Caribou harvest reporting pilot project conducted in the Tli Cho communities in the winter of 2007/2008 and 2008/2009: Preliminary results.

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Introduction

The Bathurst Caribou Management Plan (BCMP 2004) provides wildlife managers and all caribou users with a framework for monitoring and managing the herd. Some core monitoring actions are permanently in place independent of the status of the herd (stable, decreasing or low). Other recommendations become implemented when herd status changes.

When the population size of the Bathurst herd is estimated to be low, the BCMP suggests all causes of mortality be monitored adequately including aboriginal harvest. The Barren-ground Caribou Management Strategy (2006) recognizes that managing and understanding disturbance due to harvesting must be evaluated and strategies be implemented accordingly.

A resident and non-resident harvest reporting system has been in place since the 1980's and has for the most served its purpose.

Between 1987 and 1993, a Dogrib harvest study (unpublished) was initiated for all the Tli Cho communities and the main objective was to establish basic needs level in order to better manage wildlife on Tli Cho lands. Hunters were contacted on a monthly basis and asked to report all wildlife harvested during that period.

Since then, no other systematic harvest reporting project have been put in place for Tli Cho hunters although the Tli Cho Land Claim Agreement (2003) stipulates that such a program be implemented over time.

In the mid-2000's, the Lutsel K'e Wildlife Lands & Environment Department initiated an excellent caribou reporting program at the community level for a number of years but could not be maintained for lack of resources and capacity. Their methods, however, were used to develop the joint ENR/Tli Cho project on reporting caribou harvest.

In 2007, ENR staff in consultation with the Tli Cho Land Department decided to design and test a caribou harvest reporting program for the three communities located north of Behchoko.

The purpose of this initiative was to test methods and assess long-term feasibility of a caribou reporting system at the community level by providing the basis and tools for its implementation.

Methods

A harvest calendar (Figure 1 and 2) was created based on the methods and guidelines developed by the Lutsel K'e Wildlife Lands & Environment Department. Text and comments inserted in the calendar were extracted from the Bathurst Caribou Management Plan (BCMP 2004) and other material used at various time in the past for community consultation.

The calendar was designed to help hunters to keep track and record their caribou harvest on a monthly basis.

Figure 1: Covering page of the caribou harvest reporting calendar.

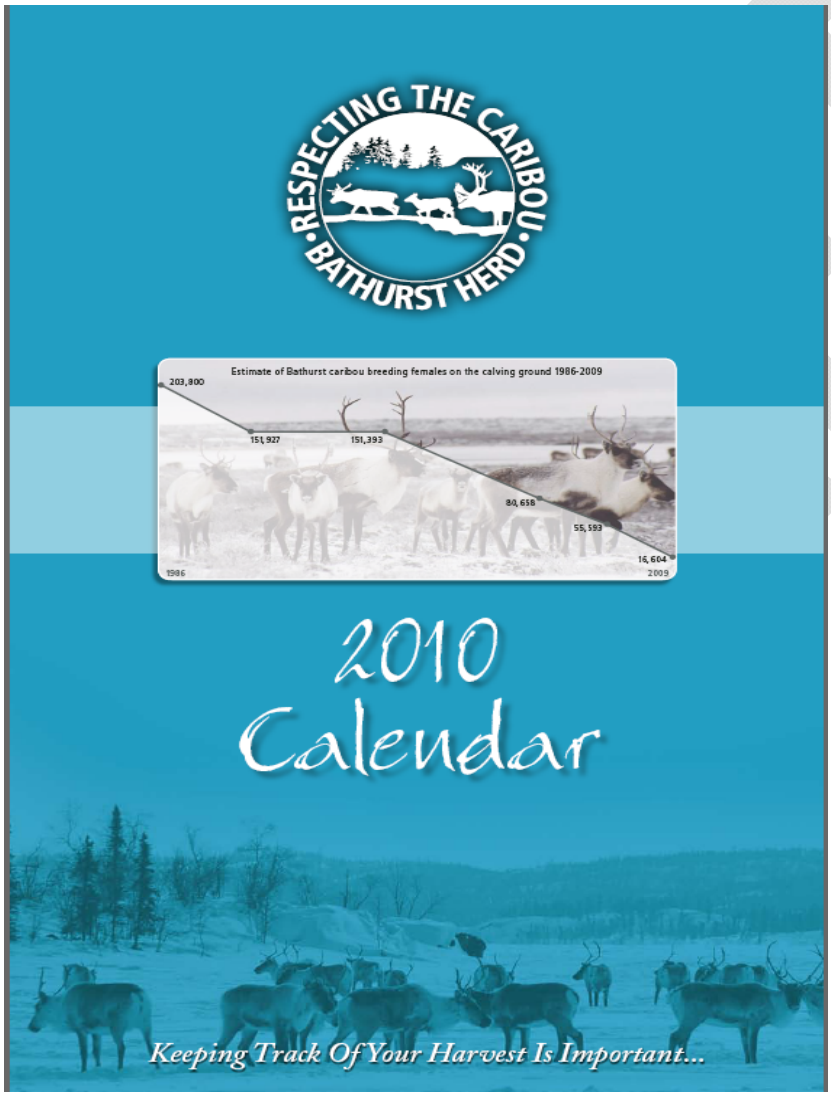
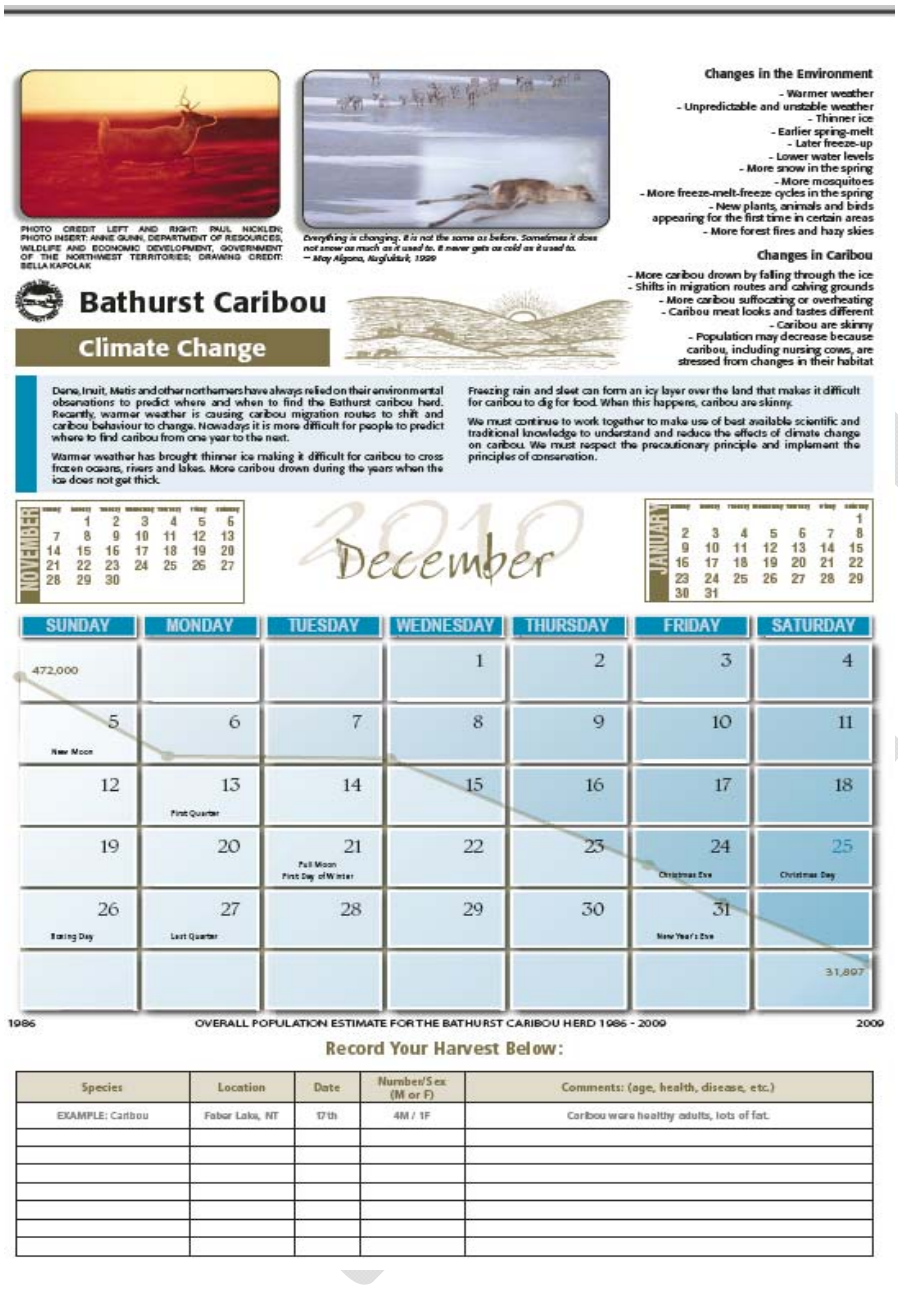


Figure 2: Example of a page in the caribou harvest calendars to keep track and report the harvest on a monthly basis.



Bathurst Caribou

Climate Change

PHOTO CREDIT LEFT AND RIGHT: PAUL NICKLEN; PHOTO INSERT: ANNE GUNN, DEPARTMENT OF RESOURCES, WILDLIFE AND ECONOMIC DEVELOPMENT, GOVERNMENT OF THE NORTHWEST TERRITORIES; DRAWING CREDIT: BELLA KAPOLAK

Everything is changing. It is not the same as before. Sometimes it does not snow as much as it used to. It never gets as cold as it used to.
— May Algona, Kugluktuk, 1999

Changes in the Environment

- Warmer weather
- Unpredictable and unstable weather
- Thinner ice
- Earlier spring-melt
- Later freeze-up
- Lower water levels
- More snow in the spring
- More mosquitoes
- More freeze-melt-freeze cycles in the spring
- New plants, animals and birds appearing for the first time in certain areas
- More forest fires and hazy skies

Changes in Caribou

- More caribou drown by falling through the ice
- Shifts in migration routes and calving grounds
- More caribou suffocating or overheating
- Caribou meat looks and tastes different
- Caribou are skinny
- Population may decrease because caribou, including nursing cows, are stressed from changes in their habitat

Dene, Inuit, Metis and other northerners have always relied on their environmental observations to predict where and when to find the Bathurst caribou herd. Recently, warmer weather is causing caribou migration routes to shift and caribou behaviour to change. Nowadays it is more difficult for people to predict where to find caribou from one year to the next.

Warmer weather has brought thinner ice making it difficult for caribou to cross frozen oceans, rivers and lakes. More caribou drown during the years when the ice does not get thick.

Freezing rain and sleet can form an icy layer over the land that makes it difficult for caribou to dig for food. When this happens, caribou are skinny.

We must continue to work together to make use of best available scientific and traditional knowledge to understand and reduce the effects of climate change on caribou. We must respect the precautionary principle and implement the principles of conservation.

NOVEMBER

	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

2010

December

JANUARY

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
472,000			1	2	3	4
5 New Moon	6	7	8	9	10	11
12	13 First Quarter	14	15	16	17	18
19	20	21 Full Moon First Day of Winter	22	23	24 Christmas Eve	25 Christmas Day
26 Boxing Day	27 Last Quarter	28	29	30	31 New Year's Eve	
						31,807

1986 OVERALL POPULATION ESTIMATE FOR THE BATHURST CARIBOU HERD 1986 - 2009 2009

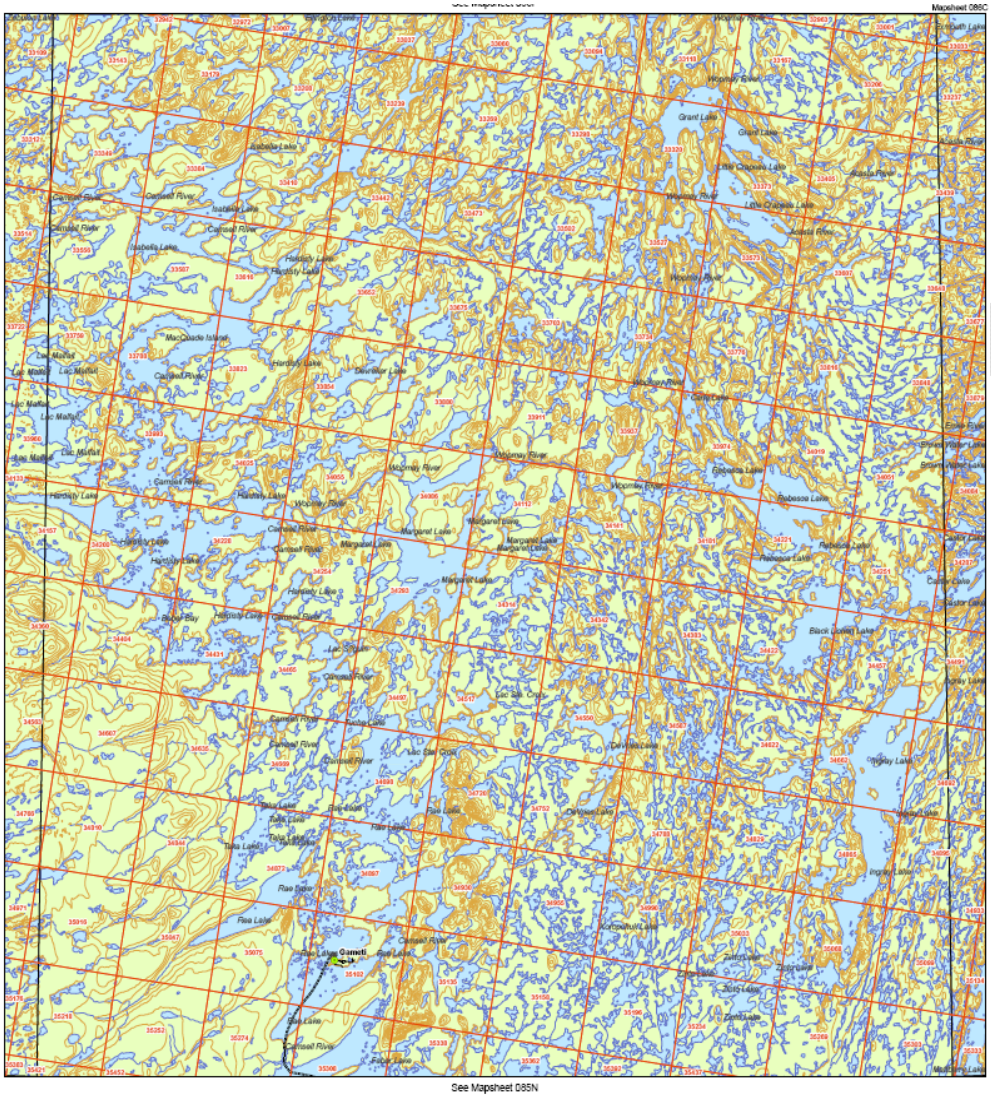
Record Your Harvest Below:

Species	Location	Date	Number/Sex (M or F)	Comments: (age, health, disease, etc.)
EXAMPLE: Caribou	Faber Lake, NT	17th	4M / 1F	Caribou were healthy adults, lots of fat.

The original intent was to interview hunters at the end of each month but this level of visits could not be achieved as results of capacity issue. For the first year of the project, community hunters were visited between nine and twelve months after the end of the winter hunting season and between 3 and 4 months in the second year.

A 10km by 10km harvest grid system was developed and overlaid on top of 1:50,000 digital NTS topographic maps and each cell was labelled with a unique identifier which was used to record the hunting location (see figure 3).

Figure 3: Example of 10km by 10km grid map used to report location of caribou harvested in the winter of 2007/2008 and 2008/2009.



To monitor caribou harvest for hunters living south of those communities and/or outside Tli Cho land, a reporting station (Figure 4 and 5) was established North of Marian Lake to stop and interview hunters returning home after their hunt to better document total number of caribou taken during the winter.

Community interviews with hunters were conducted by a wildlife officer from Behchoko who acted as a guide and interpreter and an ENR biologist. Travel to and from communities took

place by snow-machine in the winter before the opening of ice road, by pick-up truck later and by plane in the summer.

Potential hunters phone list were obtained from the community government office. Most visits with hunters were arranged to occur in the harvester's home following a request for interviews during a phone call.

Other hunters were interviewed during coffee break at their work place during the day,

Reported harvest from the Behchoko/Rae-Edzo GHL hunters was recorded at the check station upon their return south after the hunt.

Wildlife Officer John Paul Rabesca interviewing an elder.

Wildlife officer John Paul Rabesca at work in an elder's home.

ENR/Tli Cho reporting station

Caribou harvest monitor working space in the check station

The hunter's questionnaire (figure 6) was created again following the model developed by the Lutsel K'e Wildlife Lands & Environment Department. For the most part, this document was adequate to gather information on caribou harvest although hunters could not always remember sex and age of animal hunted.

Results

The number of hunters visited and interviewed for each community appears in Table 1. Numbers are consistent between years and represent the most active hunters available in the community for an interview at the time of the visit. Not all hunters were present at all time as some were either travelling south, at work out of town or simply out on the land.

Table 1: Dates of winter caribou harvest reporting visits to the Tli Cho communities and number of hunters interviewed in 2007/2008 and 2008/2009.

Hunting season/Number of hunters	Wha Ti	Gameti	Wekweeti
Winter Harvest 2007/2008	November 27th and 28th 2008	14th and 15th of January 2009	February 16th until February 18th of 2009
Number of hunters interviewed	30	23	14
Winter Harvest 2008/2009	15th and 16th of July 2009	30th June until July 2nd of 2009	27th and 28th of August of 2009
Number of hunters interviewed	29	23	19

Total of caribou harvested in 2007/2008 for the four Tli Cho communities was 1447 caribou (including harvest reported by Behchoko hunters at the check station). Number of caribou killed by non-Tli Cho GHL hunters registering their harvest at the check station was 243 for a grand total of 1690 animals for that year (Table 2).

In 2008/2009, the four Tli Cho communities reported 1973 caribou harvested (including caribou reported by Behchoko hunters at the check station) and non-Tli Cho GHL hunters reported 739 animals for a grand total of 2712 for that year (Table 2).

Table 2 indicates that sex ratio in 2007/2008 was skewed in favour of males for the Wha Ti and Gameti harvest but not for Wekweeti. In 2008/2009, all community hunters reported harvesting more females than males.

Table 3 shows the caribou harvest of all other non-Tli Cho GHL hunters. Their harvest reported at the check station indicates that a larger number of females were taken for both years.

Figure 4 and 5 show the location and amount of caribou harvested using the 10km by 10km grid system in relation to distribution of satellite collared cows of each herds for both winters.

Table 2: Winter caribou harvest reported during ENR/Tli Cho interviews conducted with most active community hunters in 2007/2008 and 2008/2009.

Community	2007/2008				2008/2009			
	Sex Ratio in the harvest			Total	Sex Ratio in the harvest			Total
	Male (%)	Female (%)	Unknown Sex		Male (%)	Female (%)	Unknown Sex	
WhaTi	316(58)	230 (42)	0	546	103(24)	283(66)	42(10)	428
Gameti	130(53)	115(47)	1	246	182(32)	348(62)	36(6)	566
Wekweeti	78(37)	133(63)	0	211	18(6)	306(94)	0	324

Table 3: Winter caribou harvest reported by community hunters at the ENR/Tli Cho check station on Tli Cho winter road in 2007/2008 and 2008/2009.

Community	2007/2008	2008/2009		
			Unknown sex and age	Total
Fort Providence	2	0	0	0
Fort Resolution	6	117	33	150
Fort Smith	94	113	108	221
Hay River	57	24	6	30
*Rae-Edzo/Behchoko	444	491	164	655
Yellowknife (GHL hunters)	45	249	89	338
Unknown Location	39	0	0	
Total	675 + (39 unk.)	994	400	1394
Sex ratio of the harvest	Males:302 (45%) Females:373 (55%)	Males:416 (42%) Females:578 (58%)		

- Harvest total showing on Figure 4 and 5 for that community.

In 2007/2008, based on distribution of satellite collared females, results suggest that Wha Ti hunters probably hunted mostly from the Bluenose East herd, Gameti hunters from both the Bluenose East and Bathurst herds while caribou reported for Wekweeti were most likely all from the Bathurst herd.

In 2008/2009, results indicate that probably a large portion of the harvest came from the Bathurst herd again based on the distribution of the collared cows

Figure 4: Location and caribou harvest in 2007/2008 in relation to distribution of Ahiak, Bathurst and Bluenose East collared females.

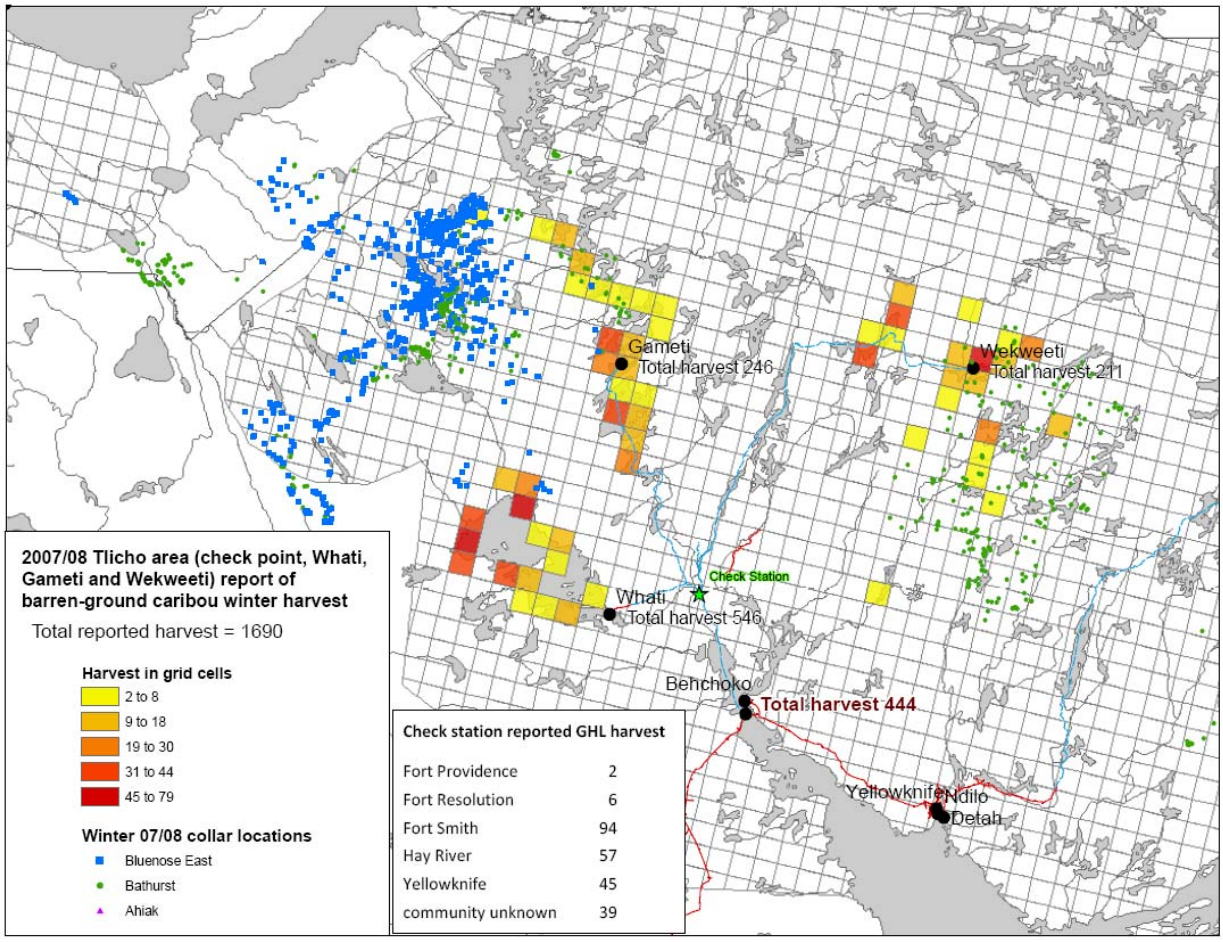
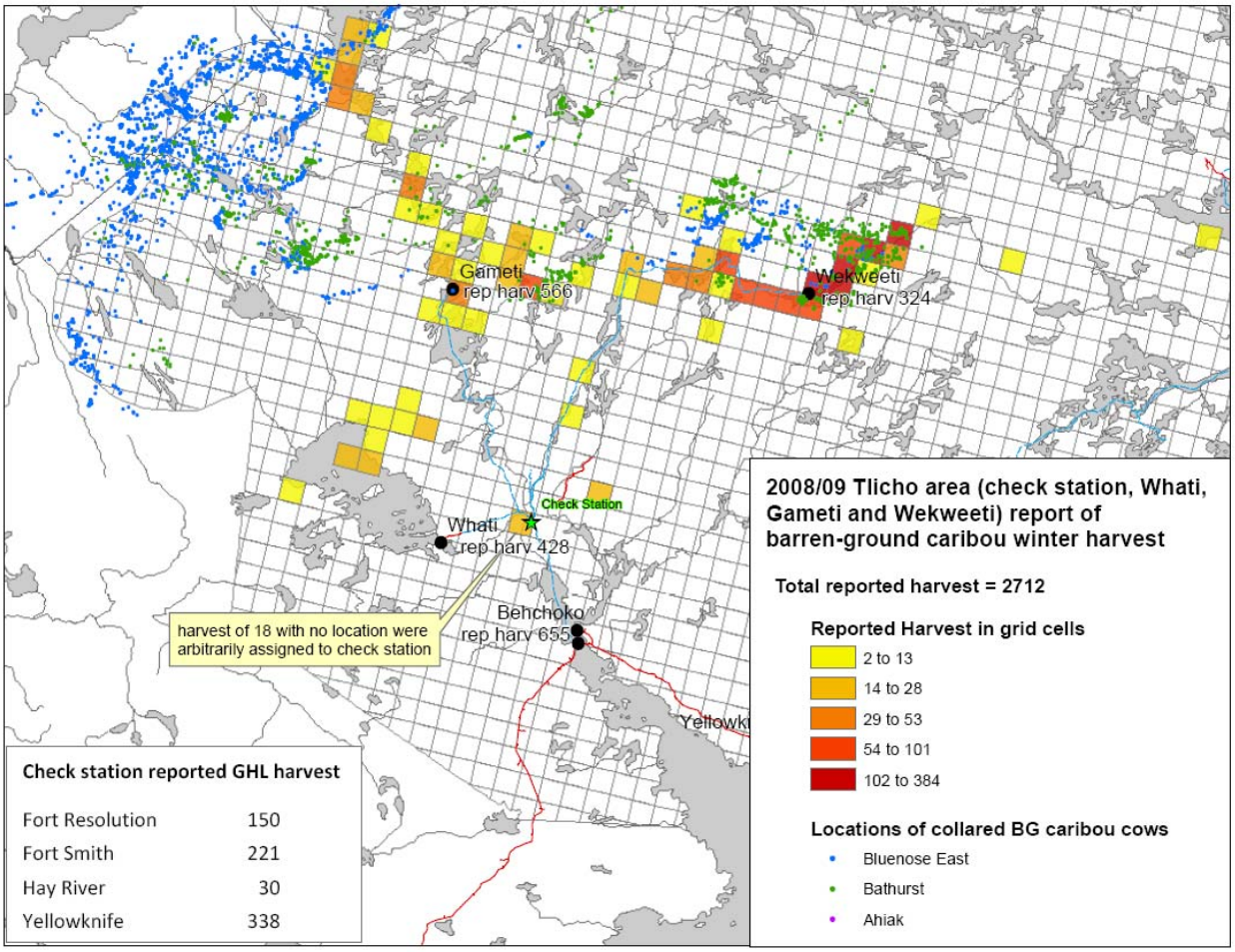


Figure 5: Location and caribou harvest in 2008/2009 in relation to distribution of Ahiak, Bathurst and Bluenose East collared females.



Discussion and recommendations

Overall reported harvest for both years of the project is believed to be underestimated for the following reasons;

- Not all active hunters were interviewed each year and no correction or adjustment factor was applied to account for missing hunters.

- Some of the hunters interviewed very likely under reported their harvest for fear of consequence on their subsistence rights to harvest any numbers of caribou.

- Lack of recollection of the exact numbers of caribou harvested given the time lag between the harvest and the interview date. Also apply to sex ratio in the harvest.

- High turn-over rate of staff at the check station leaving the place unattended when south bound hunters are driving by.

- Hunters not stopping by to report their harvest at the check station.

- No knowledge of wounding rates.

Willingness of hunters to participate to interviews improved over the two years of the project. Familiarity and trust between interviewers and hunters and an understanding of the survey methods using the harvest calendar and questionnaire contributed to an overall success of this pilot project.

The foundation for a long term caribou harvest reporting system is now in place and current methods form the basis to be implemented at the community level. It is recommended to train a person in the communities (wildlife monitor) to continue this work beginning in the fall with this onset of the bull hunt prior to rut until the end of the winter harvest.

Having someone living in the community will facilitate monthly hunter's interviews. It is proposed also that these methods be adopted and expanded to all General Hunting License holders as part of a more comprehensive and permanent reporting system in the North Slave region.

This work also demonstrated that the use of satellite locations of all collared cows at the time of the harvest and when used in conjunction with the 10km by 10km grid, that the partition of the harvest based on the herd the animals belong to can be evaluated.

Figure 6: Hunter's questionnaire

BATHURST CARIBOU HARVEST RECORD Page of

Harvester Identification #: _____

Community: ☐ Behchoko ☐ Gameti ☐ Wekweeti ☐ Whati ☐ Yellowknife

Interviewer Name: _____

Interviewer Number: _____

Interview Date:		Interviewed for Month of:	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*

Harvest Location	Map Grid Block	Total Harvest	# of Males			# of Females			# Unknown		
			ADU	JUV	UKN AGE	ADU	JUV	UKN AGE	ADU/ UNK SEX	JUV/ UNK SEX	UKN AGE & SEX

trips taken with hunting success: ☐ # trips taken without hunting success: ☐ Total # of days on land: ☐

HARVESTER'S COMMENTS: (e.g. Animal Condition)

Acknowledgement

We would like to thank Eddie Erasmus, Director of the Land Protection Department for the Tli Cho Government for his support and direction to get this project started.

We also thank the Tli Cho Government for granting us approval to pursue this work: Grand Chief George Mackenzie, Chief Charlie Football, Chief Henry Gon, Chief Leon Lafferty and Chief Charlie Nitsiza.

We also would like to acknowledge the excellent work done Adrian D'hont and Jennifer Bailey, both GIS Specialist for ENR for their help in developing the 10km by 10km grid maps for reporting the harvest and displaying results of the hunters.

Literature cited

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