



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

**INFORMATION CONCERNING WILDLIFE HABITAT FOR THE WINTER SURVIVAL OF UNGULATE SPECIES IN THE NASS 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 the Nass 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 or act in a manner consistent with section 9(3) of the *Woodlot Planning and Practices Regulation*.

It is the intention that management strategies associated with the full UWR submission, notably strategies associated with access management, be incorporated in Sustainable Resource Management Plans.

**Nass TSA**

**1) Mountain Goat**

**Amount:**

The amount included in the Notice for Mountain goats is based on the total area contained within goat suitability mapping that was done for approximately 2700 km<sup>2</sup> of the Bell II area (see Keim 2003). The THLB amount is based on ESA Ew1 and 2 budget from TSR 2 totaling 390.5 ha at 100% netdown.

**Distribution:**

Figures and spatial information (shapefiles) to support the amount and distribution statements are included in the folders titled “Figures” and “Spatial Data” on the following ftp site:  
[ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc\\_data/Approved\\_FRPR\\_sec7\\_WLPPR\\_sec9\\_Notices\\_and\\_Supporting\\_Info/Ungulate\\_Winter\\_Range/Timber\\_Supply\\_Areas/Nass\\_TSA/Supporting\\_Info/](ftp://ribftp.env.gov.bc.ca/pub/outgoing/cdc_data/Approved_FRPR_sec7_WLPPR_sec9_Notices_and_Supporting_Info/Ungulate_Winter_Range/Timber_Supply_Areas/Nass_TSA/Supporting_Info/)

Inclusion of draft and proposed Ungulate Winter Range boundaries in the supporting information does not prejudice the review and comment that may be ongoing around these Ungulate Winter Ranges. Where Ungulate Winter Ranges have not been through the full review and comment process, MWLAP will continue to work with affected parties to address the Ungulate Winter Range boundaries.

Figure 1 outlines the Mountain Goat suitability modelling that has been completed for approximately 2700 km<sup>2</sup> of the 8000 km<sup>2</sup> of Last Frontier Heliskiing's tenure area in the Bell II area (Keim 2003).

A substantial amount of work is required to adequately map out goat winter range throughout the Nass TSA. MWLAP intends to work with forest licensees to complete this mapping. The mountain goat habitat suitability model (algorithm) has been developed for application in the Nass TSA, which will provide substantial cost savings in field confirmation of goat winter range.

### **Attributes:**

Reference citations for specific UWR attributes within the notice are noted below for scientific defensibility.

- a) escape terrain being defined as rocky outcrops, cliffs or bluffs with slopes of 45<sup>0</sup> to 60<sup>0</sup>, and up to 400 meters from escape terrain (Pollard 2002, Keim 2002, McFetridge 1977, Fox 1983, cited in Fox et al. 1989, Schoen and Kirckhoff 1982, Smith 1985 state that 90% to 95% of year-round use occurs within 400 m of escape terrain, and commonly within 250 m. In either case, a 250 m buffer versus a 400 m buffer to escape terrain, the point is that the buffers are not an arbitrary width but are reflective of the quality of habitat, its location with respect to escape terrain, its present use, and its potential for use);
- b) aspects within 115<sup>0</sup> to 280<sup>0</sup> azimuth (Keim 2002, Keim 2003, supporting evidence as cited in Pollard 2003, Pollard 2000(a) & Pollard 2000(b));
- e) in forested sites, canopy old-growth cover between 60-80% (Russell 1974) to effectively intercept snow and make understory vegetation and arboreal lichen litterfall available and accessible to mountain goats;

In addition, attribute I f) – mountain goat refuge should consider the seasonality of mountain goat winter range for the Nass TSA is defined as being from November to mid-June; refuge is provided if human access management measures are in place.

### **II) Future intent**

An amount for moose has not been included in the Notice. The Nass Wildlife Management Area has described where the best moose winter range is located (Nass Wildlife Committee 2000). MWLAP will be working to develop an amount, distribution and attributes for moose and will be amending the Notice once this is completed.

Forestry and moose winter range management are compatible provided that access management, forage production and thermal/screening cover is properly planned. Considering the compatibility of moose winter range management with timber management, impact to the timber supply is not anticipated. Thus, it is not likely that moose winter range management modeling is needed for assessing timber supply impact based on experience elsewhere in the Skeena Region.

### **References:**

Fox, J. 1983. Constraints on Winter Habitat Selection by Mountain Goats in Alaska. Seattle: College of Forest Resources, University of Washington; Ph.D. dissertation.

Fox, J., C. Smith, and J. Schoen. 1989. Relation between Mountain Goats and their Habitat in Southeastern Alaska. U.S. Forest Service, General Technical Report PNW-246.

Keim, J. 2002. Modeling Core Winter Habitats from Habitat Selection and Spatial Movements of Collared Mountain Goats in the Taku River Drainage of North-West British Columbia. Unpublished version.

Keim, J. 2003. Confirming Winter Mountain Goat Habitats from a Habitat Suitability Model in the Bell II Study Area. Report produced for the Ministry of Water, Land & Air Protection, Skeena Region, B.C.

McFetridge, R. 1977. Strategy of Resource Use by Mountain Goat Nursery Groups. In W. Samuel and W. MacGregor eds. Proceedings, First International Mountain Goat Symposium; 1977 Fed. 19: Kalispell, M. Victoria, BC: Province of British Columbia, Ministry of Recreation and Conservation, Fish and Wildlife Branch: 169-173.

Nass Wildlife Committee. 2000. Nass Wildlife Management Plan.

Pollard, B. 2000(a). Critical Mountain Goat Winter Range Mapping as Developed for the TFL #1 Timber Supply Impact Assessment.

Pollard, B. 2000(b). Critical Mountain Goat Winter Range Mapping in TFL #41 for a Timber Supply Impact Assessment.

Pollard, B. 2000(c). Review and Adjustment of Moose Winter Range Mapping within the Kalum South Resource Area.

Pollard, B. 2001. Moose Winter Range Mapping for the North Coast Forest District.

Pollard, B. 2002. Mountain Goat Winter Range Mapping for the North Coast Forest District.

Pollard, B. 2003. Winter Range Mapping For Mountain Goats in the East Kalum. East Skeena & Skeena South

Russell, D. 1974. Grizzly Bear – Mountain Goat Investigations in Knight Inlet, B.C. British Columbia Fish and Wildlife Branch, Nanaimo, B.C.

Schoen, J. and M. Kirckhoff. 1982. Habitat Use by Mountain Goats in Southeast Alaska. Juneau, AK: Alaska Department of Fish and Game; Federal Aid in Wildlife Restoration Project W-17-10, 11 and W-21-1, 2 final report; job 12.4R.

Smith, C. 1985. Habitat Use by Mountain Goats in Southeastern Alaska. Juneau, AK. Alaska Department of Fish and Game; Federal Aid in Wildlife Restoration Project W-22-2; final report; job 12.4R

Vanderstar, L. 1994. Special Management Zone Draft Guidelines – Bulkley LRMP. B.C. Environment. Unpublished.