reflect UWR objectives in appropriate Fire Management Plans.