

B.C. Mountain Goat Workshop, Prince George, BC 2005

Project Title: Inventories and Assessments of Non-Alpine Mountain Goat Habitats in the Morice and Lakes Timber Supply Areas

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4. Project location: Nadina Forest Distret (Morice and Lakes Timber Supply Areas)

Coastal: Transition: Interior:

5. Project timeframe: Start (month/year): Oct/1997 End (month/year, or ongoing): Mar/2003

6. Project status: Data collection Analysis Write-up Publication

7. Project objectives: (briefly describe the primary objectives of your project)

This project description provides a summary of a number of inter-related studies that were carried out between 1997 and 2003 to look at the extent and use of non-alpine mountain goat habitats in the Morice and Lakes Timber Supply areas (TSAs). The central portions of the two TSAs contain numerous rocky bluffs, cliffs and canyons within a forested landscape away from mountainous areas, which are used by a population of over 100 mountain goats. The situation is relatively unique for mountain goats in terms of the isolation of relatively small areas, with limited escape terrain, within distributed over a forested landscape. This situation may make this goat population sensitive to natural and human related mortality factors and disturbance. The objectives of the individual studies was to determine the amount of non-alpine mountain goat habitat was in the Morice and Lakes TSAs and to examine methods for predicting their occurrence, as well as determining the amount of use they receive by mountain goats.

8. Project descriptors (select all that apply):

Research

Habitat Use:

Forestry Interactions:

Management

VHF collars:

Oil & Gas Interactions:

Inventory

GPS collars:

Mineral Exploration:

Predation:

Harvest:

Aerial Disturbance:

Habitat Modeling:

Population Dynamics:

Human Disturbance:

Other:

8. Project description (provide a brief description of your project including methods and main findings or results to date):

The initial study started in October 1997 and concluded in October 1998 to monitor seasonal and weather related habitat use of a number of sub-alpine forested rocky bluffs near Nadina Mtn, through observations of mountain goats, sign and habitat assessments. The majority of mountain goat observations were of resting or feeding behaviours with feeding behaviours increasing during the fall

and winter. Use of steep rocky habitats was most often observed, along with use of forested habitats during the fall and summer.

In 1999 a multi-year, multi-task project was initiated to monitor movements of mountain goats from Nadina Mtn to a nearby mineral lick, initiate population monitoring and determine the extent of non-alpine habitat use near Nadina Mtn. The non-alpine habitat use portion of the study was undertaken to identifying potential habitats through interviews with resource users and managers, air-photo interpretation and aerial surveys. Ground sign removal transects were then conducted on 29 habitat sites using 100m belt transects. Sign density varied by site, with some sites with no current use, having very high sign densities, indicating intensive use in the past.

During 2000, sites near Nadina Mtn were revisited and ground sign removal transects were conducted to determine which sites were revisited and establish some estimate of frequency of revisit by mountain goats. Based on the sign removal transects, higher quality habitats near Nadina Mtn were re-used, while habitats further away did not have any sign, suggesting a lower re-visitation rate.

In 2000 and 2001 inventories of non-alpine mountain goat habitats were undertaken in the Morice and Lakes Forest districts to determine the extent and use of these habitats. Potential habitats were initially identified using a Geographic Information System (GIS) query of slopes greater than 40 degrees. Air-photos were then examined to determine if the steep slopes were considered to be mountain goat habitat, based on the amount steep rocky terrain. Fixed-wing aerial assessments were then conducted on the potential habitats and a rating provided dependent on type and extent of the areas deemed to be suitable escape terrain. Ground assessments were then conducted on a sub-sample of the areas to determine if the areas were currently or historically used by mountain goats. A total of 1,291 potential non-alpine mountain goat habitat areas were identified. Approximately half of the areas were rated as Nil (no goat habitat potential) based on air photo interpretation, GIS review, aerial surveys, or ground surveys, resulting in a total of 593 habitat areas that offered suitable habitat for mountain goats (442 Morice, 151 Lakes).

In 2002, further ground sign surveys were conducted at 103 potential habitat areas within the central Morice and Lakes Forest Districts to refine our estimates of occupancy and complete a resource selection function analysis. Mountain goat sign was detected at 56 of these sites. The proportion of areas used by goats differed between the two Districts, with much lower frequency of use in the Lakes (31%) than in the Morice (65%). Two different models were tested as part of the resource selection function (RSF) analysis and both found that the only habitat variable that was significantly correlated with use by mountain goats was the amount of escape terrain. Further, the results indicated that if any escape terrain was available then there was a significant probability that goats could use the area.

9. Project documentation (provide a list of citations for all progress, final, or published reports)

Mahon, T., M. Nelligan, L. Turney, and R. Blume. 2003. Inventory of mountain goats in non-alpine habitats in the Morice and Lakes Forest Districts. Unpub. rep. prep. for Houston Forest Products Ltd. and Canadian Forest Products Ltd. Smithers, BC. 14pp.

Turney, L., R. Blume and T. Mahon. 2002. An inventory of non-alpine mountain goat habitat in the Lakes Forest District. Unpub. rep. prep. for Min. Sus. Res. Man., CanFor Ltd. and Houston Forest Products Ltd. Smithers, BC. 20pp + append.

Turney, L., R. Blume, J. Farkvam and T. Mahon, 2002. Mountain goat movement patterns and forested habitat use near Nadina Mountain, British Columbia - 2001 summary report. Unp. rep. prep. for Houston Forest Products Ltd, Canadian Forest Products Ltd, Min. of Water, Land and Air Prot. and Min. of Sust. Res. Manage. Smithers, BC. 19pp + append.

- Turney, L., R. Blume, and T. Mahon. 2001. An inventory of non-alpine mountain goat habitat in the Morice Forest District. Unpub. rep. prep. for Min. of Env., Lands & Parks. Smithers, BC. 23pp + append.
- Turney, L., T. Mahon, R. Blume and J. Farkvam. 2001. Mountain goat populations, movement patterns and habitat use in forested habitats near Nadina Mountain and Foxy Creek British Columbia - 2000 summary report. Unpub. rep. prep. for Houston Forest Products Ltd, Canadian Forest Products Ltd. and Min. of Env. Lands and Parks. Smithers, BC. 24pp + append.
- Turney, L., R. Blume and T. Mahon. 2000. Mountain goat populations and movement patterns near Nadina Mountain -1999 summary report. Unpub. rep. prep. for Min. of Env. Lands and Parks, Northwood Inc. and Houston Forest Products Ltd. Terrace, BC. 24pp + append.
- Turney, L., R. Blume and T. Mahon. 1999. Habitat use by mountain goats near Nadina mountain - final report. Unpub. rep. prep. for Min. of Env. Lands and Parks and Houston Forest Products Ltd.. Terrace, BC. 32pp + append.
- Pacific Cascade Consultants Ltd. and WildFor Consultants Ltd. 1998. Telkwa Mountain Goat Project – Field Report: January to March 1998. Unpub. rep. prep. for Ministry of Env., Lands and Parks. Terrace, BC. 15pp.
- Ardea Biological Consulting and WildFor Consulting Ltd. 1998. FRBC mountain goat project, field report – April to September 1998. Unpub. rep. prep. for Min. of Env. Lands and Parks. Terrace, BC. 13pp + append.
- Turney, L. 1998. Telkwa mountain goat project – field report: October to December 1997. Unpub. rep. prep. for Min. of Env., Lands and Parks. Terrace, BC. 8pp.