

Aerial Survey of the Detour Woodland Caribou (*Rangifer tarandus caribou*) Population

Survey report – Winter 2022



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Cover page photo: William Rondeau, Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs

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ISBN 978-2-550-95788-1 (PDF)

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Citation reference:

Szor, Guillaume, Guillaume Gingras and Alan A. Arsenault. 2023. Aerial Survey of the Detour Woodland Caribou (*Rangifer tarandus caribou*) Population, Winter 2022. Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs, Direction de la gestion de la faune du Nord-du-Québec, Québec, 20 pages + appendix.

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Warning

The results of the survey carried out for the Detour population during the winter of 2022, described in this document, are applicable only to the inventoried population and cannot be extrapolated for other populations or sectors of the caribou range.

Abstract

An aerial survey was conducted from February 8 to 25, 2022, over a 33,203 km² area covering the Detour woodland caribou population's winter range as delineated by the Québec government. This population, whose range overlaps the provinces of Québec and Ontario, has sometimes been referred to as the La Sarre herd or the Québec-Ontario Frontier herd in Québec. In Ontario, woodland caribou populations are managed by geographical sectors (ranges), and this particular population appears to be the main group of caribou occupying the Kesagami range, considered at the federal level as the local population ON8. The Québec portion of the survey was conducted by the government of Québec (then represented by the Ministère des Forêts, de la Faune et des Parcs [MFFP]), and the Ontario portion was conducted by two teams from the consulting firm WSP Environment & Infrastructure Canada Ltd. (formerly Wood PLC). The survey was the result of a financial and logistical collaboration between the government of Québec, Environment and Climate Change Canada, Green First forestry company, the mining companies Agnico Eagle Mining Ltd. (owner of Kirkland Lake Gold Ltd.) and Hecla Québec, and the Council of the First Nation of Abitibiwinni.

A total of 338 animals were enumerated during the survey: 83 in Québec and 255 in Ontario. Of this number, 273 animals were classified by age class and gender (64 adult males, 149 adult females, 60 calves). Based on the groups where more than 60% of the animals could be classified, calves accounted for roughly 22.4% of the population, giving a recruitment figure of 39.9 calves/100 females at the time of the survey. The sex ratio was 37.8 males per 100 females.

Different methodologies were used on either side of the border to estimate the probability of caribou detection during the survey. Probability of detection was estimated to be between 71% and 85% for the Québec portion of the survey, and at 73% for the Ontario portion. Using these correction factors, the total abundance of the Detour population was estimated to be between 446 and 465 animals in the winter of 2022. This survey achieved the first abundance estimate for the entire cross-border Detour population. Comparisons between the results of this survey with those of work done in recent decades are limited since the latter only covered portions of the population's range. Nevertheless, there are several indications that the Detour population may have decreased in size since the 1980s. This survey establishes a baseline reference for the abundance of the Detour population. Interprovincial collaboration between Québec and Ontario, as well as improved telemetric monitoring within the population, will be necessary in order to obtain demographic indicators that are representative of the status of the entire population and to monitor its evolution over the next few years.

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Context

In its Woodland Caribou Habitat Stewardship Action Plan announced in 2016, the Québec government planned to intensify its monitoring of woodland caribou in the province to obtain information on the status of the populations present within its territory. However, since the range of some woodland caribou populations in Québec extends beyond the province's borders, the task of monitoring them is more complex and requires the collaboration of interprovincial partners to obtain a picture covering the entire territory used by these populations.

This survey was designed to cover the winter range of the Detour woodland caribou population as defined by the Québec government (Gouvernement du Québec, 2021). This population is in the extreme western portion of the continuous woodland caribou range in Québec, and its range straddles the border between the provinces of Québec and Ontario. The name and range boundaries of the caribou population occupying this sector have varied over the years, and the partial monitoring work done on either side of the border has not provided an accurate profile of its status. In Québec, this population has sometimes been referred to as the La Sarre herd or the Québec-Ontario Frontier herd (Hovington, 2010). In Ontario, delineation of woodland caribou ranges is accomplished using a set of different ecological, biophysical and administrative criteria (MNRF, 2014c), and the Detour population constitutes the main group of caribou occupying what is considered the Kesagami range by this province (Figure 2; MNRF, 2014a).

Monitoring history of the Detour population

i. Abundance estimates

The integrated Kesagami range assessment report published by the Ontario MNRF (2014a) presents a historical overview of the work done in Québec and Ontario in the last century in the sector under study and details changes to the caribou presence over the years. Among other things, it documents the presence of woodland caribou in Ontario as far south as Lac Abitibi in the 1920s. Based on surveys carried out in the late 1970s in Ontario's Wildlife Management Unit 26 (WMU 26), covering roughly the same area as the Ontario portion of the area surveyed in the current aerial survey (Figure 2), the size of the caribou population was thought to be somewhere between 200 and 1,000 animals, based on a "non-statistical conservative estimate" (Stewart, 1977). However, this estimate was based on a sampling of approximately 5% of the WMU and sightings of only 42 caribou. Subsequent surveys in the 1980s, again in WMU 26, estimated the size of the population to be between 179 and 444 animals (Armstrong, 1980; Armstrong 1983; Dawson and Payne, 1985; McKnight and Davies, 1988 *in* Gauthier and Hildebrandt, 2000). However, these estimates are not very precise since the survey protocols mostly targeted moose, sampling generally covered less than 10% of the territory and the figures were extrapolated from a few dozen caribou sightings only. In the 1980s a number of new developments came to the region, which, until then, had been relatively undisturbed and seen a limited human presence. These developments consisted mainly of forestry operations, which began in the southern portion of the sector, as well as the construction of the road leading to the Detour Lake

gold mine. According to the authors, the caribou population present in the sector nevertheless appeared to be fairly stable at the time, and the abundance estimates obtained through the various surveys conducted in the 1980s were similar to the rough estimates proposed by Stewart (1977). The work done at this time also identified some wintering areas where caribou concentrations were greater, mainly in the northern portion of WMU 26 and near the Québec-Ontario border. Between 1998 and 2013, several partial aerial surveys or classification surveys were conducted in Ontario within the Kesagami range resulting in minimum counts ranging from 23 to 278 caribou (MNR, 2014a). Based on all the information from the partial surveys and classifications conducted, the local population of Kesagami was estimated at 492 individuals in 2010 (EC, 2011).

In Québec, the work done in the 2000s also provided a baseline reference for woodland caribou abundance at that time (Paré and Jourdain 2002; Paré et al, 2009; Figure 1). According to the results of a survey carried out in 2001 by Paré and Jourdain (2002), which covered most of the Québec study area for this survey, 170 caribou were sighted west of the Harricana River. Using the theoretical visibility rate of 85% applied by the authors,¹ this would indicate a population size of roughly 200 caribou. Paré et al. (2009) estimated the abundance of woodland caribou at 167 individuals in 2006 in their survey zone, which partially overlapped the sector surveyed in 2001 and mainly covered the sector located south of the northern limit for commercial timber allocations (Figure 1). A third survey carried out in March 2011, covering the entire area surveyed in the two preceding surveys, reported only 63 caribou sightings. Applying the theoretical visibility rate of 85% on these sightings, this would represent roughly 74 caribou present in the survey area at that time (MELCCFP, unpublished data). Although the three surveys did not cover the same exact areas, it nevertheless appears that the caribou population in this sector declined between 2001 and 2011. However, it is impossible to rule out the hypothesis that these observed differences in abundance are in fact due to variations in the geographic distribution of individuals within the population's range rather than an actual decline of the population.

ii. Demographic parameters

Partial surveys and monitoring of caribou fitted with satellite collars, carried out in Ontario between 1998 and 2013, produced several estimates of recruitment, an indicator that can be used to estimate a population's growth potential. The recruitment rates observed during this time period varied from 12.9 to 25.2 calves/100 females (MNR, 2014a), all below the threshold of 28.9 calves/100 females suggested by Environment Canada (2008) as the minimum level for population maintenance.² Satellite monitoring of adult females within the Kesagami range also made it possible to estimate their survival rates at 79% for the 1998–2000 period (Environment Canada, 2008) and 88% for the 2009–2012 period (MNR, 2014a). When combining recruitment data with adult survival rates, population growth

¹ The authors note, however, that their survey was carried out using flight lines 6 km apart rather than the 2.1 km spacing used by Courtois et al (2001) when assessing the visibility rate of 85%.

² This recruitment threshold is based on the average values estimated for woodland caribou populations in Canada, namely an average annual survival rate for adult females of 85%, 14% of one-year-old animals in the population, 61% of females in the adult population and an average parturition rate of 76%.

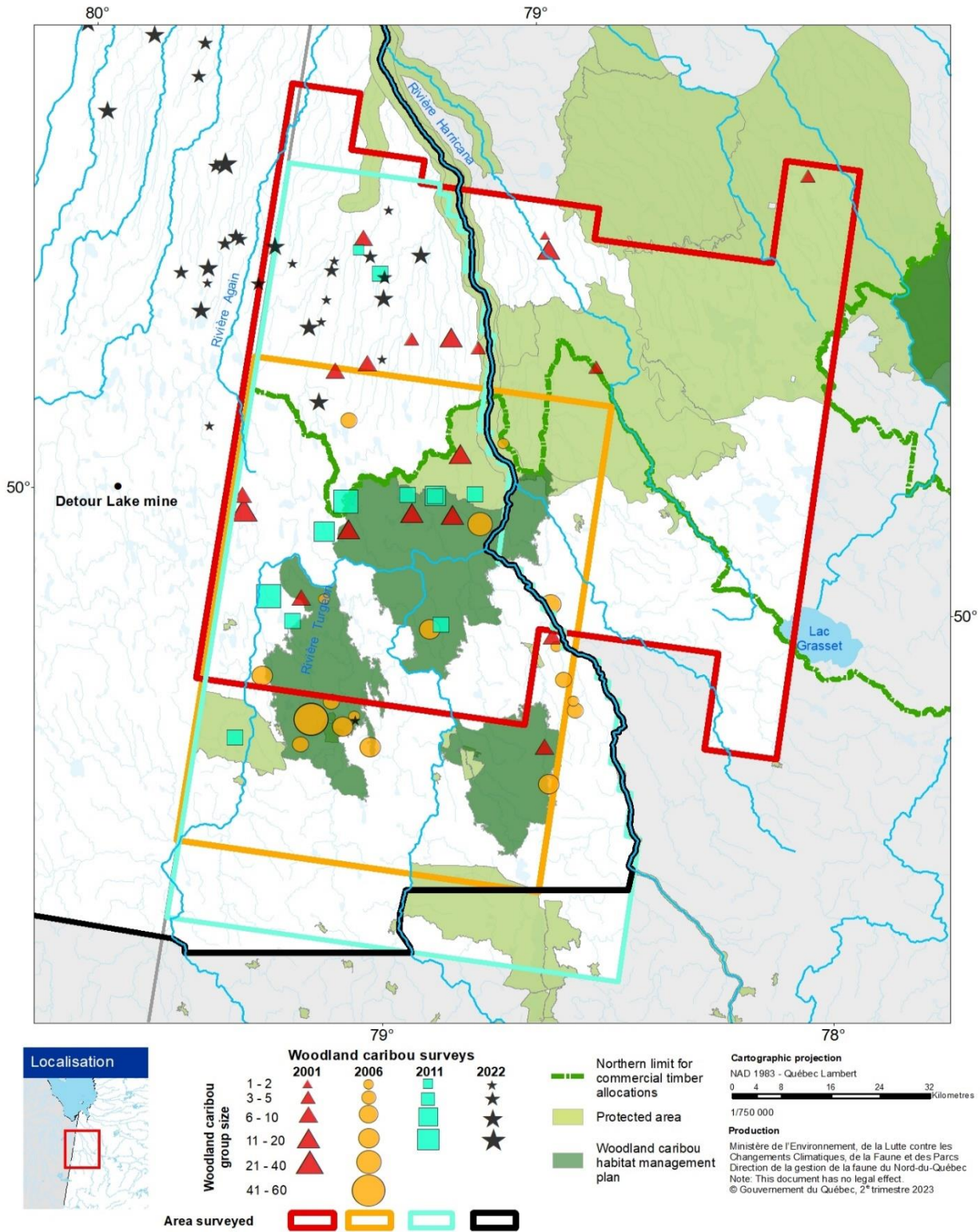


Figure 1: Summary of woodland caribou sightings during the aerial surveys of the Detour population conducted in Québec between 2001 and 2022 (Paré and Jourdain 2002; Paré et al, 2009).

rates varying from 0.88 (for 1998–2000) to 0.94 (for 2009–2012) were estimated, suggesting that the caribou population in the Kesagami sector was in decline (MNRF, 2014a) and that it was highly unlikely that this population was self-sustaining (EC, 2011). The Detour Lake mine (operated by Kirkland Lake Gold Ltd./Agnico Eagle Ltd.) has also undertaken annual aerial surveys (2008–2022) and a telemetry study (2016–2020) covering of a large portion of the Kesagami local population as part of its environmental monitoring program (WEIS, 2022). According to the data collected as part of this monitoring, the adult female annual survival rate was estimated to be stable at 95% between 2017 and 2020 within their study area. Calf recruitment rates, however, were very low, varying between 14.9 and 27.8 calves/100 females during the same period, which together with the observed survival rates, also supported the declining trend assessed by Environment Canada (EC, 2011) and the MNRF (2014a).

Aerial survey of the Detour population in winter 2022

Until now, a complete survey of the whole range of the Detour woodland caribou population, including the Québec and Ontario portions, had never been conducted. A financial and logistical collaboration between the government of Québec (then represented by the Ministère des Forêts, de la Faune et des Parcs [MFFP]), Environment and Climate Change Canada (ECCC), GreenFirst Forest Products, Agnico Eagle Mining Ltd. (owner of the Detour Lake mine), Hecla Quebec and the Abitibiwinni First Nation Council allowed the realization of such a survey. The purpose of the survey was to document the distribution of caribou within the population, to estimate their abundance and to assess the population structure, including annual calf recruitment.

Study area

The study area for this survey (33,203 km²) was established using the caribou telemetry locations available in Québec and Ontario between 2010 and 2022 and aimed to cover the entire wintering area (November to April) used by woodland caribou considered to belong to the Detour population (Figure 2). However, the exact delimitations of the various caribou groups or populations using this sector remain slightly uncertain. According to telemetric monitoring by the MNRF (2014a), three different groups of caribou appear to occupy the Kesagami range in Ontario. The main group, representing what is considered to be the Detour population in Québec, appears to mostly occupy the area located east of North French River, while the Fraserdale and Onakawana groups mainly occupy the sectors located west of North French River, up to the Kapuskasing and Missinaibi rivers respectively (Figure 2; see Figure 6 in MNRF, 2014a). There remains, however, some connectivity among those groups of caribou, and individuals considered to be part of the Detour population occasionally use areas located between the North French and Abitibi rivers. In Québec, an analysis of the movement patterns of animals fitted with satellite collars showed that the Harricana River acts as a physical barrier limiting the movements between the Nottaway and Detour populations. The study area for this survey was therefore delineated in order to cover the entire territory located between the

Abitibi River to the west, James Bay to the north and the Harricana River to the east (Figure 2). Roughly 79% of the study area is located in Ontario and 21% in Québec.

The study area is characterized by a combination of poorly drained, low-density black spruce stands and numerous large open or wooded peat bogs, interspersed with parcels of drier forests dominated by black spruce (*Picea mariana*) and jack pine (*Pinus banksiana*), in which white spruce (*Picea glauca*), balsam fir (*Abies balsamea*), trembling aspen (*Populus tremuloides*), white birch (*Betula papyrifera*), tamarack (*Larix laricina*) and eastern white cedar (*Thuja occidentalis*) are also occasionally present. There is a south-to-north declining gradient of disturbances in the study area, on both the Ontario and the Québec side. As of 2015, disturbances accounted for roughly 40% of the Kesagami range on the Ontario side (37% from human disturbances¹ and 3% from natural disturbances) (ECCC, 2017). The main sources of human disturbance in the caribou habitat on the Ontario side were road network development and forestry operations, followed by mineral exploration and mining operations. In the Québec portion of the Detour population's range, the disturbance rate was 32.6% (27.4% from human causes and 5.2% from natural causes) in 2021, mostly due to road network development and forestry operations (MELCCFP, unpublished data).

A woodland caribou habitat management plan was implemented north of La Sarre, in Québec, in 2009 (Paré et al., 2007). It was revised in 2015 to prohibit forest operations in large tracts of forest (586 to 27,488 ha) over a total area of 73,341 ha and to establish additional areas where adapted forest development methods must be applied to meet FSC forest certification criteria (Comité de révision, 2015). These habitat management measures have helped maintain a network of undisturbed patches of habitat for woodland caribou within the part of the Detour population's range subject to forest harvesting in Québec. In Ontario, forestry operations in the Kesagami range have been regulated by a dynamic caribou habitat schedule (DCHS) since 2012 (MNRF, 2014b). The goal of this approach is to spread forestry operations over time and space to reduce fragmentation and maintain large tracts of habitat suitable for the caribou across the entire landscape.

The study area covers territories used by several Indigenous nations, including the Cree Nation of Waskaganish, the Abitibiwinni Algonquin Nation, the Moose Cree First Nation, the Taykwa Tagamou Nation (New Post) and the Wahgoshig First Nation. It is also used by the Metis Nation of Ontario.

¹ Disturbances of human origin include, in addition to the footprint of the disturbance, a 500-metre buffer zone. When a human disturbance overlaps with a natural disturbance, it is counted as a human disturbance.

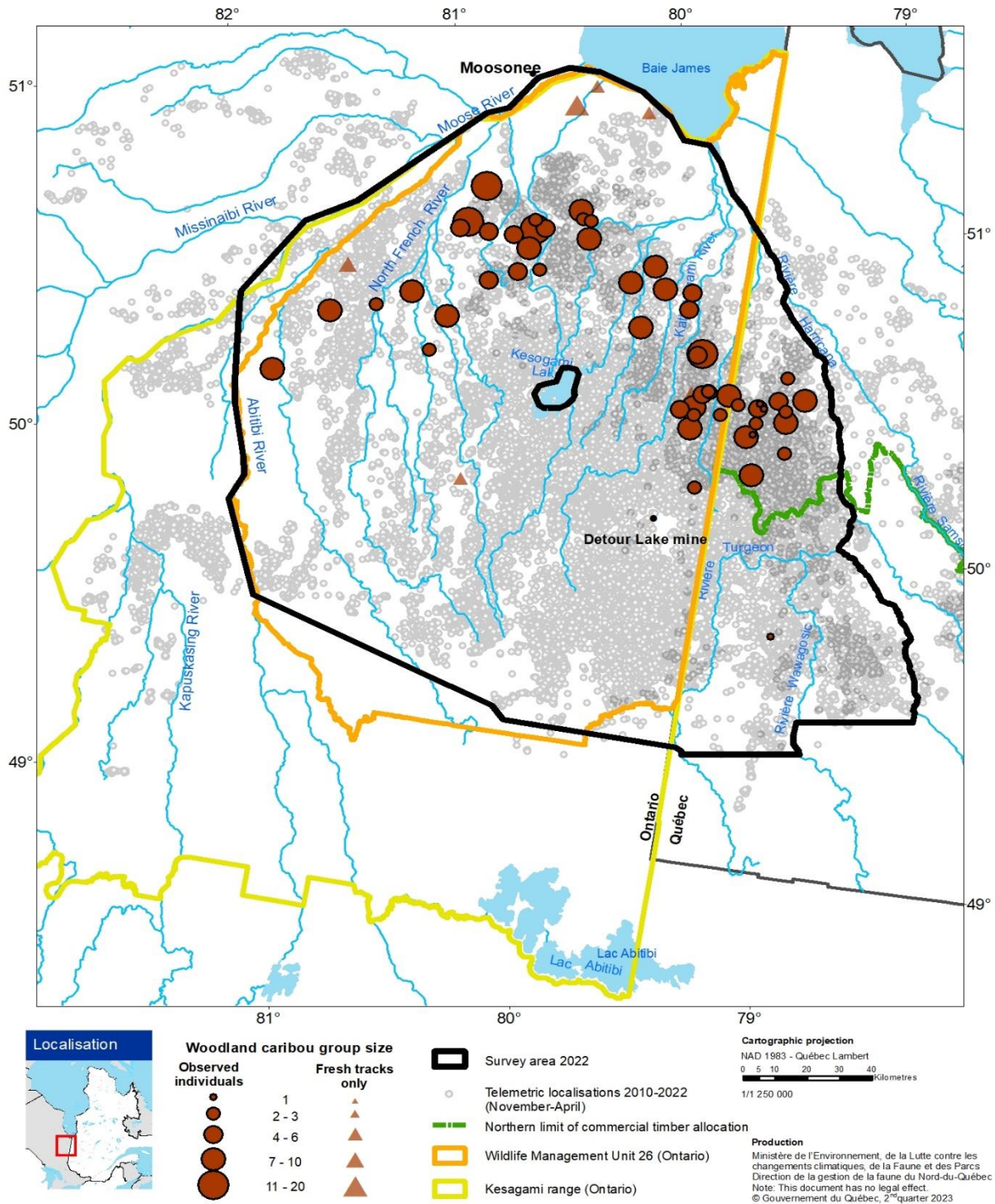


Figure 2: Study area and caribou groups sighted during the aerial survey of the Detour woodland caribou population in the winter of 2022. Winter telemetric locations of Detour woodland caribou for the 2010–2022 period monitored by the Ontario Ministry of Natural Resources and Forestry (MNRF) and Québec MELCCFP are illustrated (grey). The Kesagami range and Ontario Wildlife Management Unit (WMU) 26 are also shown.

Methodology

The aerial survey was conducted from February 8 to 25, 2022, by three different teams based in Matagami (QC), Moosonee (ON) and at the Detour Lake Mine (ON). The Québec portion of the survey was completed by the Québec government (then represented by the Ministère des Forêts, de la Faune et des Parcs [MFFP]) at the same time as the Nottaway woodland caribou population survey (Szor and Gingras, 2022). The Ontario portion of the survey was completed by two teams from the consulting firm WSP Environment & Infrastructure Canada Ltd. (formerly Wood PLC). The work was interrupted for a total of five days due to unsuitable weather conditions, including a few centimetres of snowfall. The limited amount of snow on the ground at the time of the survey allowed however some groups of caribou to move around more than usual in some of the sectors surveyed. The survey was conducted using the basis of the two-phase method described by Courtois et al. (2001), despite some methodological differences between the Québec and Ontario teams described below.

Phase I: Reconnaissance

The first phase involved flying over the entire study area to identify signs of caribou presence, such as tracks, feeding craters and individual animal sightings. Given the positioning of the aircraft refuelling sites, the flight lines were established on an east-west trajectory. Transects were 2.1 km apart in Québec and 3.0 km apart in Ontario per Arsenault (2020). For this phase, two EC-120 and two AS350-BA+ helicopters were used. The flight crews were composed of the pilot (front right seat), the navigator/observer (front left seat) and two observers in the rear seats. The flights took place at an altitude of roughly 100–200 metres above ground level at a ground speed of 120 to 200 km/hr (speeds were slower in areas with heavier vegetative cover and higher in areas with open cover). All sightings were recorded on a combination of paper forms and electronic tablets (Toughpad FZ-G1 and Panasonic Toughbook CF-19), or Garmin GPS map 78s (to record waypoint observation locations) and Avenza Maps (to record flight path).

Phase II: Enumeration and classification

The second phase of the survey was conducted using an AS350-B2 helicopter for the Québec portion and using the same two AS350-BA+ helicopters for the Ontario portion concurrent with the reconnaissance phase. During the enumeration and classification phase, all signs of potential caribou presence identified in Phase 1 were revisited to determine the species associated with these indicators and, where applicable, to find and enumerate the caribou. Once the total number of caribou was established, individual animals were classified by age class (adult or calf), and in the case of adults, by gender. The presence of a vulva patch was the main criterion used to differentiate adult males from adult females. In some cases, age and gender could not be established, for example if the caribou took shelter in a dense, closed forest stand prior to classification. When this occurred, the animals were classified as “indeterminate”.

Detection rate

Although the survey method applied aimed for total coverage of the study area, a correction factor is generally applied to the number of caribou sighted in the field to account for incomplete detection of caribou present in the study area. Incomplete detection may be due to a detection bias among the observers (e.g., fatigue, distance from aircraft, etc.) or an availability bias (the animals cannot be sighted by the observers, for example if they are in a dense forest). The correction factor is normally estimated from the visual detection rate of animals fitted with satellite collars in the study area at the time of the survey. For the Québec portion of the survey, 22 caribou equipped with telemetric collars were present in the surveyed sectors during the simultaneous surveys of the Nottaway population (18 collars) and the present survey of the Detour population (4 collars). This approach allowed us to estimate a detection rate of between 71% and 85% (Szor and Gingras, 2022), which we applied to the entire area covered by both surveys.

For the Ontario portion of the survey, there were no caribou equipped with satellite collars in that sector of the range, meaning that this approach could not be used to estimate the detection rate. The double-observer method was used instead for Phase I (reconnaissance). This method involves using two observers who observe simultaneously from the same side of the aircraft (Seber, 1992; Powell and Gale, 2015). The double observer method is based on the Capture-Mark-Recapture (CMR) principle, where the first observer performs the steps of visual capture and marking while observing a group of caribou or a site with signs of caribou presence. The second observer performs the visual recapture step, observing or failing to observe the same group or site as the first observer. The number of caribou groups or sites with signs of caribou presence observed by either the first or second observer only or by both observers is then used to estimate the specific detection rate for each observer and to assess the survey-specific visibility rate (see the details of the calculation method in Appendix 1 of Szor et al., 2019). However, the double-observer approach only corrects for detection bias (observer bias) and, unlike the telemetric collar method, cannot factor in the availability bias. In order to estimate the detection rate of individuals in Phase II once caribou groups had been located, the Ontario survey team used an approach based on observed caribou track networks. The teams estimated the number of caribou present on a site by counting the number of individual caribou tracks and then compared this number to the number of caribou actually observed on the track network. The difference between the number of caribou predicted by the tracks and the number of caribou actually observed was then used to estimate the detection rate in Phase II. For example, the team could determine that the observed track network was created by 10 different caribou. If only 8 caribou were observed at this site, the team considered that 2 caribou had been missed ($8 \text{ caribou} / 10 \text{ detected} = 80\% \text{ detection rate}$).

Results and conclusion

Overall, 58 caribou groups were located during the survey, representing a total of 338 individual animals sighted. Group size varied from one to 18 individuals (mean = 5.8 individuals; standard deviation = 3.5; Appendix 1). Virtually

all the caribou were observed in the northern portion of the study area, north of the 50th parallel. Seventeen groups (83 caribou) were located in the Québec portion of the survey area. Only one of these animals was located south of the northern limit for commercial timber allocations, while all the other groups were located more or less in the same area, between the Again and Harricana rivers. Forty-one groups (255 caribou) were located in the Ontario portion of the study area, including three groups (19 caribou) between the North French and Abitibi rivers, making their affiliation to the Detour population uncertain (Figure 2).

Of the 338 animals enumerated during the survey, 273 were classified by age class and gender (64 males, 149 females, 60 calves; Table 1; Appendix 1). Based solely on the groups in which 60% of the animals could be classified (49/58 groups), calves accounted for 22.4% of the population at the time of the survey, representing a recruitment level of 39.9 calves/100 females. These recruitment values are higher than the values observed within the Kesagami range during the 1998–2013 period (average = 24.1 calves/100 females, 10.7% calves; MNRF, 2014a) and those observed during surveys undertaken in the vicinity of the Detour Lake mining site between 2016 and 2021 (average = 21.5 calves/100 females, 14% calves; WEIS, 2022). Based on telemetry monitoring data in Québec, the annual survival rate of adult females during the 2018–2021 period was estimated at 85.9%. In Ontario, the annual survival rate of adult females, assessed from the monitoring of 20 females between February 2016 and February 2020 by the Detour Lake mine, remained stable at 95% (WEIS, 2022). Considering these survival rates of adult females, the level of recruitment observed in the winter of 2022 would have allowed for population growth for the year 2021–2022. This recruitment rate does however appear to be exceptional for the Detour population, given that the demographic parameters for the past 20 years appear to be indicative of a generally declining population trend (MNRF, 2014a; ECCC, 2011; WEIS, 2022).

Table 1: Structure of the Detour woodland caribou population in the winter of 2022 based on the results of the aerial survey carried out in the Québec and Ontario portions of its range.

Sector	Area (km ²)	Caribou enumerated					Corrected abundance	Population structure ⁴		
		Adults			Indeterminate age and gender	Total		Males /100 Females	Calves /100 Females	% Calves
		Males	Females	Calves						
Québec	7,030	18	29	7	29	83	98 ¹ – 117 ²	57.1	25.0	13.7
Ontario	26,464	46	120	53	36	255	348 ³	33.0	43.5	24.6
Total	33,494	64	149	60	65	338	446 – 465	37.8	39.9	22.4

¹ Calculated using a detection rate of 85%.

² Calculated using a detection rate of 71%.

³ Calculated using a detection rate of 73%.

⁴ Calculated using only those groups where > 60% of the animals could be classified by age and gender.

The sex ratio within the adult population¹ was evaluated at 37.8 males/100 females (or 72.6% of females), a figure that falls within the average range of 30 to 70 males per 100 females normally observed in woodland caribou populations (Environment Canada, 2008). This is similar to the average of 31.4 males/100 females observed between 2016 and 2021 within the caribou groups near the Detour Lake mining site (WEIS, 2022) and also falls within the range of observed values during the MNRF's monitoring activities in the 1998–2013 period (MNRF, 2014a).

Based on the detection rate estimated by Szor and Gingras (2022) for the Québec portion of the survey, a total of 98 to 117 caribou were probably present in the Québec portion of the area surveyed (Table 1). This is higher than the abundance estimate of 74 caribou present in 2011, but below the abundance estimates for the sector from the 2001 (200 caribou) and 2006 (167 caribou) surveys. For the Ontario portion of the range, the double-observer approach produced an estimated detection rate of 87% for signs of caribou presence during Phase I of the survey. Using the track network analysis approach, the teams that carried out the Ontario portion of the survey estimated that the tracks of 49 caribou were observed during Phase II of the survey, without sightings of the associated animals. This would therefore represent a caribou detection rate of 84% once a sign of caribou presence has been located (255 caribou sighted/304 caribou assumed to be present in the groups detected). Since we estimate that 87% of the caribou groups were located and 84% of the caribou in those groups were sighted, it is possible to estimate a combined detection rate of 73% for caribou present in the Ontario portion of the study area (87% x 84%). It is therefore reasonable to conclude that roughly 348 caribou were present in this portion of the study area at the time of the survey. This estimate is close to the minimum threshold of Stewart's (1977) "conservative non-statistical estimate" of between 200 and 1,000 animals at the end of the 1970s and is below most of the abundance estimates obtained from work carried out in the 1980s and 1990s in the same sector (Table 2). It is also below the estimate of 492 individuals published by ECCC in 2011, which however applies to the whole Kesagami range, and therefore covers a slightly larger area (Figure 2) and potentially includes some additional groups of caribou in areas excluded from the present survey.

Based on these results, the Detour population was probably composed of approximately 446 to 465 caribou in the winter of 2022. Given that the Detour population's entire range had never previously been surveyed exhaustively, it is difficult to draw firm conclusions about recent changes. However, comparisons with the few fragmentary estimates produced since the 1980s on either side of the provincial border suggest that the Detour population abundance has probably declined over that time period, which is also consistent with findings from the analysis of demographic indicators (survival and recruitment) estimated since the late 1990s (Environment Canada, 2008; ECCC, 2011; MNRF, 2014a; WEIS, 2022).

¹ Based on caribou groups where more than 60% of the animals could be classified

Table 2: Summary of historical abundance estimates for the Detour woodland caribou population

Province	Sector	Year	Abundance estimate	Source
Ontario	WMU ¹ 26	1977	898 (200 – 1000)	Stewart, 1977
	WMU ¹ 26	1980	439	Armstrong, 1980
	WMU ¹ 26	1983	179	Armstrong, 1983
	WMU ¹ 26	1985	403	Dawson and Payne, 1985
	WMU ¹ 26	1988	444	McKnight and Davies, 1988
	WMU ¹ 26	2000	701	Gauthier and Hildebrandt, 2000
	Kesagami Range	2010	492 ²	ECCC, 2011
	Kesagami Range	2010	Minimum animal count 178 Total probable >300	MNRF, 2014a
Québec	Portion of Detour and Nottaway populations	2001	233 (200 ³ Detour)	Paré and Jourdain, 2002
	Detour – southern portion	2006	167	Paré et al., 2009
	Detour	2011	74	MELCCFP, unpublished data

¹ Wildlife Management Unit

² Average based on extrapolation from partial inventory coverage

³ Abundance estimated within the range of the Detour population based on the location of caribou group observations.

The caribou groups located during the survey were not distributed evenly across the study area. Virtually all the caribou sighted by the teams were concentrated in a narrow band in the northern portion of the study area, with a handful of animals sighted in its southern portion. This strong difference in the caribou’s winter use of the northern portion of the Kesagami range compared to the southern portion was previously observed as early as the 1980s (Armstrong, 1980; Armstrong, 1983; Dawson and Payne, 1985). Such a northward winter distributional trend for the Ontario portion of the Detour population was also noted from the monitoring program of the Detour Lake mine during the 2008–2022 time period (Figure-2; WEIS, 2022). In Québec, a reduction in winter use of the southern portion of the range was already apparent between the 2006 and 2011 surveys, and the results of the current survey appear to confirm that this trend has continued. Satellite monitoring of caribou from the Detour population has, however, confirmed that the animals still use sectors south of the northern limit for commercial timber allocations, including the forest blocks maintained as a result of the woodland caribou habitat management plan implemented in that sector (Comité de révision, 2015), although this occurs mainly during the spring, summer and fall (unpublished data, MELCCFP). The strong fidelity of female woodland caribou to their calving range, even despite the presence of disturbances in the landscape (Faille et al., 2010), could possibly explain this pattern of territory use.

This document describes the first exhaustive survey of the complete Detour population range and provides a baseline reference that can be used to monitor the population in future assessments. Interprovincial collaboration between Québec and Ontario, as well as improved telemetric monitoring within the Detour population, will be necessary to obtain demographic indicators that are representative of the status of the entire population.

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Appendices

Appendix 1. Number of caribou sighted, by age class and by gender, in groups located during the survey of the Detour woodland caribou population in the winter of 2022.

PROVINCE	GROUP	ADULT MALES	ADULT FEMALES	CALVES	ANIMALS OF INDETERMINATE AGE AND GENDER	TOTAL NUMBER OF CARIBOU SIGHTED
ONTARIO	1	0	1	1	0	2
	2	0	1	1	0	2
	3	0	1	1	1	3
	4	0	3	0	0	3
	5	2	4	2	1	9
	6	3	0	0	0	3
	7	0	3	1	0	4
	8	0	6	1	0	7
	9	0	2	1	0	3
	10	4	0	0	0	4
	11	1	4	2	0	7
	12	3	6	3	2	14
	13	2	3	2	0	7
	14	1	3	2	5	11
	15	2	3	0	0	5
	16	0	2	3	0	5
	17	1	2	1	2	6
	18	0	3	3	0	6
	19	1	2	2	0	5
	20	1	2	1	4	8
	21	0	2	1	0	3
	22	0	2	1	0	3
	23	1	4	1	0	6
	24	1	1	0	0	2
	25	3	12	3	0	18
	26	3	2	1	1	7
	27	1	5	4	0	10
	28	1	5	0	1	7
	29	0	2	0	0	2
	30	1	4	2	1	8
	31	0	5	2	3	10

	32	0	2	2	0	4
	33	1	4	0	0	5
	34	5	0	0	4	9
	35	2	5	4	1	12
	36	1	1	1	2	5
	37	0	1	1	1	3
	38	2	6	0	0	8
	39	1	2	0	0	3
	40	1	4	3	0	8
	41	1	0	0	7	8
QUÉBEC	42	0	2	0	0	2
	43	1	1	0	0	2
	44	1	3	1	0	5
	45	3	0	0	0	3
	46	0	1	0	0	1
	47	0	0	0	3	3
	48	0	3	1	0	4
	49	4	6	0	0	10
	50	0	1	1	0	2
	51	4	2	1	0	7
	52	1	1	0	11	13
	53	2	4	1	0	7
	54	1	0	0	4	5
	55	0	5	2	0	7
	56	1	0	0	0	1
	57	0	0	0	2	2
	58	0	0	0	9	9
	TOTAL	64	149	60	65	338

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