

# 2010 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 fixed-wing survey was followed immediately by a helicopter flight to count and classify caribou. The South Selkirks contained a minimum of 43 caribou in 2010 – 41 in B.C. and 2 in the U.S. Recruitment in the South Selkirks continues to be low; 3 calves were identified, resulting in a recruitment level of 7% (3 of 43 caribou).

Snowpack varied from significantly below normal in some locations to normal in other locations. Caribou were found in “traditional” late winter habitat. Weather and snow conditions were generally excellent during the survey. The survey was conducted over a 5-day period (Feb 19 – 23), a shorter time interval than is typical.

This year’s census found 3 fewer caribou than were detected during the 2009 census. Caribou numbers were stable in 2008 and 2009 at 46. Despite the decline this year, the population appears to be relatively stable, at least in the short term.

Snowmobile use and non-motorized backcountry activity in caribou habitat observed during this year’s census appear to have increased over the past few years.

## **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 confirm the count and 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 and group size.

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.

## **Results**

### ***Fixed-wing survey***

A preliminary flight was taken on January 7 to assess snow conditions. The fixed-wing portion of the census was conducted on February 19, 20, 22, and 23. Wayne Wakkinen, Idaho Fish and Game biologist, was the observer on all flights. All fixed-wing flying was conducted from the Bonners Ferry, Idaho airport and used the same airplane and pilot. The 5 flights totaled 18.85 hours for a cost of \$5,362 (US\$); \$5,434 (CAN\$).

Caribou tracks were detected in the Snowy Top Mountain area of the U.S. on February 19 and 2 animals were observed. No other caribou or caribou tracks were detected in the U.S. portion of the ecosystem.

On February 19, a large group of caribou were found in the Kootenay Mountain area. Tracks were located in a tributary of Next Ck and a group of 5 was observed in a tributary of Carolina Ck on February 20. No other tracks were located during the fixed-wing survey (Figure 1).

### ***Helicopter census***

The helicopter portion of the census was conducted on the afternoon of February 22. Wind and light conditions were excellent. Approximately 50 cm of snow fell from February 10 -17 with no new snow in the 5 days prior to the flight. Areas where caribou tracks were detected from the fixed-wing survey were surveyed first. All tracks from the fixed-wing flights were associated with observed groups of caribou. In addition to the tracks detected in the fixed wing survey, we detected a lone bull in Billings Ck.

A total of 43 caribou, including three calves, were observed in 5 different groups (Table 1). Group size ranged from 1 - 32 caribou. Two radio collared caribou were observed, attempts to pick up radio signals were not attempted. Backcountry ski use within approximately 5 km of Hwy 3 appeared to be much higher than during past censuses. All five groups of caribou were using habitat away from observed snowmobile or ski tracks, the separation distances ranging from 1.3 km to 10 km. The helicopter was based out of Nelson, BC; this portion of the survey took 2.7 hours at a cost of \$3032 (US\$); \$3073 (CAN\$).



**Table 1.** 2010 South Selkirks winter census results. Coordinates are given in UTM projection, Zone 11, NAD 83.

<u>LOCATION</u>	<u>EASTING</u>	<u>NORTHING</u>	<u>GROUP SIZE</u>	<u>COMMENTS</u>
Kootenay Mtn	512183	5452835	32	1calf
Next Ck	502855	5449661	3	no calves
Carolina Ck	500563	5443989	5	1 calf
Billings Ck	490282	5441666	1	no calves
Little Snowy Top Mountain	499338	5425574	2	1 calf
<b>TOTAL</b>			<b>43</b>	All animals located in B.C. except Little Snowy Top group (U.S.)

***Age classification***

During the helicopter portion of the census, 3 calves were identified. Recruitment is estimated to be 7% (3of 43 animals).

***Comparison with past surveys***

Recent surveys reported 33, 35, 34-37, 43-44, 46, and 46 caribou in 2004, 2005, 2006, 2007, 2008, and 2009, respectively (Table 2). The count this year was 3 less than the count in the 2009 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 accurate (Wakkinen, per.comm).

**Table 2.** South Selkirk woodland caribou winter census results, 2001-2010

<u>Year</u>	<u>Retruitment</u> <i>(% calves)</i>	<u>Area Total</u> <i>US/BC</i>	<u>Grand Total</u>
2001	No census due to low snowpack		---
2002	26%	2/32	34
2003	10%	1/40	41 <sup>a</sup>
2004	7%	3/30	33
2005	---	2/33	35 <sup>b</sup>
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 <sup>c</sup>	11%	3/43	46
2009 <sup>c</sup>	11%	3/43	46
2010 <sup>c</sup>	7%	2/41	43

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

## **Conclusion**

The 2010 census count was 3 less than the 2009 count. Disregarding the suspect survey in 2003, this represents the first decline in the number of caribou detected during the count since the drop from 34 to 33 between 2002 and 2004. Despite the drop in numbers for the 2010 census, the South Selkirk population appears to be stable, at least in the short term. Most caribou were located in British Columbia north of BC Highway 3, results that are consistent with past surveys.

The helicopter portion was conducted the afternoon of February 22 within hours of the fixed-wing flight minimizing the chances of missing groups of animals. Recruitment continues to be quite low, averaging 10.3% over the previous 6 surveys (range 7-17%).

Survey conditions were very good. A high pressure weather system settled over the area and allowed flying on consecutive days to complete the fixed wing survey in record time. Normally the survey is broken up over a longer period. For example, in 2009, 5 flights were conducted between January 26 and April 6. In 2010, the flights were completed over a 5 day period. This reduced the likelihood that groups moved between fixed wing surveys or between the completion of the fixed wing portion and the helicopter portion of the census.

The snowpack for 2009/10 was significantly below normal in some locations and near normal in other locations. Idaho Panhandle SNOTEL sites reported 65-69% snow water equivalent during the survey period. The closest British Columbia Snow Pillow sites (Redfish Creek (2086 m. elevation) and Moyie Mountain (1840 m. elevation)) recorded snow water equivalent of 98% and 75% of average respectively. The weather station at Kootenay Pass (1780 m elevation) recorded a snow depth of 1.9 m. on February 22, which compares to 1.6 m. in 2009 and 2.4 m. in 2008, all on the same date. The snow depth at the Whitewater Ski Resort (1950 m elevation) was at 100% of the past 18 years mean during the survey.

A single bull was not detected during the fixed wing flights but was detected during the helicopter flight. This bull had not moved very much and left few tracks. It is possible that other individual animals or a small group of caribou were not detected during either portion of the census. Low snowpack was a concern during this survey, possibly changing caribou habitat use. These conditions were encountered during 2001 and a survey was not conducted that year. However, this year, caribou appeared to be using “traditional” late winter habitat, at least for the caribou that were found. This may be due to the timing of the survey. The good weather allowed the flights to be completed in February, prior to any possible early spring movements.

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