

2015

BC Boreal Caribou Implementation Plan:

**Mortality Investigation Summary Report No. 24:
September 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 boreal caribou previously collared by the Ministry of Forests, Lands, and Natural Resource Operations (MFLNRO), is monitored monthly to track adult survival.

As there were no caribou mortalities in August 2015, summary report #24 pertains to mortality signals investigated during the September 2015 monitoring period.

One hundred forty-seven boreal caribou collar frequencies were scanned during the September 2015 monthly fixed-wing telemetry monitoring flight. Two mortality signals were detected. SCEK179 (Lotek LifeCycle) was shot as it was crossing the Cole's Lake road in the Fortune Core of the Maxhamish Range, 31 km east of the Liard Highway. The entire carcass was removed intact, however, the radio-collar was left at the kill site. It was not possible to determine whether Snake-Sahtaneh caribou SCEK073 (Lotek VHF) died and then was scavenged or the death was the result of predation. The carcass had been largely consumed and abundant bear scat was found at the mortality site.

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

Eighty-five radio-collared boreal caribou (78 SCEK, 7 MFLNRO) died between the commencement of BCIP monitoring in December 2012 and the end of September 2015. Fifty-five caribou mortalities were confirmed wolf kills (65%), with an additional 7 cases of suspected wolf predation, 3 cases of wolverine predation, 4 non-predation deaths related to condition, and one accidental death. One caribou was shot and harvested. Cause of death for the remaining 14 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 and monitoring activities were administered and funded through the Science and Community Environmental Knowledge Fund (SCEK) until May 2015, when responsibility for the project was assumed by the BC Oil and Gas Research and Innovation Society (OGRIS). 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 during scheduled monthly 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, which are 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 for associated research projects and radio-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. Information on adult female mortality is used in conjunction with annual recruitment surveys to assess population trend.

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. 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 forty-seven boreal caribou collar frequencies were scanned during the September 2015 telemetry monitoring flights; 2 caribou mortalities were detected (Table 1). Maxhamish caribou collar SCEK179 (Lotek LifeCycle) was heard transmitting a mortality signal during the September 21 fixed-wing

flight. This collar had begun relaying GPS data from a stationary point 2 days prior to the flight after a data gap of 2 months. Poor weather delayed the investigation of the mortality until September 25. Snake-Sahtaneh caribou collar SCEK058 (Lotek VHF) was heard transmitting in mortality mode during the September 25 helicopter flight and was immediately investigated. This was one of a number of collars that could not be scanned during the September 21 fixed-wing monitoring flight due to deteriorating weather.

SCEK179 was shot while crossing the Cole's Lake road, approximately 31 km east of the junction with the Liard Highway. Tire tracks and blood indicated that a vehicle backed up to the kill site and the entire carcass was removed intact. The radio-collar was cut off with a knife and its location marked with flagging tape in black spruce habitat 30 m of the edge of the road (i.e., no attempt was made to conceal the kill). Snake-Sahtaneh caribou SCEK073 (Lotek VHF) had died well before its mortality detection. The large amount of bear scat indicated that the carcass had been consumed by a bear, but it could not be determined if the bear had killed the animal or scavenged it. No evidence of wolf presence was noted.

SCEK179 was killed on an all-weather road bisecting black spruce peatland habitat and SCEK073 died in relatively intact black spruce forest.

Twenty-seven wolf collar frequencies were scanned during the September 21-25 monitoring flights. No wolf mortalities were detected.

First Nation Sub-contractors

William Needlay, Fort Nelson First Nations, participation in the September 2015 mortality site investigations.

Table 1. Summary of SCEK and MFLNRO radio-collared boreal caribou mortality investigations conducted in September 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
093	SCEK179	MAX	Lotek LifeCycle	03-Mar-14	FRT	FRT	Unk	25-Sep-15	Shot	Collar did not transmit GPS data between July 18 and September 19; caribou shot while crossing Cole's Lake road; kill site on all-weather road bisecting black spruce peatland, approximately 1 km from gas lease.
094	SCEK073	SNS	Lotek VHF	03-Feb-13	WSK	WSK	Unk	25-Sep-15	Und	Undetermined whether caribou died and was later scavenged by bear or was killed by predator(s); kill site in relatively intact black spruce forest with abundant terrestrial lichens; regenerated cutline approximately 120 m from site.

¹ MAX - Maxhamish SNS - Snake-Sahtaneh

² FRT - Fortune WSK - West Kotcho

APPENDIX I:

SEPTEMBER 2015

CARIBOU MORTALITY INVESTIGATION REPORTS

Mortality Investigation #093: SCEK179, September 25, 2015, report and photos.

Mortality Investigation #	093
Caribou ID	SCEK179
Range	Maxhamish
Date Detected	19-Sep-15 (GPS data); 21-Sep-15 (confirmed on telemetry flight)
Date Investigated	25-Sep-15
Collar Type	Lotek LifeCycle
Date Collared	03-Mar-14
Core Collared	Fortune
Capture Site UTM	10.542538.6621589
Core Died	Fortune
Date of Death	Unknown - collar GPS failure
Mortality Site UTM	10.528954.6629234
Cause of Death	Shot
Samples	None available - caribou shot on road and entire carcass removed intact
Collar Condition	Damaged: webbing cut with knife
Photos	10632-10656
Investigators	Brad Culling, Diane Culling, William Needlay
Site Investigation Comments	Mortality detected by GPS data on September 19, 2015 and confirmed on September 21 telemetry flight; date of death not known as collar did not transmit GPS data between July 18 and September 19; caribou shot while crossing Cole's Lake road (caribou tracks lead up to road, large patch of blood with vehicle tracks leading up to it, collar cut off with knife and left in a prominent position on a chunk of lumber approx. 27 m off road with blue plastic bag tied to Sb to flag location (i.e., no attempt to conceal kill). Habitat is Sb peatland bisected by all-weather road, approximately 1 km from gas lease.



Plate 1. Mortality Site Investigation #093; SCEK179 (Lotek LifeCycle), Maxhamish Range (UTM 10.528954.6629234), September 25, 2015. (1/2)



Plate 2. Mortality Site Investigation #093; SCEK179 (Lotek LifeCycle), Maxhamish Range (UTM 10.528954.6629234), September 25, 2015. (2/2)

Mortality Investigation #094: SCEK073, September 25, 2015, report and photos.

Mortality Investigation #	094
Caribou ID	SCEK073
Range	Snake-Sahtaneh
Date Detected	25-Sep-15
Date Investigated	25-Sep-15
Collar Type	Lotek VHF
Date Collared	03-Feb-13
Core Collared	West Kotcho
Capture Site UTM	10.587244.6547435
Core Died	West Kotcho
Date of Death	Unknown
Mortality Site UTM	10.591329.6544700
Cause of Death	Undetermined; carcass scavenged by bear but unknown if caribou died or was killed
Samples	Lower jaw, portion of upper jaw/skull, vertebrae, scapula, bear scat (x 3)
Collar Condition	Good; no teeth marks, collar does not smell putrid
Photos	2443-2458
Investigators	Brad Culling, Diane Culling, William Needlay
Site Investigation Comments	Mortality detected and investigated on September 25, 2015 telemetry/mortality investigation flight (helicopter); few remains left; abundant (fresh) bear scat at site; cause of death undetermined whether predation or died and later scavenged by bear (no marks on collar, but no putrid smell, no hair remained, no leg bones found, soil and vegetation disturbed over a 3 x 6 m area); habitat relatively intact Sb forest with abundant terrestrial lichen; regenerated cutline approximately 120 m from site



Plate 3. Mortality Site Investigation #094; SCEK073 (Lotek VHF), Snake-Sahtaneh Range (UTM 10.591329.6544700), September 25, 2015. (1/2)

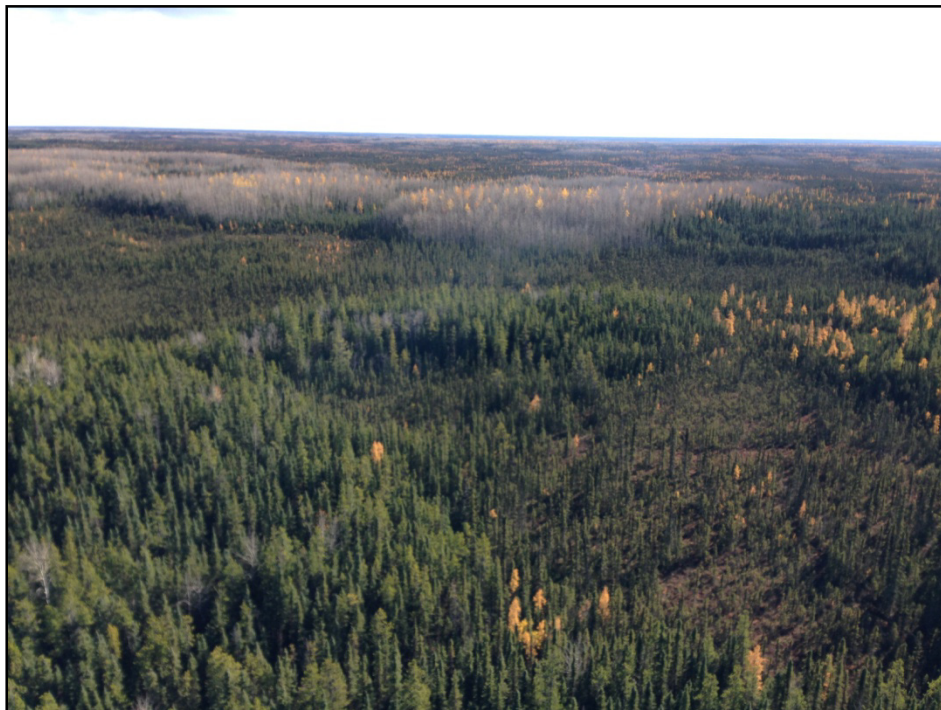


Plate 4. Mortality Site Investigation #094; SCEK073 (Lotek VHF), Snake-Sahtaneh Range (UTM 10.591329.6544700), September 25, 2015. (2/2)