

2011 WOODLAND CARIBOU CENSUS

SOUTH SELKIRK MOUNTAINS



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Summary

The 2011 South Selkirks caribou survey was initiated on January 11. The helicopter census was conducted on April 3. Thirty-six caribou were counted during the census, a decrease from previous surveys; forty-three caribou were counted during the 2010 census. Snow pack was near normal throughout the study area, however, weather conditions made flying difficult. The fixed-wing portion of the survey was conducted 12 days prior to the helicopter flight and it did not cover the entire area due to weather conditions. To compensate, the helicopter survey was expanded to cover the core area more thoroughly. However, this flight was conducted only 12 hours after a significant snowfall, not providing much time for caribou to lay down tracks. A subsequent fixed-wing flight was conducted on April 8 to re-survey portions of the area. No additional caribou or caribou tracks were located during this flight. It is unknown whether additional animals were undetected during this year's survey.

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 regularly 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) 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 an A Star with three observers in addition to the pilot was used for the helicopter portion.

Results

Fixed-wing survey

The first caribou flight of 2011 was conducted on January 11. The U.S. portion of the ecosystem was flown from the British Columbia border to McCormick Ridge in the Pack River drainage. No tracks were detected during this flight.

On January 28, Brett Lyndaker, USFS biologist, flew to search for caribou tracks and snowmobile incursions into closed areas. No animal tracks were observed, however, tracking conditions were poor due to weather and light conditions.

A fixed-wing flight on March 23 detected a total of 33 caribou within the B.C. portion of the ecosystem. No caribou or caribou tracks were detected in Idaho or Washington.

The helicopter portion of the census was conducted 12 days later on April 3 (see below). This is an unusually long time period between the fixed wing and helicopter portion of the survey and was caused by inclement weather. To determine if caribou distribution had changed during this time period, possible resulting in missing caribou, a follow-up fixed-wing survey was conducted on April 8. No additional caribou or caribou tracks were detected.

Total fixed-wing flight time was 15.15 hours.

Helicopter census

The helicopter portion of the census was conducted on April 3, 2011. Wind and light conditions were generally good with a few snow squalls. Approximately 30 cm of snow fell from April 1st and 2nd up until 12 hours prior to the flight. Since 12 days had passed since the last fixed wing flight we covered the area from Porcupine Creek south to the US border fairly thoroughly. Some of the smaller groups of caribou had moved enough so it was difficult to confirm whether we were observing all of the same groups. Groups of 4, 6, and 23-25 were observed from the fixed wing flights, while groups of 2, 1, 5, 5, and 23 were observed from the helicopter. The total count observed therefore was 36, which includes 3 calves (Table 1). One radio collared caribou was observed, attempts to pick up radio signals were not attempted.

Backcountry ski use was concentrated within 2 km of Hwy 3. Four of the five groups of caribou were using habitat away from observed snowmobile or ski tracks, the separation distances ranging from 1.5 km to 10 km. We observed five snowmobilers riding in upper Next Creek, in the area of the fifth caribou group. The snowmobilers had following the caribou tracks for approximately 100 meters. Due to the recent snowfall we were able to determine that the caribou were moving away from the disturbance. We passed over the same area approximately 3 hours later at the end of the survey and found that this group of caribou had moved another 3-4 kilometers further away to Devils

Hole Lake, crossing large avalanche prone slopes enroute. Evidence from many large avalanches occurring the same day was observed on other slopes. The disturbance from the snowmobilers and / or our helicopter may have convinced this group of caribou to undertake this risky and unnecessary movement.

The helicopter portion took 5.25 hours of which 4.62 hours were on survey. 583 km were flown at an average speed of 126 km/hr.

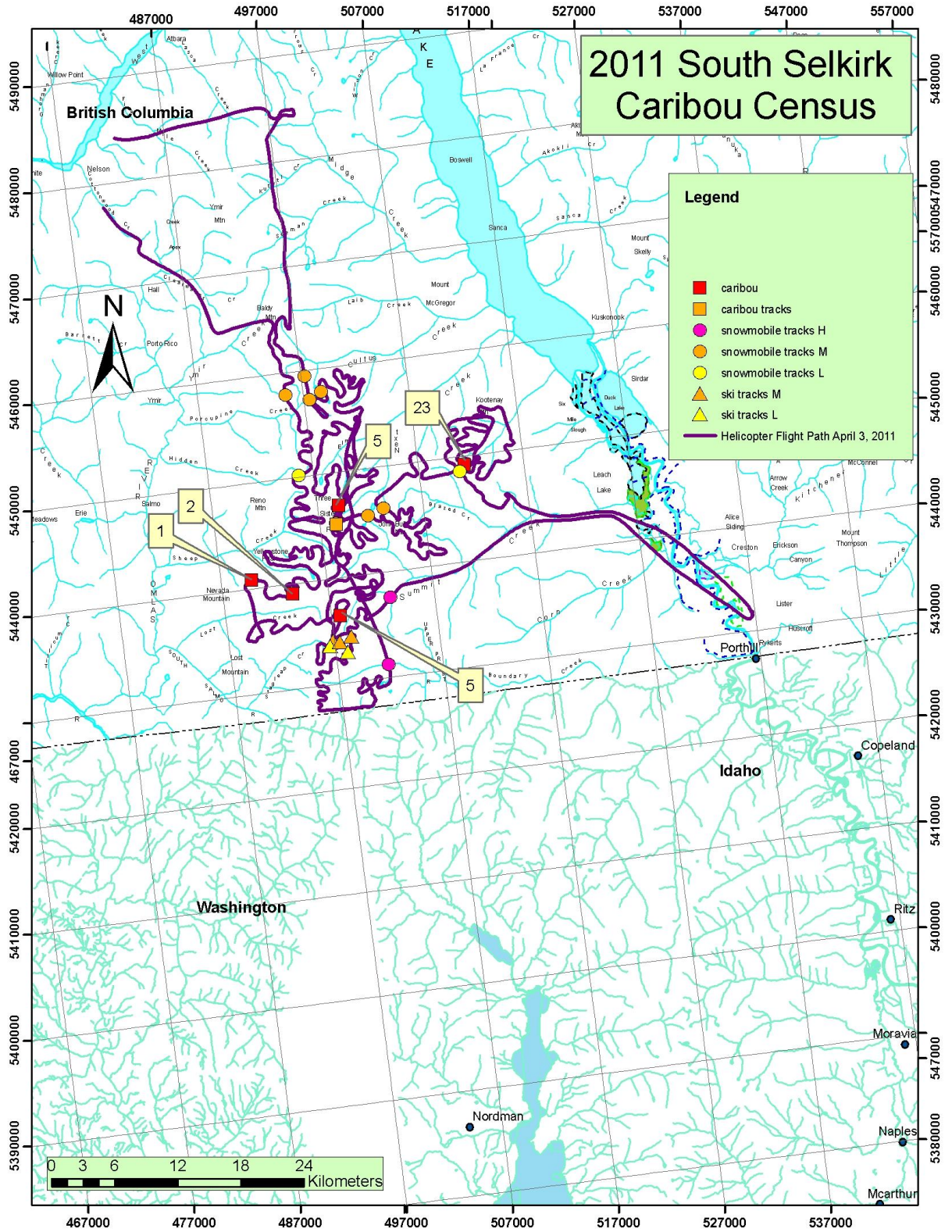


Figure 1. Helicopter flight lines and caribou locations from the 2011 census. Group sizes are noted for each location. Fixed wing flight paths were not available.

Table 1. 2011 South Selkirks winter census results, April 3, 2011. 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>
Shaw Cr.	511409	5449185	23	2 calves
Next Ck	499065	5446857	5	1 calf
Summit Cr.	497908	5436427	5	no calves
Billings Ck	489927	5440888	1	no calves
Waldie Cr.	493658	5439079	2	no calves
TOTAL			36	

Age classification

During the helicopter portion of the census, 3 calves were identified. Recruitment is estimated to be 8.3% (3 of 36 animals).

Table 2. South Selkirk woodland caribou winter census results, 2001-2011

<u>Year</u>	<u>Recruitment</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 ^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
2010 ^c	7%	2/41	43
2011 ^c	8%	0/36	36

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

Discussion

The 2011 census count was 7 less than the 2010 count. However weather conditions were difficult and the flying days were sporadic without two consecutive good days between February 2 and mid April. The fixed wing flights took place 12 days prior to the helicopter flights and did not cover the entire regular census area. To compensate the helicopter flight was expanded to cover the

core area more thoroughly than in previous years. However the helicopter flight took place only 12 hours after a large snowfall event ended, leaving only a short time period for tracks to be laid down.

The only caribou observed in close proximity to Highway 3 were a group of five in the Summit Creek drainage. Ten days later a group of twelve caribou were observed from the highway in the same area (Pat Field, pers. comm.). We can only speculate whether we missed a group of seven during the census or whether caribou from the other groups moved there during that time period. If we missed a group of seven then the population would be 43, the same as the previous year.

Recruitment continues to be quite low, averaging 10.5% over the previous 6 surveys (range 7-17%), below the suggested 12% - 16% that is required for a stable population (Bergerud 1996).

The snowpack for 2010/11 was above normal. Idaho Panhandle SNOTEL sites reported 125-135% 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 113% and 135% of average respectively. The weather station at Kootenay Pass (1780 m elevation) recorded a snow depth of 3.45 m. on April 3, which compares to 2.46 m. in 2010 and 2.50 m. in 2009, all on the same date.

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