



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

**INFORMATION CONCERNING WILDLIFE HABITAT FOR THE WINTER  
SURVIVAL OF UNGULATE SPECIES IN THE NORTH COAST 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 North Coast 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*.

**North Coast Timber Supply Area**

**Amount:**

The amount included in the notice is consistent with the Jan 1, 2004 North Coast Rationale for AAC Determination: *"No specific exclusions were applied in the timber supply review analysis to account for wildlife habitat, as it was assumed that the large proportion of area available outside the land base assumed available for timber harvesting (as reflective of the numerous constraints for ESA's, operability, visual sensitivity, riparian habitat, etc.) would adequately meet the habitat needs of the wildlife species in the North Coast TSA"*.

The amount included for Mountain is based on UWR polygons proposed for Mountain Goat in the North Coast TSA. The amount included for Moose is based on proposed UWR polygons for Moose in the North Coast TSA. No impact to timber supply will occur as a result of maintaining moose winter range within the North Coast TSA. Forestry and moose winter range management are compatible provided that access management, forage production and thermal/screening cover is properly planned.

Proposed UWR polygons are based on photo interpretation, map interpretations for topographic and vegetative features including slope steepness, aspect, elevation and forest cover, followed by winter confirmation surveys.

**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/North\\_Coast\\_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/North_Coast_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 shows the mountain goat and moose winter range polygons proposed by the Ministry of Water, land and Air Protection within the North Coast TSA.

### **Attributes:**

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

### **I) Mountain Goats**

- a) escape terrain being defined as rocky outcrops, cliffs or bluffs with slopes of  $45^{\circ}$  to  $60^{\circ}$ , 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  $115^{\circ}$  to  $280^{\circ}$  azimuth (Keim 2002; supporting evidence as cited in Pollard 2002);
- 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 North Coast is defined as being from November to mid-June; refuge is provided if human access management measures are in place.

### **II) Moose**

- a) primarily low elevation riparian communities, especially along dynamic riverine systems where much of the riparian vegetation is in a sub-climax seral stage (Pollard 2001);
- b) preferred winter food species being willow, cottonwood, red-osier dogwood, highbush cranberry, *Vaccinium* spp., and cedar (Pollard 2001);
- c) sufficient forest cover (minimum of 65 % crown closure) to provide for snow interception where snow depths begin to restrict moose mobility (65 cm +) (Vanderstar 1994);
- d) sufficient food availability within 80 meters of security cover (Vanderstar 1994);

## **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.

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.

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.

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.