

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

**Project Title:** Mountain goat trail movements near Nadina Mountain

**1. Project Leader(s):** Laurence Turney

**2. Project Team Members:** Roy Blume, Todd Mahon, Jamie. Farkvam

**3. Project contact information:** Phone: (250) 877-6705 Fax: (250) 877-6805  
Email: laurence@ardea.ca Web page: www.ardea.ca

**4. Project location:** Nadina Mountain, south of Houston, BC.

Coastal:  Transition:  Interior:

**5. Project timeframe:** Start (month/year): Jul/1999 End (month/year, or ongoing): Apr/2005

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

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

Monitor the effects of forest harvesting near, and a road built across a trail used by mountain goats to access a mineral lick near Nadina Mountain, south of Houston, BC. This project was part of a comprehensive set of projects related to mountain goat habitat use and the effects of roads and timber harvesting on mountain goats in forested areas of the Morice and Lakes Timber Supply Areas.

**8. Project descriptors** (select all that apply):

Research <input checked="" type="checkbox"/>	Habitat Use: <input type="checkbox"/>	Forestry Interactions: <input checked="" type="checkbox"/>
Management <input checked="" type="checkbox"/>	VHF collars: <input type="checkbox"/>	Oil & Gas Interactions: <input type="checkbox"/>
Inventory <input type="checkbox"/>	GPS collars: <input type="checkbox"/>	Mineral Exploration: <input type="checkbox"/>
Predation: <input type="checkbox"/>	Harvest: <input type="checkbox"/>	Aerial Disturbance: <input type="checkbox"/>
Habitat Modeling: <input type="checkbox"/>	Population Dynamics: <input type="checkbox"/>	Human Disturbance: <input type="checkbox"/>

Other:

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

A remote camera monitoring system was used to monitor pre and post-harvesting mountain goat use patterns of a trail used by mountain goats to access a mineral lick near Nadina Mountain, south of Houston, BC. Following road construction and timber harvesting, the trail was re-monitored to determine the effects of the road and nearby timber harvesting on movement patterns.

1999 (Pre-Harvest) - Preliminary year of study, with limited data gathered due to late start and development of techniques. Results showed that goat use of the trail was found to be higher during the early morning (dark) hours and female mountain goats were detected more often than males.

2000 (Pre-Harvest) - Results indicated an increase in the number of events and photos of animals using the trail system. Adult female goats and kids were photographed most often during the period May to October 2000. Mean travel times were calculated for identifiable goats along the trail and it was determined that mountain goats tended to travel faster returning from the mineral lick than going

towards it. The trail monitoring program was also able to document, animals hesitating to venture onto the trail, possibly due to the noise of the trail monitoring equipment.

2001 (Pre-Harvest) - Results showed that single mountain goats accounted for 73% of the photographs from trail monitoring, with groups of two animals accounting for 22% of the photographs and groups of three or more animals making up the remaining 5%. Adult female mountain goats with kids were the most frequently photographed group type during trail monitoring, followed by nannie/kid pairs with barren females and/or juveniles. Males tended to travel alone and female mountain goats caused approximately three times as many photographs as males. Several animals could be identified as they travelled between monitoring sites by coat markings or VHF radio collars, and from tracking this movement it was found that the average time of travel to the mineral lick was generally similar to the time of travel of animals returning to Nadina Mountain. The average stay of these identifiable female mountain goats at the mineral lick was just over 2 days.

2004 (Post-Harvest) - Overall, trail use patterns were similar post-harvest as what was found pre-harvest, although the overall numbers of goat events was less and travel to the lick stopped about one month earlier in 2004 when compared to 2000/2001. Single mountain goats accounted for 55% of the photographs resulting from trail monitoring in 2004, with groups of animals accounting for 45% of the photographs. Adult female mountain goats with kids or young were the most frequently photographed group type during trail monitoring, followed by nanny/kid pairs with barren females and/or juveniles. There was no difference in the number of events on either side of the road where the trail crossed, but there was a significant difference in the travel times from the pre-harvest to the post-harvest years. During the 2004 sessions, the average travel times were about 35 to 40 minutes, while the 2000/2001 travel times averaged 22 to 27 minutes. In 2004 there was a marked increase in the number of photographs of moose and black bears using the trail than what was seen in 2000/2001.

The road will be de-activated in 2005 to hopefully reduce human use and in 3 years it is planned that the trail will be monitored again to see if travel patterns have resumed.

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

- Turney, L. and C. Vandermark. *in prep.* Trail movements by mountain goats under pre and post timber harvesting conditions. Unpub. rep. prep. Canadian Forest Products Ltd. Smithers, BC.
- 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., 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.