

2015

BC Boreal Caribou Implementation Plan:

**Mortality Investigation Summary Report No. 26:
December 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. This summary report (#26) includes all mortality events detected and investigated during the December 2015 monitoring period.

One caribou mortality (SCEK222; Chinchaga Range) was detected and investigated in December 2015; cause of death was wolf predation. One wolf mortality (BW041; Fortune Pack) was detected and investigated in December 2015; death was due to injuries sustained during an attack on a moose. In addition, one wolf (BW027; Snake Pack) was killed by a landowner at his residence outside Fort Nelson and reported directly to MFLNRO.

Ninety radio-collared boreal caribou (83 SCEK, 7 MFLNRO) have died between the commencement of BCIP monitoring in December 2012 and the end of December 2015. Sixty caribou mortalities were confirmed wolf kills (67%), 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 harvested by a hunter. 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 are administered and funded through the BC Oil and Gas Research and Innovation Society (OGRIS; *formerly 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 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 permits, biological samples are collected. Samples of predator scat from mortality sites are collected when available. Mortality investigation numbers are assigned based on the date of detection, not the date of the ground investigation.

RESULTS

One caribou death was detected in December 2015 (Table 1). Notification of the death of Chinchaga caribou SCEK222 (Milligan Core, Vectronic Vertex) was received via GPS/satellite data on December 15, 2015, confirmed during the December 20 fixed-wing flight and investigated on December 21st. The cause of death was attributed to wolf predation, however the site had been more recently scavenged by a wolverine; abundant fresh wolverine tracks and sign were noted at the kill site on the day of the investigation.

One wolf mortality was detected and investigated in December 2015. A mortality notification was received for wolf BW041 (Fortune Pack; Lotek Iridium) on December 1; a review of GPS/satellite data indicated the animal died on November 23. A site investigation on December 18 revealed the wolf died due to injuries sustained during an attack on a moose in the Fortune Core (UTM 10.579618.6622788). BW041's remains were located within 15 m of a large patch of moose hair and abundant wolf sign (Plate 1). The wolf's body had been consumed by scavengers, with only the head and neck, with radio-collar attached, remaining (Plate 2). It appeared that the wolf had been killed quickly by the moose during the predation event as its mouth was still full of moose hair.

One additional collared wolf (Snake BW027) was killed when a landowner shot 2 wolves at his residence outside Fort Nelson. The event was reported by the landowner, who then mailed the collar to MFLNRO. BW027's radio-collar had ceased transmitting GPS data on January 16, 2015.

First Nation Sub-contractors

First Nations field assistants did not participate in the December 2015 mortality site investigations.

Table 1. Summary of SCEK and MFLNRO radio-collared boreal caribou mortality investigations conducted in December 2015, northeastern British Columbia ($n=1$).

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
099	SCEK222	CHIN	Vectronic Vertex GPS	1-Apr-15	MLL	MLL (o/s)	07-Dec-15	21-Dec-15	Wolf Kill; wolverine scavenging	Wolf kill but evidence of wolverine scavenging at site; kill site in mature mixedwood forest (white spruce/aspen dominant) on north-facing slope in Milligan Hills; unploughed logging trail approximately 1 km from kill site, with regenerated cutblock adjacent to mature stand.

¹ CHIN - Chinchaga

² MLL (o/s) - Milligan Core - outside core boundary



Plate 1. Fortune Pack wolf BW041 (Lotek Iridium) mortality site, view to remains of adjacent moose kill; Maxhamish Range (UTM 10.579618.6622788), December 18, 2015.



Plate 2. Scavenged remains of Fortune Pack wolf BW041 (Lotek Iridium); Maxhamish Range (UTM 10.579618.6622788), December 18, 2015.

APPENDIX I:

DECEMBER 2015

Caribou Mortality Investigation Report

Mortality Investigation #099: SCEK222, December 21, 2015, report and photos.

Mortality Investigation #	099
Caribou ID	SCEK222
Range	Chinchaga
Date Detected	15-Dec-15
Date Investigated	21-Dec-15
Collar Type	Vectronic Vertex
Date Collared	01-Apr-15
Core Collared	Milligan
Capture Site UTM	10.650048.6308693
Core Died	Milligan (o/s)
Date of Death	07-Dec-15
Mortality Site UTM	10.658659.6378626
Cause of Death	Wolf kill; remains scavenged by wolverine
Samples	Rumen sample, bone shards, caribou hair, wolf scat, wolverine scat
Collar Condition	Webbing ripped 3/4 through (characteristic of wolf kill); otherwise OK
Photos	1020043 to 1020072
Investigators	Brad Culling, Diane Culling
Site Investigation Comments	<p>Mortality detected by GPS/satellite data on December 15, confirmed during Dec 20 telemetry flight; carcass consumed; state of collar and mortality site indicate caribou was killed by wolves, but fresh wolverine sign (tracks and scat) indicate remains also scavenged; kill site in mature mixedwood forest (Sw/At dominant) on north-aspect slope in Milligan Hills outside north boundary of Milligan Core; regenerated cutblock adjacent to mature stand, unploughed logging road approximately 1 km from kill site.</p>



Plate 3. Mortality Site Investigation #099; SCEK222 (Vectronic Vertex),
Milligan Hills, Chinchaga Range (UTM 10.658659.6378626), December 21, 2015. (1/2)



Plate 4. Mortality Site Investigation #099; SCEK222 (Vectronic Vertex),
Milligan Hills, Chinchaga Range (UTM 10.658659.6378626), December 21, 2015. (2/2)