

2012 WOODLAND CARIBOU CENSUS

SOUTH SELKIRK MOUNTAINS



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Summary

A complete census of mountain caribou within their known range in the South Selkirk Mountains was conducted between January 12 and April 2, 2012. Twenty seven caribou were counted during the census, a decrease from previous surveys; thirty six caribou were counted during the 2011 census and forty-three during the 2010 census. Snow pack was above normal throughout the study area; however weather conditions complicated the census. The last flight of the fixed-wing portion of the survey was conducted 6 days prior to the helicopter flight. To compensate, the helicopter survey was expanded to cover the core area more thoroughly. However, this flight was conducted only 14 hours after a significant snowfall ended, not providing much time for caribou to lay down tracks. A subsequent fixed-wing flight was conducted on April 9 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 a 206B Jet Ranger with three observers in addition to the pilot was used for the helicopter portion.

Results

The snowpack for 2010/11 was above normal. The closest British Columbia Snow Pillow sites (Redfish Creek (2086 m. elevation) and Moyie Mountain (1840 m. elevation) recorded snow water equivalent of 133% and 145% of average respectively. The weather station at Kootenay Pass (1780 m elevation) recorded a snow depth of 3.58 m. on April 2, which compares to 3.45 m. in 2011 and 2.46 m. in 2010, all on the same date.

Fixed-wing survey

The first caribou flight of 2012 was conducted on January 12. The U.S. portion of the ecosystem was flown from the British Columbia border to McCormick Ridge in the Pack River drainage. Four caribou were spotted on Little Snowy Top; they were not classified into adults / calves. No other caribou tracks were spotted.

A fixed-wing flight on March 27 detected a total of 20-22 caribou.

Due to inclement weather the helicopter portion of the census was not conducted until 6 days after the last fixed wing flight, on April 2 (see below). This is a long enough time period between the fixed wing and helicopter portion of the survey for the caribou to move between groups. 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 9. No additional caribou or caribou tracks were detected.

Helicopter census

The helicopter portion of the census was conducted on April 2, 2012. Wind and light conditions ranged from good to poor. Approximately 30 cm of snow fell from April 1st up until 14 hours prior to the flight. This flight was not postponed as deteriorating weather was in the forecast. Since 6 days had passed since the last fixed wing flight we covered the area from Porcupine Creek south to the US border fairly thoroughly. Two groups were found, a group of 3 and a group of 20. We were not able to locate the group that had been on Little Snowy Top since January due to low cloud in that area, but due to consistent sightings over the winter we are counting it as 4 unclassified animals. The total count observed therefore was 27, which includes a minimum of 1 calf (Table 1).

The helicopter portion took 5.9 hours of which 4.9 hours were on survey. 741 km were flown at an average speed of 129 km/hr.

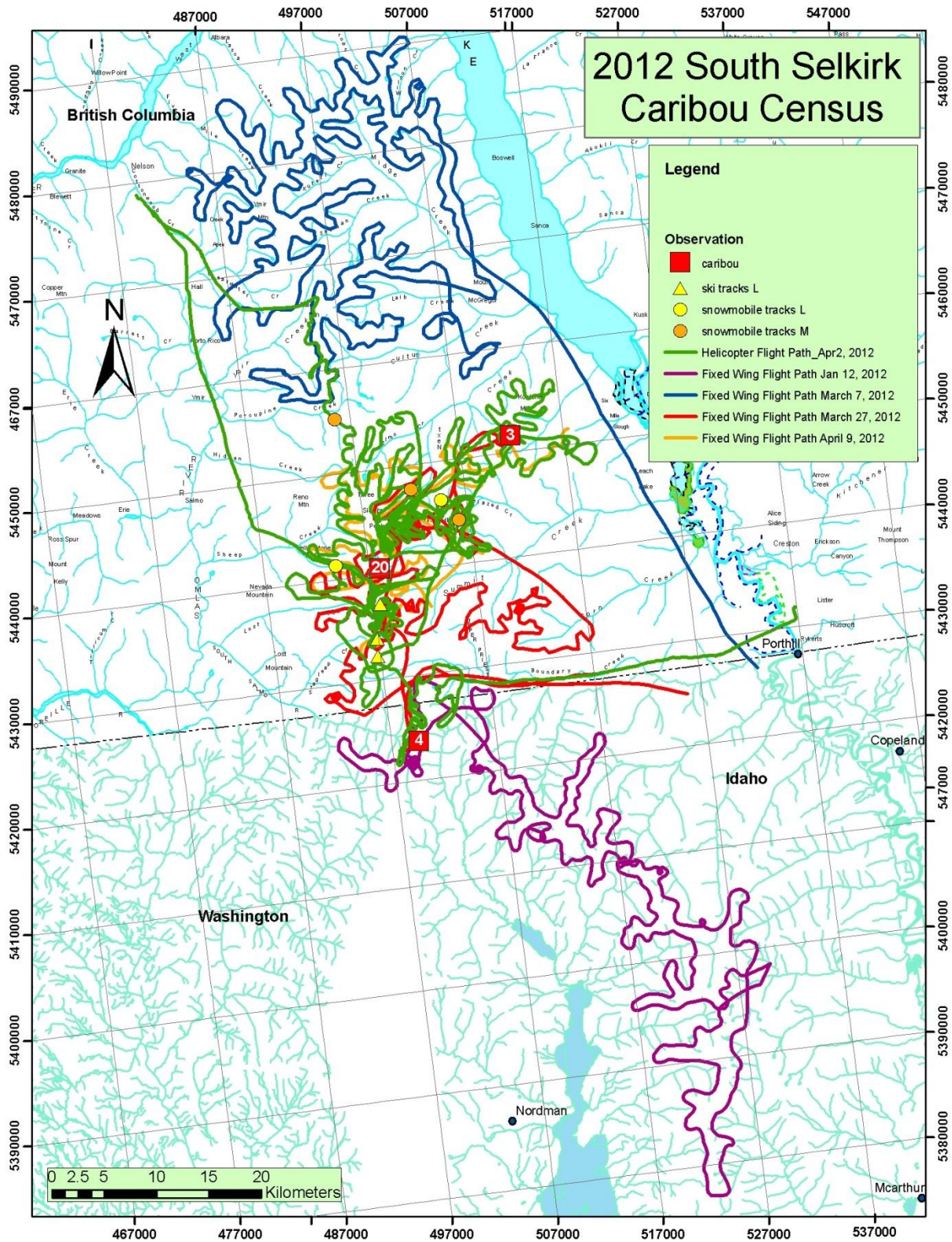


Figure 1. Flight lines and caribou locations from the 2012 census. Group sizes are noted for each location. Ski and snowmobile tracks were recorded for the helicopter flight only. Fixed wing flight paths are missing for Washington and a small segment in British Columbia.

Table 1. 2012 South Selkirks winter census results, April 2, 2012. 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>
Little Snowy Top	499667	5423803	4	Not classified
Carolina Cr	498028	5440626	20	1 calf
Shaw Cr	512012	5451621	3	no calves
TOTAL			27	

Age classification

During the helicopter portion of the census, 1 calf was identified. We were not able to classify the 4 caribou at Little Snowy Top due to poor weather. Minimum recruitment is estimated to be 4.3% (1 of 23 animals).

Table 2. South Selkirk woodland caribou winter census results, 2001-2012

<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	8.3%	0/36	36
2012 ^c	4.3% ^d	4/27	27

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

d Four caribou not classified

Discussion

The 2012 census count was 9 less than the 2011 count and 16 less than the 2010 count. The snowpack was well above normal which reduces the chance that the caribou would be in the lower, denser, and lower sightability forest (Kinley et al, 2007). However weather conditions were difficult with very few days suitable for flying. The fixed wing flights took place 6 days and greater prior to

the helicopter flights. To compensate the helicopter flight was expanded to cover the core area more thoroughly than in most years. However the helicopter flight took place only 14 hours after a large snowfall event ended, leaving only a short time period for tracks to be laid down. A subsequent fixed-wing flight was conducted on April 9 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.

Recruitment continues to be quite low, averaging 9.6% over the previous 7 surveys (range 4.3 -17%), below the suggested 12% - 16% that is required for a stable population (Bergerud 1996).

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