

B.C. Mountain Goat Workshop 2005

Project Title: A GPS- telemetry study of mountain goat habitat use in south coastal B.C. : S. Taylor, W. Wall and Y. Kulis

1. Project Leader(s): Wayne Wall, International Forest Products Limited

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4. Project location: Bute and Toba Inlets

5. Project timeframe: Start (month/year): 10/2001 End (month/year): 07/2003

6. Project objectives: (briefly describe the primary objectives of your research)

Describe seasonal home ranges; movements; selection patterns of winter habitat; predict winter habitat use.

7. Project descriptors (select all that apply):

Research

Habitat Use:

Forestry Interactions:

Management

VHF collars:

Oil & Gas:

Inventory

GPS collars:

Aerial Disturbance:

Coastal:

Harvest:

Human Disturbance:

Transition:

Predation:

Population Dynamics:

Interior:

Other:

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

We analyzed data collected from 18 GPS collars from 2001 to 2003 in southwestern coastal British Columbia to improve understanding of coastal mountain goat (*Oreamnos americanus*) habitat use and its relation to forestry operations. We described seasonal home ranges, movements, and winter habitat selection patterns to predict winter habitat use in similar geographic areas. Seasonal periods were determined for individual goats by observing shifts in elevation use. For habitat selection analyses determined at 2 different scales, we used a Geographic Information System (GIS), digital forest cover mapping, and a 25-m raster digital elevation model (DEM). At a broad scale of selection, we pooled locations across animals and conducted chi-square analyses for 18 goats. At a finer scale of selection, we used logistic regression to determine resource selection functions (RSF) for 15 individual goats. We used an information theoretic approach (AIC) to select the most likely models from an a priori set of candidate models to determine biological factors driving coastal winter habitat selection. We averaged selection coefficients from individual RSFs in a second-stage analysis to develop predictive maps of relative likelihood of use across the study area. Use of younger forests

was greater than expected, particularly among males, and was largely associated with previously-burned stands 20-40 yrs old. However, use of mature and old forests was relatively high for both sexes and was higher for males (42%) than for females (29%). Presence data was best fit by global models. Selection coefficients of RSFs were relatively consistent but variable for forest volume. At the fine scale, males were consistently associated with higher forest volume and older forest age. Females were more often associated with older forest age yet with lower forest volume.

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

1. HABITAT SELECTION BY MOUNTAIN GOATS IN SOUTH COASTAL B.C. (Submitted to NWSGC) 2004

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2. A GPS- telemetry study of mountain goat habitat use in south coastal B.C. : S. Taylor, W. Wall and Y. Kulis (Project Completion Report) July 2004