

2014

BC Boreal Caribou Implementation Plan:

**Mortality Investigation Summary Report No. 8:
February 2014**

BACKGROUND

During the winter of 2012-13, 164 adult female boreal caribou were radio-collared in British Columbia's boreal caribou ranges as part of the *British Columbia Boreal Caribou Implementation Plan* (BCIP). Caribou collaring activities were administered and funded through the Science and Community Environmental Knowledge Fund (SCEK).

The VHF signal status of each active 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 each caribou range, are also monitored for approximate location and mortality status. These include caribou and wolf collars deployed by the Ministry of Forests, Lands and Natural Resource Operations (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 estimate population trend.

This summary report pertains to mortality signals detected during February 2014, including the February 25-26, 2014 fixed-wing telemetry monitoring flight and mortalities detected from GPS data transmitted by satellite, as well as 2 collared caribou mortalities detected and reported by a seismic project monitoring program.

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 is collected when available. Mortality investigation numbers are assigned based on the date of detection, not the date of the ground investigation.

RESULTS

Three caribou mortalities were identified during February 2014, including 2 incidentally-detected mortalities and 1 mortality detected through examination of incoming satellite/GPS data. No mortality signals were detected during the February 25-26, 2014 fixed-wing monitoring flight (Table 1).

Two caribou mortalities were reported on February 14, 2014, by a seismic project monitoring program conducted by Eco-Web Ecological Consulting in the Capot-Blanc Core; mortality site investigations were conducted by DES on February 15. BC1015 and BC1047 were originally collared by MFLNRO in February 2009 and 2011, respectively. They were located in the same group in February 2013, when BC1047 was recaptured to replace its original Iridium collar with a SCEK VHF collar (SCEK067). Both collars were transmitting normal VHF signals on February 06, 2014. The caribou were found dead within 2.9 km of one another on February 14, 2014. Cause of mortality was confirmed as wolverine kill for both animals.

SCEK139 (Vectronic GPS) was not heard during the February 25, 2014 telemetry flight, however satellite data received on February 28 indicated the animal was dead. A March 01 mortality site investigation at the last GPS coordinates transmitted confirmed the caribou had been killed by wolves. External antennae had been chewed off the collar, resulting in reduced VHF signal range and an interrupted satellite link.

No wolf mortalities were detected during the February 25-26, 2014 monitoring flight.

First Nation Contractors

Laurelle Dettiah, of Fort Nelson First Nation, participated in caribou mortality site investigations in February 2014.

Table 1. Summary of SCEK and MFLNRO radio-collared boreal caribou mortality investigations conducted in February 2014, northeastern British Columbia ($n=3$).

Mort Invest #	Caribou ID	Range ¹	Collar Type	Date Collared	Core ² Collared	Core Died	Date of Death	Date Last Known Alive	Date Investigated	Cause of Death	Comments
049	SCEK067/ BC1047	MAX	Lotek VHF	02-Feb-13	CPB	CPB	Unknown	06-Feb-14	15-Feb-14	Wolverine kill	Black spruce bog, less than 500 m from lake and less than 200 m from pipeline with snowmobile track; approx. 3 km from BC1015 kill site - SCEK067 and BC1015 were in same group when SCEK067 was recollared in Feb 2013
050	BC1015	MAX	Lotek VHF	13-Feb-09	CPB	CPB	Unknown	06-Feb-14	15-Feb-14	Wolverine kill	Caribou had been yarded up in area of approx. 75 cm snow depth with network of deeply incised (30 cm) trails; approx. 3 km from SCEK067 kill site; SCEK067 and BC1015 were in same group when SCEK067 was recollared in Feb 2013
051	SCEK139	CHIN	Vectronic Vertex	01-Mar-13	Chin RRA	Chin RRA	20-Feb-14	20-Feb-14	01-Mar-14	Wolf kill	Mature open-canopy spruce/pine forest

¹ MAX - Maxhamish, CHIN - Chinchaga

² CPB - Capot-Blanc, Chin RRA - Chinchaga RRA

APPENDIX I: Caribou Mortality Investigation Reports

Mortality Investigation #049: SCEK067/BC1047, February 15, 2014, report and photos.

Mortality Investigation #	049
Caribou ID	SCEK067/BC1047
Range	Maxhamish
Date Detected	14-Feb-14
Date Investigated	15-Feb-14
Collar Type	VHF
Date Collared	02-Feb-13 (second capture)
Core Collared	Capot-Blanc
Capture Site UTM	10.463277.6585672
Core Died	Capot-Blanc
Date of Death	Unknown
Date Last Known Alive	06-Feb-14
Mortality Site UTM	10.469941.6576379
Cause of Death	Wolverine Kill
Samples	Bone marrow, tissue, long bone, caribou hair, wolverine scat
Collar Condition	Good - no bite marks
Photos	3003-3023
Investigators	Brad Culling, Diane Culling, Laurelle Dettiah (FNFN)
Site Investigation Comments	<p>First collared in Capot-Blanc Core by MFLNRO on 27 Feb 2011 (BC1047; Iridium 149.092), recaptured and recollared on 02 Feb 2013; mortality detected on Feb 14, 2014, by EcoWeb during a 3D-seismic program monitoring in Capot-Blanc Core; confirmed wolverine kill - bite marks along spine, carcass partially consumed (head, internal organs, right shoulder and leg gone), wolverine tracks at kill site, no wolf tracks in area; caribou appeared to be in poor condition; habitat black spruce bog, less than 500 m from lake and less than 200 m from pipeline with snowmobile track; SCEK067 kill site was less than 3 km from BC1015 kill site; SCEK067 and BC1015 were in same group when SCEK067 was recollared in Feb 2013; mean snow depth at mortality site was 56 cm.</p>



Plate 1. Mortality Site Investigation #049: SCEK067/BC1047 (VHF), Maxhamish Range, (UTM 10.469941.6576379), February 15, 2014. (1/2)



Plate 2. Mortality Site Investigation #049: SCEK067/BC1047 (VHF), Maxhamish Range, (UTM 10. 469941.6576379), February 15, 2014. (2/2)

Mortality Investigation #050: BC1015, February 15, 2014, report and photos.

Mortality Investigation #	050
Caribou ID	BC1015
Range	Maxhamish
Date Detected	14-Feb-14
Date Investigated	15-Feb-14
Collar Type	VHF
Date Collared	13 Feb 2009
Core Collared	Capot-Blanc
Capture Site UTM	10.475345.6586827
Core Died	Capot-Blanc
Date of Death	Unknown
Date Last Known Alive	06-Feb-14
Mortality Site UTM	10.472887.6576355
Cause of Death	Wolverine Kill
Samples	Lower jaw, long bone, tissue, caribou hair
Collar Condition	Antenna chewed and small bite marks on webbing; older collar (retired)
Photos	3024-3050
Investigators	Brad Culling, Diane Culling, Laurelle Dettiah (FNFN)
Site Investigation Comments	Detected on Feb 14, 2014, by EcoWeb during 3D-seismic program monitoring in Capot-Blanc Core; caribou had been yarded up in area of approx. 75 cm snow depth with network of deeply incised (30 cm) trails; copious amounts of arterial blood on caribou, trees and surrounding area; carcass partially consumed - wolverine chewed 3/4 through neck and right leg; no wolverine scat found at kill site; BC1015 kill site was less than 3 km from SCEK067 kill site; BC1015 and SCEK067 were in same group when the latter was recollared in Feb 2013; mean snow depth 73 cm.



Plate 3. Mortality Site Investigation #050: BC1015 (VHF), Maxhamish Range, (UTM 10.472887.6576355), February 15, 2014. (1/4)



Plate 4. Mortality Site Investigation #050: BC1015 (VHF), Maxhamish Range, (UTM 10.472887.6576355), February 15, 2014. (2/4)



Plate 5. Mortality Site Investigation #050: BC1015 (VHF), Maxhamish Range, (UTM 10.472887.6576355), February 15, 2014. Blood splashed on trees in vicinity of kill site. (3/4)



Plate 6. Mortality Site Investigation #050: BC1015 (VHF), Maxhamish Range, (UTM 10.472887.6576355), February 15, 2014. Incised trails in 75 cm deep snow at kill site. (4/4)

Mortality Investigation #051: SCEK139, detected February 28, 2014, report and photos.

Mortality Investigation #	051
Caribou ID	SCEK139
Range	Chinchaga
Date Detected	28-Feb-14 (satellite data)
Date Investigated	01-Mar-14
Collar Type	Vectronic Vertex (GPS)
Date Collared	01-Mar-13
Core Collared	Chinchaga RRA
Capture Site UTM	10.614394.6459967
Core Died	Chinchaga RRA
Date of Death	20-Feb-14
Date Last Known Alive	20-Feb-14
Mortality Site UTM	10.644674.6454770
Cause of Death	Wolf kill
Samples	Bone shards, caribou hair, wolf scat
Collar Condition	Destroyed - only transmitter box remaining
Photos	3072-3075
Investigators	Brad Culling, Diane Culling, John Cook
Site Investigation Comments	Detected from satellite data on 28 Feb 2014; confirmed wolf kill but wolverine tracks on wolf trail (investigated kill); carcass completely consumed; collar destroyed - only transmitter box remaining; wolf scat collected - appeared to have diarrhea; habitat mature open-canopy spruce/pine forest; mean snow depth 56 cm.



Plate 7. Mortality Site Investigation #051: SCEK139 (Vectronic GPS), Chinchaga RRA, (UTM 10. 644674.6454770), March 01, 2014. (1/2)



Plate 7. Mortality Site Investigation #051: SCEK139 (Vectronic GPS), Chinchaga RRA, (UTM 10. 644674.6454770), March 01, 2014. (2/2)