

2014

BC Boreal Caribou Implementation Plan:

**Mortality Investigation Summary Report No. 13:
July 2014**

EXECUTIVE SUMMARY

A total of 204 boreal caribou were radio-collared between December 2012 and March 2014 in British Columbia's boreal caribou ranges as part of the *British Columbia Boreal Caribou Implementation Plan* (BCIP). The fate of these animals, as well as all boreal caribou previously collared by the Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO), was monitored to track adult survival and calf recruitment.

Two SCEK-collared caribou deaths were investigated during the July 2014 monitoring period, including SCEK141 (Chinchaga RRA; Lotek VHF) and SCEK006/BC1053 (Kiwigana; Lotek VHF). Wolf predation was the confirmed cause of death for both animals. Two wolf mortalities were also detected and investigated during the July monitoring period (Clarke Pack female BW022 (Lotek VHF) and Clarke Pack female BW029 (Lotek Iridium). It was not possible to determine cause of death in either case.

A total of 64 radio-collared boreal caribou (57 SCEK, 7 MFLNRO) died from natural causes between the commencement of BCIP monitoring in December 2012 and July 31, 2014. Predation accounted for the majority of cases, including 40 confirmed wolf kills, an additional 5 cases of suspected wolf kills, and 2 confirmed wolverine kills. Poor condition was a factor in the death of several caribou following a particularly severe winter in 2012-13. In contrast, no non-predation mortality of radio-collared caribou occurred during the more moderate winter of 2013-14. Twenty of 22 radio-collared caribou mortalities investigated between late winter and mid-summer 2014 (March through July) were confirmed wolf predation, with an additional 2 cases of suspected wolf predation.

BACKGROUND

During the winter of 2012-13, 164 adult female caribou were radio-collared in British Columbia's boreal caribou ranges as part of the *British Columbia Boreal Caribou Implementation Plan* (BCIP). An additional 41 caribou (40F, 1M¹) were collared between February 28 and March 31, 2014. Caribou collaring activities were administered and funded through the Science and Community Environmental Knowledge Fund (SCEK). The fate of SCEK-collared caribou, as well as boreal caribou previously collared by MFLNRO, was monitored to track adult survival and calf recruitment.

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.

¹ SCEK173/BC1037 was collared as a yearling by MFLNRO in March 2010. It was recaptured and fitted with a larger SCEK collar in February 2014.

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 estimate population trend.

This summary report pertains to mortality signals investigated during July 2014.

METHODS

Mortality sites are typically accessed by helicopter from the Fort St. John airport, in the case of the Milligan and Etthithun cores of the Chinchaga Range, and from the Fort Nelson airport in the case of 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

Two SCEK-collared caribou deaths were investigated during the July 2014 monitoring period (Table 1); both were detected during the July 14-15 fixed-wing telemetry flight. The cause of death was confirmed as wolf predation for both animals. SCEK141 was killed in an area of the Chinchaga RRA characterized by very little habitat disturbance. In contrast, SCEK006/BC1053 (Kiwigana Core) was killed on a pipeline ROW within 200 m of a high-grade road.

A total of 64 radio-collared boreal caribou (57 SCEK, 7 MFLNRO) have died from natural causes between the commencement of BCIP monitoring in December 2012 and July 31, 2014. No non-predation natural deaths were detected for either collared or unmarked caribou during late winter through early summer of 2014 (March through July).

Twenty-two wolf collar frequencies were scanned during the July 14-15, 2014 monitoring flight, including 15 Lotek Iridium GPS, 1 Vectronic Vertex GPS, and 6 Lotek VHF. Two wolf mortalities were detected and investigated, including Clarke Pack female BW022 (Lotek VHF) and Clarke Pack female BW029 (Lotek Iridium).

BW022 was collared in the Clarke Core on April 07, 2013. The wolf was heard transmitting a normal VHF signal on the June 07, 2014 telemetry flight. The mortality site was located in mixedwood riparian habitat, approximately 1 km from a high-grade road in the Clarke Core (UTM 10.537491.6513365). The collar was located approximately 10 m from the remains, which consisted of a patch of hair and a few bone fragments (Plate 1). Cause of death could not be determined.



Plate 1. Remains of Clarke Pack female wolf BW022 (Lotek VHF), Clarke Core, (UTM 10.537491.6513365), July 18, 2014.

BW029 was collared in the Clarke Core on April 01, 2014. At the time of capture, the young female wolf was located alone, a short distance from the Clarke Pack, of which she was assumed to be a member. However, the animal did not appear to join up with the pack in the 3.5 months of monitoring prior to her death. Iridium data indicated the wolf was active immediately prior to her death, travelling 8 km on July 11. A satellite mortality message was sent on July 12, 2014 and was confirmed by a mortality signal detected during the July 14 telemetry flight. The mortality site was in the Clarke Core, on a secondary road approximately 1 km off the Sierra-Yoyo-Desan Road (UTM 10.548452.6512886). A patch of hair was found at the GPS data cluster, approximately 1 m from the shoulder of the road, with the collar and scattered bones located approximately 10 m away. Although cause of death could not be determined, vehicle collision or shooting and subsequent scavenging of the carcass are suspected.

First Nation Sub-contractors

Laurelle Dettiah, of the Fort Nelson First Nation, assisted with caribou and wolf mortality site investigations in July 2014.

Table 1. Summary of SCEK and MFLNRO radio-collared boreal caribou mortality investigations conducted in July 2014, 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 Last Known Alive	Date Investigated	Cause of Death	Site Investigation Comments
072	SCEK141	CHIN	Lotek VHF	01-Mar-13	CHIN RRA	CHIN RRA	UNK	07-Jun-14	18-Jul-14	Wolf kill	Mortality detected on 14 July 2014 telemetry flight; kill site less than 50 m from small lake; habitat is large fen with small lake complex (4 lakes); abundant caribou trails throughout bog-fen complex; 11 km to nearest upland habitat; very intact habitat (only a few older, regenerated cutlines).
073	SCEK006/B C1053	MAX	Lotek VHF	18-Dec-12	KWG	KWG	UNK	07-Jun-14	18-Jul-14	Wolf kill	Mortality detected on 15 July 2014 telemetry flight; kill site on pipeline RoW through black spruce forest, approximately 175 m from high-grade road.

¹ CHIN - Chinchaga, MAX - Maxhamish

² CHIN RRA - Chinchaga RRA, KWG - Kiwigana

APPENDIX I: Caribou Mortality Investigation Reports

Mortality Investigation #072: SCEK141, July 18, 2014, report and photos.

Mortality Investigation #	072
Caribou ID	SCEK141
Range	Chinchaga RRA
Date Detected	14-Jul-14
Date Investigated	18-Jul-14
Collar Type	Lotek VHF
Date Collared	01-Mar-13
Core Collared	Chinchaga RRA
Capture Site UTM	10.586865.6455497
Core Died	Chinchaga RRA
Date of Death	Unknown
Date Last Known Alive	07-Jun-14
Mortality Site UTM	10.611286.6446762
Cause of Death	Wolf kill
Samples	Lower jaw (2), skull (partial), scapula (1), rib (partial, with tissue), log bone (fragment)
Collar Condition	Good
Photos	0384-0397
Investigators	Brad Culling, Diane Culling, Laurell Dettiah
Site Investigation Comments	Mortality detected on July 14, 2014 telemetry flight; carcass consumed; collar less than 50 m from small lake; habitat is large fen with small lake complex (4 lakes); abundant caribou trails throughout bog-fen complex; 11 km to nearest upland habitat; very intact habitat (only a few older cutlines, regenerated)



Plate 2. Mortality Site Investigation #072: SCEK141 (Lotek VHF), Chinchaga RRA, (UTM 10.611286.6446762), July 18, 2014. (1/2)



Plate 3. Mortality Site Investigation #072: SCEK141 (Lotek VHF), Chinchaga RRA, (UTM 10.611286.6446762), July 18, 2014. (2/2)

Mortality Investigation #073: SCEK006/BC1053, July 18, 2014, report and photos.

Mortality Investigation #	073
Caribou ID	SCEK006/BC1053
Range	Snake-Sahtaneh
Date Detected	15-Jul-14
Date Investigated	18-Jul-14
Collar Type	Lotek VHF
Date Collared	18-Dec-12
Core Collared	Kiwigana
Capture Site UTM	10.522794.6570288
Core Died	Kiwigana
Date of Death	Unknown
Date Last Known Alive	07-Jun-14
Mortality Site UTM	10.505314.6594517
Cause of Death	Wolf kill
Samples	Lower jaw (2), rib (partial)
Collar Condition	OK (mild chewing of webbing)
Photos	0406-0413
Investigators	Brad Culling, Diane Culling, Laurell Dettiah
Site Investigation Comments	First collared in Kiwigana Core on February 28, 2011 (BC1053; ATS Iridium 149.244), recaptured and recollared in Kiwigana in December 2012; mortality detected on 15 July 2014 telemetry flight; carcass consumed - only scattered bone fragments remain; kill site on pipeline RoW through black spruce forest, approximately 175 m from high-grade road.



Plate 4. Mortality Site Investigation #073: SCEK006/BC1053 (Lotek VHF), Maxhamish Range, (UTM 10.505314.6594517), July 18, 2014. (1/2)



Plate 5. Mortality Site Investigation #073: SCEK006/BC1053 (Lotek VHF), Maxhamish Range, (UTM 10. 505314.6594517), July 18, 2014. (2/2)