

2009 WOODLAND CARIBOU CENSUS
SOUTH SELKIRK MOUNTAINS



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Summary

A complete survey of the South Selkirk caribou recovery area was conducted by fixed-wing aircraft. The flights included the U.S. and B.C. portions of the South Selkirks and were conducted to identify areas that contained caribou. One group of caribou was located in the U.S. during this survey. All other caribou tracks were located in B.C. The final fixed-wing flight was followed immediately by a helicopter survey to count and classify caribou. The South Selkirks contain a minimum of 46 caribou in 2009 – 43 in B.C. and 3 in the U.S. Recruitment in the South Selkirks continues to be low; 5 calves were identified, resulting in a recruitment level of 11% (5 of 46 caribou). Weather and snow conditions were generally excellent during the survey, however the survey was spread out over a fairly long time period this year because of weather conditions that prevented consecutive days of flying.

This year's results are identical results to the 2008 census, however three caribou died due to motor vehicle collisions on Highway 3 in the past year, one in October and two in March. In the absence of these mortalities a population growth of 6% would have been observed. Results of 42 – 44 caribou in 2007 and 34 - 37 in 2006 indicate that the population is currently on an upward trend.

Snowmobile use in caribou habitat observed during this year's census appears to have increased over the past few years. Details of snowmobile use observed in caribou habitat for 2008 and 2009 will be reported on separately.

Introduction

Woodland caribou (*Rangifer tarandus caribou*) in southeastern British Columbia, northern Washington, and northern Idaho are a unique ecotype of caribou distinguished from other woodland caribou by their winter diet consisting almost exclusively of arboreal lichens. This trait allows them to inhabit the deep snow wet belt of the Columbia Mountains. These caribou are often referred to as "mountain caribou". Due to their low and over the longer term decreasing populations and shrinking and fragmented distribution, these caribou are considered endangered in the United States, and in Canada are considered threatened by COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and are provincially red-listed (species at risk of extinction or extirpation) by the British Columbia Conservation Data Centre.

The mountain caribou population has been divided into 18 sub populations (Wittmer et. al., 2005). The South Selkirk sub population is the southern most sub population and the only one that extends into the United States.

Study Area

The study area includes all suitable caribou habitat in the southern Selkirk Mountains bordered to the north by the West Arm of Kootenay Lake, to the east by the South Arm of Kootenay Lake and the Kootenay River, to the west by the Pend Oreille and Salmo Rivers, and extending south to the community of Sandpoint, Idaho.

Methods

Standard survey protocols for mountain caribou (Resources Inventory Committee, 2002) were followed. Attempts are made to conduct flights within a few days of a new snowfall so that recent tracks are visible but older tracks are covered up. The census was conducted with fixed wing flights contouring near treeline (1800 – 2100 m elevation) over all suitable caribou habitat within the study area, followed by a helicopter flight as soon as possible after to classify caribou into calves / adults (Wakkinen et. al.1996). With both flights, caribou tracks were followed until sighted unless the tracks descend into dense mature trees and were lost from view. All flight routes are recorded using standard GPS track recording technology. High resolution (3000 X 2008 pixel)) photos of the groups of caribou were taken with a Nikon D50 digital SLR camera with a Nikon 70 – 300 mm zoom telephoto vibration reduction lens when possible. Photos were later analyzed on a computer monitor to verify classification.

A Cessna 182 with 1 observer in addition to the pilot was used for the fixed wing portion of the survey and a Bell 206 Jet Ranger with three observers in addition to the pilot was used for the helicopter portion.

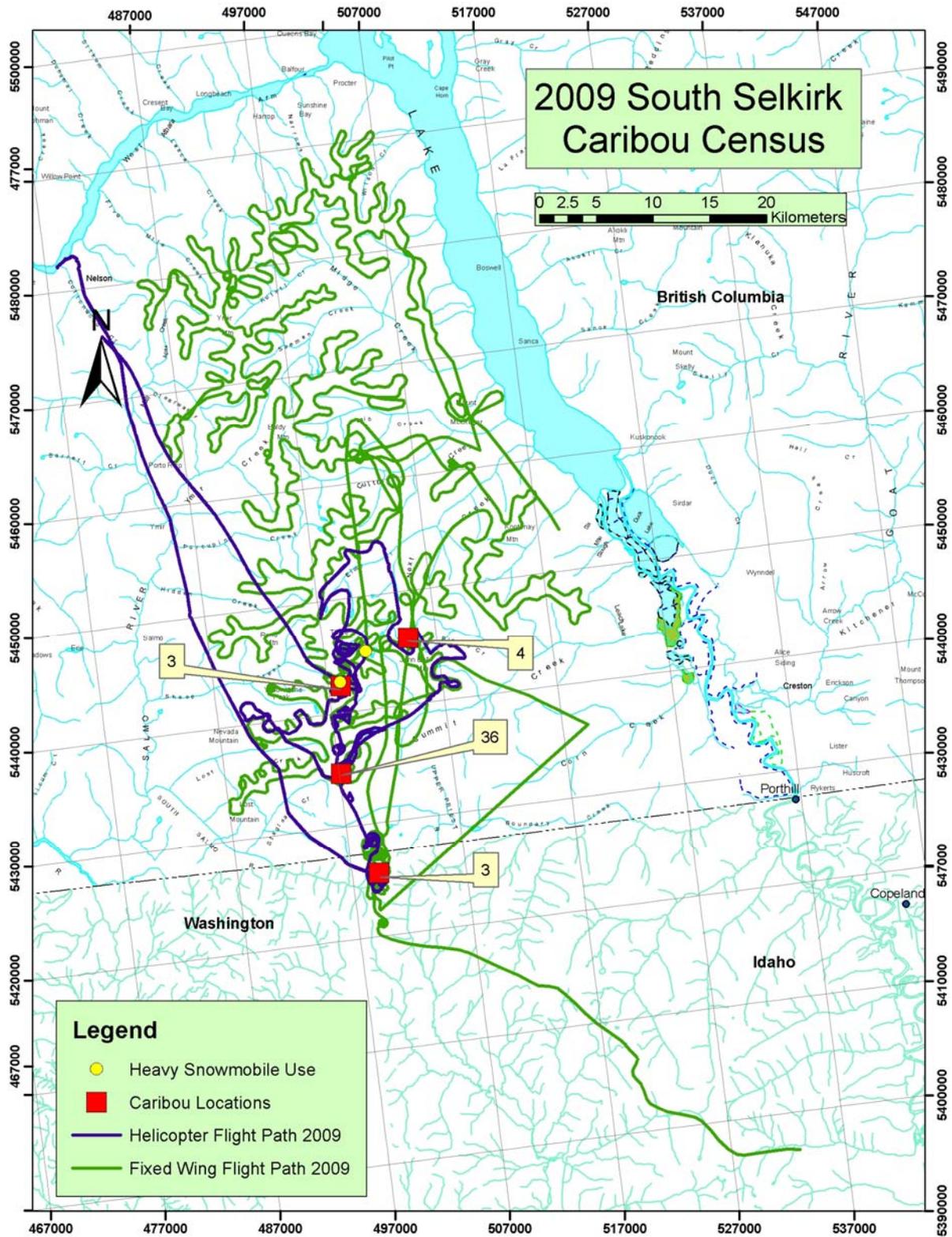


Figure 1. Flight lines and caribou locations from the 2009 census. Group sizes are noted near each location. The U.S. portion of the ecosystem was surveyed but no flight lines are available. Snowmobile tracks from the three days previous to the census were observed in many locations; the two areas of heaviest concentration of snowmobile tracks are indicated.

Results

Fixed-wing survey

The fixed-wing portion of the census was conducted on January 26, February 21, March 12 and 26, and April 6, 2009. Observers were Wayne Wakkinen, Idaho Fish and Game biologist, or Tim Laysen, U. S. Forest Service biologist. All fixed-wing flying was conducted from the Bonners Ferry, Idaho airport and used the same airplane and pilot. The 5 flights totaled 21.8 hours for a cost of \$5,341 (US\$); \$6,260 (CAN\$).

Most of the U.S. portion of the ecosystem was surveyed during flights on January 26, February 21, and March 12. Additional surveys of the far northern portion of the U.S. around Snowy Top Mountain were conducted on March 26 and April 6. Tracks of a group of caribou were detected on a small unnamed lake west of Snowy Top Mountain on March 26. The area was re-surveyed on April 6 and tracks were observed several kilometers to the south of the previous location. No other caribou or tracks were detected in the U.S. portion of the ecosystem.

The B.C. portion of the South Selkirks was surveyed on March 12, 26, and April 6. Tracks were located near Bluebird Lake, upper Next Ck, upper Carolina Ck, and Snowy Top Mountain.

Weather and snow conditions were generally excellent during the survey, however the survey was spread out over a long time period this year because of weather conditions that prevented consecutive days of flying.

Helicopter census

The helicopter portion of the census was conducted on the afternoon of April 6, a few hours after the end of the fixed-wing survey. Wind and light conditions were excellent. The most recent significant snowfall was the morning of April 4. Areas where caribou tracks were detected from the fixed-wing survey were surveyed first. Some of the caribou had moved several kilometers so tracks were followed until the groups of caribou were found. All tracks from the fixed-wing flights were associated with observed groups with the exception of tracks on and around a small lake on the BC/Idaho border that were from a lone moose at 6000' (1850m). Tracks of what appeared to be a single wolf were in the same location as the moose.

A total of 46 caribou were observed in 4 different groups (Table 1). A large group of caribou was found in heavy tree cover on the east side of Kootenay Pass. The location of the group under the tree canopy prevented an accurate count and classification. The area was resurveyed in the morning of April 7 in order to get an accurate count. Five calves were observed in this group of 36 caribou, which was confirmed by close examination of the digital photos after the flights. None of the other groups had any calves.

From the fresh tracks in the snow it appears that all or part of the group of 36 travelled approximately 10 km. from the Upper Bayonne Creek / Upper Next Creek area to the Kootenay Pass area between April 4 and April 6. Fresh snowmobile tracks indicated extensive snowmobile use in the Upper Bayonne Creek / Upper Next Creek area during the same time period. It is not known if the simultaneous movement of the caribou away from that area of snowmobile use is coincident or not. Three caribou remained in the originating area.

Two of the four remaining collared caribou were detected. Due to the age of the collars it is likely the batteries on the other 2 collars have failed.

The helicopter (Bell 206) was based out of Nelson, BC; this portion of the survey took 4.8 hours at a cost of \$4731 (US\$); \$5542 (CAN\$).

Table 1. 2009 South Selkirks winter census results. Coordinates are given in UTM projection, Zone 11, NAD 83.

LOCATION	EASTING	NORTHING	GROUP SIZE	COMMENTS
Bluebird Lake	504529	5445824	4 adults (1 collared)	0 calves
Curtis Creek / Carolina Creek Divide	498113	5442357	3 adults	0 calves
Kootenay Pass	497186	5434682	36 (1 collared)	5 calves
Little Snowy Top Mountain	499351	5425560	3 adults	0 calves
TOTAL			46	All animals located in B.C. except Little Snowy Top group (U.S.)

Age classification

During the helicopter portion of the census, 5 calves were identified. Recruitment is estimated to be 11% (5 of 46 animals).

Comparison with past surveys

Recent past surveys reported 33, 35, 34-37, 43-44, and 46 caribou in 2004, 2005, 2006, 2007, and 2008 respectively (Table 2). The count this year was the same as the count in the 2008 survey.

The reported number in 2003 of 41 is likely the result of some double counting during the survey and therefore should not be considered an accurate number (Wakkinen, per.comm).

Conclusion

The 2009 census count was the same as the 2008 count. Most caribou were located in British Columbia north of BC Highway 3, results that are consistent with past surveys. Three caribou were killed on B.C. Highway 3. A collared bull was killed on October 11, 2008 approximately 1 km east of Kootenay Pass and on March 20, 2009 an adult bull and pregnant cow (with 1 male fetus) were killed in the same general location. There would have been a slight growth in the population had there not been the 3 highway mortalities.

Survey conditions were generally good. Weather did require the fixed-wing portion to be conducted over a long period (2 ½ months) from Jan 26 – Apr 6. We do not feel this

compromised the results of the survey. Areas that were surveyed in January and February were in the U.S. where caribou have not been located in the recent past and were not in close proximity to other caribou that were detected later in the survey. Additionally, areas within the U.S. with the most recent caribou sightings were re-surveyed on March 26 and April 6.

The helicopter portion was conducted the afternoon of April 6 within hours of the fixed-wing flight minimizing the chances of missing groups of animals. The decision to re-surveyed on April 7 was necessary to get an accurate count and in combination with digital photos worked well to determine calf numbers in the large group. The ability to fly into Idaho to confirm the group of 3 caribou was also worthwhile in order to get an accurate count. Recruitment continues to be quite low, averaging 11% over the previous 6 surveys (range 7-17%).

The snowpack for 2008/09 was slightly below normal. Idaho Panhandle SNOTEL sites reported 78-85% snow water equivalent during the survey period. The closest British Columbia Snow Pillow sites (Redfish Creek and Moyie Mountain) recorded snow water equivalent of 66% and 124% of average respectively. The weather station at Kootenay Pass on Highway 3 recorded a maximum snow depth of 2.38 m on April 6, 2009 which is 71% of the previous year's maximum snow depth of 3.35 m recorded in the same location on March 30, 2008.

Table 2. South Selkirk woodland caribou winter census results, 2000-2009.

<u>Year</u>	<u>Recruitment</u> <i>(% calves)</i>	<u>Area Total</u> <i>US/BC</i>	<u>Grand Total</u>
2000	18%	3/31	34
2001	No census due to low snowpack		---
2002	26%	2/32	34
2003	10%	1/40	41 ^a
2004	7%	3/30	33
2005	---	2/33	35 ^b
2006 fixed wing	---	1/33	34-37
2006 helicopter	17%		29-38
2007 fixed wing	---	2/42-43	43-44
2007 helicopter	9%		43
2008 ^c	11%	3/43	46
2009 ^c	11%	3/43	46

^a Likely some double counting and therefore not a reliable count.

^b Not a complete census. Must be considered a minimum count.

^c Combination fixed wing/helicopter survey

Acknowledgements

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Funding for the helicopter portion of the survey was provided by the Fish and Wildlife Compensation Program - Columbia Basin. Crew consisted of Rorke Dueck, pilot – High Terrain Helicopters, Nelson, BC; Ross Clarke, navigator; Leo DeGroot and Thomas Hill, observers.

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