

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

**Project Title:** Mountain goat inventory and habitat selection in the Robson Valley, British Columbia

**1. Project Leader(s):** Kim Poole

**2. Project Team Members:** Kim Poole, Doug Heard, Glen Watts

**3. Project contact information:** Phone: 2508254063 Fax: 2508254073

Email: klpoole@shaw.ca

Web page:

**4. Project location:** Robson Valley

Coastal:

Transition:

Interior:

**5. Project timeframe:** Start (month/year): Jul 1997 End (month/year, or ongoing): Mar 2000

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

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

1. Determine the patterns of movements and habitat/forest use by mountain goats with the expectation that forest use would primarily be during the period when goats used low elevation mineral licks and during winter., and 2. Estimating mountain goat population size and densities in Robson Valley; determining sightability correction factors.

**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):

Abstract (habitat): To identify the potential for adverse effects of forest development on Mountain Goats (*Oreamnos americanus*), we documented the patterns of forest use by goats and the factors influencing goat habitat use. We used a combination of 15 very high frequency (VHF) and six global positioning system (GPS) radiocollars to document the distribution and movements of 21 (15 female, 6 male) goats from 1997–1999 in the mountains surrounding the Robson Valley in east-central British Columbia. Because canopy closure reduces the likelihood that a GPS receiver will obtain a location fix, we estimated that GPS collars underrepresented forest use by about 23%. Three goats used separate winter and summer ranges separated by 8–13 km, while most simply exhibited seasonal shifts in elevation. In winter, goats were more often at lower elevations, in commercial forest stands, on southerly aspects, and moved less each hour and over the course of the winter. Goat use declined in areas >500 m from escape terrain and goats were found lower in elevation from evening to dawn compared to daylight hours. Collared goats used high elevation

licks, which were either within their home range, or in two cases, 6 and 14 km from their typical home range. We documented use of known mid-elevation mineral licks by three collared goats, but no use of known low elevation (valley bottom and lower slopes) mineral licks. Robson Valley goats appeared to be at relatively low risk from disturbances related to logging, because although forest use was documented during winter, it occurred primarily on high elevation, steep slopes where trees were currently of low commercial value, and goats made little use of low elevation mineral licks. We recommend that in this area a forested buffer of 500 m around cliffs should be left to reduce the possibility of adverse effects on goats; especially on southerly aspects above 1300 m.

**Abstract (inventory):** A random sample unit survey using sightability correction was used to estimate mountain goat (*Oreamnos americanus*) population size along the Robson Valley in east-central British Columbia in August 1998. Twenty random sample units (12.4 ± 0.67 [SE] km<sup>2</sup> area) were surveyed in a 2,707-km<sup>2</sup> census zone above the 5,500-foot (1675 m) contour line. Standard helicopter survey techniques were employed to thoroughly search each unit (mean survey effort of 3.8 ± 0.21 min/km<sup>2</sup>). Twelve radio-collared goats within the census zone provided sightability correction. We counted 127 mountain goats in the 20 units, covering 248 km<sup>2</sup> (9.2% of the census zone). The uncorrected population estimate for the census zone was 1,400 ± 260 goats (95% CI 900 to 1,900), and the mean density was 0.51 goats/km<sup>2</sup>. Observers saw 8 of 12 radio-collared goats (67%), giving an adjusted population estimate for the census zone of 2,100 (95% CI 1,200 to 3,800), and an adjusted density of 0.77 goats/km<sup>2</sup>. Accuracy and precision of future surveys could be increased by accurate stratification, sampling more units, using more marked (collared) goats, and ensuring that the marked segment of the population better reflects the composition of the census population.

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

Poole, K.G., and D.C. Heard. 2003. Seasonal habitat use and movements of mountain goats, *Oreamnos americanus*, in east-central British Columbia. *Canadian Field-Naturalist* 117:565-576.

Poole, K.G., D.C. Heard, and G.S. Watts. 2000. Mountain goat inventory in the Robson Valley, British Columbia. *Biennial Symposium Northern Wild Sheep and Goat Council* 12:114-124.

Poole, K.G., and D.C. Heard. 1998. Habitat use and movements of mountain goats as determined by prototype GPS collars, Robson Valley, British Columbia. *Biennial Symposium of the Northern Wild Sheep and Goat Council* 11:22-35.