

Snowmobile-Caribou Surveys Within The Quesnel Highlands, Cariboo Region, 2005



Photo: Geoff Price

by
Geoff Price
Ecosystem Officer



Environmental Stewardship Division
Cariboo Region

Acknowledgements

I would like to thank John Youds for his support and input over the past three years. I would also like to thank Chris Schmid and Roger Packham, Ecosystem Biologists from Alexis Creek and 100 Mile House Forest Districts respectively, for their assistance in the 2005 monitoring.

Summary

Mountain Caribou have been identified as threatened by COSEWIC and as red-listed (endangered) in British Columbia and have been the centre of conservation concern for a number of years. There are concerns about the potential impact of backcountry activities on caribou winter range. Backcountry recreation activities, snowmobiling and heli-skiing in particular, are considered to be a major conservation concern due to the potential for displacement of caribou from their winter habitat.

To address this issue, a voluntary multi-year agreement was entered into with the local snowmobile clubs from Quesnel, 100 Mile House and Williams Lake, the Ministry of Agriculture and Lands and the Ministry of Environment in 2004.

This report documents the survey results from Year 3 of the voluntary management agreement. Six fixed-wing flights were undertaken from between February 12, 2005 and April 16, 2005. The survey results show that a total of two snowmobiles were sighted in closure zones during this period with 107 snowmobiles seen in caution zones and four snowmobiles in areas under review and four snowmobiles were seen in Wells Gray Park. Snowmobile tracks were also seen in closure zones but no snowmobiles were seen, indicating that there was use in these areas but the number of machines was unknown.

Introduction

In 2003, the ministries of Environment (MOE) and Agriculture and Lands (MAL) and the Quesnel Highlands Management Society (QHMS) had entered into a two-year voluntary agreement to address potential impacts on caribou and caribou habitat by snowmobiles in the Mountain Caribou range in the Cariboo Region. A monitoring plan was included in this agreement to collect baseline data on snowmobile use in the *Voluntary Closure Zones* and *Caution Zones* as identified and mapped by the AL. *Voluntary closure zones* are areas of critical caribou habitat. These areas were to receive no snowmobile activity. *Caution zones* are areas of critical caribou habitat that had not been closed to snowmobiling activity. However, in these areas, if caribou or caribou tracks were seen, snowmobilers were to avoid direct and indirect disturbance of caribou. In 2004, the two year voluntary agreement was expanded to a multi-year agreement.

Snowmobile surveys from a fixed-wing aircraft were conducted on a regular basis throughout the 2005 winter season from February 12, 2005 until April 16, 2005.

The project was funded through the Habitat Conservation Trust Fund program and the MOE operational budget.

Project Area

The monitoring project study area covers the Wells Gray North and the Barkerville sub-populations of Mountain Caribou from Spanish Creek in the south to Two Sisters Mountain in the north. The study area is exclusive of Wells Gray and Bowron Lakes parks and covers the eastern portions of the 100 Mile, Central Cariboo and Quesnel Forest Districts. The survey areas are consistent with areas identified by the Ministry of Environment as critical caribou winter habitat. The monitoring project study area was divided into four zones (see Figure 1): Zone A covered the area from Spanish Creek north to the East Arm of Quesnel Lake; Zone B covered the Junction area between the East Arm and North Arm of Quesnel Lake including Blue Lead Creek; Zone C covered the area from the North Arm of Quesnel Lake to the Cariboo River; Zone D covered the area from Cariboo Lake north to Two Sisters Mountain.

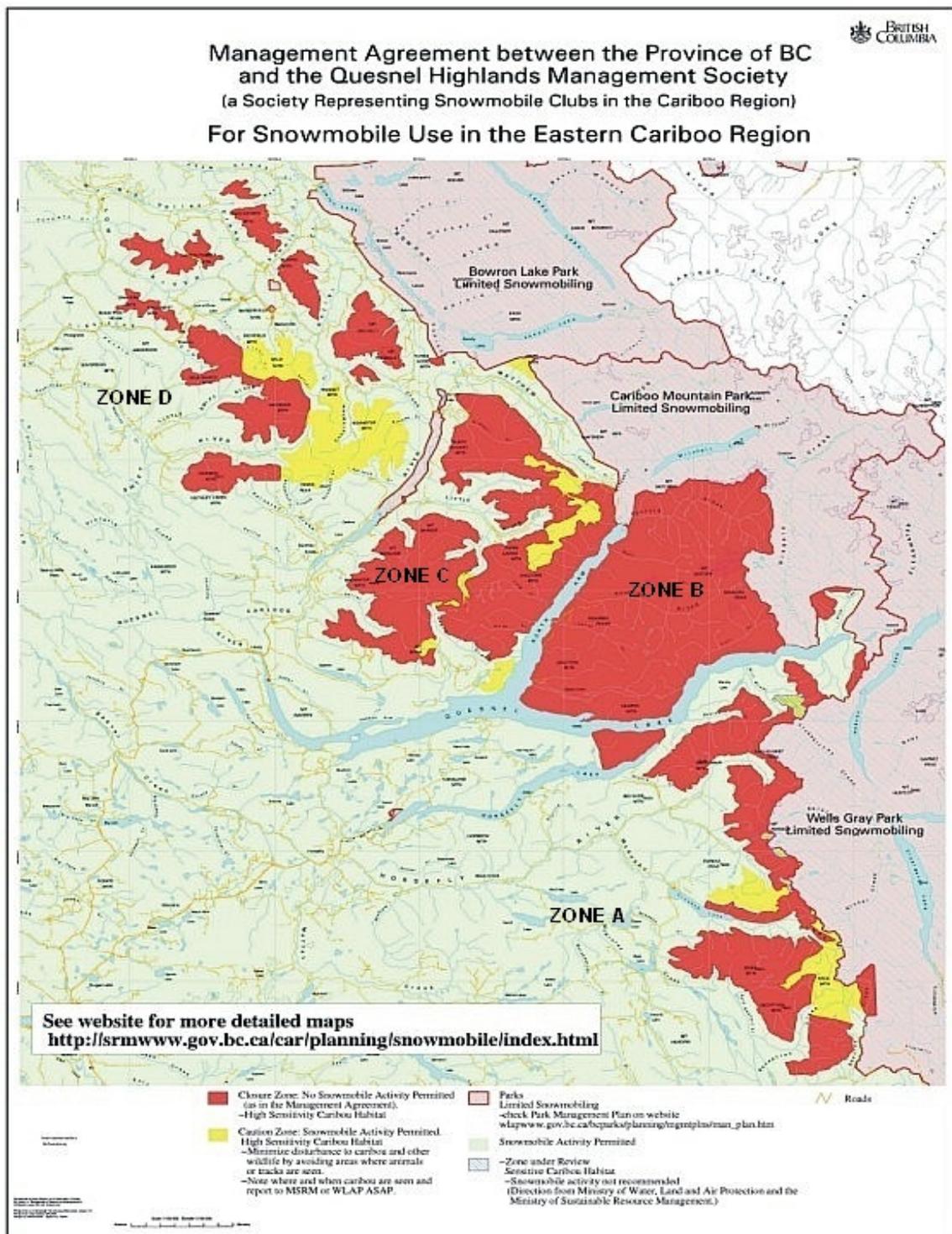


Figure 1. Map of the project area indicating the zonation of the project area.

Methodology

Initially, in 2003, the monitoring flights were done on weekdays. However, it was discovered that there were few snowmobiles present on weekdays. Therefore, the monitoring flights were shifted to weekends in 2004 to take advantage of the peak snowmobile use periods. Usually two zones were flown per day, e.g., Zones A and B

were flown on a Saturday and Zone C and D the following day, weather permitting. All flights originated from the Williams Lake Airport.

The flights were done using either a Cessna 182 or Cessna 205 fixed-wing aircraft depending on availability. These aircraft came equipped with a Garmin 95 Global Positioning System (GPS) unit with a fixed antenna. These units were used rather than a handheld unit as the fixed units are more accurate and consistent for this application. The data was recorded on a Snowmobile Monitoring Data Collection Form (attached).

In 2003 and 2004, in order to maintain consistency, each zone was flown in the same direction each flight, weather permitting. For example, Zones A, C and D were flown in a counter clockwise direction, while Zone B was flown in a clockwise direction starting at Blue Lead Creek. In order not to bias the results, the complete zone was surveyed rather than just flying directly to the known areas of snowmobile use. This also afforded the opportunity to spot and record any caribou to supplement the telemetry relocation flights and to add to the MOE's caribou location database. In 2005, Zones A, C, D were flown in one day with only the high risk areas (i.e., Yanks Peak or Meridian Mountain) being sampled instead of the whole zone. Zone B was not sampled because, based on data from the previous two years, there was very little or no snowmobile use.

As snowmobiles or snowmobile tracks were sighted, the GPS co-ordinates were recorded along with the geographic location, the number of snowmobiles, amount of usage and any relationship to caribou. One of the objectives was to identify **caribou and snowmobile use** either through visual sightings or the identification of tracks within the project area. The visual sightings of either caribou or snowmobiles were not crucial to the project other than to confirm numbers. In some instances caribou were consistently noted in certain areas (i.e., Welcome Mountain). Where this occurred, the animals were counted once to avoid duplication and inflating the final totals.

In instances where the snowmobile tracks had covered a large area, and no snowmobiles were evident, GPS co-ordinates were taken at the "corners" of the use area(s). In addition, any caribou sightings and/or tracks were also recorded identifying the GPS co-ordinates, the number of animals seen or the tracks or beds seen and the relationship to snowmobiles if any. These data points were then plotted on a map of the project area (see Figure 2).

Results

Over the course of six flights a total of two (2 %) snowmobiles were observed in *voluntary closure zones* with 107 (98%) snowmobiles observed in *caution zones* with four snowmobiles seen in areas under review and four snowmobiles in Wells Gray Park within the project area (these were not included in the total conformance percentages). The observed numbers of snowmobiles are expected to be lower than actual because the flights were conducted only on weekends and weather conditions played a significant role in whether a zone could be surveyed or a flight conducted. A total of 22 caribou were counted on the project flights with a further 93 animals

estimated, based on tracks or beds, to have been in the project areas. Of the observed caribou, 73 % were in *closure zones*, while 27 % were in *caution zones*. Detailed daily spreadsheets are attached.

TABLE 1: Summary of Observed Snowmobile and Caribou Activity by Closure and Caution Zone for the Quesnel Highlands Survey Area, 2005.

ZONE*	CAUTION/ CLOSURE ZONE**	NO. OF SNOWMOBILES	SNOWMOBILE TRACKS Y/N	NO. OF CARIBOU	CARIBOU TRACKS Y/N
A	Closure	2	Y	0	Y
	Caution	23	Y	0	Y
B	Closure	Not Sampled	N/A	N/A	N/A
	Caution	Not Sampled	N/A	N/A	N/A
C	Closure	0	Y	4	Y
	Caution	82	Y	6	Y
D	Closure	0	Y	12	Y
	Caution	2	Y	Unknown	Y
All	Under Review	4	Y	Unknown	N

*Refer to the Methodology Section for an explanation of the zones.

** Includes Wells Gray Park

TABLE 2: Summary of Observed Snowmobile and Caribou Activity by Closure and Caution Zone and Month for the Quesnel Highlands Survey Area, 2005.

	February	March	April	Totals	%
No. of Flights Snowmobiles	3	1	2	6	
In Closure Zones	2	0	0	2	0.02
Snowmobiles In Caution Zones	38	13	56	107	0.98
Snowmobiles In Review Zones	0 Tracks Only	0	4	4	0
Caribou In Closure Zones	4	0	12	16	0.73
Caribou In Caution Zones	0 Tracks Only	0	6	6	0.27

Discussion

Data collected from February 12, 2005 to April 16, 2005 indicated that, for the most part, the agreement was being adhered to and snowmobilers were respecting the *voluntary closure zones* as 98% of the observed snowmobiles were in caution zones. However, there were some exceptions.

Snowmobile use was again noted on the east side of Grain Creek north of Mt. Stevenson in the caribou harvesting trials. This area is, by agreement, off limits to snowmobiles. As in past years this is still an area of concern. Caribou had used this area this year and it appeared that there was more snowmobile use than in the previous two years.

Project Costs

Aircraft rental for the project totalled 19 hours of flight time costing \$5703.32. Flight times included the ferry time to and from the project area.

Funding is currently in place to continue this project on a limited basis in 2006. The continued monitoring of snowmobile activity will indicate how well the agreement and associated education is working.

Conclusions

Voluntary conformance rates appear to be improving, based on the aerial sample done.

However, snowmobile usage was noted in areas where caribou and caribou tracks were identified. This was evident in the Yanks Peak area where it was noted that snowmobile tracks were in close proximity to either caribou tracks or caribou themselves. More effort may need to be put into the education of the snowmobiling community regarding the voluntary closure zones.



Photo: Geoff Price

Photo 1. These two caribou were seen in the Yanks Peak area approximately 500 meters from snowmobile tracks.

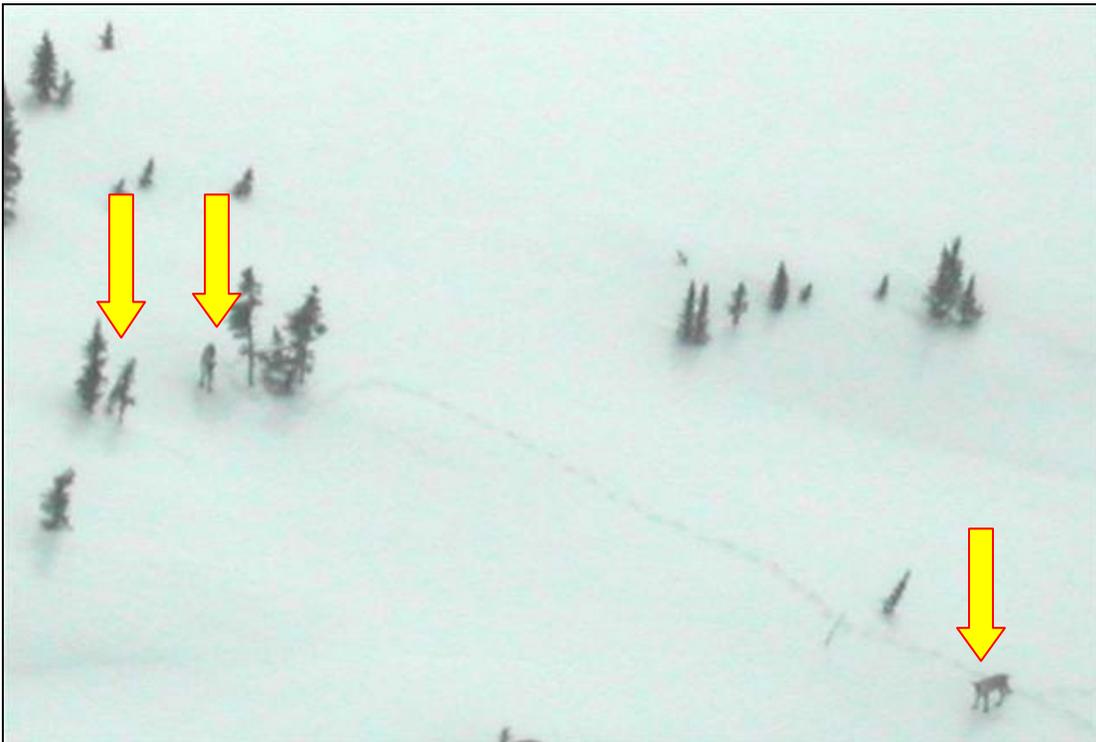
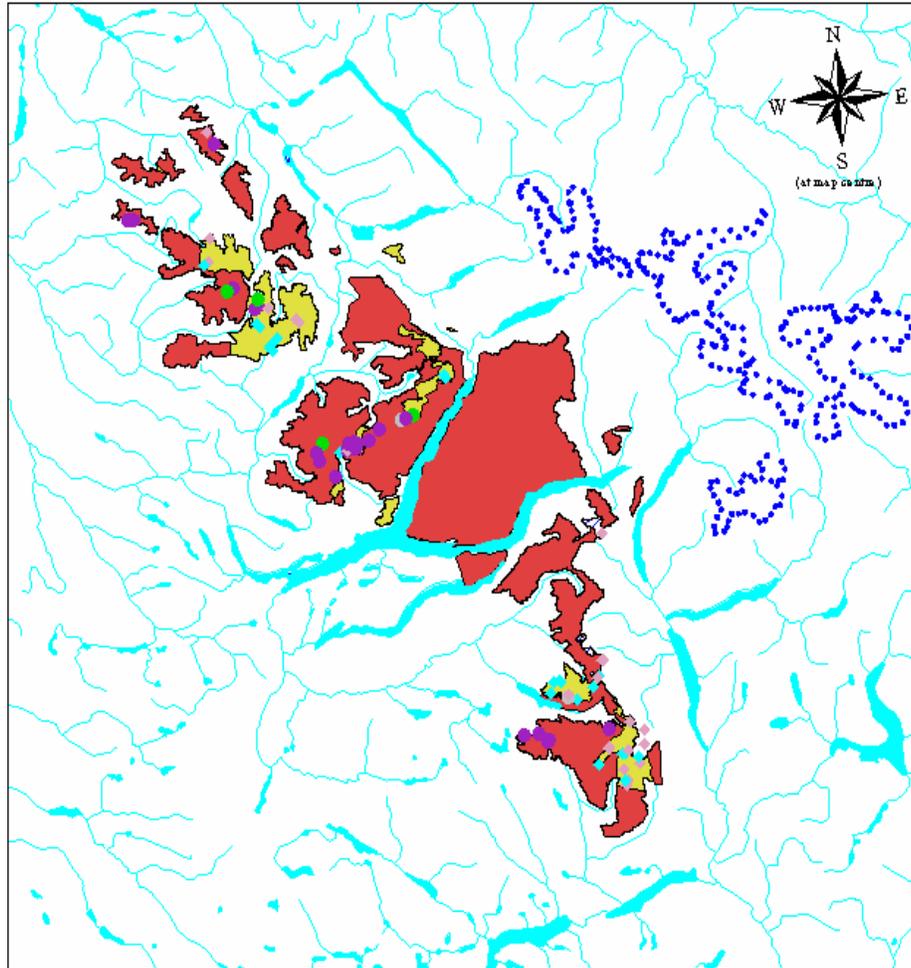


Photo: Roger Packham

Photo 2. These caribou (3 of 4 animals) were seen in the area of Three Ladies Mountain.

2005 Snowmobile Monitoring



1:1,100,000

10 0 10 Kilometers

ES, Snowmobile and Habitat Usage
within the Snowmobile Agreement -
Eastern Cariboo

- Cariboo Observations
- Cariboo Tracks
- Goat Observations
- Goat Tracks
- ◆ Snowmobile Observations
- ◆ Snowmobile Tracks

SRM, Snowmobile Agreement -
Eastern Cariboo - Cooper Filled,
1:250 K

- Cariboo Zone
- Closure Zone
- Zone Under Review

Ministry of Water,
Land and Air Protection
Cariboo Region
July 4, 2005



Figure 2. Map showing the data points collected.