

**SPRING SURVEY OF CARIBOU IN THE VICINITY OF SCHEFFERVILLE
APRIL-MAY 2010**

Prepared for:

NEW MILLENNIUM CAPITAL CORP. AND LABRADOR IRON MINES LIMITED

FINAL REPORT

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1.0 CONTEXT

New Millennium Capital Corp. (NML) and Labrador Iron Mines Limited (LIM) are engaged in separate environmental assessment procedures for proposed iron ore mines. Both NML and LIM have proposed iron ore mines in western Labrador. All of these properties are near Schefferville, Québec.

This area of the Ungava Peninsula includes the ranges of both migratory and sedentary caribou. The George River Caribou Herd (GRCH), a migratory ecotype, was estimated at 385,000 individuals in 2001 (based on a post-calving estimate) (Couturier et al. 2004). When the herd migrates through the Schefferville area, hunting provides large quantities of country food for local residents. However satellite telemetry (MRNF 2009, 2010) and observations by local residents (R. McKenzie, pers. comm.) confirmed that George River caribou did not migrate through this area during the fall and winter of 2008-2009 and of 2009-2010.

Sedentary caribou formerly occurred in the vicinity of Schefferville. The McPhadyen Caribou Herd (MCH) was identified in the area in the mid-1980s (Phillips 1982, Saint-Martin 1987, Bergerud et al. 2008). As sedentary caribou are classified as endangered in Canada and in Labrador (COSEWIC 2001, Newfoundland and Labrador *Endangered Species Act*), the Government of Newfoundland and Labrador (GNL) is concerned that those caribou may occur in the vicinity of both of these projects and has requested this issue be addressed in the environmental assessment.

To complete the requirements of the GNL environmental assessment procedure, both NML and LIM were asked to perform a spring survey of the area within a specified radius of their properties in 2009 and 2010 to assess the presence of sedentary caribou. If adult female caribou were located, they were to be outfitted with satellite telemetry collars, and several body measurements were to be recorded to assist in ecotype identification. Dermis samples would also be collected as part of a genetic testing program led by Université Laval. Information derived from genetic testing may help to determine whether any animals observed in the survey belonged to the migratory or to the sedentary ecotype. This determination would then be used to select, design and implement appropriate mitigation and monitoring strategies.

Both proponents have a common interest in documenting whether sedentary caribou are present within the study area set in and around their respective properties of their proposed iron ore developments. As the survey areas for NML and LIM overlapped, the two companies agreed to collaborate and to share the resources and expenses required to carry out the program in co-operation with the GNL Wildlife Division and with the approval of Québec's Ministère des Ressources naturelles et de la Faune (MRNF).

1.1 Objectives

The main objective of the survey was to determine whether sedentary caribou were present within a specified radius of the LIM and NML iron ore mining project sites

immediately prior to the calving season. Data collected from collared female caribou, such as the location of calving grounds, habitat use and site fidelity, would be used to identify the ecotype. Satellite telemetry has provided an effective indication of caribou movement and distribution for monitoring purposes and implementation of improved mitigation measures (Trimper and Chubbs 2003).

2.0 METHODOLOGY

2.1 Field Preparation

In 2009, a survey area, delineated as a radius of 50 km centred on each proposed mining development, was established (D'Astous and Trimper 2009). As few observations were made that year, the Study Area approved by GNL in 2010 (K. Miller, Ecosystem Management Ecologist, Government of Newfoundland and Labrador, pers. comm.), consisted of a radius of 20 km centred on each proposed development.

Given the overlap of the range of the GRCH with the Study Area and the difficulty in distinguishing this ecotype from the sedentary forest ecotype, the Study Team contacted the GNL and MRNF to determine the location of collared migratory caribou immediately prior to the start of the survey. The display of satellite collars from the GRCH on the MRNF and GNL websites as well as communication with the nearby Naskapi and Innu communities indicated that few, if any, George River caribou had passed through the Study Area during the winter of 2009-2010. It should be noted that there are no known telemetry collars currently attached to sedentary caribou, if present, in this area.

As was done in 2009, before the start of the survey, letters prepared by NML and LIM explaining its objectives were sent to the leaders of the First Nations concerned, namely the Innu Nation, Innu Takuaikan Uashat mak Mani-Utenam (ITUM), the Naskapi Nation of Kawawachikamach (NNK) and the Nation Innu Matimekush-Lac John (NIMLJ). This contact was important for information purposes but also to direct the survey aircraft away from spring hunting parties. Upon arriving in Schefferville, the Study Team received confirmation that goose hunting would not begin until a week later. Because of this timing and the shorter radius of interest in 2010, the Study Area was flown completely.

The necessary provincial approvals, scientific permits and a federal Animal Care Certificate were obtained before the start of the survey and are available upon request.

2.2 Field Techniques

At the beginning of the survey, a health and safety checklist of all hazards as well as actions to be taken for their management was completed and discussed by all participants on the Study Team. Safety issues were also reviewed and discussed each morning of the survey in the form of a "last-minute risk assessment." Various scenarios related to capture techniques were rehearsed in advance.

The survey was completed between April 26 and May 1, 2010. Survey lines were overflown with an Astar 350BA helicopter at an altitude of approximately 100 m (AGL) and at an average speed of 160-200 km/hr depending on conditions and/or habitat.

Flight lines were spaced every 4 km with transects oriented in a NW/SE direction consistent with the topography. Flights ceased if precipitation or other factors (e.g., extensive shadows) reduced visibility. All observations, tracks, land use and other relevant information, such as weather and start and end times of each transect, were recorded by the navigator. All tracks observed were identified if possible (e.g., caribou, moose, lynx). If fresh caribou tracks were encountered, the tracks were to be followed off the survey line in an effort to locate the origin. A total of 14.1 hours was flown in the helicopter, including ferry from and return to Goose Bay, Labrador, to the Study Area.

The spring conditions made it possible to take advantage of persistent snow cover and ice conditions for tracking (Appendix A, Photo 1).

3.0 RESULTS

3.1 Caribou

No caribou or confirmed tracks of caribou were observed along the transect lines (Map 1). Only one old track, which may have been a moose track (*Alces alces*) (based on pattern and the associated habitat), was observed. As the track was obscured by heavy snow, the origin could not be determined despite an intensive search of this location.

3.2 Other Wildlife

One adult female moose and the tracks of two other moose were identified. A River otter (*Lutra canadensis*) and tracks of a second otter were observed at waterbodies. Tracks of Canadian lynx (*Felis canadensis*), porcupine (*Erethizon dorsatum*), Snowshoe hare (*Lepus americanus*) and Red squirrel (*Tamiasciurus hudsonicus*) were also observed (Map 1). Finally, a Spruce grouse (*Dendragapus canadensis*), a Willow ptarmigan (*Lagopus lagopus*), a Golden eagle (*Aquila chrysaetos*), an osprey (*Pandion haliaetus*) nest, two Bald eagles (*Haliaeetus leucocephalus*) (one of which was observed immediately outside the survey area during ferrying) and an American crow (*Corvus brachyrhynchos*) were observed during the survey.

Land use activity was low (Map 2). Only one blind (with decoy) for traditional goose hunting was identified, and it was avoided by the helicopter.

4.0 DISCUSSION

In 2009, only three sightings of caribou (*Rangifer tarandus caribou*) totalling seven individuals were confirmed over a much larger area than flown in 2010 (i.e., approximately 50-km radius versus 20 km). In addition, caribou tracks were confirmed in one other location (D'Astous and Trimper 2009). One adult female caribou, identified as 'Blue 331', was fitted with an Argos GPS collar (PTT 53572, VHF signal 149.970 MHz) and catalogued as GR2009001 (T. Chubbs, pers. comm.) on May 6, 2009 (D'Astous and Trimper 2009). However, no signal was received from the collar until after it had been shot (J. Neville, pers. comm.) and no observations of 'Blue 331' were ever reported. On February 6, 2010, 'Blue 331' was legally shot by a hunter on the Naskaupi River in the Grand Lake Extension Zone of the Caribou Management Area (about 400 km east of the capture location, 53°51'N 60°52'W) (T. Chubbs, pers. comm.). Based on the migratory route of the GRCH during the fall and winter of 2009-2010, the Senior Wildlife Biologist for Labrador considered this animal to belong to the migratory ecotype rather than to the sedentary ecotype (T. Chubbs, pers. comm.). The caribou's body length (192 cm) (D'Astous and Trimper 2009) is consistent with this interpretation (T. Chubbs, pers. comm.).

The 2009 body measurements indicated that the two caribou measured in the study area probably belonged to the migratory ecotype (D'Astous and Trimper 2009). Moreover, the only caribou captured in 2009 had joined the GRCH (D'Astous and Trimper 2010). Based on the absence of caribou observations in 2010 and the 2009 results accumulated to date, there has been no evidence that the study area is used by sedentary caribou during the pre-calving period in recent years.

Finally, results from the genetic analysis of the dermis samples collected in 2009 are expected to be available in the summer of 2010 (Dr. S. Côté, pers. comm.). These data would add information to help determine the ecotype of the caribou observed in the study area in 2009.

5.0 CONCLUSIONS

The 2009 survey results indicated that the caribou observed in the area were migratory caribou. The 2010 survey was completed under good tracking conditions, yet no caribou were observed. Results from both years' surveys indicate that it is unlikely that sedentary caribou are present in the Study Area during the pre-calving period.

6.0 REFERENCES

6.1 Personal Communications

T. Chubbs	Senior Wildlife Biologist, Government of Newfoundland and Labrador
Dr. S. Côté	Professor, Researcher for Caribou Ungava, Université Laval, QC
R. McKenzie	Resident hunter, Matimekosh-Lac John, QC
K. Miller	Ecosystem Management Ecologist, Government of Newfoundland and Labrador
J. Neville	Wildlife Biologist, Government of Newfoundland and Labrador

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7.0 APPENDIX A



PHOTO 1. Snow conditions prevailing at the time of the 2010 survey



