

2015

BC Boreal Caribou Implementation Plan:

**Mortality Investigation Summary Report No. 22:
June 2015**

EXECUTIVE SUMMARY

As a component of the *British Columbia Boreal Caribou Implementation Plan* (BCIP), 224 individual boreal caribou were radio-collared in British Columbia's boreal caribou ranges between December 2012 and April 2015. The fate of these animals, as well as all boreal caribou previously collared by the Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO), is monitored monthly to track adult survival.

One hundred fifty-four boreal caribou collar frequencies were scanned during the monthly fixed-wing telemetry monitoring flight conducted on June 16-18, 2015. Three mortality signals were detected during the flight, including Prophet caribou SCEK144 (Lotek VHF), Maxhamish caribou SCEK210 (Vectronic GPS), and Chinchaga caribou AB150.470 (Alberta VHF). Mortality investigations were conducted for the 2 SCEK caribou on June 19; cause of death was confirmed as wolf predation in both cases. The Alberta caribou mortality was not investigated. No additional caribou mortalities were detected during the June monitoring period.

Twenty-seven wolf collar frequencies were scanned during the June monitoring flight; no wolf mortalities were detected.

Eighty radio-collared boreal caribou (73 SCEK, 7 MFLNRO) died between the commencement of BCIP monitoring in December 2012 and the end of June 2015. Fifty-three caribou mortalities were confirmed wolf kills (66%), with an additional 7 cases of suspected wolf predation, 3 cases of wolverine predation, and one accidental death. Three caribou died of apparent poor condition. Cause of death for the remaining 13 animals could not be determined.

BACKGROUND

During the winter of 2012-2013, 164 adult female caribou were radio-collared in British Columbia's boreal caribou ranges as part of the BCIP. The sample size was augmented during the winters of 2013-2014 and 2014-2015, with a total of 224 individual boreal caribou collared by April 1, 2015. Caribou collaring activities were administered and funded through the Science and Community Environmental Knowledge Fund (SCEK). The fate of all SCEK-collared caribou, as well as boreal caribou previously collared by MFLNRO, is monitored to track adult survival.

The VHF signal status of each active radio-collar is monitored monthly during regular fixed-wing telemetry flights, as well as during associated incidental surveys and field activities. In addition to the SCEK collars, active caribou and wolf collars from other programs, known to be present within BC boreal caribou ranges, are also monitored for approximate location and mortality status. These include caribou and wolf collars deployed by MFLNRO, as well as collared caribou that have entered BC's boreal caribou ranges from adjacent jurisdictions. Upon detection of a suspected mortality event, through VHF signal status or transmitted GPS/satellite data, a ground-based mortality investigation is conducted to determine the cause and approximate date of death, collect biological samples, and recover the collar. Adult mortality information is used in conjunction with juvenile recruitment data to determine population trend.

This summary report pertains to mortality signals investigated during the June 2015 monitoring period.

METHODS

For the Milligan and Etthithun cores of the Chinchaga Range, mortality sites are accessed by helicopter from the Fort St. John airport. Access is from the Fort Nelson airport for the Chinchaga RRA and all other ranges and cores.

Information recorded for each confirmed mortality site includes: animal ID, collar frequency, collar condition, GPS coordinates, photodocumentation, condition of remains, habitat, and other evidence relevant to suspected cause of death. Where available, and when the stage of decomposition allows, biological samples are collected (e.g., long bones, lower jaw, tissue samples, and internal organs). Samples of predator scat from the mortality site are collected when available. Mortality investigation numbers are assigned based on the date of detection, not the date of the ground investigation.

RESULTS

One hundred fifty-four boreal caribou collar frequencies were scanned during the June 16-18, 2015 telemetry monitoring flight, including 149 SCEK collars (5 ATS Iridium, 61 Vectronic Vertex, 11 Lotek LifeCycle, and 72 Lotek VHF), 3 previously-deployed MFLNRO VHF collars, and 2 Alberta VHF collars. Three mortality signals were detected during the June flight, including Prophet caribou SCEK144 (Lotek VHF), Maxhamish caribou SCEK210 (Vectronic GPS), and Chinchaga caribou AB150.470 (Alberta VHF).

The SCEK210 mortality had been indicated by GPS data transmission several days prior to the June flight. Mortality investigations were conducted for the 2 SCEK caribou on June 19. An investigation of the Alberta-collared caribou was not conducted; Alberta Environment and Parks staff in Peace River were notified. The cause of death for the 2 SCEK animals investigated was wolf predation. Maxhamish caribou SCEK210 was killed by wolves in a peatland fen adjacent to black spruce bog habitat in the Kiwigana Core. Prophet caribou SCEK144 was killed by wolves outside the current Prophet Range boundary in relatively undisturbed black spruce bog habitat immediately adjacent to a mature aspen stand. Details of the mortality site investigations are presented in Table 1 and Appendix I. No additional caribou mortalities were detected or investigated during the June 2015 monitoring period.

Twenty-seven wolf collar frequencies were scanned during the June 2015 monitoring flight, including 20 SCEK collars (12 Lotek Iridium, 1 Vectronic Vertex, 7 Lotek VHF) and 7 Lotek Iridium collars deployed on behalf of Nexen Inc./University of Alberta. No wolf mortalities were detected.

First Nation Sub-contractors

William Needlay, of the Fort Nelson First Nation, participated in caribou mortality site investigations during the June 2015 monitoring period.

Table 2. Summary of SCEK and MFLNRO radio-collared boreal caribou mortality investigations conducted in June 2015, northeastern British Columbia ($n=2$).

Mort Invest #	Caribou ID	Range ¹	Collar Type	Date Collared	Core Collared ²	Core Died ²	Date of Death	Date Investigated	Cause of Death	Site Investigation Comments
088	SCEK210	MAX	Vectronic Vertex GPS	12-Dec-14	KWG	KWG	07-Jun-15	19-Jun-15	Wolf kill	Mortality detected by GPS data on June 15, confirmed during June 17 telemetry flight; kill site in fen, habitat relatively intact
089	SCEK144	PPH	Lotek VHF	01-Mar-13	PPH	PPH	Unk	19-Jun-15	Wolf kill	Kill site in black spruce peatland immediately adjacent to mixedwood stand, within 250 m of a small lake; habitat intact but adjacent to Sikanni Chief River (approx. 1.4 km)

¹ MAX - Maxhamish PPH - Prophet

² KWG - Kiwigana PPH - Prophet

APPENDIX I:

JUNE 2015

CARIBOU MORTALITY INVESTIGATION REPORTS

Mortality Investigation #088: SCEK210, June 19, 2015, report and photos.

Mortality Investigation #	088
Caribou ID	SCEK210
Range	Maxhamish
Date Detected	17 June-15 (confirmed)
Date Investigated	19-Jun-15
Collar Type	Vectronic Vertex
Date Collared	10-Dec-14
Core Collared	KWG
Capture Site UTM	10.522817.6571037
Core Died	KWG
Date of Death	07-Jun-15
Mortality Site UTM	10.526086.6572989
Cause of Death	Wolf kill
Samples	Lower jaw x 2, skull fragments, scapula x 2, hoof fragment, wolf scat x 1
Collar Condition	Damaged - belting chewed up
Photos	0596, 0598, 2002-2006
Investigators	Brad Culling, Diane Culling, William Needlay
Site Investigation Comments	Mortality detected by GPS data on June 15, confirmed during June 17 telemetry flight; carcass consumed; kill site in a fen, the collar and remains were found on a hummock surrounded by water; a gap occurs in the GPS data, which may have been due to the collar being under the water at some point; habitat relatively intact.



Plate 1. Mortality Site Investigation #088; SCEK210 (Vectronic Vertex),
Maxhamish Range (UTM 10.526086.6572989), June 19, 2015. (1/2)



Plate 2. Mortality Site Investigation #088; SCEK210 (Vectronic Vertex),
Maxhamish Range (UTM 10.526086.6572989), June 19, 2015. (2/2)

Mortality Investigation #089: SCEK144, June 19, 2015, report and photos.

Mortality Investigation #	089
Caribou ID	SCEK144
Range	Prophet
Date Detected	17 June-15
Date Investigated	19-Jun-15
Collar Type	Lotek VHF
Date Collared	01-Mar-13
Core Collared	Prophet
Capture Site UTM	10.534984.6475800
Core Died	Prophet
Date of Death	Unknown
Mortality Site UTM	10.576672.6450752
Cause of Death	Wolf kill
Samples	Bone shards, portions of lower jaw (x2), scapula fragment, hoof fragment, mort site hair, scat (x2)
Collar Condition	Good
Photos	0599-0604, 2008-2021
Investigators	Brad Culling, Diane Culling, William Needlay
Site Investigation Comments	Mortality detected during June 17 telemetry flight; carcass consumed; kill site in black spruce peatland immediately adjacent to mixedwood stand, within 250 m of a small lake; habitat intact but adjacent to Sikanni Chief River (approx. 1.4 km).



Plate 3. Mortality Site Investigation #089; SCEK144 (Lotek VHF), Prophet Range (UTM 10.576672.6450752), June 19, 2015. (1/2)



Plate 4. Mortality Site Investigation #089; SCEK144 (Lotek VHF), Prophet Range (UTM 10.576672.6450752), June 19, 2015. (2/2)