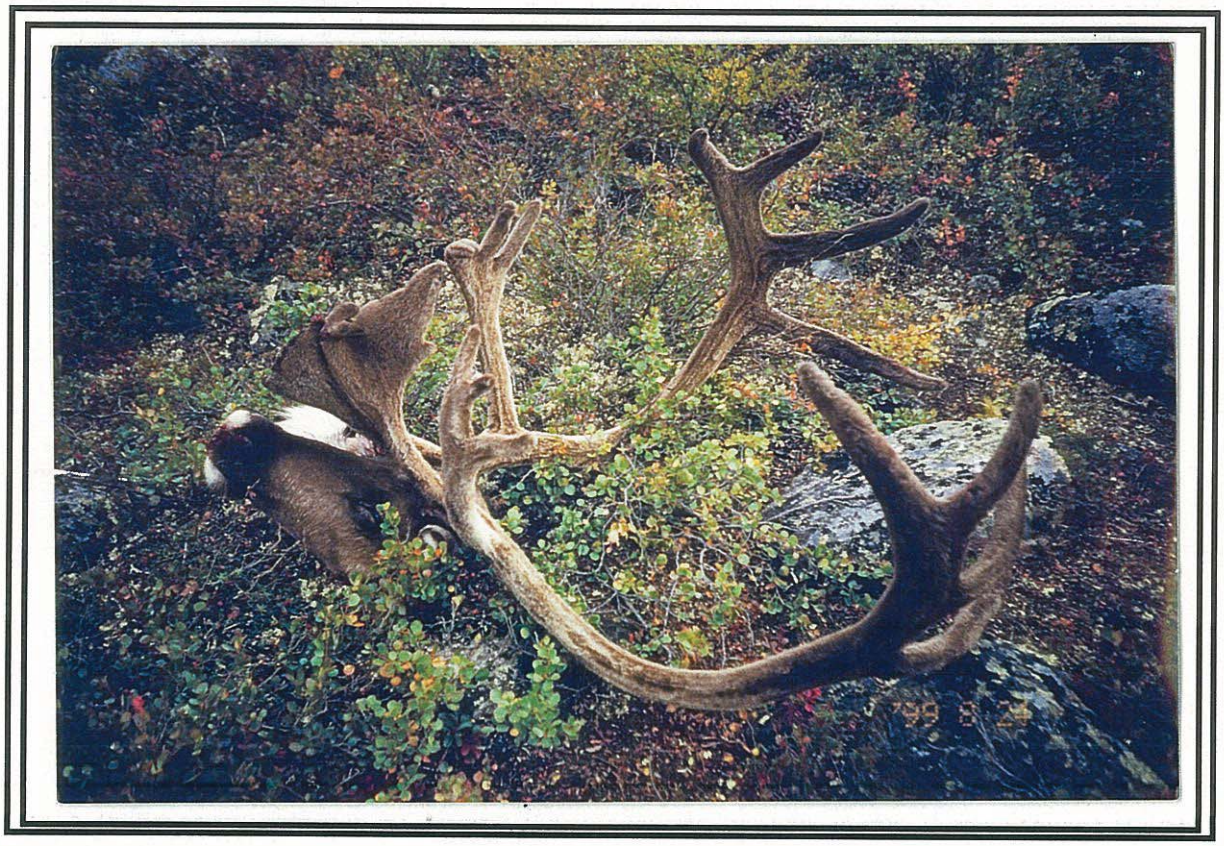
CARIBOU MIGRATION AND THE STATE OF THEIR HABITAT

FINAL REPORT



Submitted by
Whaèhdǫǫ̀ Nàowoò Kǫ̀
Dogrıb Treaty 11 Councıl

to the
West Kıtıkmeot Slave Study Socıety
Yellowknıfe, NT

March 2001

Photo Credits (in alphabetical order)

Research Team

- Georgina Chocolate
- Madeline Chocolate
- Bobby Gon
- Allice Legat
- Melissa Mantla
- Joseph Whane
- Sally Anne Zoe

NWT Archives

- G79-023 series - Richard Pierre, photographer
- G79-052 series - Henry Busse, photographer
- G95-001 series - Unknown, photographer

Cover Photo

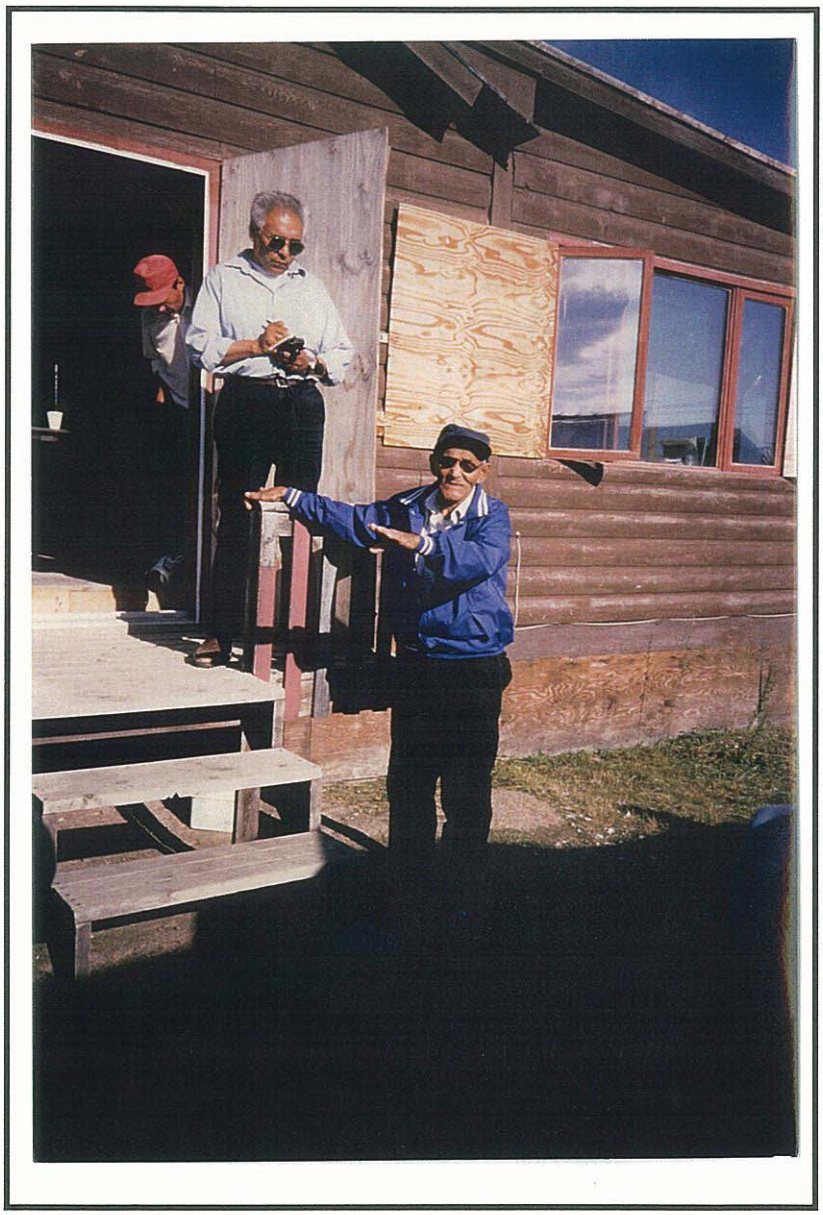
- Melissa Mantla provided the photo, which was taken on Wekweètì in 1997.

DEDICATION

Thıs report ıs dedıcated t the memory of Sammy Football or Sahme as he ıs called. Sahme trapped wıth hıs father and lıved on the land ın all seasons and only traveled to town when they needed supplıes. Sahme came from a wealthy famıly, but he dıd not show off. All people looked up to hım because of hıs background and how hıs parents raısed hım. He treated all hıs great, grandchıldren wıth love, gave them Tłı̨chǫ (Dogrıb) names, and told them storıes of what he knew.

He loved to tease and joke wıth people, and he laughed out loud. We often saw Sahme as he walked around town stoppıng and talkıng to the chıldren, whom he treated ın fun lovıng and carıng way.

Sahme was a great man. He spoke wıth a powerful voıce that showed hıs strong character and hıs respect for Tłı̨chǫ nàowo (Dogrıb knowledge). Sahme's character, and understandıng and kınd heart wıll always be remember and talked about ın storıes.



James Rabesca ınterpretıng for Moıse Martın, who ıs explaınıng the benefits of Whaèhdǫǫ̀ NàowoòK'e research and thankıng the West Kıtıkmeot Slave Study Socıety Board for theır support

ACKNOWLEDGEMENTS

We would like to thank the following individuals and organizations for their support throughout the duration of this project:

- The Tłı̨chǫ (Dogrib) leadership and Dogrib Treaty 11 Council's staff for their constant support.
- The Department of Resources, Wildlife and Economic Development for assistance with plant identification in Latin and for discussions on where collared caribou were in relation to known harvesting sites.
- Chris O'Brien for separating the lichen and mosses so they can be identification and named in Latin.
- Air Tindi for their patience and help in moving elders and equipment to the field.
- Deborah Delancy for providing personal support in continuing this research, and for reading and providing comments on the final drafts of the reports.
- The West Kitikmeot Slave Study Society for the funding with which to document Dogrib knowledge of caribou.

Ernie Camsell near Behtsokǫ̀ (Rae), NT
1949

SUMMARY

The Tłı̨chǫ (Dogrıb) state that they and the carıbou have a very close and respectful relatıonshıp. Respect ıs shown by only takıng what ıs needed, usıng all parts of the harvested anımals, and dıscardıng any unused parts ın respectful ways. Respect ıs also shown by havıng and sharıng knowledge of the carıbou. A lack of knowledge, and therefore respect, wıll result ın the carıbou mıgratıng elsewhere and a populatıon declıne. Tłı̨chǫ knowledge ıs collected through harvestıng actıvıtıes, verıfied through dıscussıons wıth other harvesters and elders, and shared through oral narratıves ın associatıon wıth the general truths such as:

- Carıbou have unpredıctable mıgratıon patterns, but when they mıgrate to a partıcular areas they are more lıkely to use certaın traıls and water crossıngs[1].
- Carıbou return to the same bırthıng grounds.
- Carıbou follow the same general annual cycle each year.
- Carıbou leaders, who are mıddle-aged cows wıth experıence, have good memorıes.
- Carıbou mıgrate to where the vegetatıon ıs lush and wıll remaın ın an area ıf the vegetatıon ıs easıly accessıble and plentıful.
- Carıbou have a very strong sense of smell.
- Carıbou are faırly adaptable to changıng envıronments but adaptatıon has ıts lımıts makıng them susceptıble to pollutants.
- Carıbou's survıval and contınued annual mıgratıon ıs dependent on the respect shown to them by humans.
- Only a few people have a spırıt connectıon wıth the carıbou, and therefore the knowledge and ıntelligence that comes from thıs. These people know where the carıbou are at any gıven tıme, but cannot predıct where the carıbou wıll mıgrate to ın the boreal forest.

[1] These are areas harvesters consistently frequented and where they put up caribou fences prior to the late 1930s.

Orthographic System and Pronunciation Guide

The spellings in this report are based on the orthographic system explained in the introduction to *Tłı̨chǫ Yatìì Enı̨htł'è / A Dogrib Dictionary* (Dogrib Divisional Board of Education, 1996). This appendix provides an overview of that system so that readers will understand the spelling principles.

Dogrib and English employ different sets of sounds to create words. The alphabet used for Dogrib is expanded to include characters for sounds not occurring in English. Letters are combined in ways not used in English to further increase the alphabetic possibilities.

Vowels

The most significant differences between English and Dogrib lie in the vowel system. Dogrib has four vowels [a e ı o] which are pronounced approximately as in the English words **pa**, **Dene**, **ski**, and **to** or **tow**. When a vowel in Dogrib is doubled the sound is drawn out. (In contrast, doubling vowels in English usually yields a different sound entirely.) In the pairs of Dogrib words below simple and double vowels are exemplified.

dı	island
dıı	this

ts'eda	to be sitting
ts'eeda	to be living

weghà	its fur
weghàà	according to it

goxègodo	he or she is telling stories
goxègodoo	the one telling stories

Many words have double vowels from the start and many other words show double vowels as a consequence of grammatical formations, as in the last pair above.

Non-matching vowels can come next to each other, as shown below.

dea	creek
godoa	a little above
whaèhdǫǫ̀	oldtimer
dzìewà	blueberry
goı̨de	he or she spoke

Each vowel is pronounced separately with its regular value, though in some instances there is a tendency for neighbouring vowels to be pronounced more like each other.

Dogrib is a tonal language. This means that each of the four vowels can be pronounced with a high or low pitch so as to affect meaning. For example, the words

jɪh mitt
jìh fish hook

are identical except for the low tone on the second word (written with an accent above the vowel). The change makes for a different word, so it is important to represent tone orthographically. Tonal differences can also yield a new form of a word with an altered meaning. Compare the words below.

yehtsɻ he or she is making it
yèhtsɻ he or she made it

The use of double vowels and tone marks greatly simplifies the comprehension of written Dogrib. Therefore double vowels and tone are consistently shown in the spellings in this report.

Dogrib vowels show another contrast not found in English, between nasal and plain vowels. Nasal vowels (not found in English) involve airflow through both the mouth and nose, while plain vowels have airflow through the mouth only. The plain vowels have no marking; nasal vowels are marked by a hook under the vowel. Compare the words below.

tso firewood
tsǫ rain

The following pair of words illustrates the fact that closely related words can differ just in the presence or absence of a nasal vowel.

ɪdà I was there
ɻdà he or she was there

Vowel doubling, tone, and nasal marks can all be combined:

kǫ̀ house
mɻ̀ net
tsàkę̀ę̀ beaver lodge
gogǫ̀ǫ̀ arm
geède they left
dą̀ą west
nɪɻ̀tɬa get up!
tabàa shore
daht'ǫǫ̀ plastic

Note from the last several words above that doubled vowels don't necessarily have to match each other in tone or nasal marking. Though these aspects of Dogrib spelling take some getting used to, they allow much more accurate writing and reading in the language.

Consonants

Dogrib has many more consonants than English does. Two special characters are used in the Dogrib alphabet for sounds not found in English, and there are several letters or letter combinations with uses not found in English spelling.

The character **ʔ**, called 'glottal' or 'glottal stop', represents a sound like what we hear in the middle of the English expression "oh-oh". In Dogrib this sound is an ordinary consonant. It is found in many words of all types:

ʔoo	spruce boughs
ʔɻhdaa	jackfish
seʔeè	my jacket
weʔǫǫ̀	beyond it
nàʔeelı	he or she is sewing
nìɻʔǫ	it arrived
k'eʔà	(animals) are roaming

The other special character is **ɬ**, called 'barred-l'. It is similar to the letter **l** in English but has a breathy quality.

ɬèdzèh	clay
ɬıe	fish
ɬekǫ	it is delicious
hàahɬà	I did that
ʔeɬèèdlɻɻ	confluence of rivers

The apostrophe (or 'click') is used following a consonant or pair of consonants in representing a class of very distinctive sounds, termed 'ejective' or 'glottalized' consonants. There is a glottal pop which accompanies the release of the consonant. The glottalized consonants are as follows, with one word illustrating each:

ch'	**ʔehch'ęę**	pickerel
k'	**k'ı**	birch
kw'	**kw'ah**	moss
t'	**t'ooh**	poplar
tɬ'	**tɬ'à**	bay
ts'	**ts'oo**	muskeg

Four other letters or letter combinations deserve mention. **X** is not pronounced as in English, but represents a sound similar to German **ch** as in **Bach**. Dogrib **gh** is similar to French **r** as in **rouge**. **Wh** represents the breathy **wh** as in some English pronunciations of **when**. Finally, **zh** is similar to **z** as in English **azure**.

x	**xòo**	snare
gh	**goghàeda**	he or she is looking at us

wh	**whagweè**	sandy area
zh	**zhah**	snow

Other letters and letter combinations are pronounced not far different from the English letter values. For details see the introduction to *Tłı̨chǫ Yatıì Enı̨htł'è / A Dogrib Dictionary* (Dogrib Divisional Board of Education, 1996).

Orthographic Principles

Three simple orthographic principles dictate the forms of placenames in this report, apart from matters of matching sound to symbol. The decisions behind these principles derive from discussions with the elders' committee.

The first requires that placenames begin with a capital letter, following the practice in English and many other languages.

The second requires that placenames be written without spaces as a single 'word', no matter how complex the name is in its internal structure. This decision reflects the idea that since a placename represents a unique conceptualization it should be treated as unitary orthographically as well. Two somewhat long placenames are analysed below.

ʔelàts'ıìwek'ewhelaatì 'Lake on which there are old canoes'

ʔelà + ts'ıì + wek'e + whelaa + tì

canoe+old+on it+there are+lake

ʔı̨hdaatìdeèhàelı̨ı̨ 'Mouth of Jackfish Lake River'

ʔı̨hdaa + tì + deè + hàelı̨ı̨

jackfish+lake+river+outflowing

Of course, many placenames are of such antiquity that no analysis of them is possible.

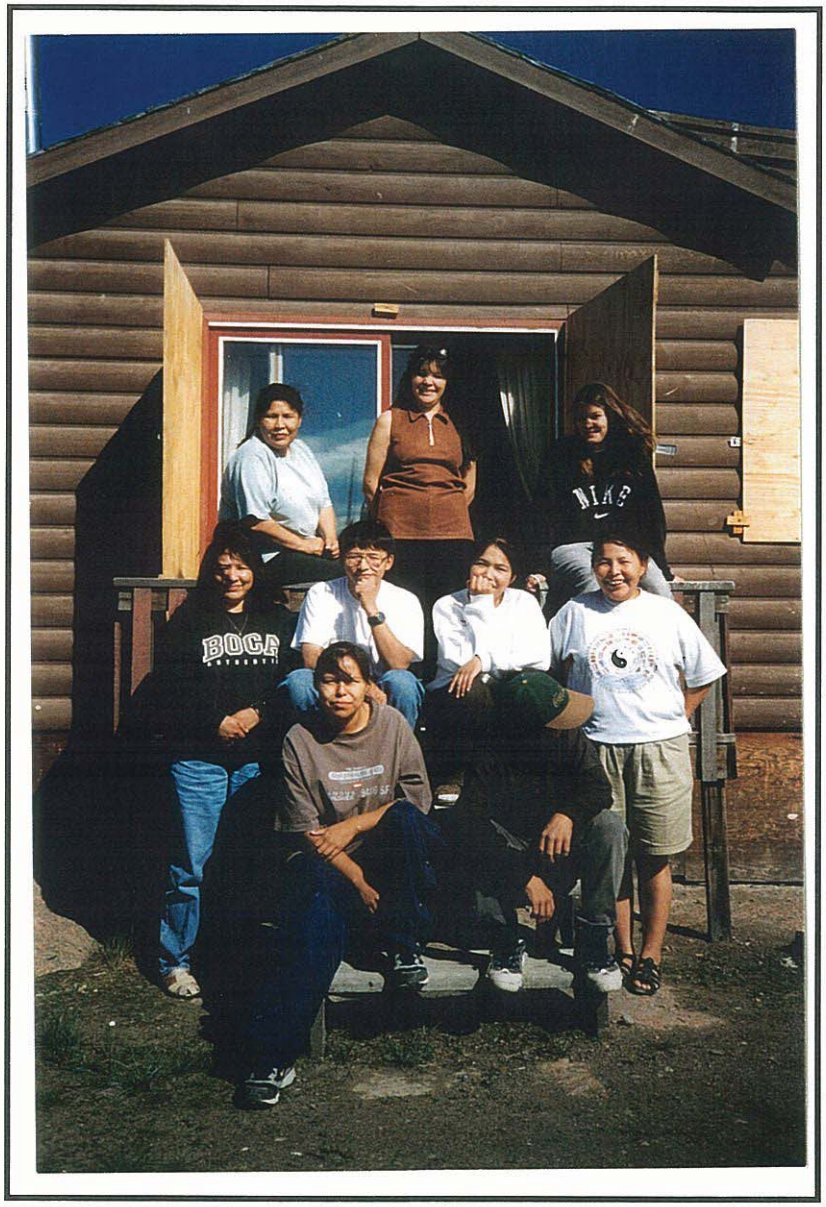
The third principle is that a communal decision is to be reached among the elders being interviewed concerning which variant pronunciation of a placename should be most closely represented in spelling. For example, the two variants [Kàelı̨ı̨, Hàelı̨ı̨] are heard for a single place, rather in the way that the English names **Toronto** and **Calgary** have a range of variant pronunciations. The decision was made in this cases to use the spelling **Hàelı̨ı̨**, which is more commonly used. In other cases a spelling is chosen because it is more revealing of the concepts behind the name.

Elders and Harvesters leaving from Gamètì
1998

TABLE OF CONTENTS

APPENDICES

TABLES



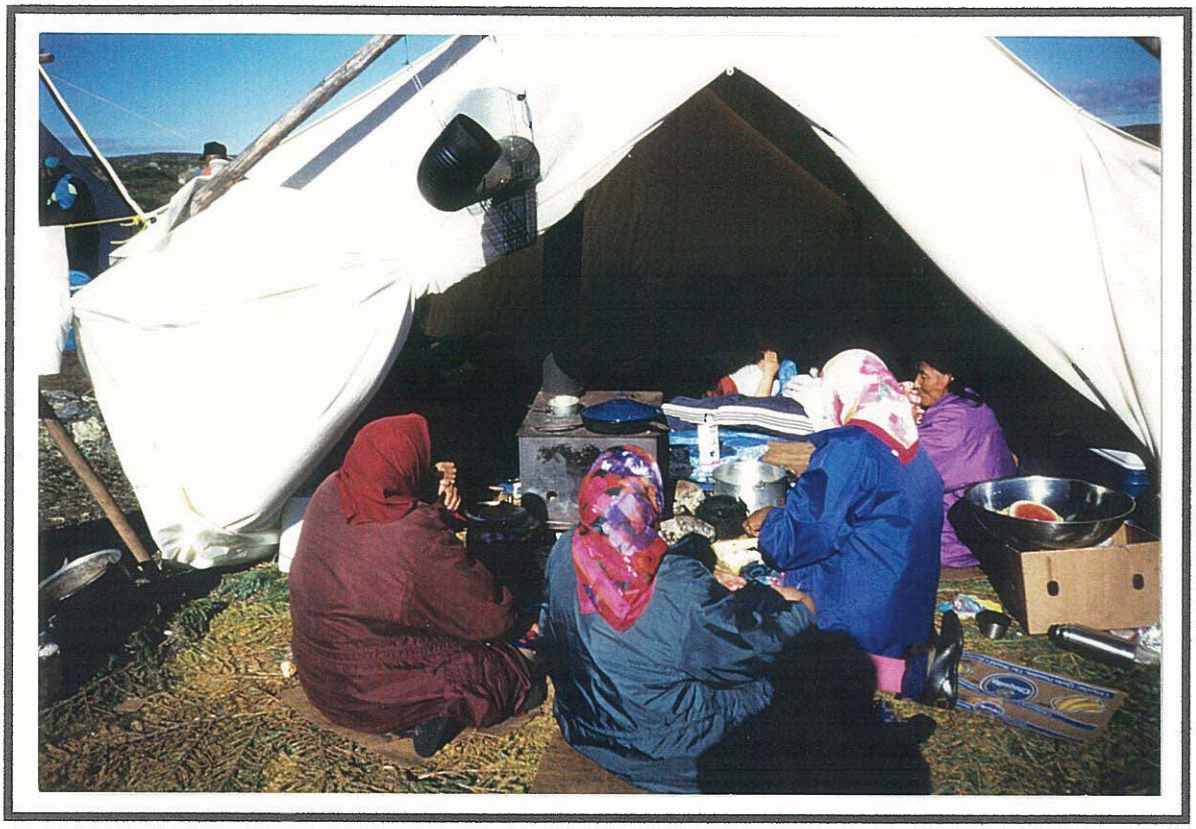
Georgina Chocolate, Gabrielle Mackenzie-Scott, Dagha Scott
Camilla Nitsiza, Bobby Gon, Elsie Mantla, Sally Anne Zoe
Darla Beaulieu, Roger Champlain

CARIBOU MIGRATION AND THE STATE OF THEIR HABITAT

1. OBJECTIVES

The objectives for this project were:

- To translate relevant information on caribou movement contained in previous interviews.
- To develop Tłı̨chǫ (Dogrib) terminology on caribou and caribou habitat which will be used when developing interview guidelines.
- To document Tłı̨chǫ (Dogrib) knowledge of caribou habitat.
- To document variations in migration patterns, and the elders' knowledge on why variation occurred during given time periods.
- To document the relationship between the Tłı̨chǫ (Dogrib) and the caribou.
- To complete a literature review of indigenous knowledge of caribou and reindeer.



Margaret Lafferty from Wekweètì, Roseann Martın from Behtsokǫ̀, Elıse Sımpson from Gametì and Lısa Mackenzıe from Behtsokǫ̀ are all havıng lunch and talkıng about Deèzàatì (Deèzàatì,1999)

2. PROJECT DESCRIPTION

2.1 The People

The Tłı̨chǫ[1] are members of the Athapaskan language group and tradıtıonally goccupıed the area between Tìdeè (Great Slave Lake)[2] and Sahtì (Great Bear Lake), extendıng well past Kǫ̀k'èetì (Contwoyto Lake), Ts'eèhgootì (Alymer Lake) and ?edaàtsotì (Artıllery Lake) ın the barrenlands to the Dehtsotì (Mackenzıe Rıver) ın the west (See Helm, 1981). Rıchardson (1851) claıms the Tłı̨chǫ regıon extended to the Back Rıver[3], and Back (1836:265) stated that the Tłı̨chǫ traveled to the Back Rıver mouth durıng war excursıons agaınst the Inuıt. Petıtot (1884, 1891) states that the Tłı̨chǫ area extended to Deèzàatì (Poınt Lake). The research team found that although both ?ek'atì (Lac de Gras) and Deèzàatì are extremely ımportant areas for Tłı̨chǫ durıng fall carıbou huntıng[4] theır tradıtıonal terrıtory also extends well to the east of the Mǫwhì Gogha Dènı̨htłèe[5].

As Joe Suzıe Mackenzıe states, most hunters consıder Kǫ̀k'èetì part of theır tradıtıonal huntıng terrıtory.

> My mother used to tell me storıes. Every once ın a whıle I asked her for old storıes and she would tell me storıes. So she told me at one tıme, "your father and the others went to the barrenlands and they were not back. They were gone and stıll gone. It ıs saıd,

---

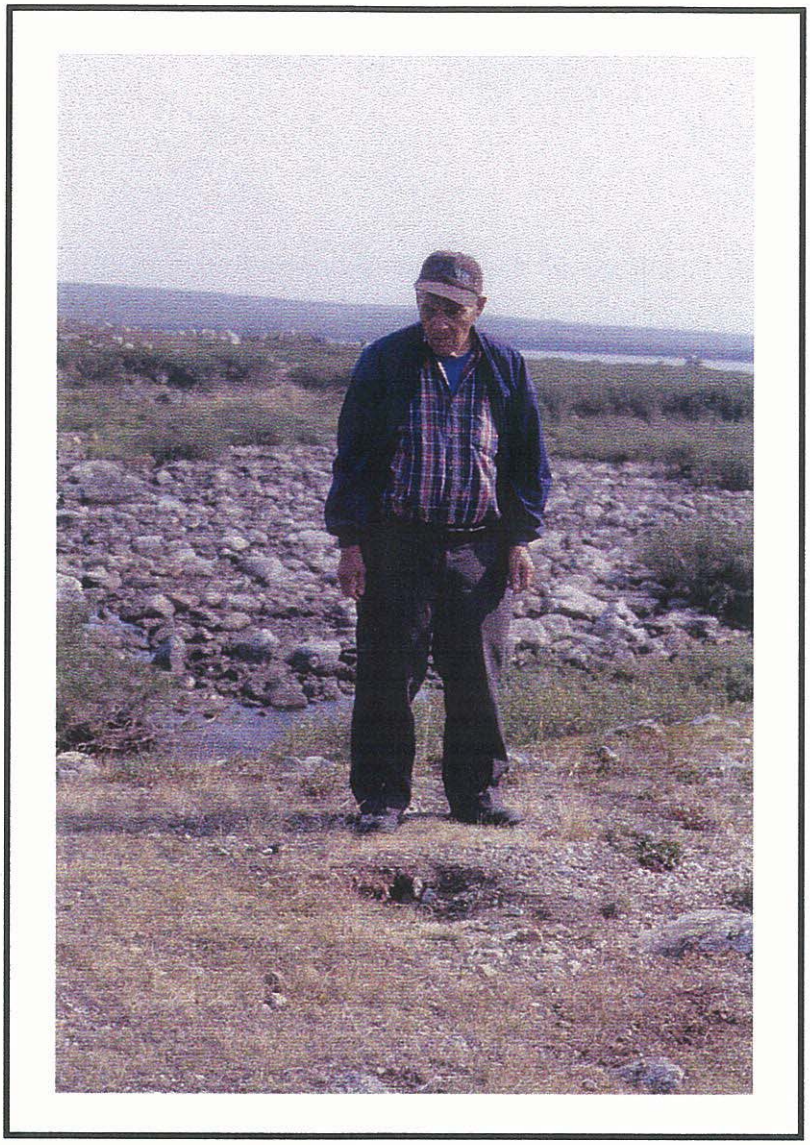
[1] The Tłı̨chǫ are known ın Englısh as the Dogrıb. The term Tłı̨chǫ ıs used throughout thıs report, except on the maps and ın names of commıttees or organızatıons..

[2] See Maps ın Appendıx I and II for locatıons of places ıf these sıtes are wıthın the Mǫwhì Gogha Dènı̨htłèe.

[3] The research team has been unable to document the Tłı̨chǫ name for Back Rıver.

[4] The area ıs also ımportant for trappıng, however thıs report focuses on carıbou.

[5] See Map entıtled: "Dogrıb Tradıtıonal Carıbou Harvestıng Traıls" to see outlıne of Mǫwhì Gogha Dènı̨htłèe. Most carıbou traıls are found wıthın the boundary, however, as the map ıllustrates, some carıbou traıls extend beyond ıt.



Joe Suzie Mackenzie
ʔek'atı̀ 1998

> when there's no caribou, they have to travel all the way to Kǫ̀k'èetì or to Yabahtì[6] or to ?ek'atì. When there's no caribou at the edge of the tree line and when there's no caribou during the summer. It is said, that's how far they had to travel. They used just the birch-bark canoes. (Joe Suzie Mackenzie, age 83: CHP-98/05/26-1/4)

Since the 1921 Treaty agreement between Mǫ̀whì and the Federal Commissioner, the Tłı̨chǫ acknowledge that their land base diminished to those lands encompassed within the Mǫwhì Gogha Dènı̨htłèe. Bordering the Tłı̨chǫ territory are the North Slave Dene to the northwest, the South Slave Dene to the east and southwest, the Chipewyan Dene to the south and east, and the Inuit to the northeast. Traditionally the Tłı̨chǫ often traveled around Sahtì and down to ?ı̨ndààkǫ̀ (Fort Resolution) as well as to Yabahtì (Arctic Ocean). Several elders residing in the four communities tell of these journeys, such as the journey that occurs every spring to Deline, which this year took place between March 6 and 10, 2000.

The economic, social and cultural importance of caribou to the Tłı̨chǫ is substantial. As is evident from data compiled by the Department of Resources, Wildlife and Economic Development (RWED), Government of the Northwest Territories, and as stated in Dene Land Use Mapping Project done by the Dene Nation in the 1970s.

The Tłı̨chǫ harvest more caribou from the Bathurst herd than any other group of people. According to RWED records, people in the four Tłı̨chǫ communities harvested 71% of the total documented harvest of the Bathurst herd, or

[6] There are two Yabàahtì: one is officially know as Yamba Lake; and the other translates as the Arctic Ocean. The one referred to here is the Arctic Ocean.

ʔekwǫ̀
Deèzàatì 1999

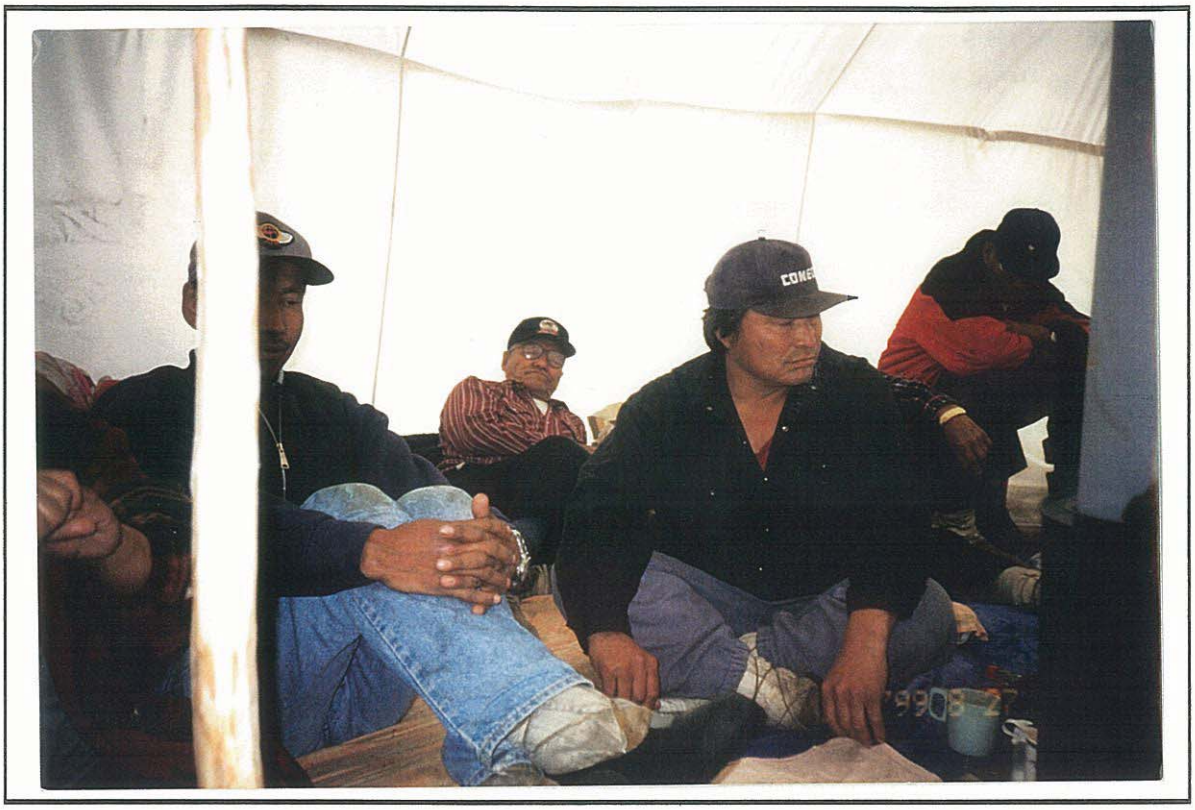
approximately 12,000, between 1988 and 1989.

To our knowledge this information has not been updated, however, the Tłı̨chǫ continue to have community hunts and most families have at least one full-time hunter, and several women who continue to dry meat, tan hides and make winter clothing. The harvesting figures from 1988-99 are therefore representative of the current situation in Tłı̨chǫ communities.

2.2 Background

Both the territorial and federal governments have long acknowledged the importance of the caribou to the Tłı̨chǫ through harvesting studies, as is evident from harvesting records kept by RWED. It can also be seen in figures such as those collected by Tracey and Kramer (2000: 47) who found that 96.8% of the residents of Rae-Edzo consume caribou at least once per year, compared with 89.6% who consume fish, 20.4% who consume moose, and 76.7% who consume berries at least once per year. Furthermore, the Tłı̨chǫ consistently support programs that monitor, study and protect caribou such as the caribou collaring project conducted by RWED (Anne Gunn), which was funded by the West Kitikmeot/Slave Study Society (WKSS).

The Tłı̨chǫ leadership and elders requested this study to ensure Tłı̨chǫ knowledge of caribou and their habitat was documented so that it could be used for monitoring caribou and their habitat, as well as for management purposes. Throughout the four years of the project, information has been gathered under the premise that caribou distribution and migration patterns are dependent on the state of the habitat. The closest Tłı̨chǫ concept to the



Joseph Whane, Harry Simpson, Charlie Tailbone, Robert Mackenzie
Deèzàatì 1999

Deèzàatì 1999

scientific concept of habitat is dè, which is also similar to the scientific concept of ecosystem. Caribou dè includes everything that is in the space the caribou inhabit, including, among other things, the human spirit, predators, snow depth, ice cover, pests, vegetation on which they depend, humans and human behaviour, water, landscape, wind and temperature. Tłı̨chǫ harvesters have observed that changes to the habitat result in changes to caribou migration and distribution. Scientific studies agree with Tłı̨chǫ oral narratives that suggest a correlation between caribou and the state of the habitat. Tłı̨chǫ harvesters have also observed that it is impossible to predict what changes to migration will occur, but that caribou will always go to the best vegetation.

Industrial development and associated infrastructure, once it is built, is also part of the dè. According to the records located by Scott (1998), mining on Tłı̨chǫ traditional territory is at its lowest ebb since the 1930s. Nevertheless, current mining practices may potentially take place on a more massive scale and be more disruptive to the caribou and their dè. The Tłı̨chǫ elders think the mines, which may be, in area, the size of small cities like Yellowknife, and the associated tailings ponds, noise, smoke and human activity, will disrupt migration patterns and, therefore, caribou distribution and vegetation, the latter possibly taking several hundred years to rejuvenate. For this reason they wanted to have their knowledge of the past documented so that all people concerned with caribou could have access to baseline data.

Oral narratives provide the most reliable form of baseline data, as there is no other source capable of providing a long-term perspective. The Tłı̨chǫ elders have documented their knowledge of the caribou, over the past four years, from the point of view of hunters who have survived by understanding

Roseann Martin from Behtsokǫ̀, Elise Simpson from Gamètì, Elizabeth Chocolate from Gametì and Margaret Lafferty from Wekweètì are all having lunch at Deèzàatì (1999)

caribou behaviour and their dè.

2.3 Study Area

The Tłı̨chǫ occupy the largest portion of the North Slave Geological Area and represent the largest Athapaskan-speaking population in the Northwest Territories. The research area consists of the Mǫwhì Gogha Dènı̨htłèe[7], an area smaller than the traditional territory used by the ancestors of the people now living in Behtsokǫ̀ (Rae-Edzo), Gametì (Rae Lakes), Wekweètì (Snare Lake), and Wahtì (Wha Tì).

2.4 Participatory Action Research (PAR)

The participatory action research (PAR) methodology is used as it provides a structure that incorporates the Tłı̨chǫ philosophical approach. They know the elders and harvesters have extensive knowledge of the caribou in both the barrenlands and the boreal forest, and they want to maintain control over the way research is being conducted and the manner in which their knowledge is presented. The implementation of PAR was as follows:

- Throughout the process the Community Elders' Committee (CEC), particularly the Community Elders' Committee in Behtsokǫ̀, provided direction on who was to be interviewed and why. Since they were concerned with documenting knowledge that would provide baseline data, they recommended those elders over 75 years in age.

- During 1996-99 the Researchers and Research Director met with the Elders' Committees from each community and sought their advice and direction on an on-going basis.

Sally Ann Zoe Initial Research Office
1999

- During the Dogrib Assembly in 1999, the Tłı̨chǫ (Dogrib) elders requested a regional elders' committee be set up to oversee the projects documenting and using Tłı̨chǫ (Dogrib) knowledge.

- The Research Director continually worked with the researchers to ensure reliable research techniques.

- The Researchers and Research Director interviewed elders to understand the flora associated with caribou habitat.

- A botanist from RWED worked with the Researchers to determine the Latin names for the plants.

- The Researchers and Research Director worked together with elders to understand the concept of respect in relation to the caribou.

- The GIS Administrator input the harvesting data to the electronic database and GIS system.

- The Research Director ensured consistent data collection and analysis.

- The Research Director ensured funding was spent according to budget plans.

- The Researchers and Research Director verified data collected with both the Community Elders' Committee (CEC) in Behtsokǫ̀, and at a Dogrib Regional Elders' Committee. Approximately 80 elders, currently residing in Behtsokǫ̀, were invited to a meeting at which the caribou report was read for verification. Discrepancies were noted and changed if directed to do so.

- As in previous years, the Researchers were responsible for research and organization of data collection, and the Research Assistants in the communities collected and documented the life histories of harvesting

---

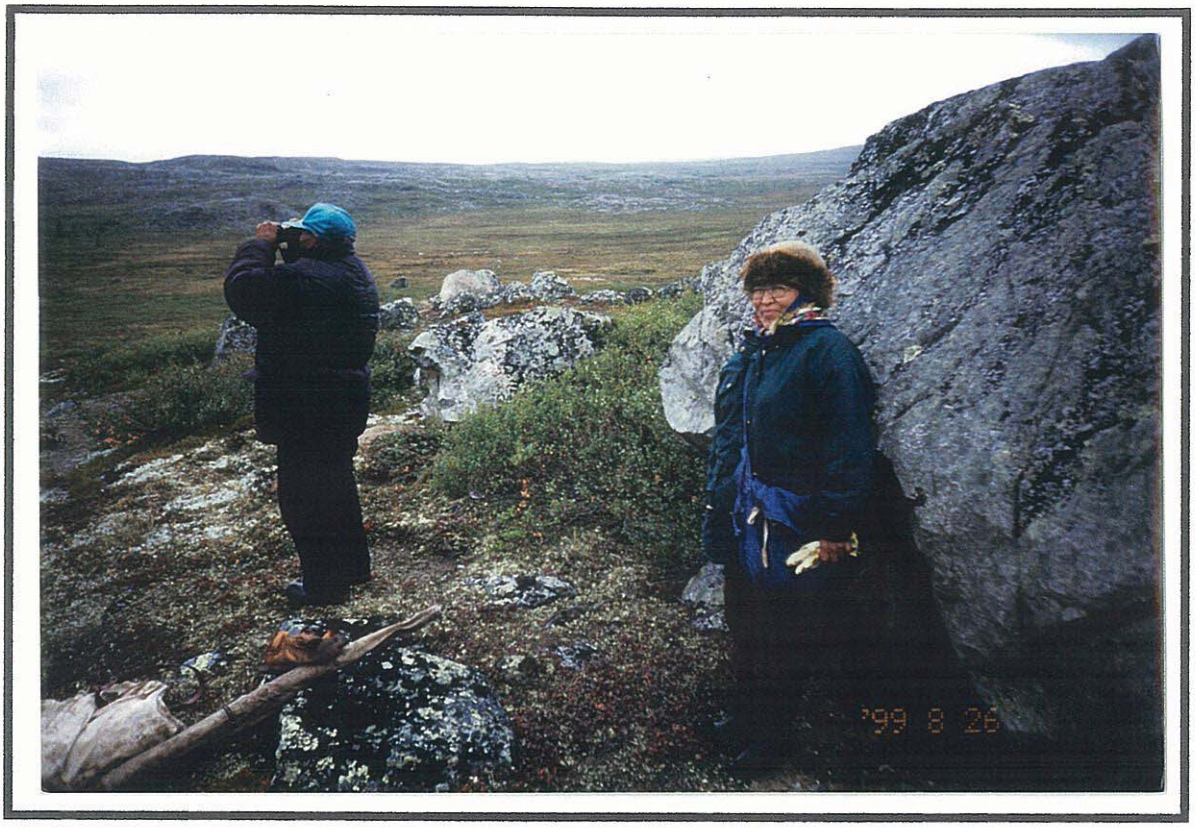
[7] See Map entitled Dogrib Traditional Caribou Harvesting Trails.

Georgina Chocolate, Louie Whane, Romie Wetrade and Sally Zoe
are looking out for caribou at Deèzàatì, 1999.

following the system designed by the research team. The GIS Administrator input data relating to the spatial distribution of harvested caribou as well as data on water crossing and location of caribou fences.

- The Research Director, was responsible for overseeing the field research, data management, analyzing the data and writing the reports, as well as for doing the accounting and coordinating the training. Dawn Sprecher assisted with this process.

- WKSS provided peer review of the annual reports as well the final report.



Paul Wetrade and Madelaine Chocolate at Deèzàatì (1999).

3. ACTIVITIES

Activities between 1997 and 2000 can be related to the long-term objectives of this project.

3.1 To translate relevant information on caribou movement contained in previous interviews

- During the three years this research took place, a total of 44 taped interviews from previous projects were translated. As the researchers learned to understand and explain the elders' oral narratives, interviews were summarized in report format, as the translations were time consuming.

3.2 To develop Dogrib terminology on caribou and caribou habitat that will be used when developing interview guidelines

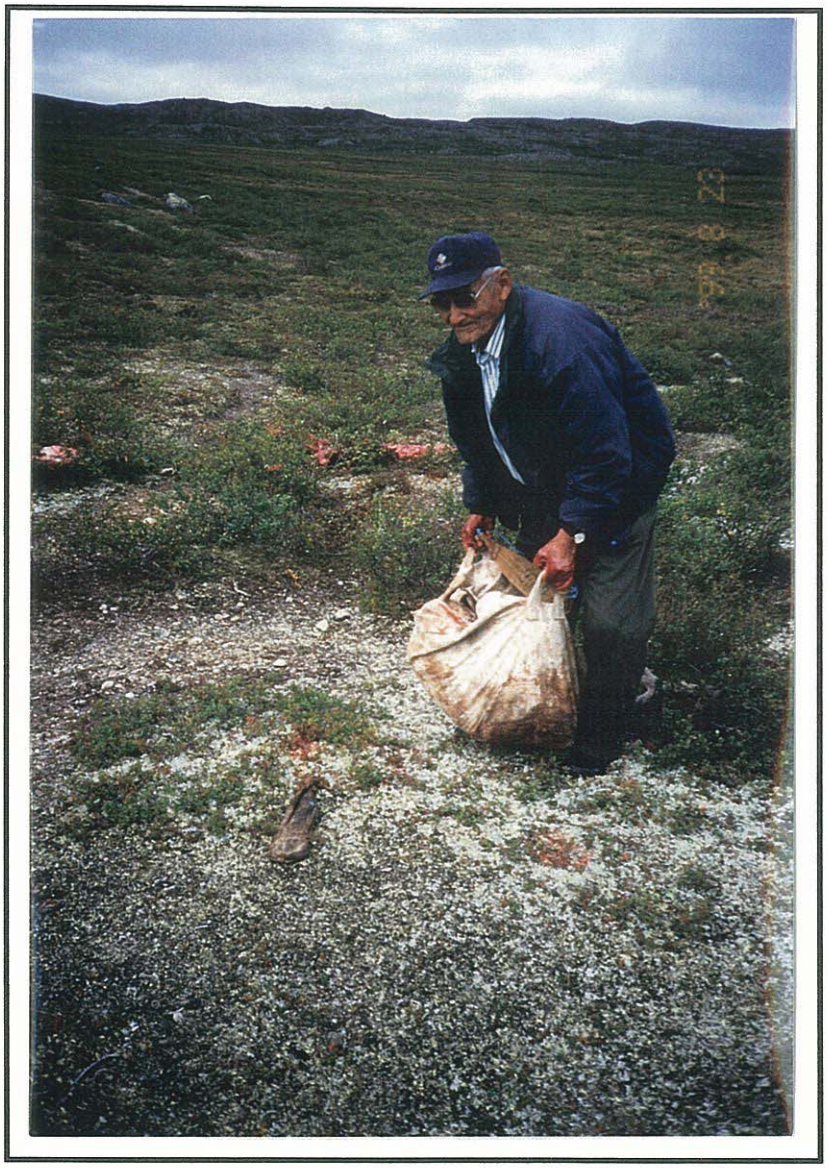
- Initially the researchers worked with Madeleine Chocolate, the Language Coordinator, for approximately one hour/week on literal and conceptual interpretations of terms. Problems were discussed during two workshops, one in November 1997 and the other in February 1998, in which both elders and Linguist, Dr. Leslie Saxon from the University of Victoria participated. Traditional terms associated with caribou and habitat was used during interviews, discussion and verification.

3.3 To document Dogrib knowledge of caribou habitat

- Several activities took place in order to document elders' knowledge of caribou habitat.

- Initially 20 hours of interviews took place with the elders' committee. After each interview and transcribing the tape the researchers worked with the elders to put relevant habitat on topographic maps.

- In 1998 Researcher, Georgina Chocolate, along with high school student Roger Champlain, traveled with the elders Jimmy Martin (age 76), Louise



Jımmy Martın wıth ʔǫhtsì (canvas bag) of ʔekwǫ̀kwo (carıbou meat)
Deèzàatì 1999

Whane (age 77) and Elizabeth Michel (age 77) to ʔek'atìʔetsı̨lı̨ı̨[1] to observe caribou and document the barrenland vegetation eaten by caribou.

- During May 1999 Georgina Chocolate, Researcher, traveled to ʔı̨hdaatì (Stagg River) with 15 elders from Behtsokǫ̀ to document vegetation that caribou forage on in the boreal forest. Eight (8) taped interviews were completed along with 19 field forms and nine (9) rolls of film.

- During August 1999 Georgina Chocolate, Researcher, worked with elders Romie Wetrade, Elizabeth Chocolate, Jimmy Martin, Louis Whane and Phillip Zoe at Deèzàatì (Point Lake) to document information on caribou habitat in the barrenlands. Twenty-four (24) field forms were completed. Due to the circumstances in the field it was more appropriate to conduct videotaped interviews. Vegetation was photographed, pressed and identified, and habitat types were photographed. Joseph Whane, Research Assistant, videotaped approximately two-hour of elders and harvesters hunting, butchering and using the caribou.

3.4 To document variations in migration patterns, and the elders' knowledge on why variation occurred during given time period

- Initially 33 interviews were conducted with 25 elders from Behtsokǫ̀, Gamètì, Wekweètì and Whatì that resulted in 54 hours of taped information. After each interview and transcribing the tape the researchers worked with the elders to put relevant places and trails on topographic maps.

- Next Researchers Bobby Gon and Christine Sansparıel in Behtsokǫ̀, Adele Tatchia and Noella Kodzin in Wekweètì, and Gloria Ekendia in Gamètì worked with assistant researchers and harvesters, Joe Migwi and Charlie Bishop in Behtsokǫ̀, Joseph Whane in Wekweètì and Joe Mantla in Gamètì. These individual documented the elders' oral histories associated with harvesting caribou. A total of 28 harvesters/elders were interviewed each continuously between one (1) to three (3) weeks. These interviews resulted in a time span of 73 years of information relating to: location of caribou in a given year, foraging habits, health and fitness and whether there were enough caribou for the harvester and their family or not. The

[1] See any of the Maps for location of Tı̨chǫ (Dogrib) place names.

Arrıvıng at Deèzàatì
1999

elders listed in the table below provided their life histories of harvesting caribou, which resulted in 1269 data entries, spanning between 1917 and 1998

Name, Age as of 1999, and Community of Elders' Interviewed on Harvesting

Behtsokǫ̀	Gamètì	Wekweètì
Suzie J. Bruneau (94)	Madeline Drybone (94)	Margaret Lafferty (82)
Sammy Football (94)	Romie Wetrade (81)	Louis Whane (80)
Joseph Rabesca (93)	Alphone Quitte (81)	
Moise Martin (88)	Louis Zoe (60)	
Adele Wedawin (86)	Joe Mantla (60)	
Liza Lamouelle (84)		
Matto Mantla (85)		
Joe S. Mackenzie (84)		
Harry Koyina (83)		
Liza Koyina (81)		
Nick Black (81)		
Paul Rabesca (81)		
Zimmy Mantla (80)		
Madeline Martin (80)		
Elizabeth Michel (77)		
Annie Black (77)		
Elizabeth Rabesca (71)		
Elizabeth Mantla (66)		
Robert Mackenzie (66)		
Joe Migwi (65)		
Charlie Bishop (65)		

3.5 To document the relationship between the Tłı̨chǫ and the caribou.

- In 1997, Bobby Gon, Researchers, and two elders, Jimmy Martin (age 76) and Robert Mackenzie (age 64), traveled on the winter road to the BHP Ek'ati Mine. They observed and discuss caribou and people's relationship to the caribou.

- Georgina Chocolate and Bobby Gon, Researchers, spent between May 22

Georgina Chocolate at Deèzàatı̨ (1999)

and 29, 1998 in Whagweètì [2] where they interviewed 13 elders. These interviews focused on ways of knowing and respecting caribou.

- Elders were interviewed on issues associated with respecting caribou and how this affects the relationship between caribou and humans. Twenty-two (22) tapes are associated with this information.

- Georgina Chocolate, Researcher, reviewed the tapes on caribou , translations and summaries for information on respect.

- In 1999, Sally Anne Zoe, acting as a Researcher, and Allice Legat, Research Director, traveled between Whatì and Gamètì with Romie Wetrade, Angelique Mantla and Adele Wedawin to observe caribou in their winter range, and to observe human behaviour associated with the winter road.

3.6 To complete a literature review of indigenous knowledge of caribou and reindeer

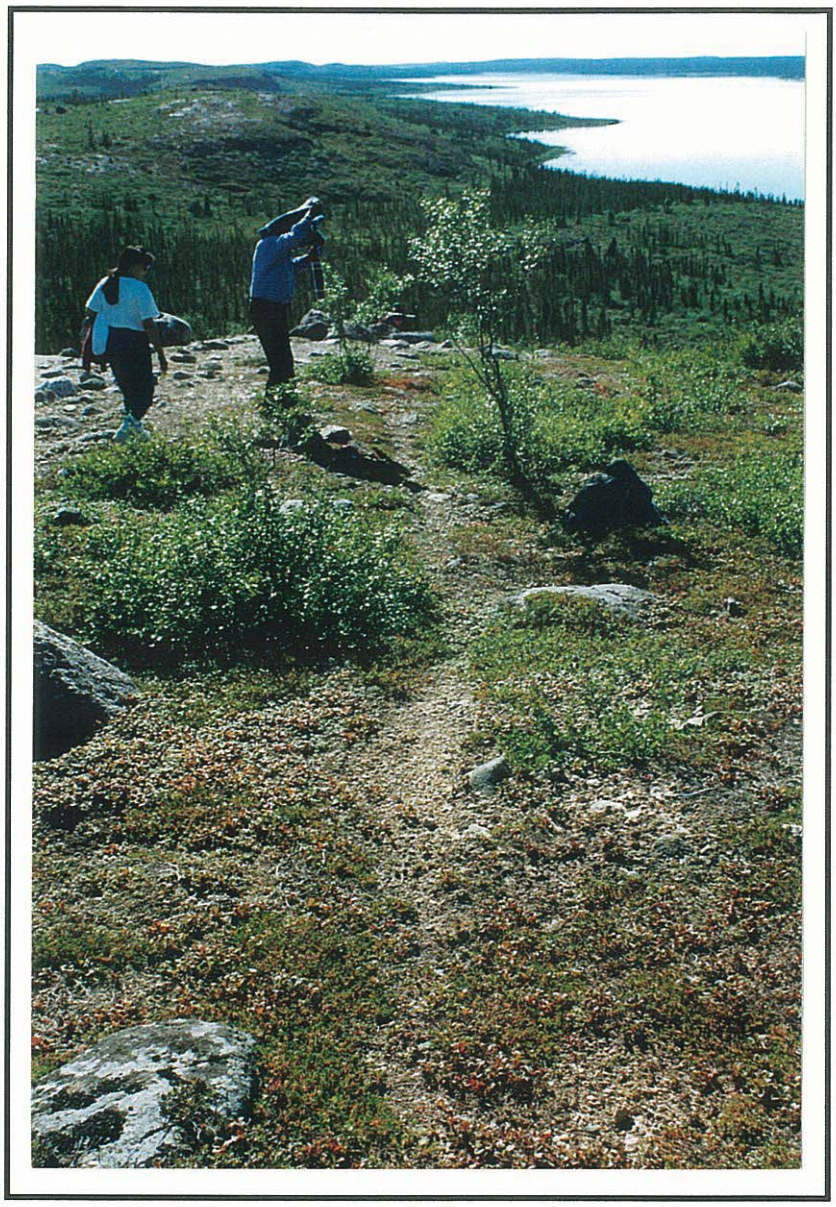
- Initially, a literature search of indigenous knowledge on caribou and reindeer was conducted through the University of Calgary, Alberta, the University of Aberdeen, Scotland and the Scott Polar Institute, Cambridge, England, as well as through related websites. Fifty-three (53) references were reviewed. Most traditional knowledge studies were done in other languages (for example, Zhigunov 1961; Herre 1956), and money was not available for translation. The literature has been reviewed for links with this study. Relevant articles are discussed in Section 5: Discussion/Conclusions of this report and all are listed under the bibliographic section, whether directly referred to in the report or not.

3.7 Other Activities

- On-the-job training is an important aspect for the research team and the Dogrib Regional Elders' Committee. Training includes Tłı̨chǫ literacy and transferring data to topographic maps and a database in addition to data analysis and report writing.

---

[2] Officially known as Russell Lake



Madelaine Chocolate and Jimmy Martin
Following ʔekwǫ̀ trail

Wekweètì 1997

- In conjunction with the elders' discussion of mining activities, Gabriel Mackenzie-Scott was contracted in 1998 to compile a report, using archival information on mining activity and caribou distribution on Dogrib Traditional Territory, as recorded by Wildlife Officers. 71 years of mining data was entered into the GIS (Scott (1998). This information can be compared to where caribou were harvested during that period.

- In conjunction with elders' statements about their concern about fires destroying important caribou habitat, the research team requested and received fire data from the RWED. Twenty-four (24) years of information was entered into the GIS and can be used to compare where caribou were during that period.

- Photos were produced for families whose members participated in the research

- Reports were sent to all Dogrib band office and schools, and made available to delegates at the Dogrib General Assemblies.

3.8 Storage of Material and Data

All materials and data are the property of Dogrib Treaty 11 Council and are stored at the Whàehdǫǫ̀ Nàowoò program office where staff have catologued tapes and photos. Currently this information is being entered into a data base so the material will be accessible to Dogrib students, Dogrib Band Councils and Dogrib Community Services Boards

- Audio and video tapes as well as photos are stored in locked safes
- Topographic data is stored in access and maps are in MapInfo format on computers where data can be continually updated
- Plant specimens have been pressed and are stored in metal cabinets
- Topographic maps have been storied in filing cabinets but are being transferred to map drawers

Paul Wetrade and Joseph Whane looking for caribou
Deèzàatì 1999

Paul Wetrade and Sally Zoe looking for caribou
Deèzàatì

4. RESEARCH RESULTS

The basis for this research was the premise that ʔekwǫ̀[1] migration is dependent on the state of the habitat. The elders discuss ʔekwǫ̀[2] from the point of view of hunters who survived by knowing caribou behavior and their dè, and who have a sophisticated understanding of wildlife management in relation to the dè and the inter-relations between animal and human behaviour. The interviews were done within the context of the elders' concern for the future, especially in relation to their grandchildren, whose lifestyles will most be affected by industrial development. The elders want the caribou and their dè to be respected so their grandchildren will thrive and continue to use the Tłı̨chǫ (Dogrib) traditional territory.

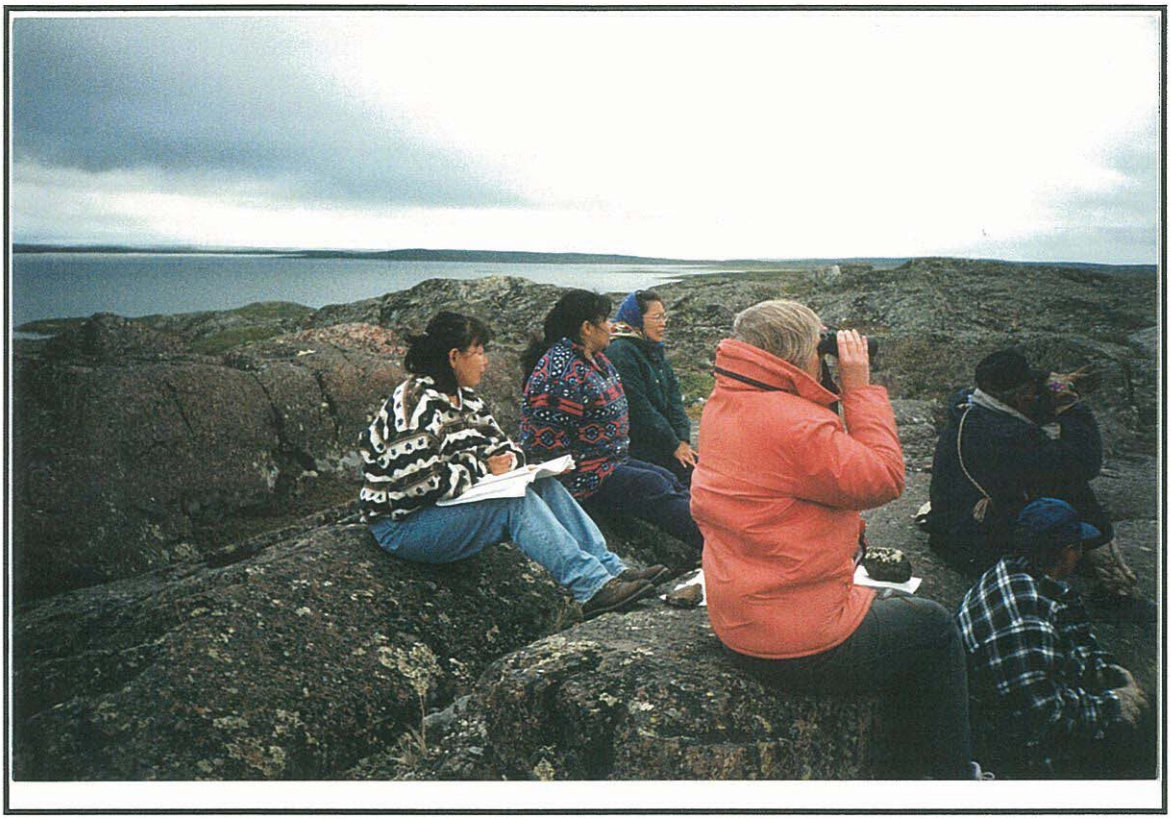
While the elders are working within the context of harvesters concerned for the future of their descendents, the research team worked within the methodological framework known as Participatory Action Research (PAR). The decision to conduct research with the elders on caribou and habitat came from the elders and the leadership through the Dogrib Renewable Resources Committee[3] (DRRC), who wanted baseline data that reflected Tłı̨chǫ (Dogrib) knowledge to be used in future monitoring and cumulative effects studies. Within the PAR context, the elders were responsible for sharing knowledge that had been verified through the traditional methods of group discussions,

---

[1] See Orthographic System and Pronunciation Guide by Dr. L. Saxon, Linguist, University of Victoria. The guide is located before Table of Contents.

[2] When the word caribou is used, it denotes both woodland and barrenland caribou. The Tłı̨chǫ term ʔekwǫ̀ is used when discussing barrenland caribou and tǫdzı when referring to woodland caribou.

[3] This committee consisted of Harry Simpson and Romie Wetrade, Jimmy Nitsiza, Phillip Dryneck and Eddie Camille, Louis Whane and Joe Pea'a and was chaired by Violet Camsel-Blondin



Sally Anne Zoe, Georgına Chocolate, Madelıne Chocolate
Allıce Legat, Louıs Whane, Romıe Wetrade
Observıng ʔekwǫ̀ at Deèzàatì
1999

whereas the researchers, who were chosen by the elders, were responsible for documenting caribou knowledge that has been verified and shared through oral narratives. The Research Director was responsible for overseeing the project, particularly the documentation of the Tłı̨chǫ knowledge, the analysis and the report writing. Research methods will be described in association with the research results under the following sections.

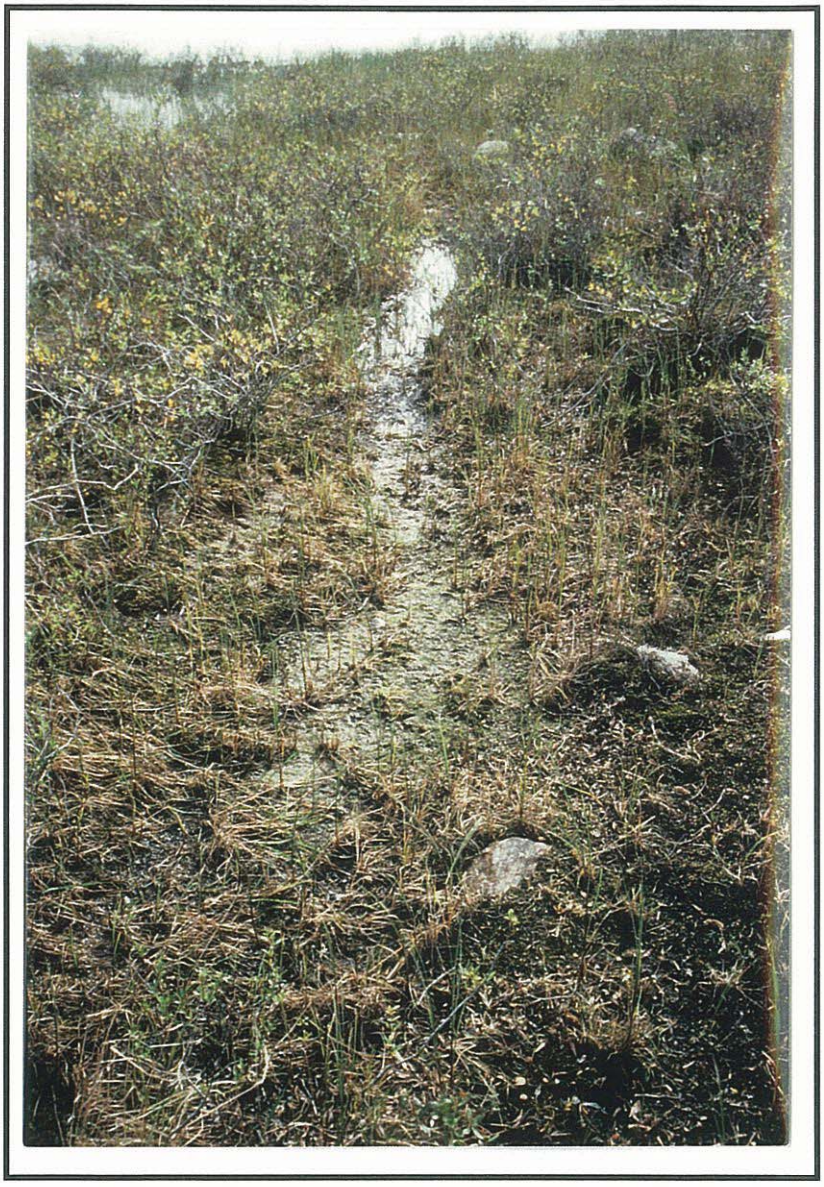
- Oral Narratives: This section will describe accepted Tłı̨chǫ knowledge of ʔekwǫ̀ that has been traditionally verified through discussions among hunters and can now be shared through oral narratives.

- Life Histories of ʔekwǫ̀ Harvesting: This section will describe ʔekwǫ̀ harvesting of specific individuals. It is during harvesting activities that hunters observe and come to understand the knowledge that is contained in the oral narratives. They also share their experiences among groups of harvesters where their experiences are verified by others and then become part of Tłı̨chǫ oral narratives that are told and retold to pass knowledge of caribou.

- Field Research: This section describes specific vegetation communities and landscape in specific location in the boreal forest and in the barrenland. During these field research trips the researchers took photos, pressed plants and filled in data forms specific of the ʔekwǫ̀ dè explained in oral narratives.

Throughout the life of the project the research team spent time considering concepts relevant to understand the elders' knowledge. The English concept 'habitat' was not easily translated. The term habitat is usually translated as "tı̨ts'aàdìì ʔeʔǫǫ", or "animal den" in public meetings, however the researchers and elders found 'tı̨ts'aàdìì ʔeʔǫǫ' to be too narrow in meaning. A more appropriate concept is the word ʔekwǫ̀ dè[4], which allows the elders to discuss

[4] Dè is similiar to the scientific concept 'ecosystem', however where ecosystem is based on the idea that living things exist in association with non-living elements, the Tłı̨chǫ term dè is based on the idea that everything in the environment has life and spirit. Dè includes both the spiritual



ʔekwǫ̀ʔetǫ (ʔekwǫ̀ trail) ın Tɬ'otıa (wet, marshy grass)

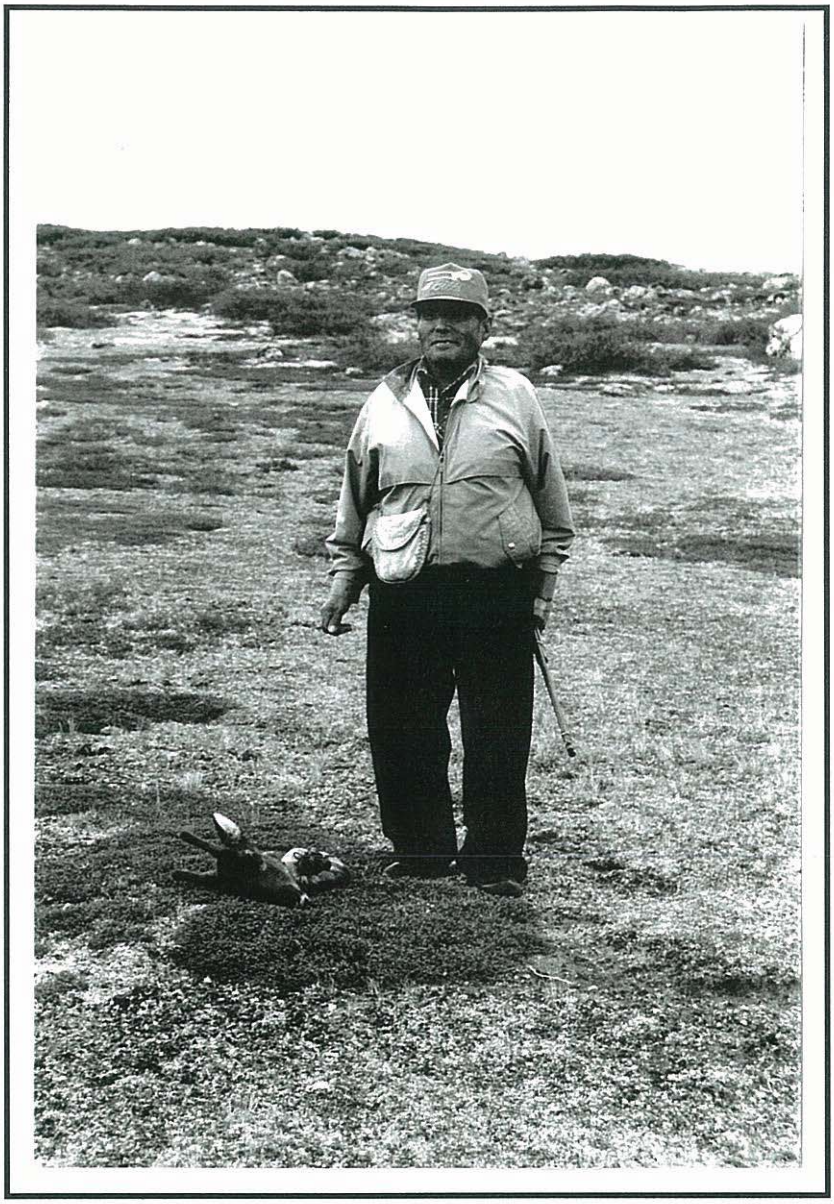
anything that they consider to be linked to the caribou, including such phenomena as ʔɻk'ǫǫ̀ (medicine power) and peoples' behaviour, predators such as wolves and people, pests such as mosquitoes and flies, landscape such as eskers and smooth bedrock leading to areas to cross water, weather conditions creating particular kinds of snow conditions, and favoured vegetation.

During interviews the researchers used terms related to migration, which are listed in Table I. These concepts explain the actions taken by the ʔekwǫ̀ (barrenlands caribou) and are more meaningful to the hunters who are trying to understand the ʔekwo's (barrenland caribou) behaviour in relation to the dè.

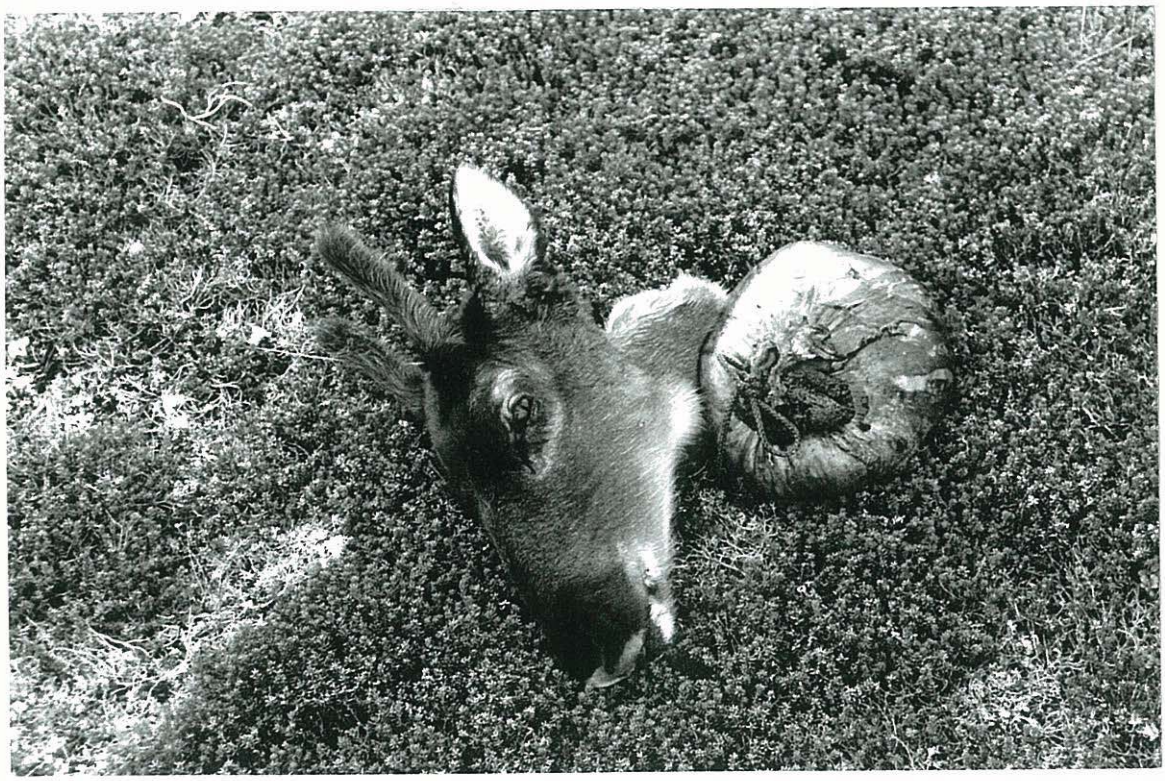
Table I
Terms Associated with Migration of ʔekwǫ̀

Detsiìlààʔekwǫ̀	ʔekwǫ̀ that winter in the boreal forest
Hoziʔekwǫ̀	ʔekwǫ̀ that winter in the barrenlands
Naèdaadıı	ʔekwǫ̀ that summer in the forest
Nadeʔà	Migrating ʔekwǫ̀
Nı̨̀zaa	ʔekwǫ̀ migrating towards the forest in the fall
Nadèezoǫ	ʔekwǫ migrating to the birthing grounds
ʔekwǫ̀kèè	ʔekwǫ̀ tracks

and physical aspects of the land, people, wildlife and their habitats. ʔekwǫ̀ translates as barren land caribou.
Tı̨chǫ words follow the orthography found in the Dogrib dictionary, "Tı̨chǫ Yatìì Enı̨htł'è", or in the case of compound place names they follow the spelling rules established by the Place Names Project.



Joe Migwi



4.1 Research Results: Oral Narratives

As stated above, the Tłı̨chǫ (Dogrib) elders interviewed discussed caribou from the point of view of hunters within the dè. Elders were interviewed in: Whatì (Wha Ti), Gametì (Rae Lakes), Wekweètì (Snare Lake) and Behtsokǫ̀ (Fort Rae). During the first segment of research the Researchers, interviewed, documented and transcribed the oral narratives on caribou migration and caribou habitat. Since this type of data and data collections are qualitative rather than quantitative data the Community Elders' Committee[5] (CEC) was vital to directing the Researchers to interview the most qualified and knowledgeable elders.

The CEC directed the researchers to interview elders over the age of 75 as they are the ones who rarely, if at all, worked for a wage. They used canoes to travel throughout the Tłı̨chǫ territory, and therefore have the most intimate knowledge of the dè. Most interviews were done in groups of four to six, as we were not asking the elders to discuss their own personal experience but more general Tłı̨chǫ (Dogrib) knowledge contained in oral narratives. These interviews took place in camps in the boreal forest, in the barrenlands and in the office in Behtsokǫ̀. The interview guidelines, which included such open-ended statements as the following, were designed to solicit the elders' knowledge on caribou migration and habitat.

- Please talk about where the caribou travel and why
- Please talk about what part of the dè influences where the caribou travel and why

After being interviewed, the researchers and research director documented

[5] The Behtsokǫ̀ (Rae) Elders' Committee, consisting of Jimmy Martin, Adele Wedawin, Robert Mackenzie and Elizabeth Michel, oversaw this project.

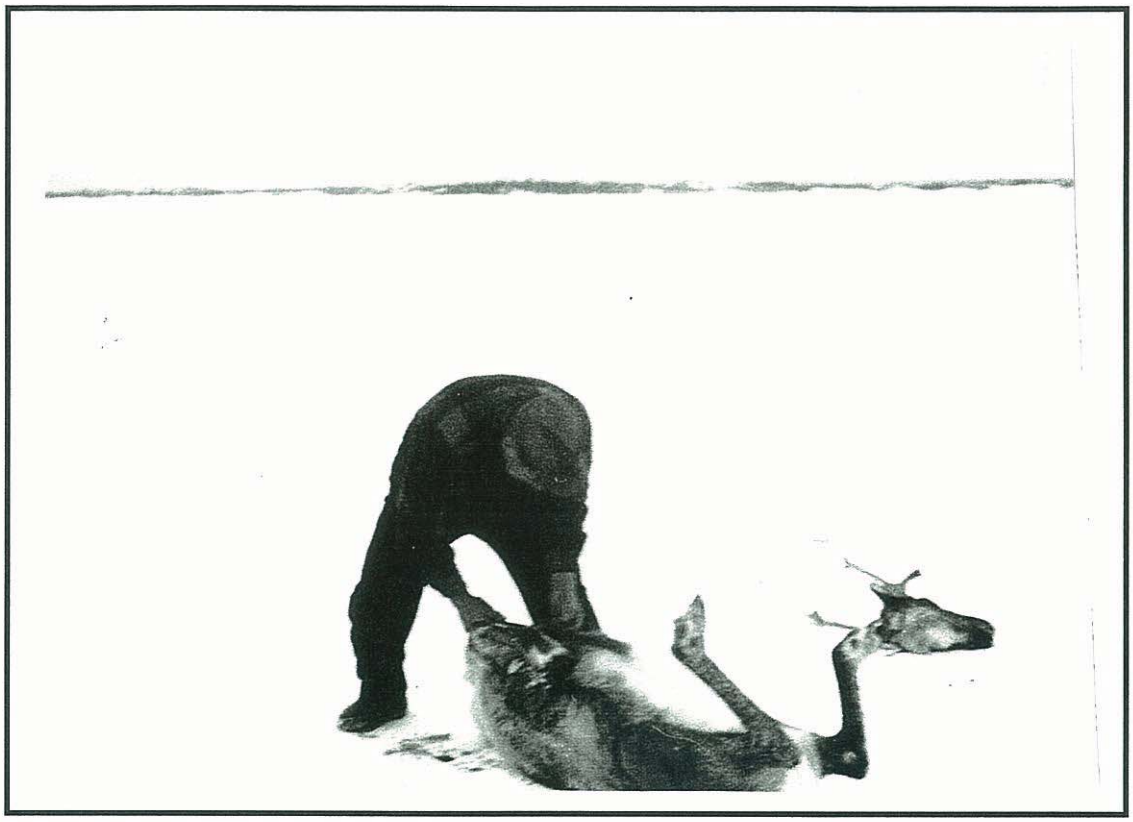
Liza Mackenzie, Harry Quitte, Eddie Lafferty, Adele Wedawin, Theresa Lafferty, Sally Anne Zoe, Robert Mackenzie and Johnny Eyakfwo

the knowledge contained in oral narratives on data sheets. If an oral narrative is considered by the team to be particularly useful, in that it clarifies or clearly states what many other elders have expressed to be true, the tape was translated by a professional translator. Tapes are also translated if the elder speaking is the only one to make a certain point, based on their knowledge of a particular area or experience that contributed significantly to the data[6]. The research team used these translations to direct research and discussions when evaluating and changing interview guidelines, analyzing data and writing reports.

Oral narratives provide information, in context, to the listener. In this case the context is land claims, self-government and industrial development. Elders consistently talk about their concerns around mining and their desire to have authority over decisions about caribou, the habitat and over development that effects caribou and the Tłı̨chǫ. The research team agreed to continue making inquiries that allowed elders to share information through oral narratives, but would also solicit more detailed information about foraging behaviour, relationship with predators and distribution. In order to accomplish this the researchers had to let the elders know that they understood what had been expressed to date. This was done by:

- Using appropriate terms and concepts. On one occasion the Community Elders Committee (CEC) spoke firmly to a researcher about using terms that had not been verified and that only one elder had used in a descriptive way. They felt that classic Tłı̨chǫ terms should have been discussed to verify the meaning. By using the misunderstood term it had mislead the elders, confused the issue and was seen as attempting to have elders talk about what they did not know.

[6] Given that one hour of taped interviews take approximately 40 hours to translate, a system was devised to select relevant tapes to be translated, rather than translating all tapes.



NWT Archives N79-0-1537
1950s

- Verifying the data contained in the annual report.
- Asking open-ended questions that contained information that had previously been verified in order to avoid asking leading questions. For example, all the Tłı̨chǫ elders agree that smoke and fumes will cause caribou to move away from those smells, but they also agree that caribou will travel wherever they want when they are "on the move" during migrations. The researcher pointed out that oral narratives appear to be contradictory and asked if the elders could further explain what they mean.[7]

Interviews usually emphasized: the Relationship between ʔekwǫ̀ Migration Patterns and the Behaviour of Humans; Annual Cycle of ʔekwǫ̀ (barrenland caribou); Spring and Fall ʔekwǫ̀ Routes; and ʔekwǫ̀ Migration in Relation to Vegetation and Ability to Forage.

4.1.1 Oral Narratives: The Relationship between ʔekwǫ̀ Migration and the Behaviour of Humans

The relationship between the Tłı̨chǫ and the caribou is based on mutual respect. The ʔekwǫ̀ (barrenlands caribou) show their respect towards people by traveling to the Tłı̨chǫ from their birthing grounds. The elders say that even though the ʔekwǫ̀ know that they will be killed they still come to the Tłı̨chǫ; by giving themselves to the Tłı̨chǫ the ʔekwǫ̀ spirit will be reborn and the ʔekwǫ̀ population will remain strong. The people show their respect towards the caribou in various ways. First, all individuals must have knowledge of the caribou. Second, people must use all possible parts of the caribou that they harvest. Third, they must care for the stored meat and discard bones and other unused parts in a manner that will not offend the

[7] To summarize, the elders mean that when ʔekwǫ̀ are on the barrenlands grazing on the rich vegetation, prior to migration, they will move away from what bothers them, but when they are migrating they will go through and/or over most obstacles to get where they are going.

Elızabeth Chocolate preparıng Bògǫǫ̀ (dry meat)
Deèzàatì 1999

Elızabeth Chocolate and Bella Zoe scrapıng Deghǫ (haır) off ʔewò (carıbou hıde)
Deèzàatì 1999

caribou. Fourth, the rules regarding caribou respect must be obeyed. Georgina Chocolate (Personal Communication: 00/02/29) has heard several elders, including her grandfather Pierre Quitte, state that,

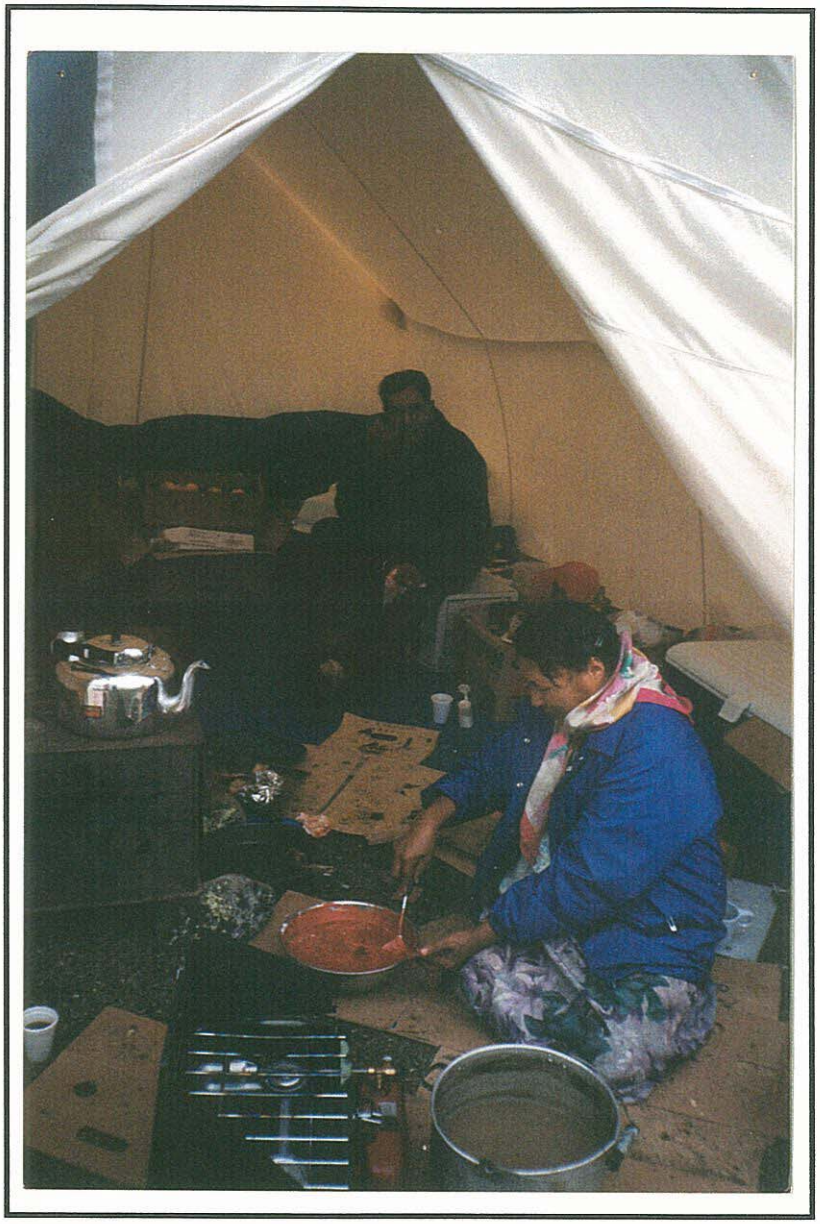
> the caribou are like the creator, when they know you need them they will come to you; when you are alone and you pray to them they will come and you will have food and clothing. Like the creator they take care of us. When they know you are in need they will help you.

Since the Tłı̨chǫ elders insist that no one can ever know where the ʔekwǫ̀ will migrate they constantly tell stories that explain how to find sites where ʔekwǫ̀ frequent and where, in the past, ʔekwǫ̀ have been harvested successfully. Some of these places are around Wekweètì (Snare Lakes), ʔek'atì (Lac de Gras), Gots'ǫkàtì (Mesa Lake), and as far into the barrenlands as Kǫ̀k'èetì (Contwoyto Lake).

> ...Louie Whane's father used to tell [him] a story. ...Louie's father used to canoe to Kok'eghotì with birch bark canoe. And to ʔek'atì (Lac de Gras) where there is a mine today around that area there used to be lots of ʔekwǫ̀ (barrenland caribou). Because there's a place called Kwek'aghotì (southern end of Point Lake) and that's where there is a lot of ʔekwǫ̀, that's where the water crossing is. That's why there's people living around that area. (Eddie Lafferty, age 71: 97/04/17)

It is generally believed by the Tłı̨chǫ that the ʔekwǫ̀ migrate to people who live well and behave properly.

> When I was a young man I lived at Whatì, there used to be a ʔekwǫ̀ around there at the time. But someone had hit the ʔekwǫ̀ with the stick, and the elders had said "if you guys [the older elders] are right, next year there will be lots and lots of ʔekwǫ̀." Sure enough that next year there was ever lots of ʔekwǫ̀. But that next year after that, there was no more ʔekwǫ̀.



Alıce Sımpson makıng ʔedoò tıiwo (blood soup)
Deèzàatì 1999

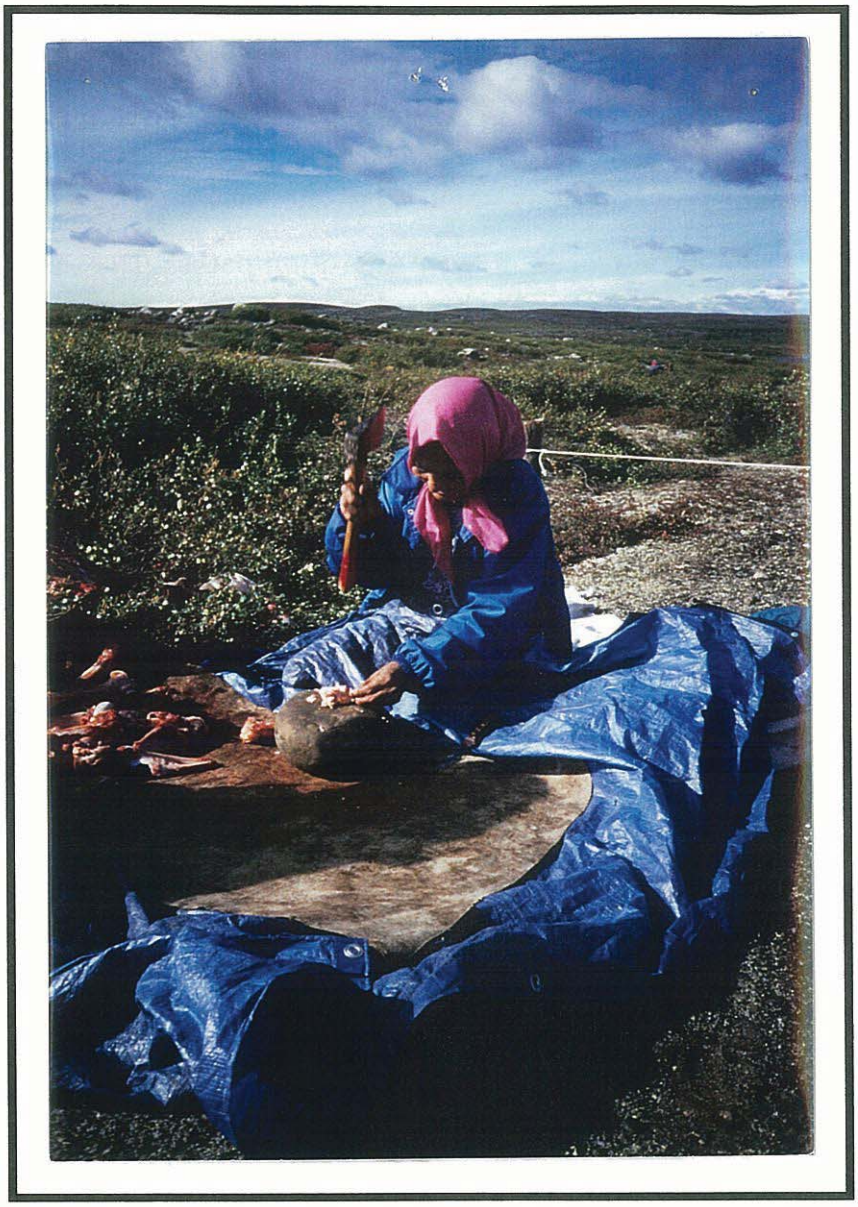
> Because the ʔekwǫ̀ was hit, that's why. Now I'm over seventy years old. ... From then on [and] for the next thirty or forty years thereabout, only then will the animal return they say. (Johnny Eyakfwo, age 73: 97/04/17)

With the loss of ʔekwǫ̀ to the Whatì area for approximately 30 years, many Tłı̨chǫ people are very cautious about how the ʔekwǫ̀ is treated and what developments should be placed in their migration paths. The ʔekwǫ̀ stopped migrating to the Whatì area when a young man hit the ʔekwǫ̀ with a stick and about the same time as Ray Rock uranium mine was under construction. Elders continually encourage all people to treat the ʔekwǫ̀ with respect because

> ...ʔekwǫ̀ are the ones that struggle to get to us, even though they know they are going to be killed. They are happy to see people. We people are not the ones to struggle for the ʔekwǫ̀. (Caroline Beaulieu, age 86: CHP-98/02/05-1-3/3).

The Tłı̨chǫ elders continually state that it is important to respect the ʔekwǫ̀ if it is to continue coming back to them. To respect is to use the various parts of the ʔekwǫ̀:

> The ʔekwǫ̀ are not human. They are not human, but like prophets they can foresee everything that's on this part of the land. They don't talk, they don't understand one another but still, that's the way they roam on the land. The old timers have really respected the ʔekwǫ̀ because they are all we depend on. People don't do things without the ʔekwǫ̀ being aware of it. We depend on the ʔekwǫ̀ and so, when we kill a ʔekwǫ̀, we show it respect. If we don't do that and we don't treat them really well, the ʔekwǫ̀ know about it. They say, " people don't treat us very well and they don't show us respect at all." Right now, during the spring when the ʔekwǫ̀ start to migrate, there are usually many of them. The young men go hunting and bring back fresh

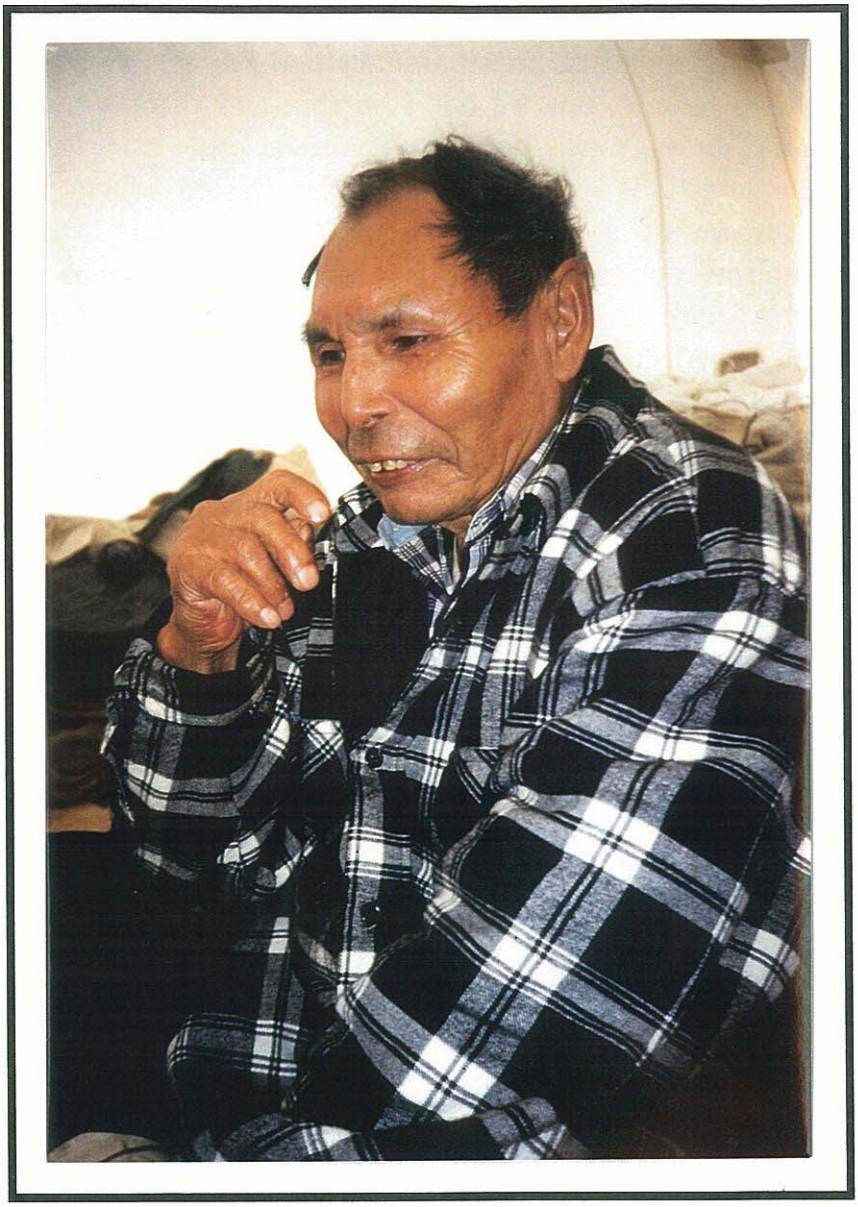


Elızabeth Chocolate smashıng ʔekwǫǫ̀ (carıbou bones)
to make ʔekw'ǫǫ̀tłeè (bone fat)
Deèzàatì 1999

> meat. If their wives are not able to prepare or fix the fresh meat, why do they bother to go hunting and kill that many ʔekwǫ̀. We depend on these animals and we are suppose to show them respect. But we don't do that and that's why you find ʔekwǫ̀-hides, meat, heads and various other parts at the garbage dumps. We hear about all the wasted ʔekwǫ̀ meat being thrown away at the dumps. As old timers, that is something we don't like at all. If they bring ʔekwǫ̀ meat to us we will prepare or fix the meat because we love the animal. And the ʔekwǫ̀ knows about these things. That was the way our elders have talk to us about these things. As for the ʔekwǫ̀ leader who they follow, she was born with the grace of God and it is like she knows what is up ahead of them. That's the way it is with the ʔekwǫ̀. They don't see people all year but... they leave the barrenlands for the tree line when they start migrating. So it is said that; when they see the people for the first time, they are really, really happy. That is when they see people the first time. We are happy too, because we depend on them to survive. It is said, they probably sense that they will be killed but they're still happy anyway. In the old timer's way, they're like our relatives and we depend on them, so we are really happy. In the same way, they know they will not live but they are happy too. That's when they see people for first time and that's what is said. How long do we have to talk, is that it? (laughter) Did I speak a little bit too long? Ok that's all. (Rosalie Drybones, age 82: 98/02/05)

The Tłı̨chǫ elders know it is human behaviour on the ʔekwǫ̀ dè (caribou territory) that is the most important factor affecting ʔekwǫ̀ migration patterns. The elders frequently mention the importance of human behaviour, while the biologists concentrate on other predators and pests such as the wolf, mosquitoes and black flies. When asked about predators the elders made statements such as:

> Wolves, fox, raven and people are supposed to eat [and use] ʔekwǫ̀. Raven and fox scavenge on the ʔekwǫ̀ and wolves,



Romie Wetrade
Deèzàatì 1999

> grizzly and people harvest the ʔekwǫ̀. (Joe Suzie Mackenzie, Personal Communication, age 80: 95/05/20)[8]

The mines are the product of human behaviour, and humans are an aspect of ʔekwǫ̀ dè. The possible effects of mines, all weather roads, winter roads and communities on ʔekwǫ̀ migration and distribution concern the elders because they all affect the ʔekwǫ̀ habitat and therefore show disrespect for ʔekwǫ̀. The Tłı̨chǫ elders feel that the developers seem to build without adequate knowledge. They fear this lack of knowledge and the building of containers for the tailing at Diavek. Several elders have made the comment. "We do not think they know how strong the ice is, and, if the containers break, how much pollution will be in the water."

> Although we have all seen ʔekwǫ̀ in association with the ice road, the ʔekwǫ̀ do not like to cross roads unless they are in the migration mode. They become very skittish when trying to cross roads, as they can smell the human scent. When they are not in migration mode and simply foraging during the winter, if the ʔekwǫ̀ "sniff our scent, they will turn back" (Romie Wetrade, age 77: BHP-95/05/10).

It is generally believed by the Tłı̨chǫ that the ʔekwǫ̀ migrate to people who live well and behave properly.

Respect Through Knowledge

The elders acknowledge that during an earlier time the ʔekwǫ̀ did not come to the Tłı̨chǫ territory within the boreal forest. It is said that,

> A long time ago when the ʔekwǫ̀ did not travel the trails to this area, the Tłı̨chǫ were starving. A man had a dream and the next day he walked straight to the barrenlands and invited the

[8] Also referred to in Legat et al 1995: 16)

Charlıe Taılbone teachıng Allıce Legat to skın carıbou
Deèzàatì 1999

> ʔekwǫ̀ to follow him to this land... (Romie Wetrade, in Legat et al:1995)

Since the Tłı̨chǫ know that the ʔekwǫ̀ (barrenlands caribou) did not always migrate to the boreal forest, they are very concerned about knowing everything about the ʔekwǫ̀ and not creating a situation that will cause the ʔekwǫ̀ to stay away or migrate elsewhere. Probably the most important way of showing respect for the ʔekwǫ̀ is by knowing everything they can about ʔekwǫ̀ and, to respect people who have the intelligence to know more about ʔekwǫ̀ and those who know the spirit of the ʔekwǫ̀. The elders know that to lack knowledge will result in lack of respect in such ways as taking more ʔekwǫ̀ that is necessary, destroying ʔekwǫ̀ food, and ʔekwǫ̀ water crossings and travel routes. It is believed that only those who know little about ʔekwǫ̀ would act in way that would destroy the ʔekwǫ̀. As Amen Tailbone (in Legat et al, 1995) said,

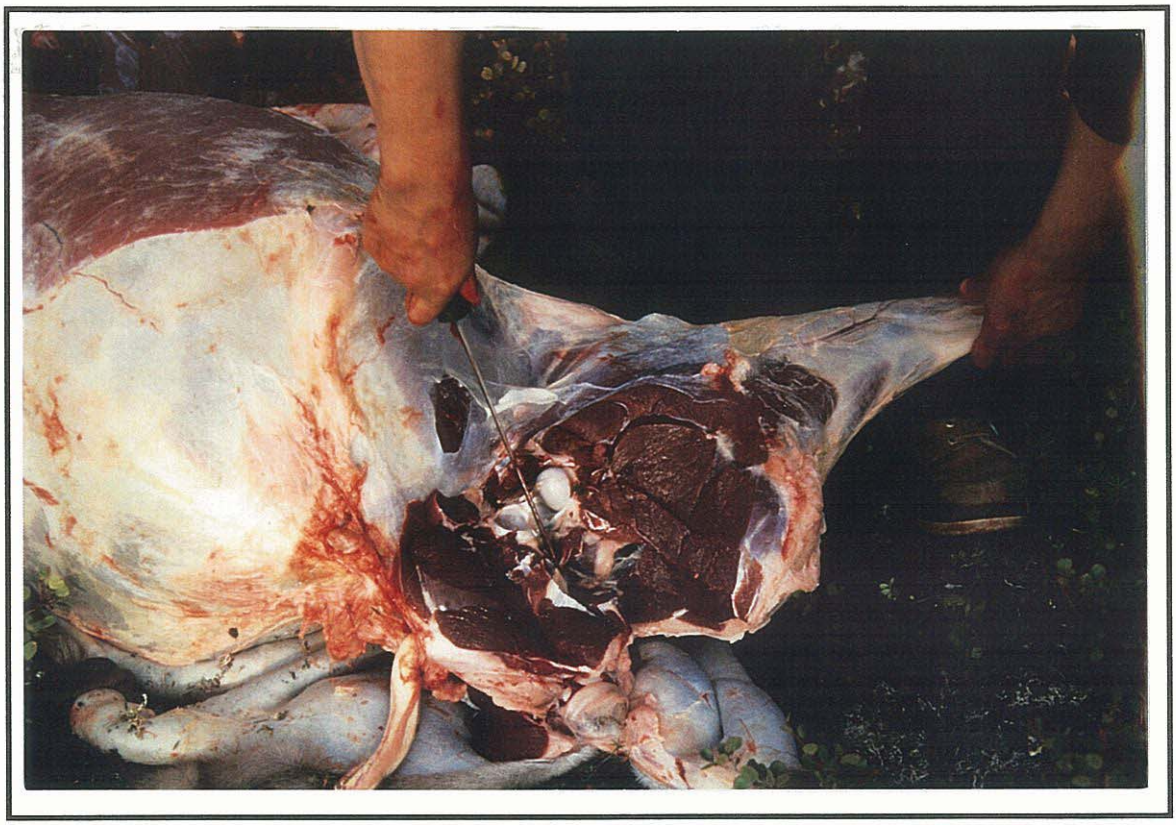
> you must know the ʔekwǫ̀ and observe the ʔekwǫ̀ and if the ʔekwǫ̀ does something that is different than you expect, then you must watch it even harder so you understand why it did not behave the way you expected it to.

Tłı̨chǫ elders emphasized that there is different ʔekwo nàowo[9] for the barrenlands and for the boreal forest, which people should know as well as know the difference between the tǫdzı (woodland caribou) and ʔekwǫ̀ (barrenland caribou). To know that the tǫdzı are darker than the ʔekwo and the tǫdzı have white around its throat and it is bigger, more like a moose, and has long legs is a sign the person has respect, as is the knowledge that tǫ̀dzfı prefer the habitat of the nǫdìì (plateau) west of Whatì[10] yet still like the same food as the ʔekwǫ̀.

---

[9] Caribou knowledge.

[10] See Appendix I: map entitled, 'Dogrib Traditional Caribou Harvesting Trails.'

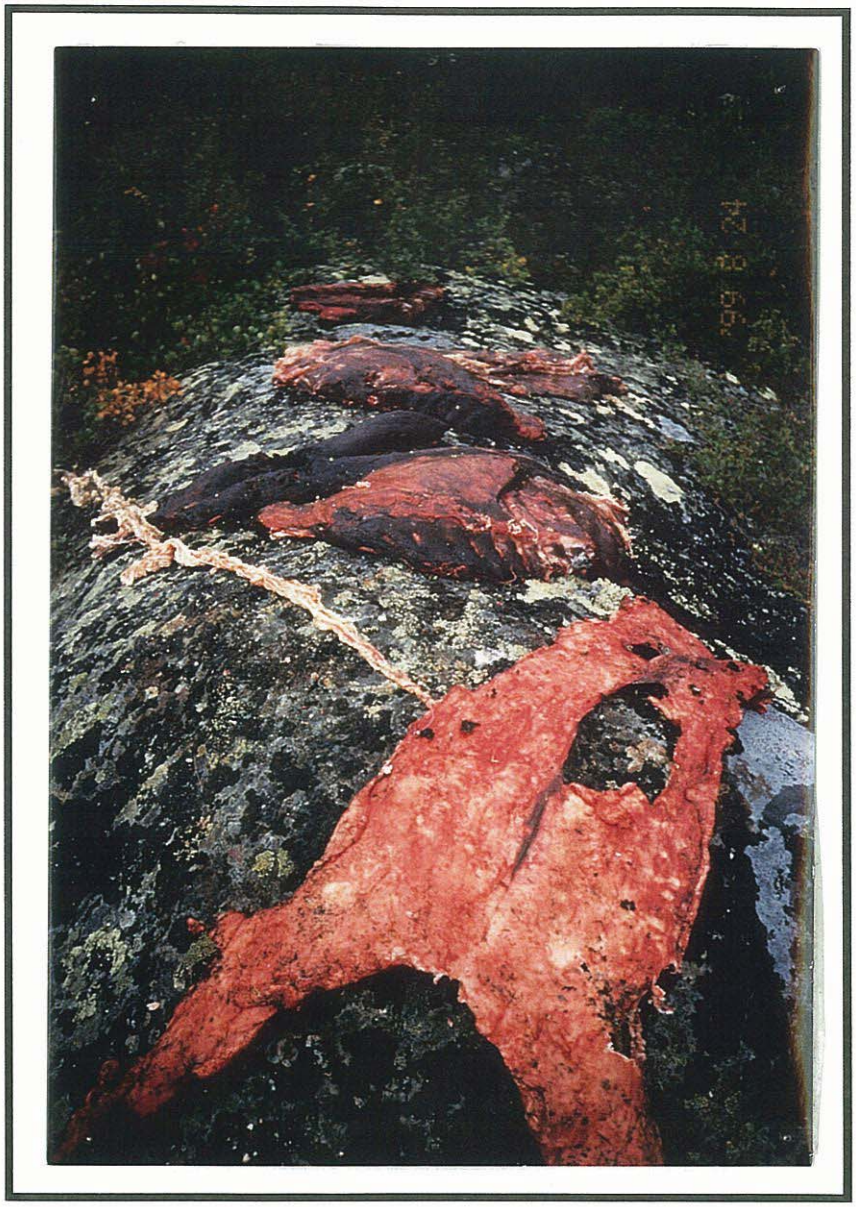


Cuttıng ʔedza (hınd legs) from ʔekwǫ̀
Deèzàatì 1999

Respect is also shown by knowing that there is only one type of ʔekwǫ̀, and even though names such as hoziʔekwǫ̀ and detsiìilààʔekwǫ̀ are used, the name has more to do with where each winters. The hoziʔekwǫ̀ winters on the barrenlands where as the detsiìilààʔekwǫ̀ winter in the boreal forest; and knowing that in general the ʔekwǫ̀ is dark grey in colour with white around the throat, yet is lighter in the winter, and almost a reddish brown in the summer with the same white around the throat is considered showing respect for this important animal.

Respect for the caribou is also shown by knowing caribou behaviour as well as knowing how to think and talk about caribou. This means knowing terms associated with caribou. When discussing migration patterns and distribution of caribou, male elders often start by discussing the importance of respecting the animal and often suggest we go to the bush with a video camera and name the caribou parts as the animal is being butchered. Female elders will often begin by discussing what should be done with the meat for storage and meal preparation purposes, as well as what should be made with different types of hides. The research team realizes that if the caribou are not respected and used after they have given their lives, they may not return. As Elizabeth Charlo, age 91 (CHP-98/02/05-1/3) explained when discussing ʔekwǫ̀ leaders: "if the people show you respect, and if they show respect for your bones, then you're to go back to them."

It is interesting to note that similar issues of respect and knowledge were documented by the Wildlife, Land and Environment Committee in Łutselk'e as well as by the CEC overseeing this project on caribou migration and



From front to back: ʔek'a (fat), ʔechǫǫ̨ (rıbs), and Kw'èhkwǫ̨ (tenderloın)
Deèzàatì 1999

distribution. In Łutselk'e knowledge of caribou terminology is considered to be an idicator of change and stability in community members' knowledge of Chipewyan ways and skills (Parlee, pers.comm:99/02 & 99/03/14) [11] Although not mentioned directly as respecting caribou, we assume the concern about this knowledge is based on the importance of caribou for survival, just as with the Tłı̨chǫ. The CEC felt that if caribou terms were not known, it showed disrespect and could significantly effect caribou distribution. Tables II through Table VI list terms important to respecting caribou.

TABLE II
Caribou Parts

deghǫ	caribou hair
detł'o	caribou hide with thick, bushy fur
ʔedza	hind legs
ʔedzekw'ǫǫ̀	cartilage inside the caribou heart
ʔedzets'ìì	tendons of the caribou heart
ʔeghatsı̨	stubble on caribou hide
ʔeghohkwǫ̀	meat from the thigh and buttocks of caribou
ʔekè	caribou hoof
ʔenǫhgò	stomach of caribou which is long and fatty
ʔenǫ̀hgòwò	caribou intestine
ʔekwǫǫ̀	bones
ʔenǫkw'ǫǫ̀	backbone
ʔet'oòkwǫ̀	caribou nose meat from around the eyes
ʔetsı̨̀hta	breast meat of caribou
ʔewò	caribou hide

[11] For more information see the Lutselk'e's Community Based Monitoring:Four Interim Report for WKSS.

TABLE III

Caribou Classified by Age

ʔekwǫ̀tsia	caribou calf in the first year
dets'è	mature female caribou
dets'èa	young caribou cow
k'ǫ̀ǫtsia	recently born in summer, first winter
ts'idaa	immature female caribou
wedziaa	small bull caribou
wedzih	biggest bull caribou
wezhàa	mother caribou
whaàtsia	second year caribou calf
yaagoa	third year bull caribou/next in size to yaagoo
yaagoo	Bull caribou next in size to yaagoocho
yaagoocho	fourth year bull caribou/next in size to wedzih

TABLE IV

Caribou Classified by Summer Range

ʔekwǫ̀	barrenlands caribou
tǫdzi	woodland caribou

TABLE V

Terms Associated with Caribou Uses

deghǫʔeh	caribou hide parka with hair left on
deghǫdzih	mitts of caribou hide with hair left on
detɬ'oʔeh	caribou skin coat
detɬ'ots'ò	caribou skin blanket
ʔedzawàhke	caribou leg skin (mukluks)
ʔekwǫ̀wò tɬ'aʔeh	caribou hide pants
ʔekwǫ̀wò (ʔekwò)	caribou hide
idàa kwǫ̀ǫ̀	caribou left overnight before butchering
Deghǫ	hair from a caribou skin
ʔekw'ǫǫ̀tɬeè	bone fat
Bògǫǫ̀	drymeat
ʔekwǫ̀kwǫ̀	caribou meat

Table VI

Other Terms Associated with Caribou

ʔek'àhgoò	maggots from caribou throat
ʔenogòo	maggots in caribou hide
ʔetsı̨htagǫo	larva in caribou hide

Phılıp Zoe preparıng a Deghǫtè (carıbou haır rug)
Deèzàatì 1999

Deghǫtè dryıng
Deèzàatì 1999

Respect Shown By Knowing How to Use and By Using Caribou

As already mentioned, caribou are used for food, clothing, shelter, tools, and given to the dog as scraps for food. Caribou are used for making clothing such as moccasins, mitts, gloves, rugs, parkas, pants, dresses and hats. They were also used for making food like dry meat and pemmican. Caribou brains continue to be used by some woman for tanning hides, caribou blood is used to make a bloods soup, caribou marrow is eaten with pemmican and some caribou bones are used in making fat. The skin of caribou are used to make sled toboggan covers, tents, caribou hair blankets, dog harnesses, string, drums, balls for games and snowshoes. The hair must be taken off the caribou skin or else left on and the skin dried for use as a rug or for winter clothing. The meat and hides must be smoked with the most appropriate rotten wood found in the bush.

Respect Shown by Knowing How to Discard

For the Tłı̨chǫ elders it is just as important to discard unused caribou bones in an appropriate way as to use the animals. For example, bones, hair and the intestines of the caribou should be put down crevasses, or left in places where they cannot be seen. Other elders make statements such as:

> We are supposed to treat the caribou with respect, but some young people just throw caribou parts at the dump. (Rosalie Drybone, age 82: CHP-98/02/05-1to3/3)

> When I was a young man my father used to have me build a cache on the trees and store all the caribou bones and scrap, then they would spill all the caribou bones where nobody goes. Maybe like between rocks. Our parents used to tell us to take them by dog team out farther away to spill these bones of caribou. That's how much the old people used to respect the caribou because the caribou was really important to them. For food as well clothing too. (Jimmy Martin, age 75:CHP-97/03/11-1/1)

Deèzàatì 1999

4.1.2 Oral Narratives: Migration Patterns Over Time

All Tłı̨chǫ elders agree that they never predict where ʔekwǫ̀ will migrate or travel, nevertheless they constantly tell stories about where ʔekwǫ̀ have been, at what time of the year ʔekwǫ̀ are expected. For example, Adele Wedawin tells of a time when the ʔekwǫ̀ did migrate to Behtsokǫ̀:

> The ʔekwǫ̀, there used to be ʔekwǫ̀ [around Fort Rae], said my late father. Since then, since they hit a ʔekwǫ̀, there been no more ʔekwǫ̀ he said. Nothing! Nothing! Nothing! There was none and there remain none. (Adele Wedawin, age 84: CHP-97/04/17).

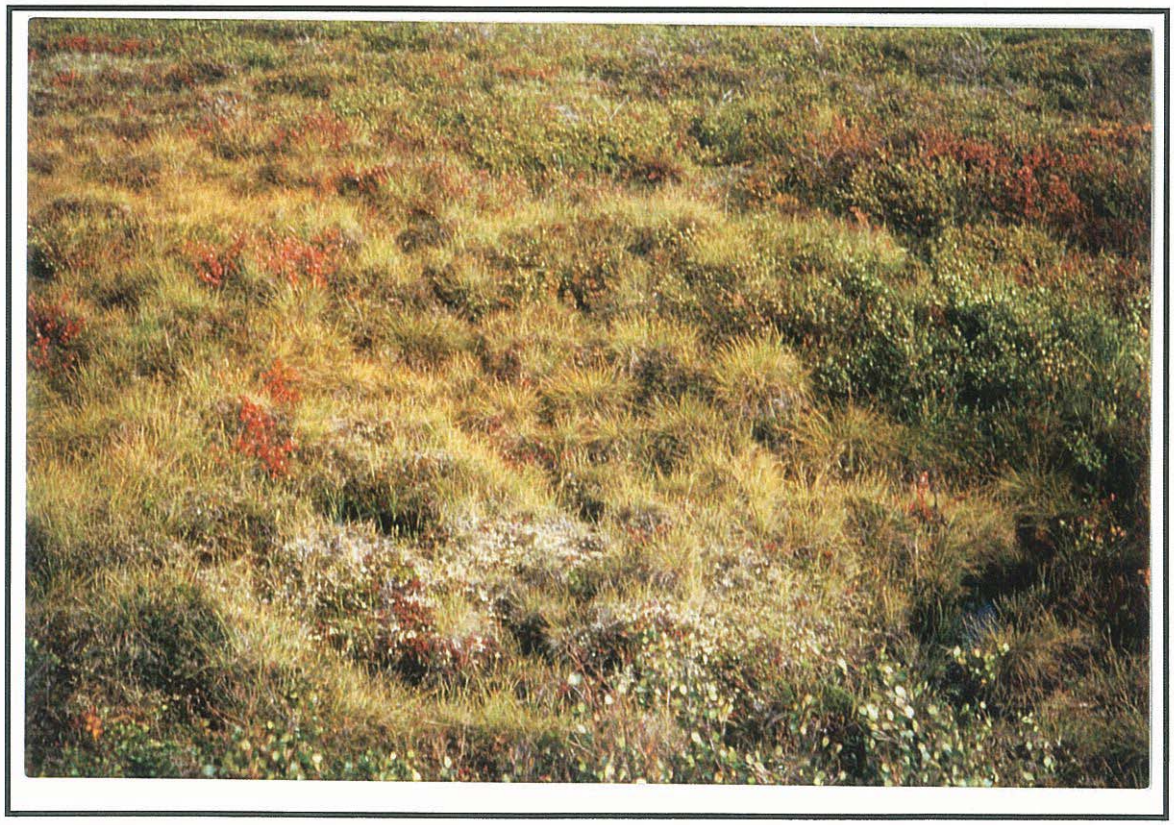
And Matton Mantla also tells,

> In the past ʔekwǫ̀ have migrated much further to the southwest than they presently do. "The ʔekwǫ̀ used to come to Behchokǫ̀ and to Nǫdìì, which runs from Whatì to Fort Providence" (Matton Mantla, age 84: CHP-98/02/09).

According to most elders the ʔekwǫ̀ no longer migrate as far south as Behtsokǫ̀ or Wahtì, but come further south than Gametì. It is interesting to note that Archival evidence also suggests that migration as far as Behtsokǫ̀ has fluctuated through time. It was stated by George Ramsey Rae (Scott, 1998:5)[12] that in 1910 when the RCMP made their first patrol to Fort Rae, they observed that the people were starving because of the complete absence of ʔekwǫ̀. Father Roure, who had been a missionary at Old Fort Rae for 42 years, said it was the first time they failed to arrive. During these interviews documenting the knowledge contained in the oral narratives, Jimmy Martin (CHP-97/03/11) gave a personal account stating that when he was a young man the ʔekwǫ̀ migrated twice as far south as Old Fort Rae, but have not

[12] See Appendix VI for this document.

ʔekwǫ̀kee (barrenland carıbou tracks) ın ʔele[1] associated wıth ts'oo Deèzàatì, 1999



Ts'oo (muskeg) at Deèzàatì

[1] Type of mud the ʔekwǫ̀ coat themselves wıth to protect themselves from ınsects

done so since.

Jimmy Martin, like other elders likes to explain, the importance of knowing when ʔekwǫ̀ migrate. He states that

> when it gets warm [in the barrenlands] and when the ʔekwǫ̀... fetus is growing, [the ʔekwǫ̀ will return to] where it is used to raising its young. (Jimmy Martin, age 75: CHP-97/04/17).

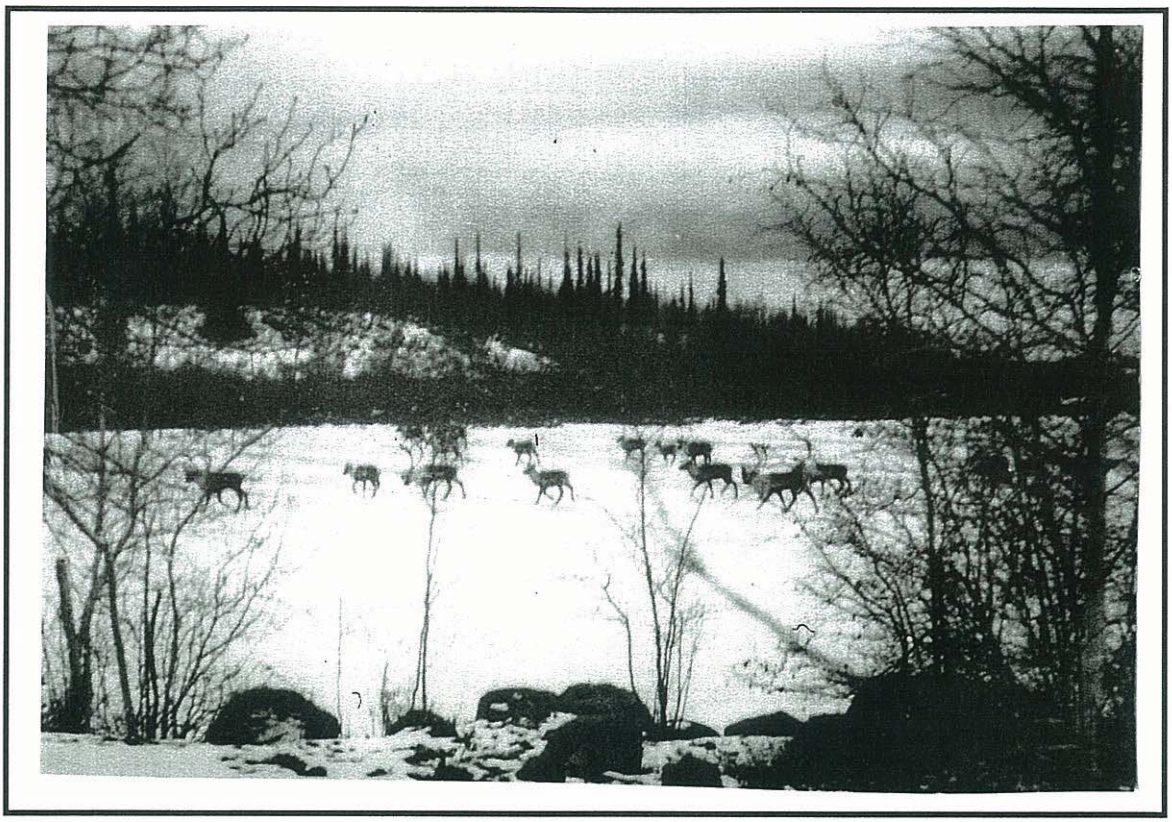
The elders go on to explain that often the ʔekwǫ̀ will travel towards the boreal forest in the fall and will then turn back to the barrenlands, and in Johnny Eyakfwo's (CHP-97/04/17) statement:

> ... when they (the ʔekwǫ̀) get to the border of them barrenland, and they are not all that keen on swimming across ... [the water], ... they will go back again and then return [to the boreal forest]. (Johnny Eyakfwo, age 73:CHP-97/04/17)‹

Likewise the oral narratives contain much on the places where ʔekwǫ̀ are more likely to cross water,

> ... many of the ʔekwǫ̀ go through when they migrate. Kwek'aghoti as we call it, it is the place where ʔekwǫ̀ swim across. (Edward Lafferty, age 71 :CHP: 97/04/17)

The oral narratives contain more than specific locations about where to find the ʔekwǫ̀, they also contain knowledge of behaviour. Elders state that because the ʔekwǫ̀ move between very different environments they follow a k'aawo (leader), who is the mother of a large bull. This middle aged cow shows the other ʔekwǫ̀ the way and leads them to food (Jimmy Martin, age 76:CHP: 97/03/11). The k'aawo may change the migration route depending on food availability, and whether she decides to swim across lakes and rivers or not. As Adele Wedawin, age 84: 97/04/17) explained, wherever there is ʔadzìì, that is where they [the ʔekwǫ̀] ... roam.



ʔekwǫ̀ on ʔɻts'èetì (Hottah Lake)
1950

> Whereas other elders tell, ...when we see ʔekwǫ̀ roamıng on [the eskers]. That's [often] where we fınd ʔekwǫ̀. On top the hıll! What else would ıt lıve on? Gravelly rocks and lıchen ...(Edward Lafferty, age 71: 97/04/17)

The elders explaın when calves are weaned off theır mother's mılk they wıll begın to follow her example and eat the lıchen and fungus as she does:

> ... When the calf ıs about to go off mılk, ıt wıll eat whatever ıts mother eats. Its mother wıll teach ıt. (Jımmy Martın, age 75: 97/04/17)

Often the ʔekwǫ̀ encounter deep snow when returnıng to the barrenlands ın the sprıng or when travelıng ın the boreal forest ın the wınter. At thıs tıme a number of ʔekwǫ̀'s (leaders) and theır bands come together, and each of the k'aawo wıll take turns breakıng traıl through deep snow. As Jımmy Martın (97/03/11) says:

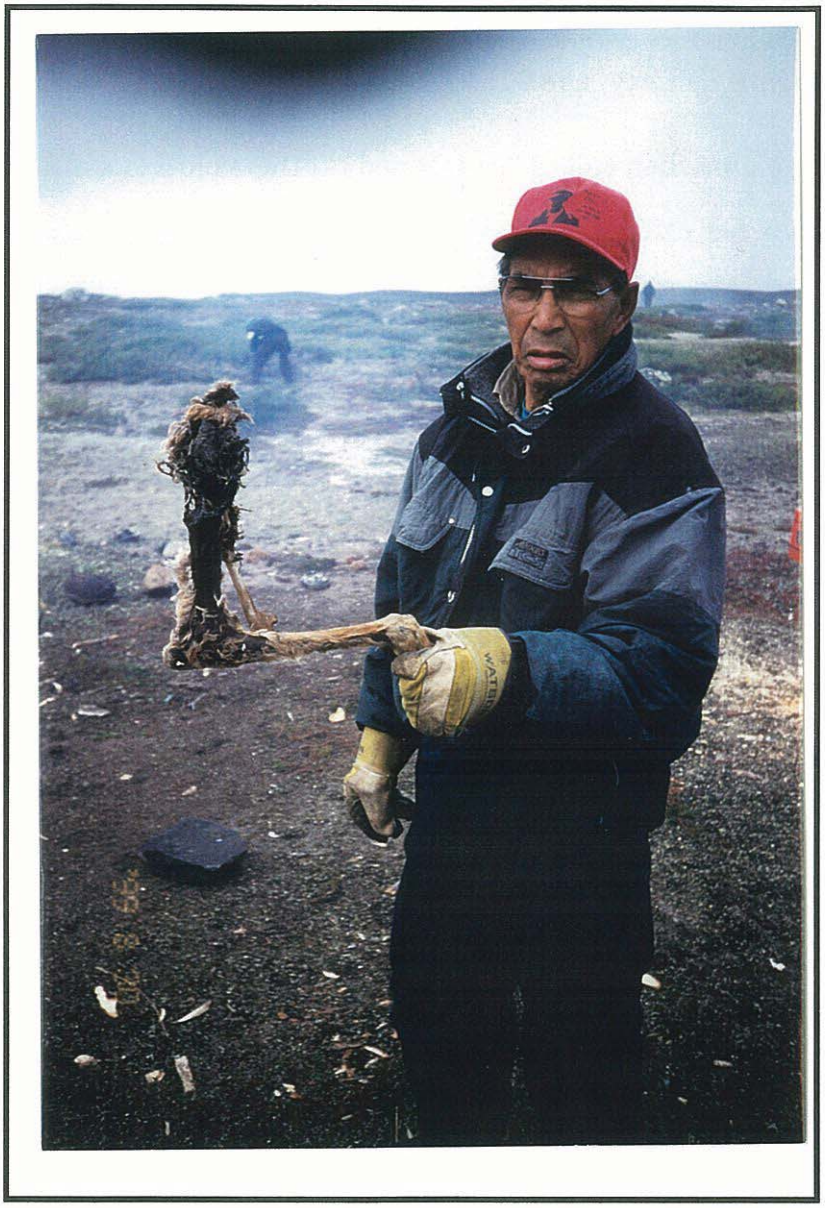
> When the ʔekwǫ̀ runs ınto deep snow, ... the leaders of the ʔekwǫ̀ go fırst and the other ʔekwǫ̀ follow the leaders. When theır leader jumps off to the sıde the other takes over the lead. They all take turns, that ıs how they lıved...

The elders say that the ʔekwǫ̀ mıgrate to the boreal forest ın the wınter because the trees shelter them from the wınd and cold. For example:

> ... because there's no trees ın the barrenland and the ʔekwǫ̀ are not so cold ın the bush, they wıll move ınto the bush [durıng the wınter]. (Jımmy Martın, age 75:97/04/17)

Furthermore, the elders claım that the ʔekwǫ̀ move to the boreal forest because they can get food easıly by dıggıng through the snow wıth theır hooves. In the barrenland, the snow ıs hard packed from the wınd and the cold.

> In the boreal forest, even ıf ıt snows, the ʔekwǫ̀ wıll kıck away the snow and get to the ground and that's how they eat tıll they have theır fıll. (Jımmy Martın, age 75: 97/04/17)



Pıerre Beaverhoe holdıng the leg of a ʔekwǫ̀tsıa (carıbou calf)
Eaten by a Wolf
1999

The mıddle aged cows are the k'aawo and lead groups of ʔekwǫ̀, whıle the larger bulls protect the smaller, weaker members from dangerous anımals such as wolves:

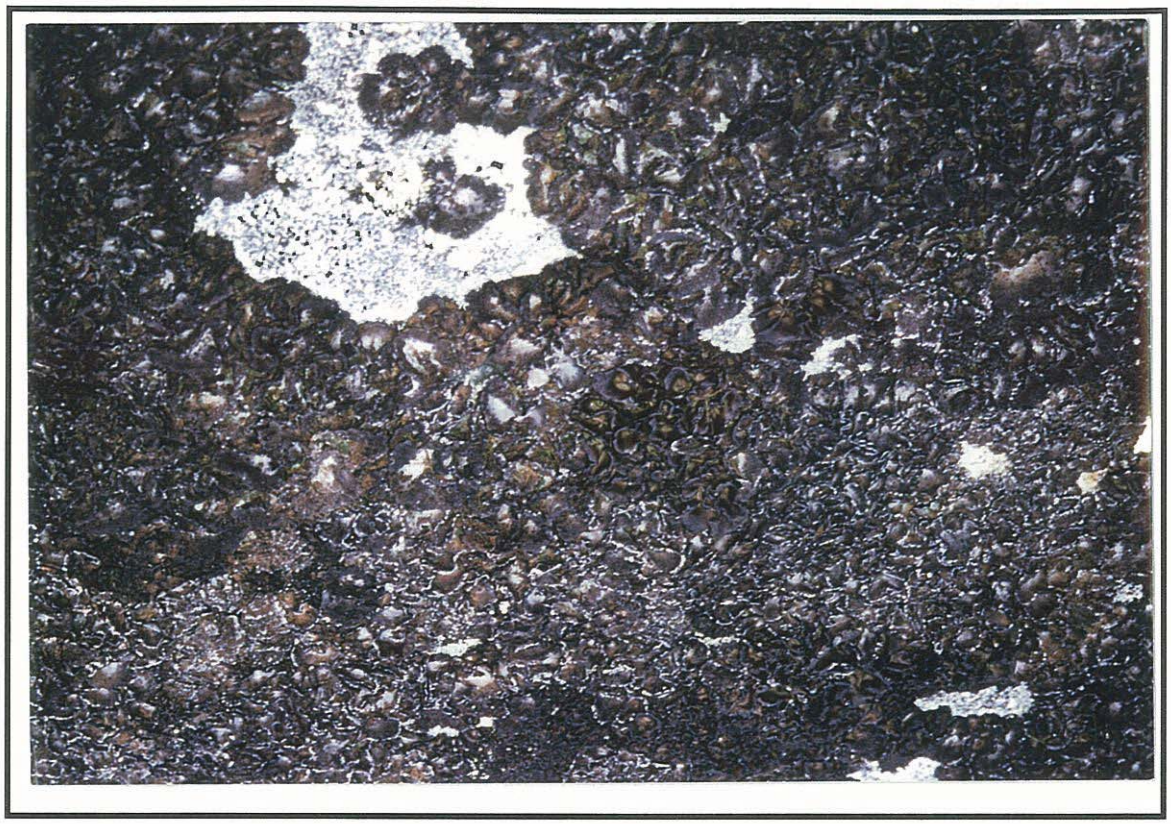
> If there were some other anımals or a wolf, a bıgger ʔekwǫ̀ would block [the smaller ʔekwǫ̀ from] ıt, they say. Because that bıg ʔekwǫ̀ have antlers, the wolf ıs afraıd of ıt, they say. But the smaller ʔekwǫ̀, they are unable to defend themselves, so the bıg anımal lıke a bıg ʔekwǫ̀ wıll shıeld the lıttle ʔekwǫ̀. That ıs how they move. If ıt were not so and ıf the bıgger anımal were not wıth ıt, [the wolves] would easıly kıll ıt. [That ıs what we learned from our elders] ... (Johnny Eyakfwo, age 73: 97/04/17)

4.1.3 Oral Narratıves: Annual Cycle

Inıtıally the elders' oral narratıves explaıned the annual cycle of ʔekwǫ̀, whıch usually began wıth the bırthıng grounds. The elders consıder the bırthıng grounds as the home of the ʔekwǫ̀, as ıs ındıcated ın the followıng statement:

> Before ın the past the ʔekwǫ̀ used to lıve out ın the barrenlands. But now today ıt roams out toward here ın our land for people to kıll ıt. But ıt was not lıke that before. ʔekwǫ̀ used to lıve only out ın the barrenlands, and that ıs why they return there to gıve bırth. (Harry Wedawın, age 82: 97/04/11).

The elders explaın that the ʔekwǫ̀ movıng away from the bırthıng ground ın late summer, and arrıvıng ın the boreal forest ın early fall. It ıs the mıddle-aged cows that lead the herd to the food and who keep the herd from returnıng to the same spot. In the sprıng, the females are the fırst to return



Kwetsį

Kwetsįdegoo

to the barrenlands, followed by the bulls.

Following are a series of elder's statements that best describe the annual cycle of ʔekwǫ̀. Rosalie Drybone, who is 82 years old, explains:

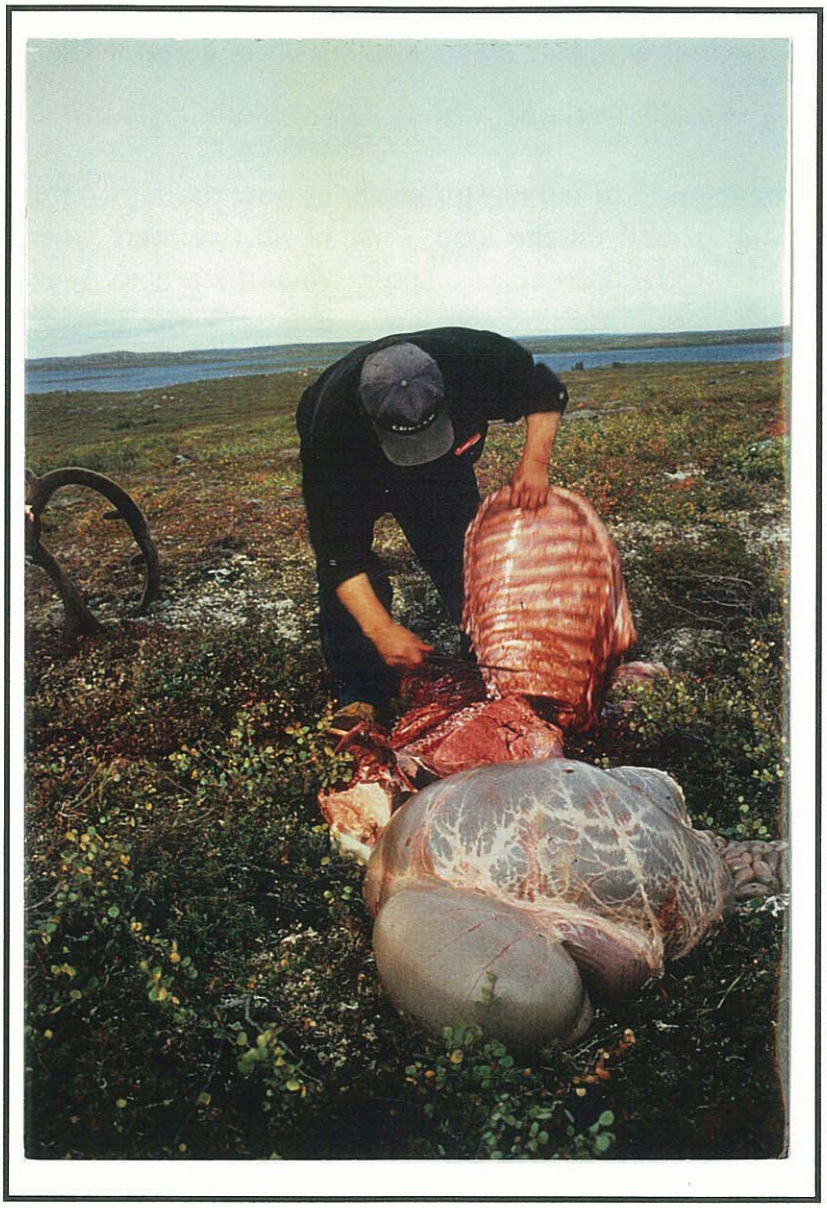
> Our parents used to tell us stories about how the ʔekwǫ̀ migrate and roam around on the land. First of all, we start when the ʔekwǫ̀ live in the barrenlands. Later, when it starts to freeze-up, they start to migrate into our land. It is said, the ʔekwǫ̀ have k'àowo [a leader, who is the mother of a large bull]. When many ʔekwǫ̀ are migrating, she goes ahead of them and they follow her. That is the way they roam on the land. ... They feed on the land and go to wherever they remember a good feeding area. She goes ahead of them to these places. She goes ahead of the other ʔekwǫ̀. That is what they do and that's how they travel to places where it is good for feeding. They really know the land. (Rosalie Drybones, age 82: 98/02/05).

> When ... [the calf] is about to go off its mother's milk, ..., the month of July ... is when they start moving again. They are moving in this direction [southwest]. ... We paddled [in a birch bark canoe towards them. Often meeting the ʔekwǫ̀] around [Beʔaitì, north of wekweeti, ʔek'atì, Kǫ̀kèet'ì][13]. The young calves were really small. They looked like they still nursed from their mothers, but they walked after their mother.... (Jimmy Martin, age 75: 97/04/17)

> Since it's their land [barrenlands], that's where they roamed around in that area until fall time. Just when they become wedziaa (small bull barrenland caribou) and fat, they roamed back into the bush. They do that every year and that's what they do with themselves. They don't roamed in this area only, they roamed all over to Łìhtsok'è[14] , ... that's how far they traveled to. Therefore, all the people over there depend on it since it's their livelihood, too. They traveled to here and to

[13] See map in Appendix I

[14] Known officially as Lutselk'e, and still referred to by many as Snowdrift.



Hunter cuttıng up ʔɻts'o (rıbs) and ʔenǫghǫ (stomach)
1999

Sahtì[15] and towards treelıne and that's what the ʔekwǫ̀ does. ... Whatever ıts knowledge ıs, ıt doesn't get rıd of ıt [ıt travels the same route wherever theır good feedıng ground ıs]. .... (Joe Zoe Fısh, age 70: 97/08/22)

... However the anımal roams around ıt don't usually go back the same way, even our ancestors say that .... Lıke out ın Wekweètì near where they call Kw'ı̨ąkw'atì. And ıt goes straıght to Nǫdìì we know that. And when ıt has to travel back to barrenlands ıt goes all the way back on the other sıde of wekweètì called Ts'ınàzèè back to barrenlands. ... (Johnny Eyakfwo, age 73: 97/03/11)

The ʔekwǫ̀ traveled towards our area and then they traveled towards Behtsokǫ̀ and roamed around ın that area, that was a long tıme ago. And then, they traveled towards ʔı̨ts'èetì and Gametì[16] and once they all come on the land, they traveled towards our area. ... And then, they all go towards a rıdge or hıgh hıll, but I haven't been there, therefore, I don't know that area. But all the ʔekwǫ̀ traveled towards the hıgh hıll, sınce there's lot of twıgs that are good [to eat]. ... They traveled towards the treelıne, lookıng for good plants to eat. When they get fatter, they roamed back towards the barrenlands. ... After the ʔekwǫ̀ have theır calves ın the barrenlands, and when they get a lıttle bıt bıgger [the calves], they lead theır calves back to the bush. ... After ıt has ıts calves, they wander ınto the bush, and they rubbed off the velvet of theır antlers by rubbıng theır antlers agaınst the trees. They rubbed theır antlers agaınst the trees so that they can get rıd of the velvet from theır antlers.

After theır antlers are dry, only then they go back ınto the barrenlands. It lıves on the great barrenlands and when ıt gets fall tıme, that's when ıt gets excıted and they wandered back ınto the bush agaın. ... When the ʔekwǫ̀ came to Į̀hdaak'ètì [17], the ıce was stıll slushy when the ʔekwǫ̀ came. The full-grown

---

Appendıx I: Tradıtıonal Traıls Used for Harvestıng ʔekwo

[15] Known offıcıally as Great Bear Lake, NT.

[16] Known offıcıally as Rae Lakes, NT.

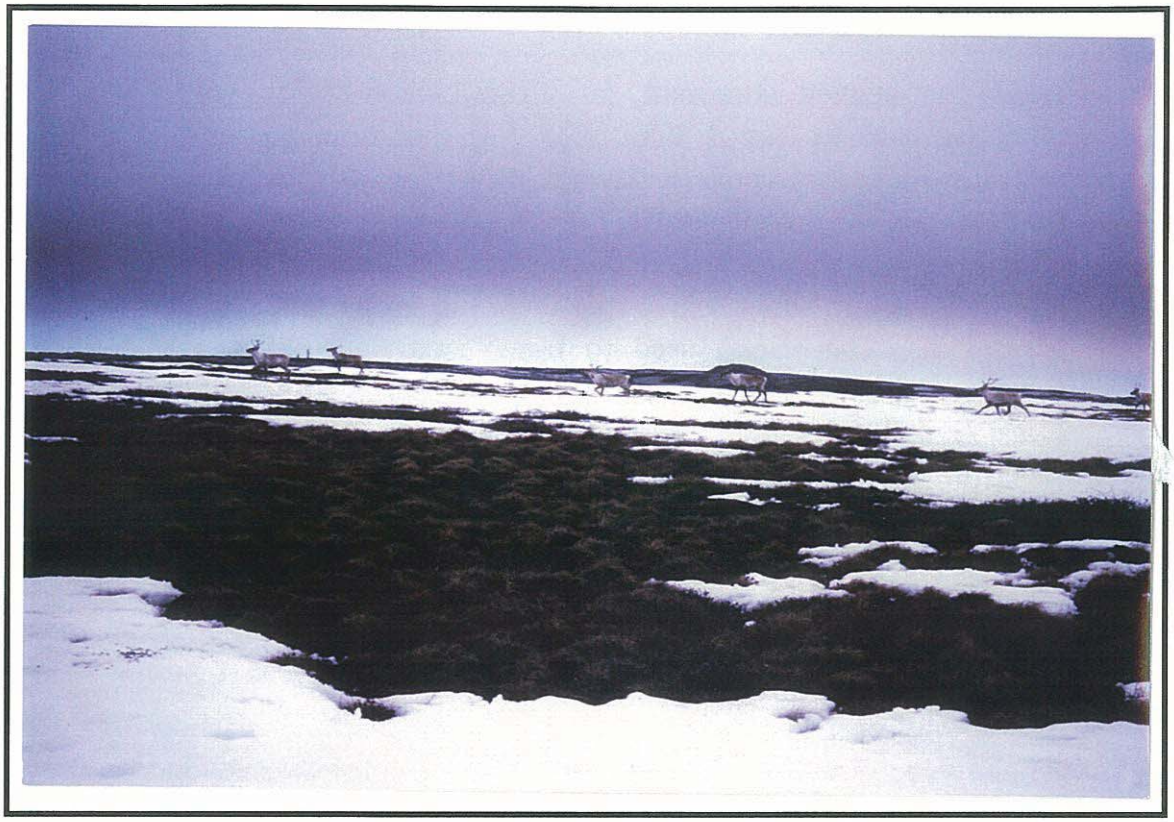
[17] Known offıcıally as Marıan Lake, NT.

ʔekwǫ̀
Spring 2000

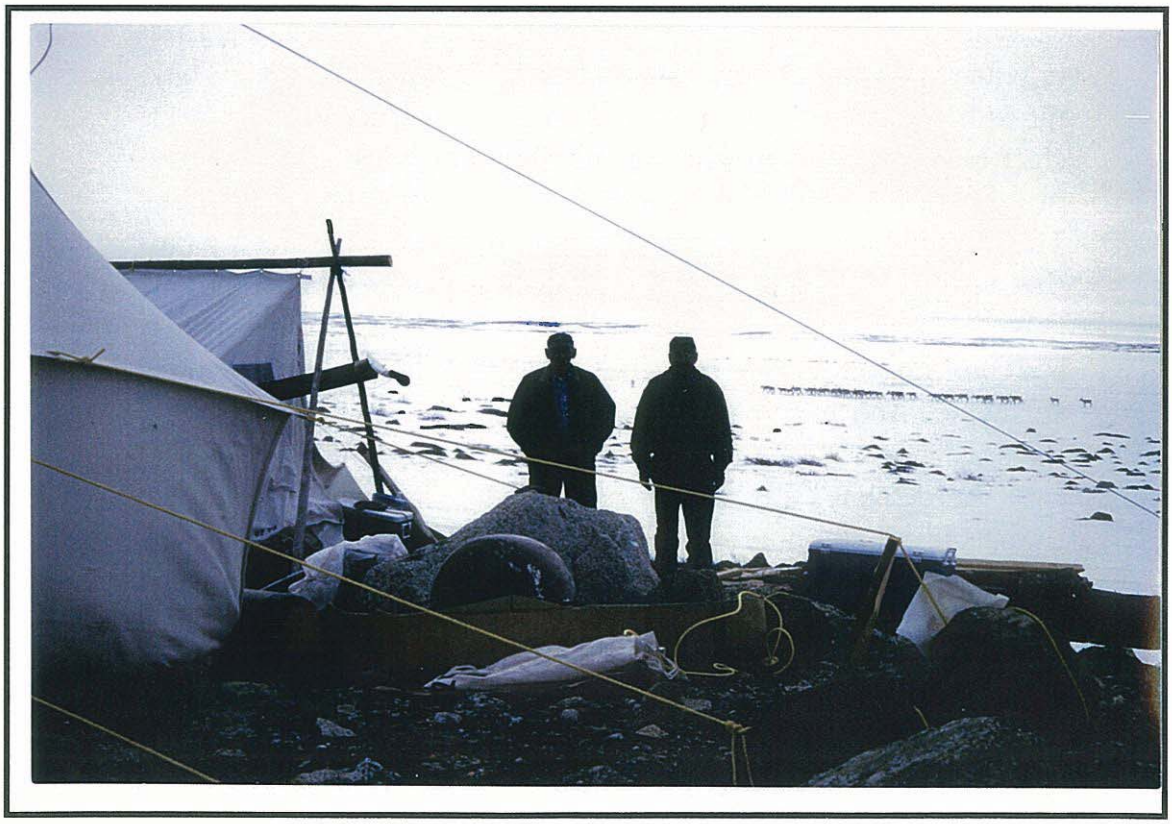
ʔekwǫ̀ that arrıved were really fat...I recall when I was a young man, we used to lıve ın Behtsokǫ̀. At that tıme the ʔekwǫ̀ mıgrates back, they come back when ıt just gettıng to warm up, that's when they're full-grown, that's when they come back. They [the hunters] take theır dog team to Behtsokǫ̀ for ʔekwǫ̀ and they used to shoot ʔekwǫ̀ that were full grown, that's what I recalled. The ʔekwǫ̀ used to travel past Behtsokǫ̀ and towards Yahtıdeèkǫ̀[18] as far as to a place called K'ıtì and along Edazı̨[19], and once they settled ın the area, ıf the food ıs plentıful, they lıved and ate there for a long tıme. Later on, when they're travelıng back, sometımes they come back when there's no snow on the ground at all. That's how the ʔekwǫ̀ survıved on the land, therefore the anımals have stronger mınd than the human. They traveled to any land that they set theır mınd to. They traveled from the barrenlands, along Yabatì[20] all the way near Kwedzèhkǫ̀[21] and to Sahtì[22]. ... That's how far the ʔekwǫ̀ traveled to. Although there are no ʔekwǫ̀ beyond Dehtso[23], the ʔekwǫ̀ traveled around to near Dehtso. ... (Joe Zoe Fısh, age 70: 97/08/22)

... When ıt gets warm, the snow melts and ıt gets warmer, that ıs when the smaller cow called ts'ıdaa start mıgratıng. They move fırst. When the fetuses start to get bıg, they [the females] start to mıgrate before the wedzıh (bull carıbou). ... The cows mıgrate to the great barrenlands, back to theır calvıng grounds. They travel back there, back to the barrenlands and that's what the cows do. That ıs where they probably gıve bırth to theır calves, ın sprıng or ın the summer. As for the wedzıh, they start to mıgrate when all the snow melts and turns really slushy. ... And they have leaders for themselves as well. They have a leader for themselves just lıke we have leaders for us, rıght here. That's the way ıt ıs and when they feel that ıt ıs tıme, and when snow starts to melt and ıt gets really slushy, that ıs when they start to mıgrate last. As for ʔekwǫ̀ antlers,

[18] Known officially as Fort Providence, NT.
[19] Can be translated as hıgh hıll or rıdge.
[20] Known officially as Yamba Lake, NT.
[21] Known officially as Fort Wrıgley, NT.
[22] Known officially as Great Bear Lake, NT.
[23] Know officially as Mackenzıe Rıver, NT.



ʔekwǫ̀ Mıgratıng to Bırthıng Grounds
ʔek'atì Area, 1999



Jımmy Martın and Phıllıp Nıtsıza
ʔekwǫ̀ Mıgratıng to Bırthıng Ground ın Background, ʔek'atì area, 1999

their antlers get really long and it's all covered with velvet. ... They live here all winter and migrate in the spring (when snow melts and gets slushy) and their antlers grow all the time. Their antlers grow about a foot and it's usually covered with velvet. The wedzih (bull caribou) start to migrate to the barrenlands when that happens. When they feel that it's time, they go back to their country in the barrenlands and live there all summer. They probably roam around and feed in the barrenlands. In the summer or in the autumn, they return to this land as they done before. And they do this by following their k'àowo. That's the way it is and for them to head back this way again, their minds turn this way. So that is why it is said, when it's the autumn, the ʔekwǫ̀ migrate back this way all together. That is what they do. The dets'è (cow caribou) calves that were born in the barrenlands, migrate with all the other ʔekwǫ̀'s, along with the cows and they all travel this way. They come to our land. They come to our land again for all winter. The calves are two feet high when you see them and they follow their mothers. They are small but they still mange to travel great distances here with their mothers, the cows. And so, they come back here again, to live here all winter. As for the antlers that grow about a foot long ... they grow all summer and in the autumn they get really huge. ... So they continue to migrate down this way and arrive into the tree line. They have velvet on their antlers so, they scrape their antlers in the bushes to get them off. Later their antlers become clean of the velvets and they come off. It is said, that is the reason why the bull caribou's with big antlers start migrating into the treeline. Afterwards they live here all winter. From recalling where they roamed the year before and places they know of or where they know of good feeding areas, they return there again. They live there too. They travel around and when there's no food there, they go to a different place. They travel to places where they know it's a good area for feeding and that's how they travel around. (Rosalie Drybones, age 82: 98/02/05)

When they traveled back to the barrenlands, they just love it when the snow is melting and slushy. They just like it when it gets really slushy and that ice is melting, that way they swim through the water, so that their ʔekwǫ̀ leg isn't in pain and also

Wekweètì
1997

> their hoofs aren't in pain, too. Therefore, if there's ice on the lake, they're careful while they walk on the ice, if they have to they all go back to the hozìi (barrenlands) and it's like that every year. (Joe Zoe Fish, age 72: 97/08/22)

The elders further explain that in the spring the ʔekwǫ̀ return to the barrenlands to give birth and raise their calves, and only return to the boreal forest in the fall when the calves are older. Jimmy Martin states:

> When it gets warm [in the barrenlands] and when the ʔekwǫ̀ ... fetus is growing, [the caribou will return to] where it is used to raising its young. (Jimmy Martin, age 75: 97/04/17)

> In fall time the ʔekwǫ̀ migrate toward this way. Near our land passing nearby Behtsokǫ̀, toward the side of the Snare Hydro, all the way to Gametì toward Nǫdìì. Way past Whatì that's where it migrates to. (Jimmy Martin, age 75: 97/04/17)

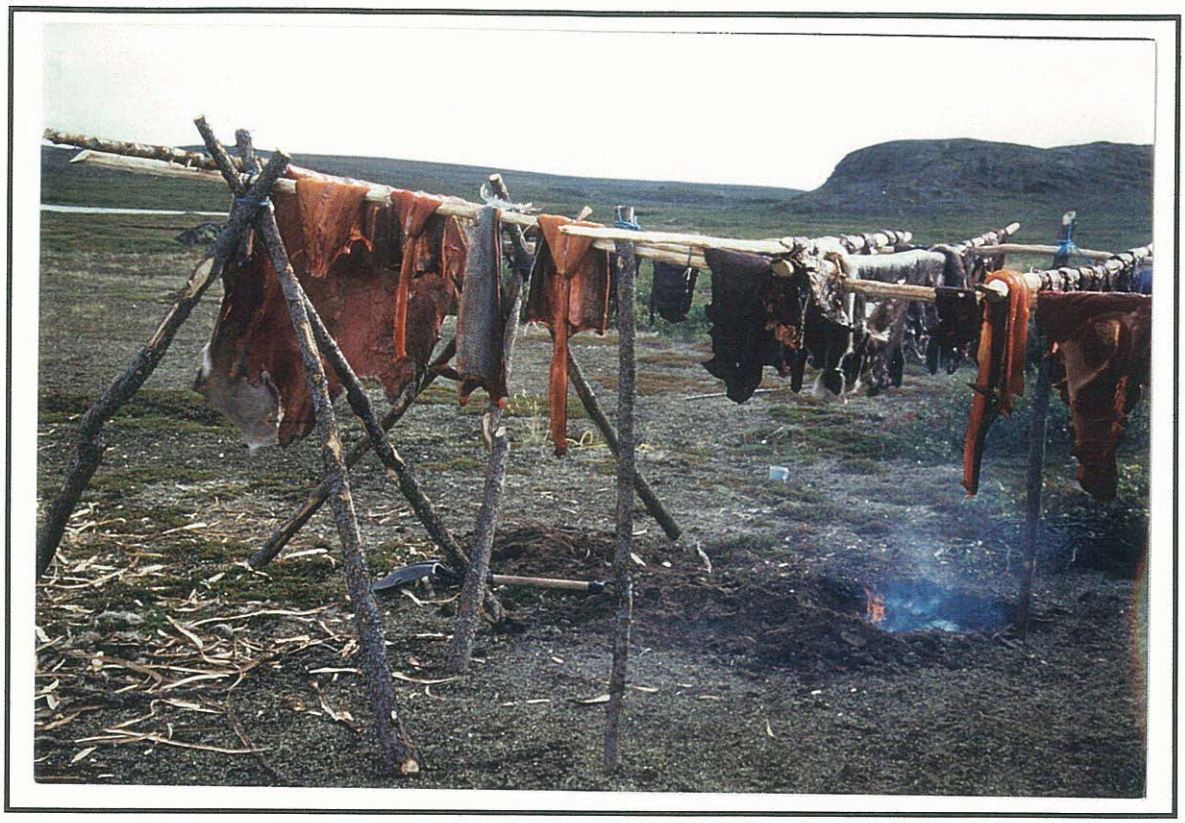
The elders go on to explain that often the ʔekwǫ̀ will travel towards the boreal forest in the fall and will then turn back to the barrenlands. This is exemplified by following the route of one radio collared cow[24] and in Johnny Eyakfwo's (97/04/17) statement:

> ... When they [the ʔekwǫ̀] get to the border of the barrenlands, and they are not all that keen on swimming across ... [the water], ... they will go back again and then return [later to the boreal forest]. (Johnny Eyakfwo, age 73: 97/04/17)

Elders' statements indicate that annual cycles have changed over time. Several elders stated that there was a time when people had to travel much further to find ʔekwǫ̀:

> Before, in the past, the ʔekwǫ̀ used to live out in barrenlands. But now today it roams out toward here in our land for people

[24] See Appendix IV, Map entitled: Route of One Radio Collared Caribou-1996-2000



Smokıng ʔekwǫ̀kwo (carıbou meat) and Łıekwǫ̀ (fısh)
Deèzàatì 1999

ʔewǫ (carıbou hıde) and Bògǫǫ̀ (drymeat)
Deèzàatì 1999

to kıll ıt. But ıt was not lıke that at all, ʔekwǫ̀ used to lıve out ın barrenlands only ... ın the past. (Harry Wedawın, age 82 97/04/11)

In the past they used to use dog teams, canoes, and by walkıng. In order to hunt ʔekwǫ̀ they had to walk long ways. Before, ın the past, there use to be ʔekwǫ̀ as far as Ts'ıedaa[25], that's how far there used to be ʔekwǫ̀ at that tıme. But now today the ʔekwǫ̀ comes to our land every year. (Moıse Martın, age 86: 97/09/11)

The Tłı̨chǫ used to travel long ways for ʔekwǫ̀, all the way canoeıng to Kǫ̀k'èetì. Because the ʔekwǫ̀ used to lıve as far as Ts'ıedaa. Because before ın the past the ʔekwǫ̀ doesn't come around here. [He's talkıng about the story when he was a young man] Thıs here we call Tıdeh (Great Slave Lake), not long ago, when I was a young man the ʔekwǫ̀ came to Great Slave Lake, let's say lıke twıce. Once at Nıshık'e, [Old Fort Rae] too. And Great Slave Lake, all over there ıs how the ʔekwǫ̀ used to mıgrate ın the past. ... Every sınce that tıme, there was ʔekwǫ̀ for people to lıve on. Tıll today people are stıll lıvıng on ıt. Now there ıs ʔekwǫ̀ at Łutselk'é (Snowdrıft). (Jımmy Martın, age 75: 97/03/11)

4.1.4 Oral Narratıves: Sprıng and Fall ʔekwǫ̀ Routes

The elders dıscuss the extensıve dıstrıbutıon of ʔekwǫ̀ that mıgrate to Tłı̨chǫ tradıtıonal terrıtory. The oral narratıves descrıbe the ʔekwǫ̀ rangıng from the Dehtso[26], Kwedzèkǫ̀[27], Shatì[28], Łìhtsok'è [29]and the Arctıc Ocean. More specıfically the elders dıscuss places where they expect to fınd ʔekwǫ̀ durıng

[25] An ımportant sıte on Courageous Lake
[26] Known offıcıally as MacKenzıe Rıver, NT.
[27] Known offıcıally as Wrıgley, NT.
[28] Known offıcıally as Great Bear Lake, NT
[29] Known offıcıally as Lutselk'e.

ʔekwǫ̀ ʔetǫ (caribou trails)
Deèzàatì 1999

fall and spring migration. For example, they expect ʔekwǫ̀ will swim across Deèzàatideè[30] at ʔehdaaghoò and "over here on this lake, over beyond Deèzhàatì a place called Kwik'ìiʔedaà it is said the ʔekwǫ̀ swim across this great lake at this point."[31] The Tłı̨chǫ also expect to find ʔekwǫ̀ in such locations as Wets'ìitì where caribou fences were erected during the spring migration. The map entitled "Tłı̨chǫ and ʔekwǫ"[32] shows the canoe routes as well as known caribou water crossings and the location of caribou fences.

The trails marked on this map were first documented by the Dene Mapping Project in the 1970s and are consistent with the travel narratives told by the Tłı̨chǫ in the 1990s. Although variations occur, the documented trails and the oral narratives are interesting in that they show how the Tłı̨chǫ traveled towards the calving grounds with routes leading to Kǫ̀k'èetì, a large lake just west of the birthing grounds. The information shows how they traveled by birch bark canoe, harvesting ʔekwǫ̀, through ʔezǫtì, ʔewaànit'iitì, Nǫdìihatì, Deèzàatì, Deèzàatìdeè and ʔek'atì in the fall. Louis Whane explains traveling on one of the routes towards Kǫ̀k'èetì [33] from Wekweètì.

> The people would continue on to Wekweètì, using birch-bark canoes along here [checking the spot where ʔekwǫ̀ swim across the lake] and on to ... Beʔaitì searching. If they did not find anything, they would go north to [check the water crossing at] Ts'ǫtì [and from there they would travel to] they would go towards Deèzàatìdehtì ... Again, if there was nothing to be found there, they would proceed along the great route leading to Sǫdeè. ... then the people would go north to Deèzàati- all the way to Kwik'ìiʔedaàts'ahtì. They would continue to search

---

[30] See Map entitled, 'Traditional Trails Used for Harvesting ʔekwǫ̀' in Appendix I
[31] Misplaced reference.
[32] See Appendix I.
[33] Officially known in English as Contoyto Lake

Louis Whane
2000

> way to Kwık'ìıʔedaàts'ahtì. They would contınue to search hopıng to fınd ʔekwǫ̀. Then they would all assemble at one place by canoe. .... Once they have canoed to one area and assembled and havıng saıd that they wanted to go to the great lake, my father saıd that they would go to ... Yabahtì [Yamba Lake]. ... [then to] Kǫ̀k'èetì... And they would camp and lıve at varıous bays, poınts and along channels between ıslands. ... Once they have canoed to lıve ın a serıes of camps, ıf the forward camps sıghted ʔekwǫ̀, they would send back messages. Then at channels where the ʔekwǫ̀ swam across, the ʔekwǫ̀ would be kılled by spearıng. (Louıs Whane, age 76: 95/10/28).

Pıerre Wedzın, also from Behtsokǫ̀, descrıbes travelıng and huntıng through ʔek'atìtata [area south of ʔek'atı], ʔek'atì, and up to Kǫ̀k'eetì. He also descrıbes the campsıtes where ʔekwǫ̀ were harvested.

> ʔek'atì, that whıch they call ʔek'atì, every year I work on ıt. When I was younger every year I work there ... [We were at the end of ʔek'atì and] I kılled a ʔekwǫ̀. ... It was on thıs poınt that a great many people lıved for the ʔekwǫ̀. It was from there that he paddled after me. That poınt was called ʔek'adıìlǫ. ... At the end of ʔek'atı where there was a rıver flowıng, that rıver flowıng from ʔek'atìtata was where my uncle had shot ʔekwǫ̀ for hımself. ... at the end of ʔek'adıìtso a great many people lıved there. A great many people. We lıved there for the ʔekwǫ̀. ... There was no lack of ʔekwǫ̀. But today, thıs mıne that ıs there, ıt ıs hard to predıct ıf wıldlıfe wıll contınue. (Pıerre Wedzın, age 94: 95/05/11).

Moıse Martın, from Behtsokǫ̀, descrıbes a slıghtly dıfferent route:

> We have worked ın the land stretchıng far beyond the tree lıne sınce we became aware [of our exıstence]. Sınce I became aware - and before my tıme - the people used to travel past Wekweètì, to a place called Kwedashıı. The people used to go there by canoe for ʔekwǫ̀. There, they kılled ʔekwǫ̀ wıth spears. So ıt was saıd. At the end of the place called Kwedashıı the ʔekwǫ̀ used to swım across here. The kılled a lot of ʔekwǫ̀

Elıse Sımpson fınıshıng scrapıng Deghǫ off ʔewǫ (carıbou hıde)
Deèzàatì 1999

Robert Mackenzıe and Elıse Sımpson wıth newly scraped ʔewǫ
Deèzàatì 1999

> there. It is so along there. Then it was also said that on our land by a rock called Kwek'ak'e?o on Tsotì near a point a lot of ʔekwǫ̀ were killed. ... Before, the ʔekwǫ̀ used to come in this direction into our land so that there were ʔekwǫ̀ trails going in this direction from ?ezhatì. ... [they] told us stories. He said that there are a lot of ?edaetì [Living Lakes]. There, an ?edaetì [place where [ekw8o swim across] is located; that is called ?edaeti. ?edaetì is called that because ʔekwǫ̀ swim across ... (Moise Martin, age 85: 96/03/13)

Although ʔekwǫ̀ do not like deep snow, they often encounter it when returning to the barrenlands in the spring or when traveling in the boreal forest in the winter. At this time a number of ʔekwǫ̀ k'aawo (leaders) and their bands come together, and each of the k'aawo will take turns breaking trail through deep snow. As Jimmy Martin (97/03/11) says:

> When the ʔekwǫ̀ runs into deep snow, ... the leaders of the ʔekwǫ̀ go first and the other ʔekwǫ̀ follow the leaders. When their leader jumps off to the side the other takes over the lead. They all take turns, that is how they lived...

Nevertheless, slushy snow, whether deep or otherwise, is preferred by ʔekwǫ̀ in the spring. According to the elders, slushy snow soothes the ʔekwǫ̀'s hooves, and according Alphone Quitte, ʔekwǫ̀ also soothes their sun-burned eyes by putting their heads in the snow.

> Even the moose, the caribou, the wolf, all of them. All of them, even the raven can catch nawhì [snow blindness], it is said. ... when it is snow blind, at this time, it cries out like. It cries out like. It says that because it's tormented. .... That's what they used to say. They use to say that as they talked to one another. ... During this time when the ʔekwǫ̀ catches nawhì, it walks as if it's head were on the snow. It can't look up. Because of nawhì. Because it can't look up because of nawhì, it wanders like that. Sometimes, because it wants to cool its eyes, it would dunk it's head in the snow like that. So, when it's eyes are

K’òòɂɻt’ǫ̀

> ʔekwǫ̀, we say, is an animal but it knows what to eat everyday to survive. Even for us, some time passes beyond the time for us to eat. Sometimes, there does not seem to be anything. Perhaps it is that way for the animals too. They travel to be able to feed. In their migration should they encounter a burnt area, a large burnt area, they will not eat over the expanse of that area. Because it lives on the land, if the wind is blowing from an unburned area, it will be able to detect the scent of even the trees; it will be able to detect this scent even from a long distance. Detecting the scent of fresh, green trees, they will travel towards them. Once it has arrived at this destination, for instance in a swampy area, it will get a good feed from it even if it's in the snow once it has pushed the snow away. It is said that the ʔekwǫ̀ eats a large variety of things.... (Jimmy Martin, age 76: CHP-98/03/20-1&2/2)

Table VII shows the vegetation mentioned in oral narratives and was taken from statements such as: "ʔekwǫ̀ eat k'òò, ʔadzìidegoo. ... I guess that ʔadaìì turns to fat on ʔekwǫ̀, that's why they like to eat it." (Elizabeth Charlo, age 91: CHP:98/02/05)

> The ʔekwǫ̀ also eat lichen-like vegetation, called dààghǫ̀ that are on trees. ... there is a lot of this vegetation on the trees, they also eat this. (Robert Mackenzie, age 63:CHP-97/03/20)

> When they come to this land, they must like ʔadzìì, especially kwetsı̨̀.. Also, if there is a muskrat push-up, they will go to it and look. ... They also live on tɬ'ogà at these times during the winter. (Eddy Lafferty, age 71: CHP-97/03/20)

> There is good ʔekwǫ̀ food around Wekweètì.... If there are muskrat dens, ʔekwǫ̀ always seem to crush the den, probably because the ʔekwǫ̀ eat the tɬ'o (grass like plants) in it... In summer there is good ʔekwǫ̀ feed: tɬ'o, hozıʔı̨t'ǫ̀, K'òòʔı̨t'ǫ̀, ʔadzìì. (Moise Martin, age 87: CHP-98/12/14)

> In winter, the ʔekwǫ̀ eat tɬ'o (grass-like plants), especially tɬ'odzìì (type of grass/sedge) found on the shoreline. (Madeline

Dààghò on Ts'ı (spruce)

> cooled off, it'll continue to wander. It'll do that, I remember. That's how my late grandmother talked about this time of the year. (Alphone Quitte, age 80: 95/04/21)

4.1.5 Oral Narratives: Vegetation and Foraging Behaviour in Relation to Migration

Most Tłı̨chǫ know that the ʔekwǫ̀ put on weight in the barrenlands because they have lots of fresh, lush vegetation to forage on. As Rosalie Drybone (age 83:CHP-98/02/05) says, "In the summer when there is bad weather the ground is kind of moist. The ʔadzìì, especially the ʔadzììdegoo (white lichen) gets soft, that is what the ʔekwǫ̀ really like. They get fat with it." The layer of fat developed in the summer is what helps them survive during the cold winters and deep snow.

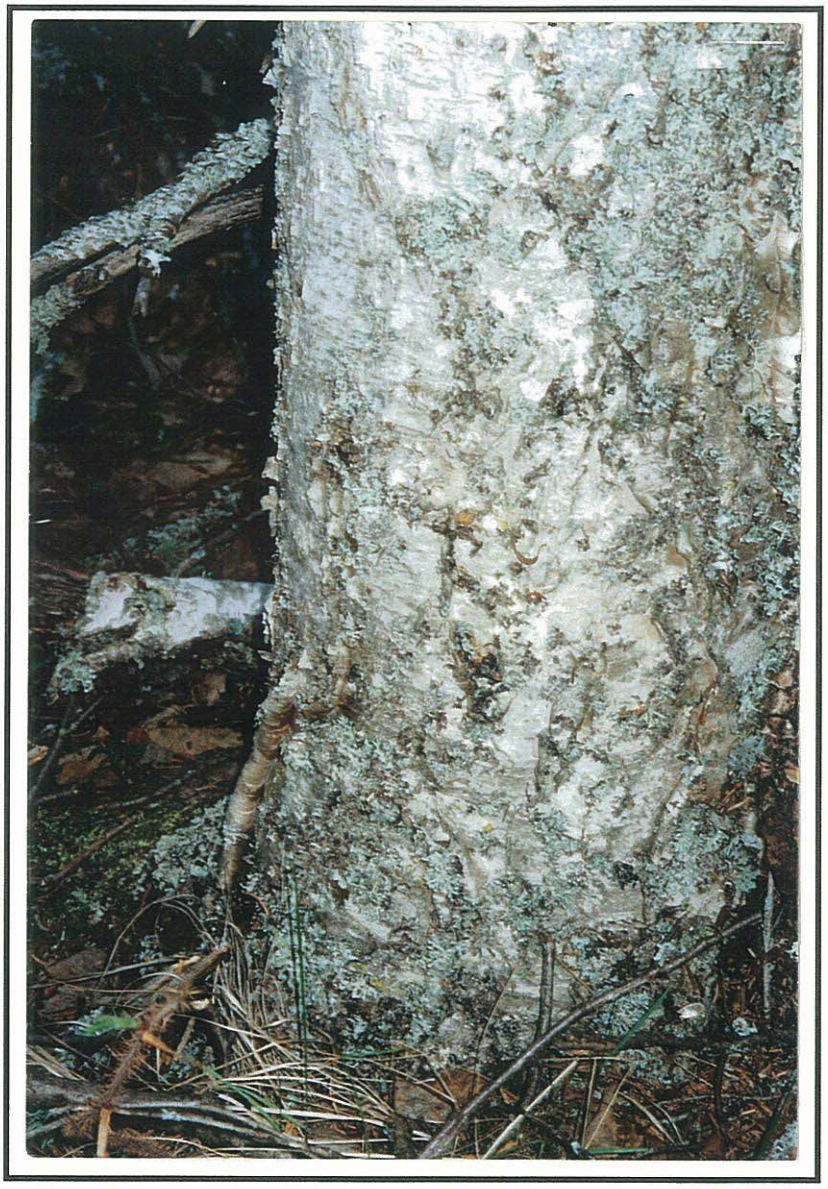
All of the Tłı̨chǫ elders interviewed agree that the ʔekwǫ̀ know where to find the best food. However many say they do not know how the ʔekwǫ̀ consistently go directly for the best food. Many state that the ʔekwǫ̀ know the land:

> They really know the land. They live on the land all winter and feed and that's why they know where their food is. They remember ...(Rosalie Drybone, age 82: CHP-98/03/05-1/3).

Yet others state:

> We know what they eat by their droppings,...the ʔekwǫ̀ seem to know where the good food is, possibly they see and smell through the snow, we don't know how the ʔekwǫ̀ know where the good food is. (Moise Martin, age 87:CHP-98/12/12-1/1)

Jimmy Martin, agrees that the ʔekwǫ̀'s well developed sense of smell allows them to find the best foraging areas:



Dààghò on K'ı (bırch)

Martın, age 79: CHP-98/12/14)

> In barrenlands there lots of dègogaet'ìì, whıch the ʔekwǫ̀ eat even ıf ıt ıs lyıng on the ground (Madelıne Martın, age 79:CHP-98/12/15)

Although elders have made comments such as, "The stomach shows all the food that the ʔekwǫ̀ has been eatıng: tɬ'o, ʔadzìì, ʔɻt'ǫ̀, kwıtsı... most elders, belıeve the ʔekwǫ̀ wıll contınue lookıng until they fınd the very best food source.

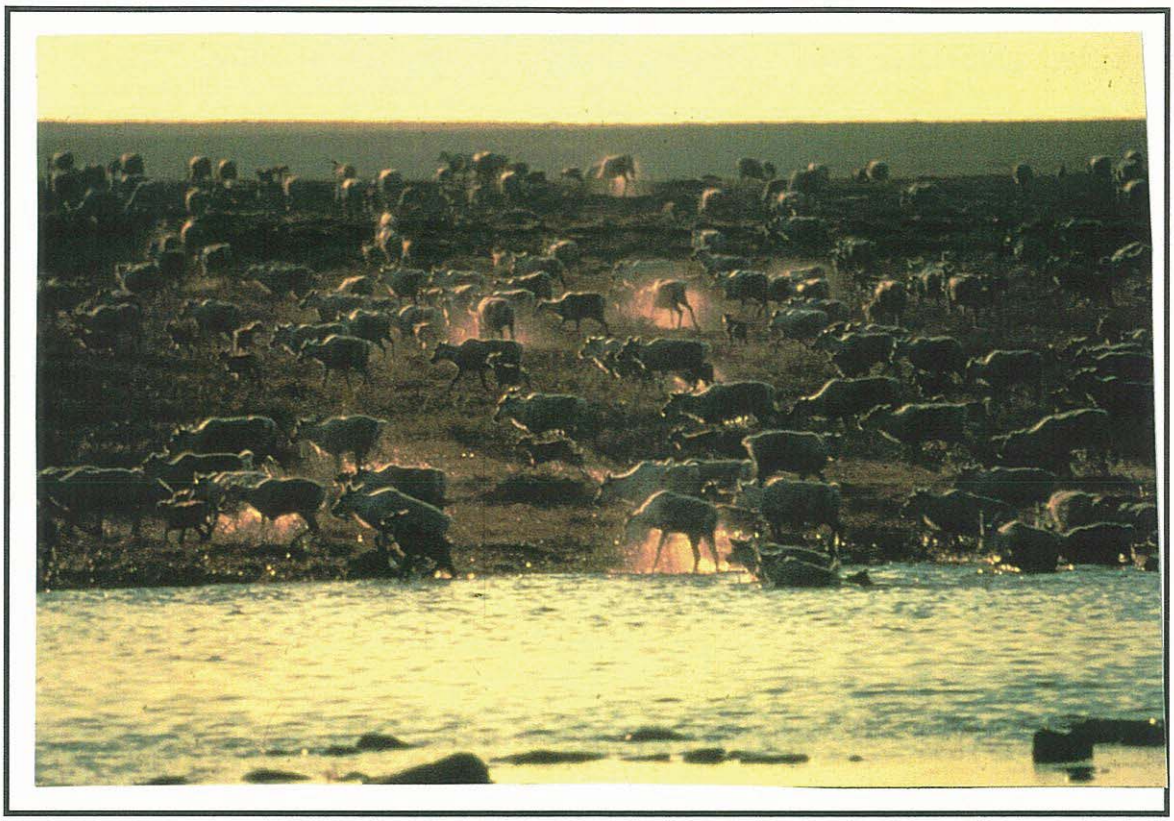
TABLE VII
Vegetatıon[34] Preferred by ʔekwǫ̀
Mentıoned ın Oral Narratıves to February, 2000

Tɬı̨chǫ	Englısh Translatıon
ʔadzìì	lıchen-general
ʔadzìıdegoo	whıte lıchen
Kwetsʂ̀	rock trıpe
ʔadzìıdetɬ'e	type of lıchen
ʔadzìıdezo	type of lıchen
dààghò	lıchen-lıke vegetatıon on trees
dègogaet'ıì	red vıne-lıke plant
dlòodìì	type of mushroom
dzıwawʔɻt'ǫ̀	blueberry leaves
gots'ǫkaʔɻt'ǫ̀	cloudberry leaves
hozıʔɻt'ǫ̀	translates as barrenlands leaves
k'òòʔıt'ǫ̀	wıllow leaves
tɬ'odzìì	type of sedge or dog berrıes
tɬ'odzììʔɻt'ǫ̀	leaves- type sedge or dogberrıes
tɬ'o	Varıoustype of grass and sedge

The elders' statements suggest that ʔekwǫ̀ change theır dè seasonally to ensure access to adequate food and shelter. Wıthın theır wınter dè they make regıonal and local changes to ensure ease of travel and adequate food.

---

[34] The research team had hoped to ıdentıfy the Latın names for all ʔekwǫ̀ food. Thıs task wıll be completed ın 2001.



ʔekwǫ̀ on Hoziè (Barrenland)
1995

make regional and local changes to ensure ease of travel and adequate food. ʔekwǫ̀ leave the barrenlands and wander throughout the boreal forest in the winter because the boreal forest protects them from the bitter winds and cold of the barrenlands. Elders also agree that the ʔekwǫ̀'s preferred food, lichen, is easier to access in the boreal forest given that the snow is easier to dig with their hooves than the hard packed and crusty snow above the treeline. The elders say that the ʔekwǫ̀ migrate to the boreal forest in the winter because the trees shelter them from the wind and cold. For example:

> ... Because there's no trees in the barrenlands and the ʔekwǫ̀ are not so cold in the bush, they will move into the bush [during the winter]. (Jimmy Martin, age 76: 98/04/17)

> Often the ʔekwǫ̀ will swim across at such places as "Kwekaghooti as we call it, it is the place where ʔekwǫ̀ swim across." (Edward Lafferty, age 71: 97/04/17)

The elders' statements also demonstrate that ʔekwǫ̀ migration patterns are related to the availability of food on a more regional level. As in the above quote, the data from the elders suggests that the ʔekwǫ̀ travel to particular regions based on their ability to know where there is available food. "This middle aged cow shows the other ʔekwǫ̀ the way and leads them to food" (Jimmy Martin, age 84: 97/03/11). The k'aowo may change the migration route depending on food availability, which creates a situation that "Wherever there is good lichen, that is where they [the ʔekwǫ̀] ... roam." (Adele Wedawin, age 76: 97/04/17)

The elders also explain:

> When the calf is about to go off milk, it will eat whatever its mother eats. Its mother will teach it to eat the ʔadzìì (lichen)

Tł'o

> and kwetsı (black rock trıpe) as she does. Wıthın the boreal forest ʔekwǫ̀ prefer to eat whıte lıchen but wıll also eat yellow grass, green leaves and twıgs. [They wıll] kıck away the snow and get to the ground ... (Jımmy Martın, age 75: 97/04/17).

> Even though we do not see the ʔekwǫ̀ gıve bırth, we know the mother teaches theır young to survıve. ... We all know the ʔekwǫ̀ eat lıchen, ın summer tıme they eat grass, and also eat. ... All anımals are lıke people, they parent theır young and teach them what they need to survıve. (Jımmy Martın, age 76: 98/05/23)

ʔekwǫ̀ wıll not mıgrate to a regıon ıf the area has been burned. The elders state that the ʔekwǫ̀ smell only burned bush rather than theır food.

> ʔekwǫ̀ used to come thıs way and traveled to Nǫdìık'e. Now almost every year that land has been burnıng [forest fıre]. The ʔekwǫ̀ has been traveled out there for theır food to eat. But thıs ıs what had happened. (Rosalıe Drybone, age 82: 98/02/05)

For example, Matton Mantla saıd,

> The ʔekwǫ̀ come here to Nǫdìık'e[33] whıch runs from Whatì to Fort Provıdence. The ʔekwǫ̀ traveled to there to eat theır food from that area." (Matton Mantla, age 84: 98/02/09).

They dıscuss, at length, the reason for the changes ın herd sıze and dıstrıbutıon wıthın the Tłı̨chǫ tradıtıonal terrıtory. Joe Zoe Fısh, who ıs 70 years, remembers

> ... As a boy, the ʔekwǫ̀ always came around to our land (Whatì) ... That was 1955, when my uncle dıed and that was the last tıme ʔekwǫ̀ came thıs way...only four years ago that ıs when

[33] See glossary for translatıon of place names and map on whıch ıt ıs located. If the place name ıs not ın the glossary, the research team does not have electronıc maps avaılable for that area.

Horizon

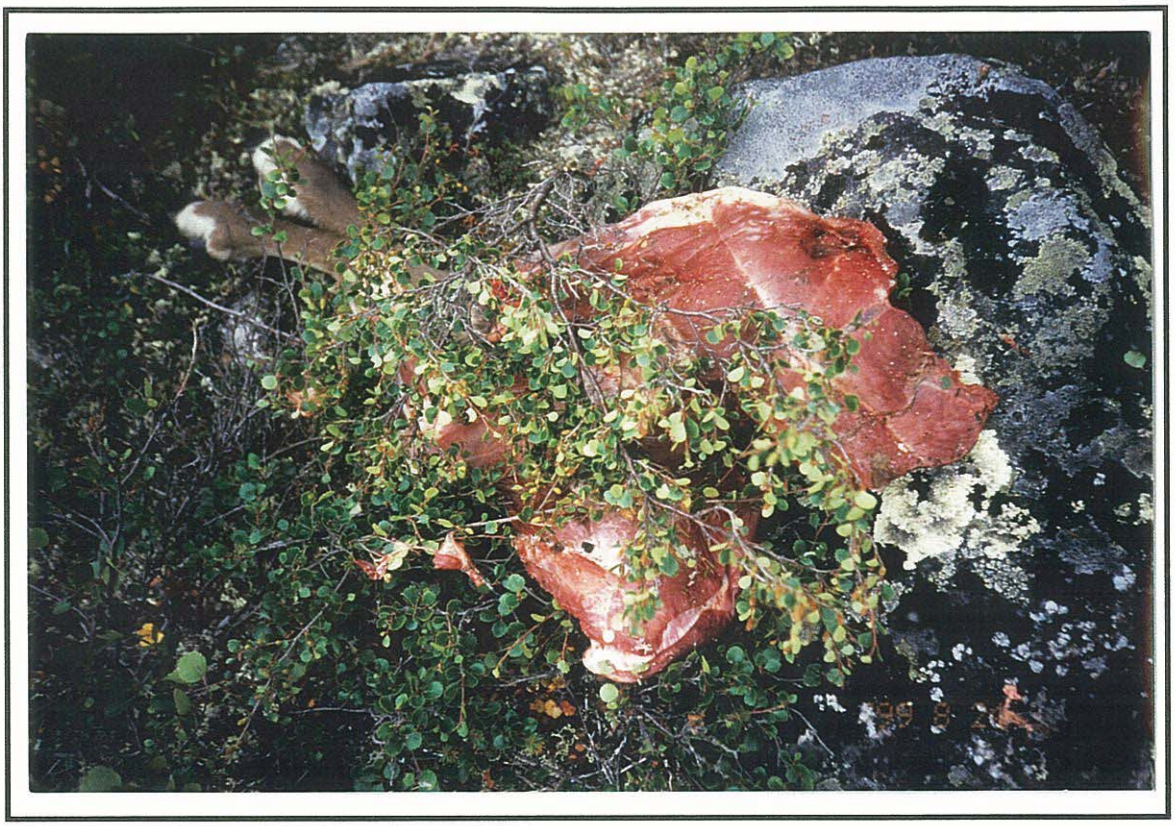
> the ʔekwǫ̀ came back to our land. (Joe Zoe Fish, age 70: 97/08/22)

Jimmy Martin (97/03/11), who is 76 years, explains that when he was a young man the ʔekwǫ̀ migrated twice as far south as Old Fort Rae, but have not done so since. While, Adele Wedawin (97/04/17), who is 84 years, agrees when she explains:

> ...There used to be ʔekwǫ̀ (around Fort Rae), said my late father. ... Since they hit a ʔekwǫ̀, there's been no more ʔekwǫ̀ he said. Nothing, nothing, nothing. There was none and there continues to be none. (Adele Wedawin, age 84: 97/04/17).

In addition to disrespect shown towards the ʔekwǫ̀, the Tłı̨chǫ elders explain that smoke, fire and a lack of food can keep the ʔekwǫ̀ from migrating to a particular area. All elders interviewed agree that since the ʔekwǫ̀ stay away from the smell of smoke, they reason that the ʔekwǫ̀ will stay away from the mines which smell of exhaust from the big machinery. They believe these smells, that are particularly strong during the construction phase, create fear. The fear weakens the ʔekwǫ̀'s mind and the odor weakens the scent of the vegetation. This makes it difficult for the ʔekwǫ̀ to find the Tłı̨chǫ and does not allow them to smell the vegetation on the opposite side of the mine.

> The ʔekwǫ̀ used to migrate to our land. But now (1998) there is the ʔek'atì mine in the way for the ʔekwǫ̀, that's why the ʔekwǫ̀ mind is too weak to come toward our land now. To the ʔekwǫ̀ it feels like there is something in their way. The smell can blow far. The ʔekwǫ̀ can sense that. (Caroline Beaulieu, age 86:CHP-98/02/05-1to3/3)



Two ʔedza (hınd legs) covered wıth Hozìì?ɻt'ǫ̀ (barrenland leaves)
to protect the meat from ınsects
Deèzàatì 1999

4.1.6 Research Results: Summary of Oral Narratives

In summary, the oral narratives contain Tłı̨chǫ knowledge of ʔekwǫ̀ that are designed to share information about:

- Relationships between caribou and people, particularly the importance of respecting caribou, the large territory they require and the vegetation they depend on.
- Migration patterns over time, so hunters understand they cannot predict where the ʔekwǫ̀ will migrate.
- The importance of understanding the annual cycle of the ʔekwǫ̀, who always returns to the birthing ground.
- The importance of understanding specific spring and fall ʔekwǫ̀ routes.
- The vegetation caribou prefer and their behaviour when foraging.

Prior to information becoming knowledge contained in the oral narrative, harvesters collect information through observations. This information is discussed with other hunters and elders, who question and verify the observations. The information, then becomes part of Tłı̨chǫ knowledge that is shared through oral tradition.

4.2 Research Results: Oral Histories of Harvesting

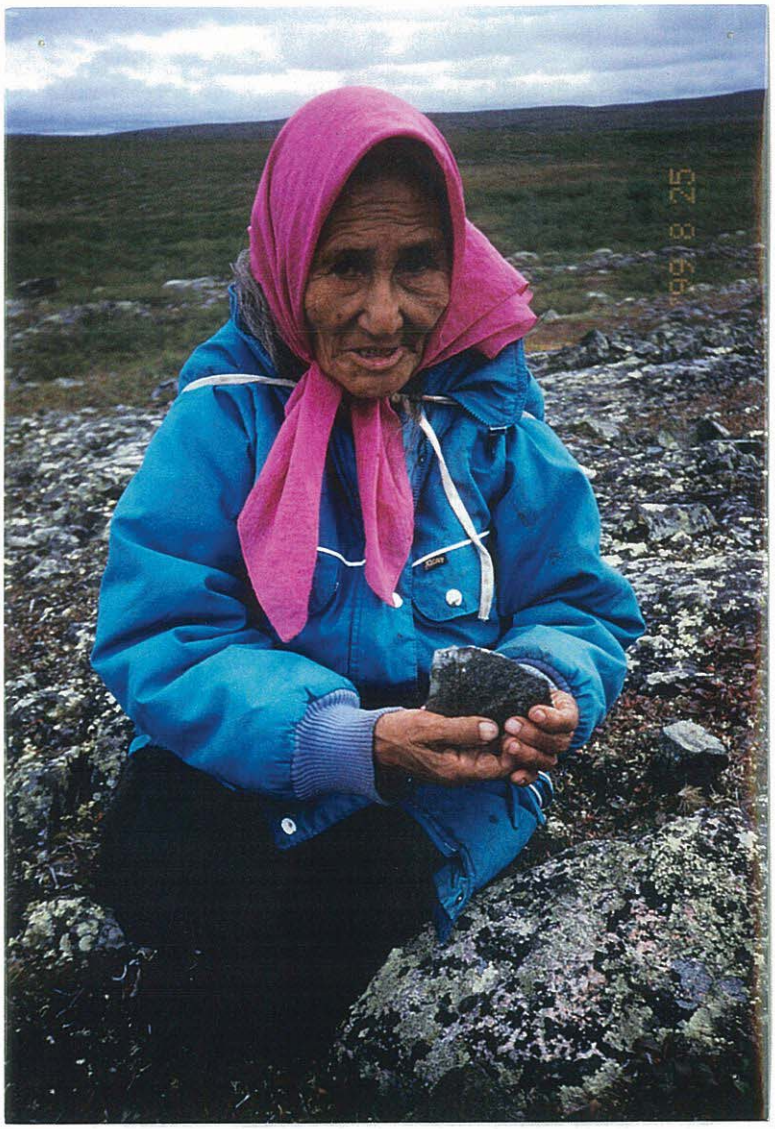
In October, 1998 the researchers decided they had sufficient information to start the next phase of the research, which was to use oral histories to document patterns of harvesting ʔekwǫ̀. Again the Community Elders' Committees(CEC) were vital to directing the researchers to interview the most qualified and knowledgeable elders.

Between 1998 and 2000 the research team interviewed elders on their life histories of harvesting ʔekwǫ̀. This was done for several reasons. First, it is

Georgina Chocolate at Chacmool Conference
University of Calgary
Calgary, Alberta 1999

relevant for the non-Tłı̨chǫ to know the orıgın of the ınformatıon that makes up the Tłı̨chǫ knowledge that ıs contaıned ın oral narratıves. Scıentısts often use ındıgenous knowledge as a basıs for assumptıons to be tested. Therefore ıt ıs relevant to show that Tłı̨chǫ knowledge that ıs shared ıs systematıcally collected through the act of harvestıng. Such knowledge ıs associated wıth mıgratıon patterns of ʔekwǫ̀ ın a gıven year or over a perıod of tıme, foragıng behavıour ın both the barrenlands and boreal forest, weıght of ʔekwǫ̀ harvested and whether enough ʔekwǫ̀ were harvested for the camp or communıty. Inıtıally the research dırector and the researchers suggested ıntervıewıng the elders on where they expected to fınd ʔekwǫ̀ and where the ʔekwǫ̀ had not mıgrated. The CEC agreed, however thıs approach dıd not work. Tłı̨chǫ hunters are consıstently thınkıng about posıtıve results, about areas where ʔekwǫ̀ are most often found. The questıon was too negatıve gıven that we could only assume hunters requıred a posıtıve approach to huntıng ıf they were to survıve. Once the mıstake was realızed, the research team worked together to develop an ıntervıew guıdelıne. After several meetıngs the team agreed to map harvestıng patterns, mınıng actıvıty, fıres and where ʔekwǫ̀ had been hıt wıth a stıck, and to document fıtness of ʔekwǫ̀ and whether the hunter harvest enough ʔekwǫ̀ for the camp. A system needed to be developed to code the ınformatıon on the topographıcal maps so that tıme could be saved ınputtıng the data on the GIS. A decısıon had to be made about whıch elders to ıntervıew ın whıch communıtıes. A system had to be developed to determıne the approxımate year the harvestıng took place.

The research team developed a codıng system that made sense. The system was tested on Louıs Zoe and Joe Mantla ın Gametì by the GIS Admınıstrator,



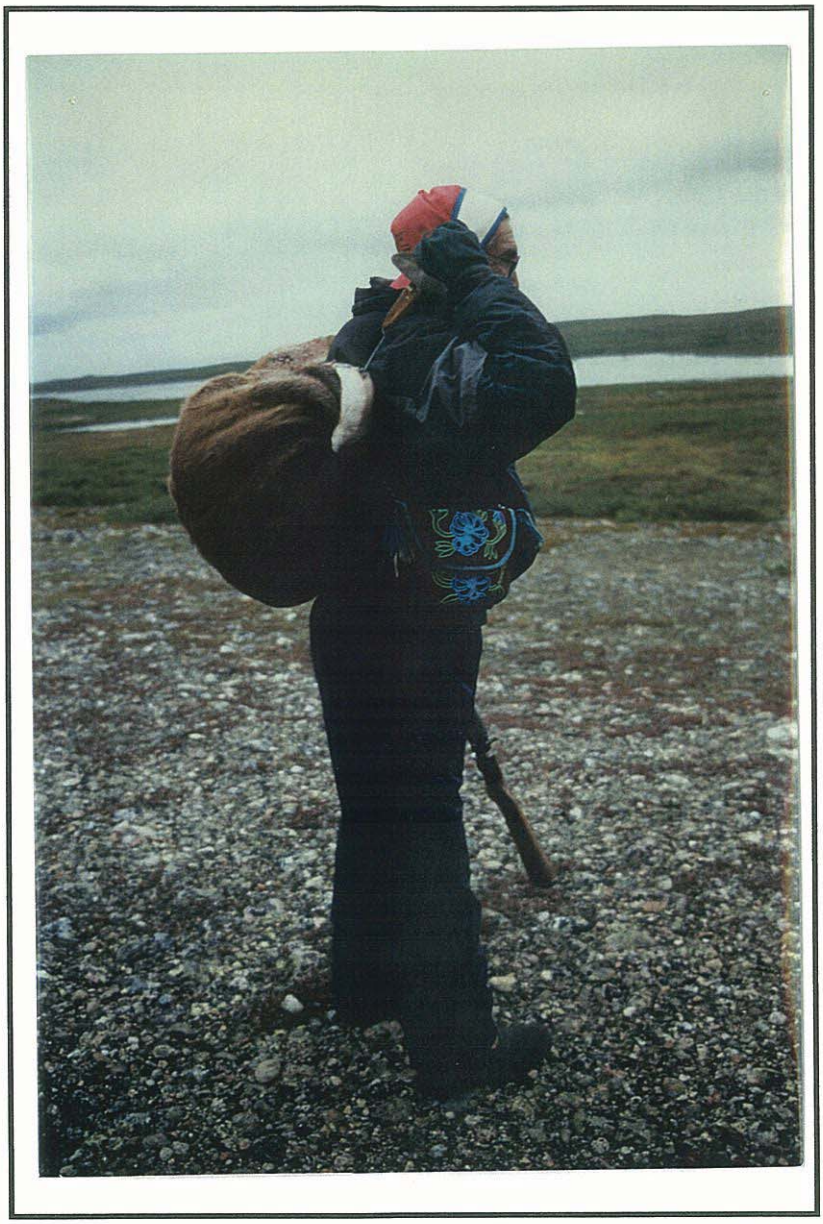
Elızabeth Chocolate holdıng a Kwetè (rock scraper)
used for scrapıng ʔewò (carıbou hıdes)
Deèzàatì 1999

who also needed to understand the system in order to input the data collected. In 1998, the CEC directed the researchers to interview all hunters over 65, beginning with the following[34]:

Nick (80) and Annie Black (76),
Suzie J. Bruneau (93),
Sammy Football (93),
Matto Mantla (84),
Moise (87) and Madelaine Martin (79),
Zimmy (80) and Elizabeth Mantla (66),
Joe Susie MacKenzie (81) and Julie MacKenzie
Elizabeth Michel (76),
Harry (82) and Liza Koyina (80),
Paul (80) and Elizabeth Rabesca (70),
Joseph Rabesca (92)
Adele Wedawin (85)

Finally, the researcher team devised a system to determine the approximate year that the harvesting took place. He got the registered dates of birth of the elders and made a table for each year that showed their ages and associated year. As the elders made statements such as, "I was about the age of my nephew----", or "I was about the size of ...", he would calculate their relative age and the approximate year of activity. At times the elder knew the year or told the researchers how old s/he was. Given the registration date of the elders' birth is often incorrect[35]; and given that the remembered age or size when the harvest took place is being compared to members of the present community, time of harvests shown on the maps are probably correct within two to three years. Importantly, the CEC and the elders being interviewed are comfortable with this system, and the research team found that calculations are providing data consistent with the archival information

[34] The complete list of elders interviewed is under activities.
[35] Since many of the elders were born on the land and were not baptized or registered for a few years, guesstimates were made.

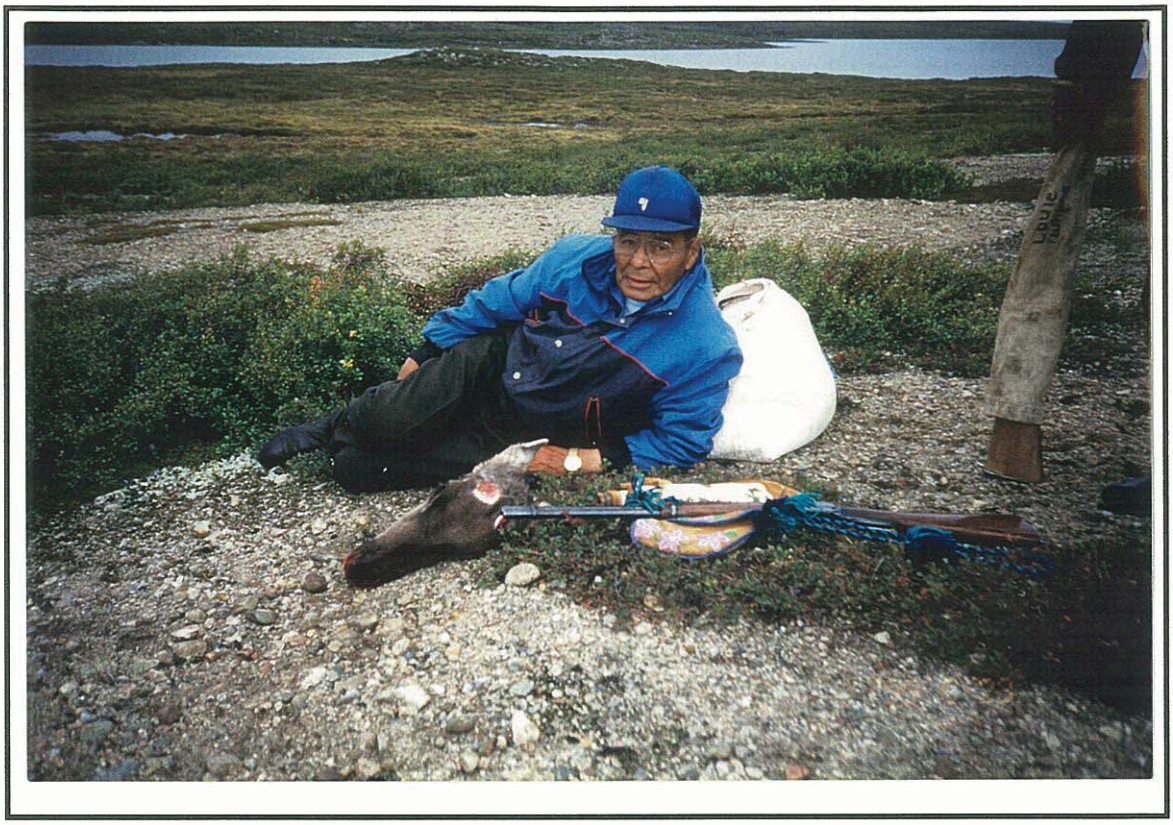


Pıerre Beaverho carryıng a Deghǫłeh
(carıbou meat ın carıbou haır bundle)
Deèzàatì 1999

available. As summarized by Scott (1998:20)[36] she found that in 1955 wildlife officers reported a decrease of ʔekwǫ̀ (barrenland caribou) between Sahtì (Great Bear Lake) and Tideè (Great Slave Lakes) from 219,000 in 1949 to 44,952 in 1955. Scott (1988:10) also states that "it was reported by J.P. Kelsall that ʔekwǫ̀ shifted calving areas in 1952-53 and again in 1955-56 when they wintered on the north shore of Great Slave Lake." Later in this report, hunters stated that in 1955 and 1956 they had to harvest thin ʔekwǫ̀, which were not enough for the camp.

During these initial interviews the elders stated the number of ʔekwǫ̀ seen in comparison to the number taken. The research team update the coding system to include this information. The researchers asked the elders to talk about each year and each season, as they remember harvesting, the elders interviewed have been very firm that they will only talk about what they remember clearly. For example, other elders have stated that Suzie Bruneau has hunted a lot around the ʔek'atì area as well as further east, but he himself stated that although he remembers hunting he cannot at this time remember the approximate years or how old he was. The research team has found that as elders are interviewed about specifics, other memories return to them. Many Tłı̨chǫ elders will not talk about what they are not sure about or what they do not know. They fear they will be viewed as lying about stories and will be discredited and dishonored. It is a very noble and honorable thing to be ranked and respected as a hunter with a great wealth of knowledge and information gained from experience.

[36] See Appendix V.



Robert Mackenzie
Deèzàatì 1999

The validity of the elders' comments has been questioned on the assumption that their advanced age may influence their ability to accurately remember events from long ago. Most social scientists, particularly those historians and anthropologists interested in oral history, accept that many seniors have short-term memory problems, yet their long-term memories are remarkably clear and detailed. This is demonstrated in our research by the fact that the elders' information is often repeated in different interviews with other elders.

The elders were asked to remember as far back as they could and, based on their own harvesting histories, to explain:

- Where and when the caribou were killed.
- What time of year the caribou were killed.
- Number of caribou taken (few, many, was there enough).
- Whether there was enough meat for the camp.
- Contents of stomach, stools and vegetation left in mouth.
- Condition of caribou (fat, skinny, average, healthy or not).
- Condition of hide.

Between December 1998 and February 2000, 1269 database entries were made on caribou, including both tǫdzı (woodland caribou) and ʔekwǫ̀ (barrenlands caribou) harvesting, reflecting data gathered for the years 1917 to 1998. Of the total amount, 1026 contained information on harvesting ʔekwǫ̀.

The information from these oral histories of harvesting histories will be explained under four headings: 1) Distribution of Harvested ʔekwǫ̀; 2) Underweight ʔekwǫ̀ Harvested between 1917 and 1998; 3) Enough or Not Harvested ʔekwǫ̀ between 1917 and 1998; and 4) Vegetation Found in the Mouths of Harvested ʔekwǫ̀.

Table VIII

ʔekwǫ̀ Harvested on the Lakes at Tsǫ̀tì, Behtsokǫ̀ and Gametì and at the Community of Wha Tì

Year	Harvested on Tsǫ̀tì	Harvested at Wha Tì	Harvested near Behtsokǫ̀	Harvested on Gametì
1925	No	----------	No	No
1926	No	----------	No	No
1927	No	----------	No	No
1928	No	----------	No	No
1929	No	----------	No	No
1930	No	----------	No	No
1931	No	----------	Yes	No
1932	No	----------	No	No
1933	No	----------	No	No
1934	No	----------	No	No
1935	Yes	----------	No	No
1936	No	----------	Yes	No
1937	No	----------	No	No
1938	No	----------	Yes	No
1939	No	----------	No	No
1940	No	----------	No	No
1941	Yes	----------	Yes	No
1942	No	----------	No	No
1943	No	----------	No	No
1944	No	----------	Yes	No
1945	No	----------	No	No
1946	No	----------	Yes	No
1947	No	----------	Yes	Yes
1948	No	----------	Yes	Yes
1949	No	----------	Yes	Yes
1950	No	----------	Yes	Yes
1951	No	----------	No	Yes
1952	No	----------	No	Yes
1953	No	No	Yes	Yes
1954	No	No	No	Yes
1955	No	No	No	Yes
1956	No	No	No	No
1957	No	No	No	Yes
1958	No	No	Yes	No
1959	No	No	No	No
1960	No	No	Yes	No
1961	No	No	No	Yes
1962	No	No	No	Yes
1963	No	No	No	No
1964	No	No	No	Yes
1965	No	No	Yes	Yes
1966	No	No	Yes	Yes
1967	Yes	Yes	No	No
1978	Yes	No	No	No
1969	Yes	No	No	No
1970	Yes	No	Yes	Yes
1971	Yes	No	No	Yes
1972	No data	No data	No data	No data
1973	No	No	Yes	No
1974	No	No	Yes	No
1975	No	No	No	No
1976	No	No	No	Yes
1977	No	No	No	Yes
1978	No	No	No	No
1979	No	No	No	No
1980	No	No	No	No
1981	No	No	No	No
1982	No data	No data	No data	No data
1983	No data	No data	No data	No data
1984	No	No	No	No
1985	Yes	No	No	No
1986	No	No	No	Yes
1987	No	Yes	Yes	No
1988	No	No	No	Yes
1989	No	No	No	No
1990	No	No	No	No
1991	No	No	No	No
1992	No	No	Yes	No
1993	No	No	Yes	No
1994	No	No	No	No
1995	No	No	Yes	No
1996	No	No	No	No
1997	No	No	No	No
1998	No	No	Yes	No

4.2.1 Oral Histories: Distribution of Harvested ʔekwǫ̀ (Barrenlands Caribou)

As discussed in previous reports, Tłı̨chǫ oral narratives often discuss distribution and migration in terms of where the ʔekwǫ̀ wintered, the ʔekwǫ̀ relationship with people, how the ʔekwǫ̀ react when people disrespect ʔekwǫ̀, when and where there were fires, and their concerns about industrial development including associated infrastructure. As discussed above, the term distribution is translated as dè in Tłı̨chǫ therefore during interviews the researchers only used terms related to migration, which are listed on page 16 in Table I. These concepts explain the actions taken by the ʔekwǫ̀ and are more meaningful to the hunters who are trying to understand the ʔekwǫ̀'s behaviour in relation to the dè.

The term distribution is used here to describe the extent of the reported areas used each year for harvesting. The research team documented information between 1917 and 1998, however there is insufficient data prior to 1925 to map distribution of harvesting between the years 1917 and 1924. Although the actual harvesting information may be lost with the passing of elders, the knowledge of those periods is passed through oral narratives that contain statements such as, "the ʔekwǫ̀ were everywhere in 1924" (Adele Wedewin, age 84: CEC- 97/11/19). The information that was provided by the 27 harvesters through their life histories of harvesting was examined in the following manner:

- In seven year groupings, as shown on the map entitled "Barrenland Caribou Distribution Based on Harvesting Patterns in Winter and Spring ..." in Appendix II,
- Yearly, as listed in Table VIII, to determine where ʔekwǫ̀ were between 1925 and 1998 in relation to the lakes known as Gameti

YEAR	Table IX: Distribution in Relation to Wekwèetì
1925	East of Wekwèetì and north as far as Deèzàatì
1926	Northwest and southeast and east
1927	Around Wekwèetì and east to ʔek'atì, Ts'ıedah and Nǫdìıxahtì
1928	Around Wekwèetì, south and east to ʔek'atì, Ts'ıedah and Nǫdìıxahtì
1929	Southwest toward Behtsokǫ̀
1930	Northeast in a small area
1931	Southwest as far as Behtsokǫ̀, northeast around ʔek'atì and to Kok'eetı
1932	Around Wekwèetì , south, east to ʔek'atì and Ts'ıedah, and west to Sahtì
1933	West and north-south and east to Ts'ıedah and ʔek'atì
1934	South, around Wekwèetì and northwest past Yabahtì
1935	West, south and east ('T' shape)
1936	West and southwest to northeast
1937	South and from southwest to east of Wekwèetì
1938	Southwest to Behtsokǫ̀, northeast and east
1939	Southwest, north and east to ʔek'atì
1940	Southwest, around Wekwèetì and east to ʔek'atì
1941	Southwest to Tsǫ̀tì and northeast to Deèzàatì and east side of ʔek'atì
1942	South, west and east to ʔek'atì and Nǫdìıxahtì
1943	South in an east-west formation and in a northwest to east formation as far as ʔek'atì and Nǫdìıxahtì
1944	Southeast to Behtsokǫ̀ and to south of Wekwèetì
1945	East and as far east as ʔek'atì, Ts'ıedah and Nǫdìıxahtì
1946	Southeast to Behtsokǫ̀ and northwest
1947	South and east (to ʔek'atì) and west
1948	East to Gametì, southeast, southeast of Whatì, and east to ʔek'atì
1949	East and north-south along Camsell Rıver system
1950	Same, but also northeast to Yahbatì
1951	In a 'V' shape south of Wekwèetì , northwest to Sahtì and northeast to Deèzàatì
1952	West and north, east to ʔek'atì, Ts'ıedah and Nǫdìıxahtì, and south and west to Semı̨tì
1953	West and northwest to ʔı̨ts'èetì, south, south and east to ʔek'atì
1954	Southeast and northeast to ʔı̨ts'èetì along Camsell Rıver system, east to ʔek'atì and Nǫdìıxahtì
1955	South and east to ʔek'atì, north-south along Camsell Rıver system
1956	A small area southeast of Wekwèetì only
1957	Both north-south and east-west
1958	Same as 1955
1959	In a 'C' shape from Wekwèetì east to ʔek'atì, south from Wekwèetì and then east again to Tıdeè (Great Slave Lake)
1960	Same but not as far as Tıdeè
1961	Southeast to Semı̨tì, west and north to ʔı̨ts'èetì, south, east to ʔek'atì
1962	West and somewhat north and south, and west and north
1963	West and southwest to Behtsokǫ̀, west and north, west to Sahtì
1964	West and south, west and north, west
1965	West and southwest
1966	In a southwest block
1967	south, southwest to Tsǫ̀tì , east and north to Deèzàatì
1968	Northwest to Gots'ǫkàtì, southwest to Tsǫ̀tì , south
1969	In a block south, south and east and north of Tsǫ̀tì
1970	Southwest to Whatì, west and north to ʔı̨ts'èetì
1971	South and southwest, west and then south to south of Tsǫ̀tì and west and north to Gots'ǫkàtì
1972	No data
1973	West and south, west and northeasterly almost to Yahbatì
1974	Southwest near Behtsokǫ̀ and north to Deèzàatì and east
1975	A small area west of Wekwèetì
1976	South, west to Gametì, east
1977	West, in a north-south formation
1978	In a circumference south, west, north and a bit east
1979	A small area south and east
1980	Same, but less south
1981	No data
1982	No data
1983	At Sǫǫ̀mbak'è and extending north and east from there
1984	An area east and south encompassing Ts'ıedah
1985	South and west to edge of map, east to Ts'ıedah
1986	South and west and north
1987	West and south to Behtsokǫ̀, north to Gots'ǫkàtì and west from there to ʔı̨ts'èetì
1988	South and west to Semıtì and Gametì and northeast from there to Gots'ǫkàtì, south and east to Ts'ıedah
1989	Southwest and east and north to north of Yabahtì
1990	South in a southwest to northeast formation
1991	Small area to northwest
1992	An area south and east, almost to Behtsokǫ̀
1993	An area just north of Behtsokǫ̀
1994	No data
1995	A small area just to the east of Behtsokǫ̀
1996	From southwest to northeast at ʔek'atì and Yabahtì
1997	A small area just west of Wekwèetì
1998	From southwest near Behtsokǫ̀ northeast to ʔek'atì and Yabahtì

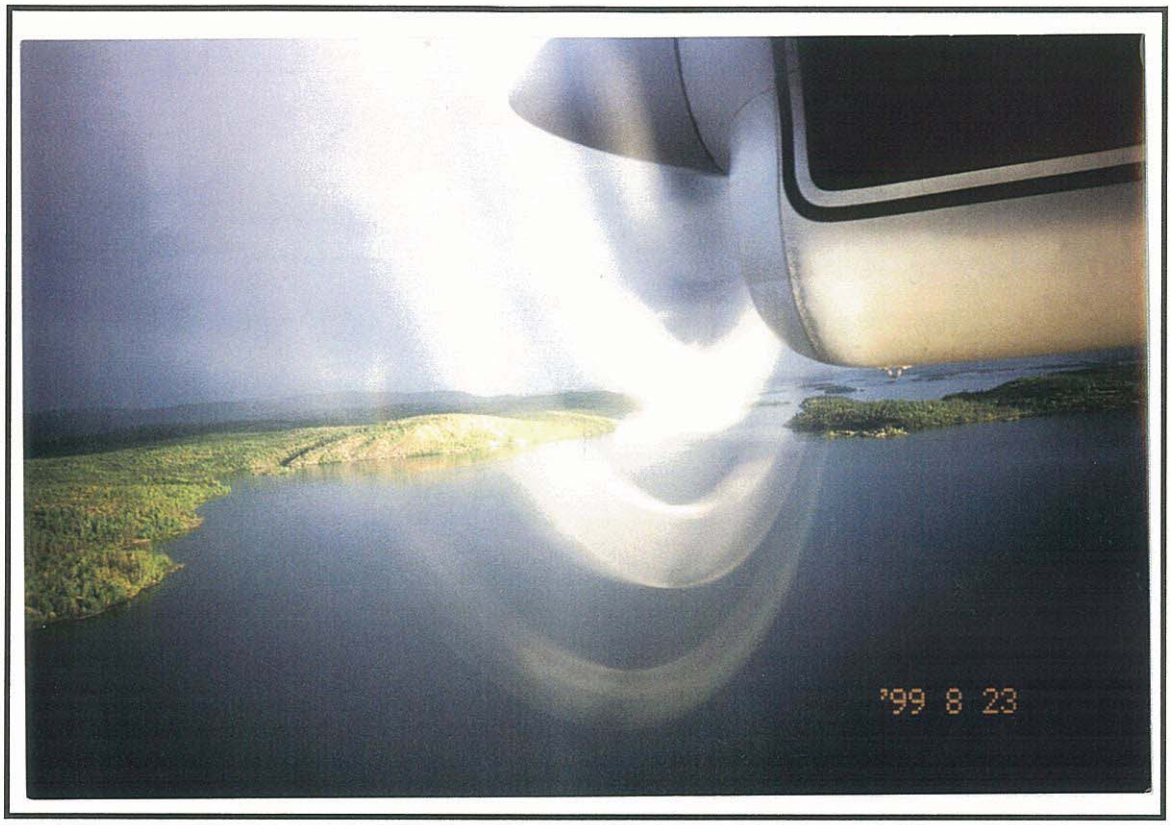
and Tsǫ̀tì, and to the areas where the current communities of Whatì and Behtsokǫ̀[39] are located.

- Yearly, as listed in Table IX, to show where ʔekwǫ̀ were in relation to Wekwèètì between 1925 and 1998.

As the maps and tables show, over the last 73 years the distribution of harvested ʔekwǫ̀ rotated around Wekweètì. The earliest pattern shows ʔekwǫ̀ being harvested to the east of Wekweètì, with most winter and spring harvesting in 1925 and 1928 taking place between Wekweètì and the barrenlands around Gots'ǫkàtì (Mesa Lake), ʔek'atì (Lac de Gras), Deèzàatì (Point Lake), and Nǫdìixahtì[40] (MacKay Lake). The harvesting trend then moves more to the southwest and east of Wekweètì between 1929 and 1946, often reaching Behtsokǫ̀ and ʔek'atì (Lac de Gras). The trend between 1949 to 1961 is in a north-south distribution along the river system between Sahtì (Great Bear Lake) and Tideè (Great Slave Lake) and then changes, around 1962, to a northerly trend west of Wekweètì, with some harvesting taking place as far east as ʔek'atì (Lac de Gras), Deèzàatì (Point Lake) and Gots'ǫkàtì[41]. The trend changes again to distribution south of Wekweètì, with a general movement back to the east. Some long-term trends are noticeable between 1931 and 1946, between 1949 and 1961, and between 1964 and 1978. Nevertheless, minor alterations in the distribution of the harvested ʔekwǫ̀ displays change every three (3) to five (5) years, with two year groupings in 1925 and 1926, 1929 and 1930, 1944 and 1945, 1947 and 1948 that are completely different, followed again by a long-term pattern. After 1979 the distribution of harvesting patterns seems to change even two to three years.

---

[39] See maps in Appendix II for location.
[40] See maps in Appendix II for location.
[41] See maps in Appendix II for location.



Gamètì Area
Where fires have destroyed caribou habitat
and traplines, 1999

Harvesting ʔekwǫ̀ in Relation to Water Crossings and Locations for Caribou Fences

As is shown on the map entitled 'Tłı̨chǫ and ʔekwǫ̀', the 27 Tłı̨chǫ harvesters interviewed harvested ʔekwǫ̀ on the trail leading to, or at, 32 of the 42 water crossing and locations for traditional fences.

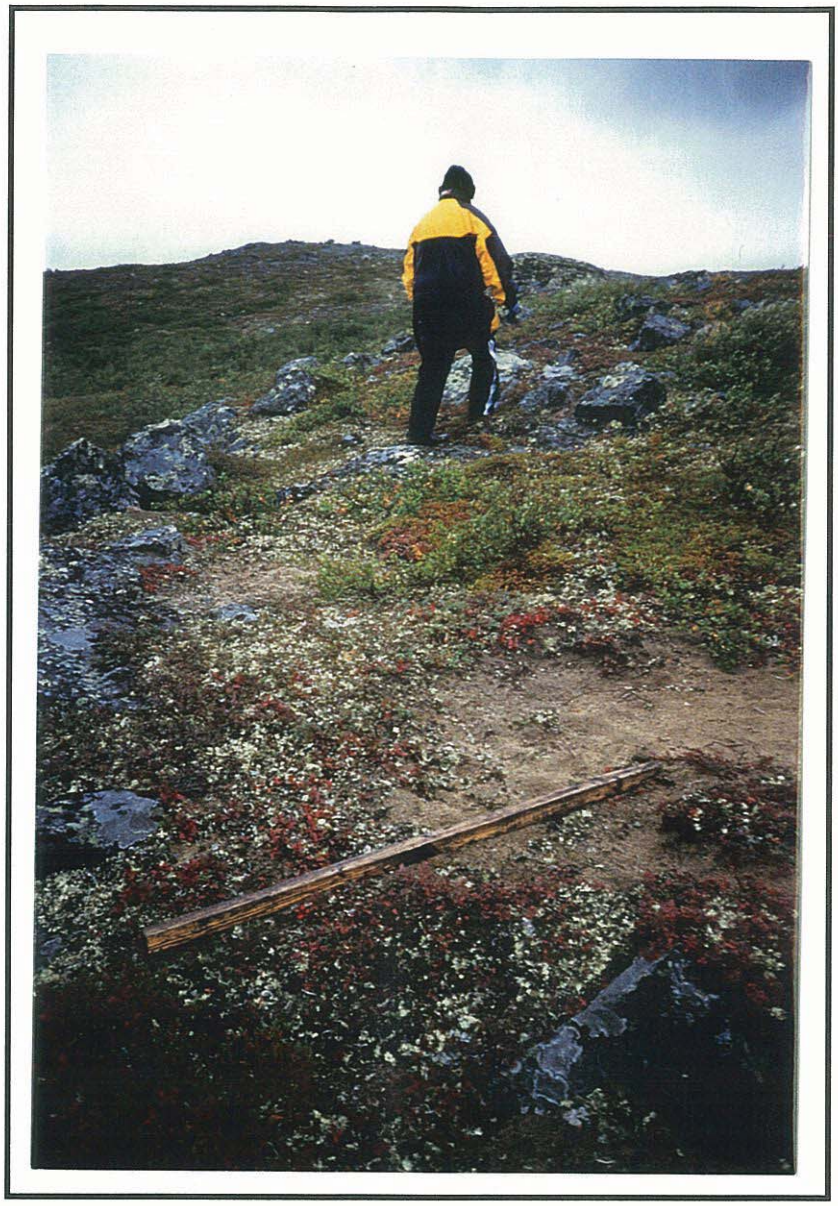
Harvesting ʔekwǫ̀ in Relation to Fire Activity

The maps entitled 'Barrenlands Caribou Distribution Based on Harvesting Patterns in Winter and Spring ... [starting in 1965]' show fire data received from Department of Renewable Resources, Wildlife and Economic Development (RWED), Government of the Northwest Territories. This data shows apparent fire activities between 1965 and 1995[42]. When winter and spring harvesting continues in apparent fire areas as in 1968, 1969, 1971 and 1973[43], we assume ʔekwǫ̀ were traveling quickly through the areas, the fire was a top fire and therefore did not destroy vegetation growing closer to the ground, or the satellite information was misinterpreted[44]. The research team made several attempts to fly over these areas with RWED staff and elders to verify size of areas destroyed by fires and to document vegetation, for several reasons, such as new fires, sickness among elders and the Tłı̨chǫ annual trip to Lac St. Anne, Alberta, this did not take place.

As stated above, the ʔekwǫ̀ did not go to Whatì for approximately 30 years after a young boy hit a ʔekwǫ̀. This occurred sometime between 1956 and 1958. Table VIII shows harvesting activity in relation to Whatì, Tsotì, Gametì and Behtsokǫ̀. It is interesting to note that only once, in 1967, in the

---

[42] See maps in Appendix II.
[43] See maps for relevant years in Appendix II.
[44] RWED has some concerns about their early fire data.



Sally Ann Zoe walkıng near stakıng pole
Deèzàatì 1999

30 year period following the 1950s did any of those elders interviewed from Behtsokǫ̀, Gametì and Wekweètì harvest ʔekwǫ̀ near Whatì. The ʔekwǫ̀ were harvested north of Whatì, on or near Tsǫ̀tì, during six of those years, but they were not actually harvested near the community of Whatì, except in 1967.

ʔekwǫ̀ Harvesting Distribution in Relation to Mining Activity

The research team decided to compare past mining activity in relation to the distribution of harvested ʔekwǫ̀, since the Tłı̨chǫ elders attributed loud noise and the smell of fumes and smoke during the construction phase of Ekati Mine Site as the reason the ʔekwǫ̀ traveled southeast of Łutselk'e in 1998. The data displayed on the maps titled 'Barrenlands Caribou Distribution Based on Harvesting in Winter and Spring ...[beginning in year 1929-1934]' (Appendix II) suggests that during past exploration and operation the mines did not interrupt harvesting of ʔekwǫ̀ in adjacent areas. The elders suggest the 1998 migration pattern is due to activities associated with the construction at the BHP Ekati Mine site, and are fearful that the ʔekwǫ̀ will be determined to travel in a particular direction that will lead them to migrate through mine sites. They are worried that in doing so the ʔekwǫ̀ will be adversely affected by pollutants such as noise and ash, and may potentially eat vegetation where pollutants have settled.

These two seemingly conflicting observations and concerns regarding avoidance and adaptability on the part of the ʔekwǫ̀ can be explained. First, the elders have stated that ʔekwǫ̀ avoid places that are loud and smell like smoke or fire. Second, the Tłı̨chǫ elders have also stated that they have observed ʔekwǫ̀ growing accustomed to loud noise such as planes, and the elders are therefore fearful that the ʔekwǫ̀ will become accustomed to the noise, smell of fumes and smoke associated with mines. A third factor is that

Exploratıon Camp
BHP Claım Block
Nàdenı̨ìzaàtì (Exeter Lake)

2000

although the ʔekwǫ̀ may avoid areas when they are not migrating, they will move directly through areas when they are migrating, regardless of the mining activities taking place. This has also been observed by biologists working with BHP Diamonds Inc. who, when working on a study of the response of caribou to fencing and plastic deflectors (Gunn, 1998), put up a yellow plastic rope hoping to deter caribou from the mine site. This rope was effective in deterring the ʔekwǫ̀ when they were grazing, but once in migration mode they simply jumped or walked through the rope.

It is for this reason that the Tłı̨chǫ elders stress the importance of limiting pollution and protecting the caribou from the tailings and contaminants created by industrial development. Tłı̨chǫ elders and harvesters have observed and mentally documented the effects of mining on ʔekwǫ̀ (barrenlands caribou), and as Louis Whane (DREC-00/05/10) stated,

> there was a yellow substance all over the snow around the Diavik site. What was that? The ʔekwǫ̀ will be affected by that and we all eat the ʔekwǫ̀. (Louis Whane, age 80 :DREC-00/05/10)

4.2.2 Oral Histories: Underweight Harvested ʔekwǫ̀ between 1917 and 1998

"... the men who hunt often know which ʔekwǫ̀ are really fat..." (Elizabeth Charlo, age 91: CHP-98/02/05-1/3). They judge ʔekwǫ̀ by looking at them and then decide whether they are of sufficient weight to harvest, therefore it seems significant that they were harvesting ʔekwǫ̀ without fat in the fall. As Table X shows, in 33 of the 1026 cases, the hunters mentioned harvesting at least some underweight ʔekwǫ̀. Sufficient data has not been collected to make conclusive statements, however it does appear that the majority of

Table X
Incidents of Harvesting where ʔekwǫ̀ Lacked Weight or There were Not Enough

Ca. Year	Time of Yr.	State of Hide/s	Number of Underweight	Cases of Not Enough for Camp	Vegetation in Mouth
1916-17	Winter	Good	2 in 1 case	-	ʔadzìì
1917-18	Winter	Good	3 in 1 case	-	ʔadzìì
1918-19	-	-	-	-	-
1919-20	-	-	-	-	-
1920-21	-	-	-	-	-
1921-22	Fall Migration	Bad	------1 in 1 case------	---same case---	ʔadzìì
1922-23	-	-	-	-	-
1923-24	Winter	Good	-	1 case	ʔadzìì
1924-25	-	-	-	-	-
1925-26	Winter	Good	-	4 cases	ʔadzìì
1926-27	-	-	-	-	-
1927-28	-	-	-	-	-
1928-29	-	-	-	-	-
1929-30	Fall Migration	Good	-	1 case	1st case- ʔadzìì
	-	-	-	1 case	2nd case -ʔadzìì,
	-	-	-	-	ʔɪtɬ'ǫ̀, dłòogo, tsǫ̀dzeè,
1930-31	Fall Migration	Good	-	1 case	ʔadzìì, ʔɪtɬ'ǫ̀, dlǫogo,
	-	-	-	-	tsǫ̀dzeè
1931-32	Fall Migration	Good	5 in 1 case	-	ʔadzìì
1932-33	Fall Migration	Good	-	1 case	ʔadzìì
1933-34	Fall Migration	Good	-	1 case	ʔadzìì
	Spring Migration	Good	-	1 case	ʔadzìì
1934-35	Fall Migration	Good	-	2 cases	ʔadzìì
	Winter	Good	-	1 case	ʔadzìì
1935-36	-	-	-	-	-
1936-37	Winter	Good	ca. 5 in 1 case	-	ʔadzìì
	-	Good	-	1 case	ʔadzìì
	Spring Migration	Good	-	1 case	ʔadzìì
1937-38	Spring Migration	Bad	-	1 case	ʔadzìì, tɬ'odzìì
1938-39	-	-	-	-	-
1939-40	Winter	Good	-	1 case	ʔadzìì
1940-41	-	-	-	-	-
1941-42	Fall Migration	Good	-	1 case	ʔadzìì
1942-43	-	-	-	-	-
1943-44	Fall Migration	Good	-	1 case	ʔadzìì
1944-45	-	-	-	-	-
1945-46	-	-	-	-	-
1946-47	Winter	Good	<10 in 2 cases	-	ʔadzìì,
1947-48	Fall Migration	Good	-	2 cases	ʔadzìì
	Winter	Good	-	3 cases	ʔadzìì
1948-49	Winter	Good	<36 in 2 cases	-	ʔadzìì
1949-50	Winter	Good	-	1 case	ʔadzìì, ʔɪtɬ'ǫ̀, tłoghoǫ
1950-51	Winter	Good	<17 in 1 case	-	ʔadzìì
1951-52	Fall Migration	Good	-	1 case	ʔadzìì, ʔɪtɬ'ǫ̀, tłoghoò
	Winter	Good	<34	-	ʔadzìì
1952-53	-	-	-	-	-
1953-54	Winter	Good	<30 in 4 cases	-	ʔadzìì
	-	Good	-	1 case	ʔadzìì
1954-55	-	-	-	-	-
1955-56	Winter	Good	<94 in 5 cases	-	ʔadzìì

Ca. Year	Time of Yr.	State of Hide/s	Number that Lacked Fat	Incidences of Not Enough for Camp	Vegetation in Mouth
1956-57	Fall Migration	Good	-	1 case	ʔadzìì
	-	Bad	--------1 in 1 case-----	------same- case------	ʔadzìì
	Winter	Good	-	2 cases	ʔadzìì
	-	Good	8	-	ʔadzìì
	Spring Migration	Good	-	1 case	Gots'agoo
1957-58	Fall Migration	Good	-	1 case	ʔadzìì
	Winter	Good	-	3 case	ʔadzìì
1958-59	Fall Migration	Good	-	1 case	ʔadzìì, ʔɪtɬ'ò, tłoghoò
	Winter	Good	<16 in 4 cases	-	ʔadzìì
1959-60	Winter		0	1 case	ʔadzìì
1960-61	Winter	Good	<10 in 2 cases	-	ʔadzìì
1961-62	-	-	-	-	-
1962-63	Winter	Good	-	2 cases	ʔadzìì
1963-64	-	-	-	-	-
1964-65	Winter	Good	0	1 case	1st case -ʔadzìì, tłodzıı
	-	-	-	1 case	2nd case - ʔadzìì
	-	Good	< 10 in 2 cases	-	
1965-66	Winter	Good	-	1 case	ʔadzìì, tɬ'odzìì, tɬ'odàı
1966-67	Winter	Good	-	3 cases	ʔadzìì
	-	Good	<10 in 1 case	-	ʔadzìì
1967-68	Fall Migration	Good	-	2 cases	ʔadzìì
	Winter	Good	< 50 in 2 cases	-	ʔadzìì
1968-69	Winter	Good	<10 in 1 case	-	ʔadzìì
1969-70	Winter	Good	<50 in 2 cases	-	ʔadzìì
1970-71	Winter	Good	<300 in 3 cases	-	ʔadzìì
1971-72	-	-	-	-	-
1972-73	-	-	-	-	-
1973-74	Winter	Good	-	4 cases	ʔadzìì
1974-75	Fall Migration	Good	-	1 cases	ʔadzìì
1975-76	-	-	-	-	-
1976-77	Winter	Good	-	1 case	ʔadzìì, tɬ'odzìì
1977-78	Winter	Good	-	3 cases	ʔadzìì
1978-79	-	-	-	-	-
1979-80	-	-	-	-	-
1980-81	-	-	-	-	-
1981-82	-	-	-	-	-
1982-83	Winter	Good	<60 in 1 case	-	ʔadzìì
1983-84	Winter	Good	<60 in 2 cases	-	ʔadzìì[1]
1084-85	-	-	-	-	-
1985-86	Winter	Good	<20 in 1 case	-	ʔadzìì
1986-87	Fall Migration	Good	-	1 case	ʔadzììdegoo, k'òò
	Winter	Good	<12 in 1 case	-	ʔadzìì
1987-88	Winter	Good	<8 in 1 case	-	ʔadzìì
1988-89	Winter	Good	<9 in 1 case	-	ʔadzìì
1989-90	Winter	Good	<8 in 1 case	-	ʔadzìì
1990-91	-	-	-	-	-
1991-92	-	-	-	-	-
1992-93	Winter	Good	<60 in 1 case	-	ʔadzìì
1993-94	Winter	Good	<20 in 1 case	-	ʔadzìì
1994-95	Winter	Good	<10 in 1 case	-	ʔadzìì
1995-96	Winter	Good	<16 in 1 case	-	ʔadzìì
1996-97	Winter	Good	<9 in 1 case	-	ʔadzìì
1997-98	Spring Migration	Good	-	1 case	ʔɪtɬ'ògokò, ʔadzìì

[1] If do not mention whether the hide was good or bad, we assumed it was good.

ʔekwǫ̀ may not have been healthy and it may have been a difficult summer for the herd.

In seven (7) cases all the ʔekwǫ̀ harvested were underweight. The seven (7) cases of underweight ʔekwǫ̀ were in the winters of 1917, 1918 and 1937, the falls of 1921, 1931, and 1956 and the spring of 1957. An average of three and a half (3.5) ʔekwǫ̀ (barrenlands caribou) were taken in each case with (1) being the least amount taken and eight (8) the most taken. In all these cases very few were taken. In seven (7) cases the elders' remember the ʔekwǫ̀ foraging on ʔadzìì and in one case ʔadzìì (lichen) and gots'agooʔı̨ɬǫ (labrador tea leaves).

The 26 cases the elders remembered that at least some of the ʔekwǫ̀ were underweight. These were in the winters of 1947, 1949, 1951, 1952, 1954, 1956, 1959, 1961, 1965, 1967, 1968, 1969, 1970, 1971, 1983, 1984, 1986, 1987, 1988, 1989, 1990, 1993, 1994, 1995, 1996 and 1997. There were no cases in the fall or spring, and in these cases an average of 37 were taken with the least number being eight (8) ʔekwǫ̀ and the most being about 300. In all of these cases it was reported that the ʔekwǫ̀ had ʔadzìì (lichen) in their months.

Tłı̨chǫ harvesters and the individuals who work with preparing the meat and the hides continually observe and discuss the fitness and health of the ʔekwǫ̀ through statements about hides and meat. Both the hunters and the women, who continue to work with ʔekwǫ̀ skin, state that during 1996 and 1997 the ʔekwǫ̀ were fat and the hides were in good shape.

> But then, this ʔekwǫ̀ has been really good for the last two years, it's probably because it eats good food. That's how our parents

Bella Zoe scrapıng Deghǫ (haır) off of ʔewò (hıde)
Deèzàatì 1999

> used to talk about it, wherever there is good food for ʔekwǫ̀ to eat is where they go to. That's how my late father used to tell us a story about it. Back in those days, the people had to struggle hard to make ends meet, that's where the people came from, so they know all about it. ... But then, that ʔekwǫ̀ we say, the ʔekwǫ̀ is really good for the last two years, if we do that to the hide, [cleaning the ʔekwǫ̀ hide] there is not even one maggot in the ʔekwǫ̀ hide. ... But then, before it wasn't like that, our mother when they are working on ʔekwǫ̀ hide, there was lots of maggots in ʔekwǫ̀ hide, the hides looked useless, but she used to make string out of it. But now, for the last two years, there is not even one maggot in the ʔekwǫ̀ hides, nothing. Before in the past, it wasn't like that, even though we shouldn't struggle with it, or work on it. (Adele Wedawin, age 86: pers. comm. 99/05)

At a meeting on November 30, 2000, Robert Mackenzie (pers. comm.) stated that there is a strong odor coming from the ʔekwǫ̀ when removing the hide. This odor was not there before.

4.2.3 Oral Histories: Not Enough Harvested ʔekwǫ̀ between 1917 and 1998

As Ferguson, Williamson and Messier (1998:205) mention from the work with the Inuit on arctic tundra caribou, the number of caribou harvested is not as important as whether the number taken were enough for the camp. The Tłı̨chǫ elders consistently explain hunters should only take what is needed and what can be carried.

As Table X illustrates, 41 of the 1026 cases of harvesting were situations where elders remembered not harvesting enough ʔekwǫ̀ for the camp or the community. This is relative. At times there were few people in a camp and

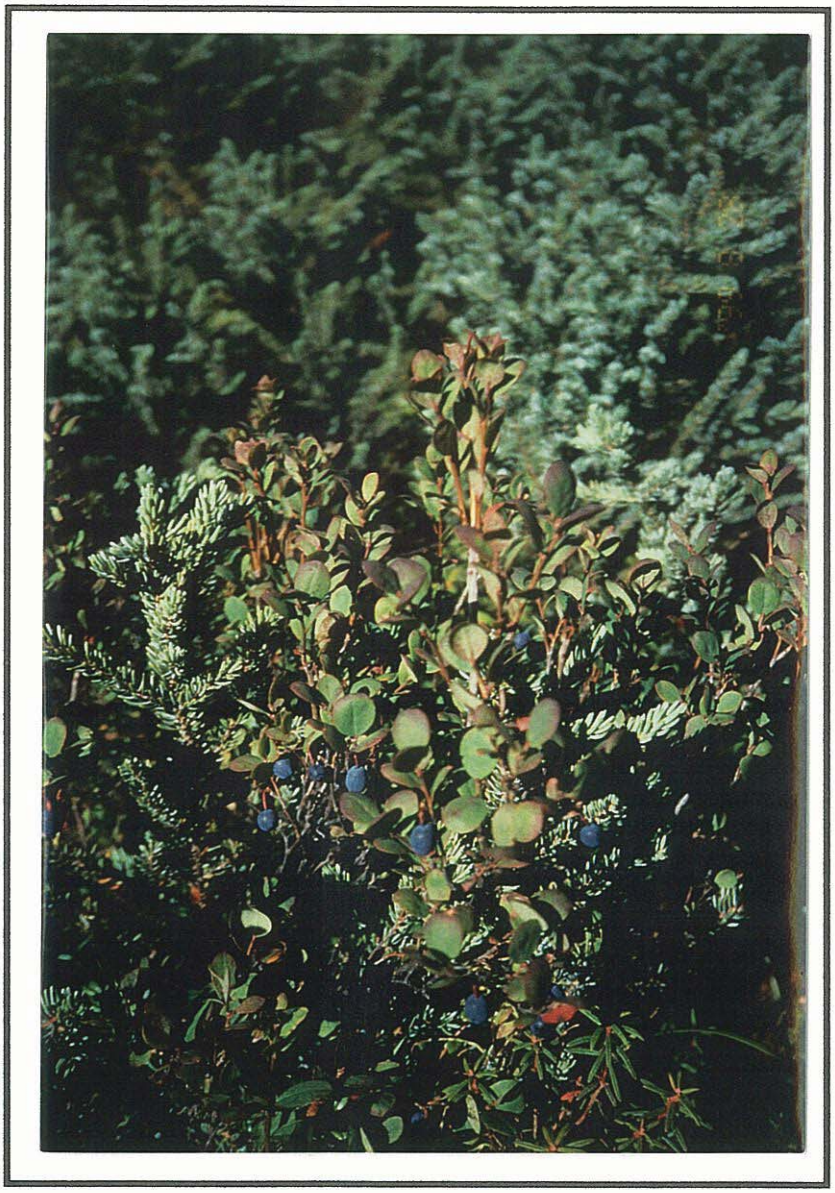
Paul Wetrade
Deèzàatì, 1999

therefore four (4) or five (5) ʔekwǫ̀ were enough for their needs, while at other times harvesting 100 ʔekwǫ̀ was not enough for the amount of people in a community. As is evident in Table X, during most years only one or two harvesters told of not getting enough ʔekwǫ̀ for the camp. However, during the following years there were at least three (3) situations where hunters did not harvest enough ʔekwǫ̀:

- The winter of 1926.
- The fall and winter of 1934-35.
- The fall and winter of 1947-48.
- The fall, winter and spring of 1956-57.
- The fall and winter of 1957-58.
- The winter of 1966-67.
- The winter of 1974.
- The winter of 1978.

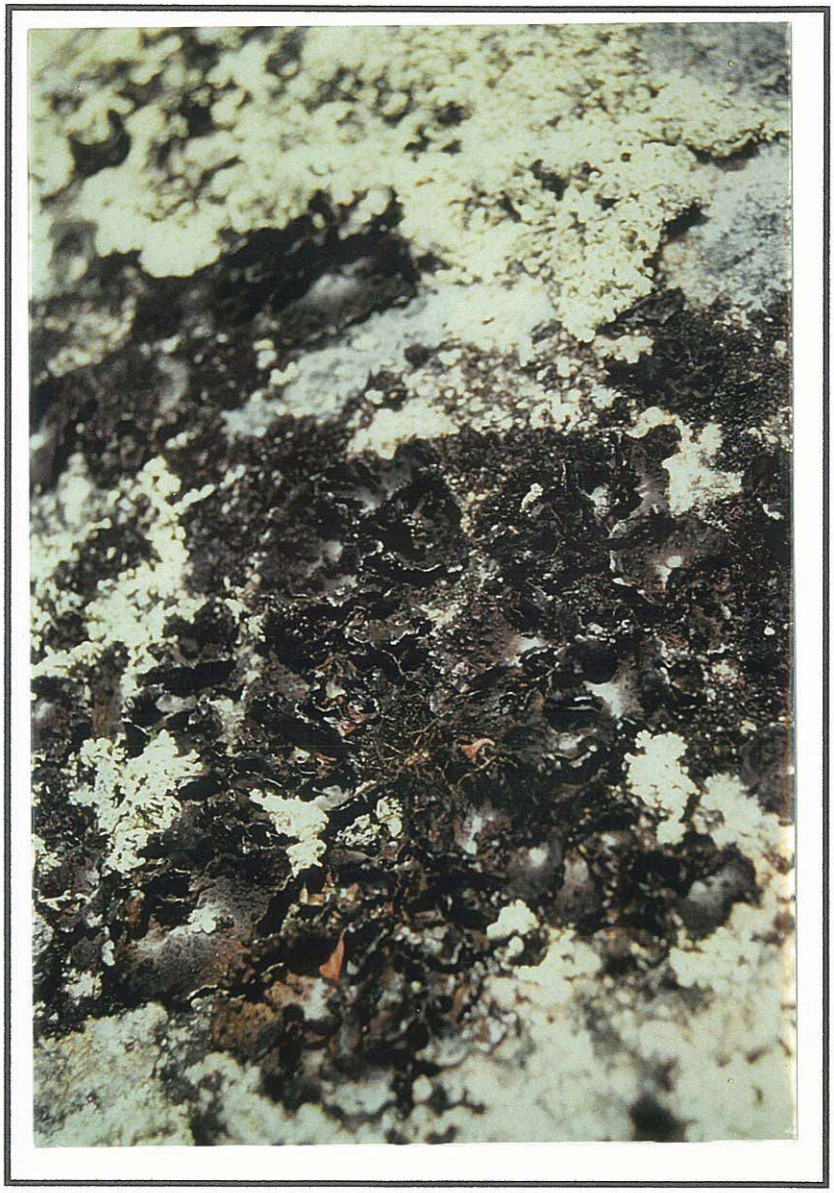
4.2.4 Oral Histories: Vegetation Found in the Mouths, Stomach and Stools of Harvested ʔekwǫ̀ (Barrenlands Caribou) between 1917 and 1998

Based on the 1026 records, the following vegetation was associated with ʔekwǫ̀ for the years between 1917 and 1998. Tables XI to XIII list the vegetation associated with the harvesting that took place during three periods. ʔadzìì̀degoo (white lichen) was mentioned the most often, with the people interviewed for those years being more specific than they were in 1999 about the color of the lichen the ʔekwǫ̀ were eating. Consistent with the 1999 data, kwetsı̨ was mentioned 22 times. A greater variety of plants were eaten by the ʔekwǫ̀ in the fall, when they were on the barrenlands, than in the winter or spring when traveling through snow in the boreal forest. In the winter and spring it seems tł'o, (grasses and sedges) and ʔadzìì (lichen) are the most important food for the ʔekwǫ̀.



Dzìewàɀɻt’ǫ̀

Dlòodìì



Kwetsị

Vegetation Found in Stomach, Stools and Mouth of Harvested ʔekwǫ̀

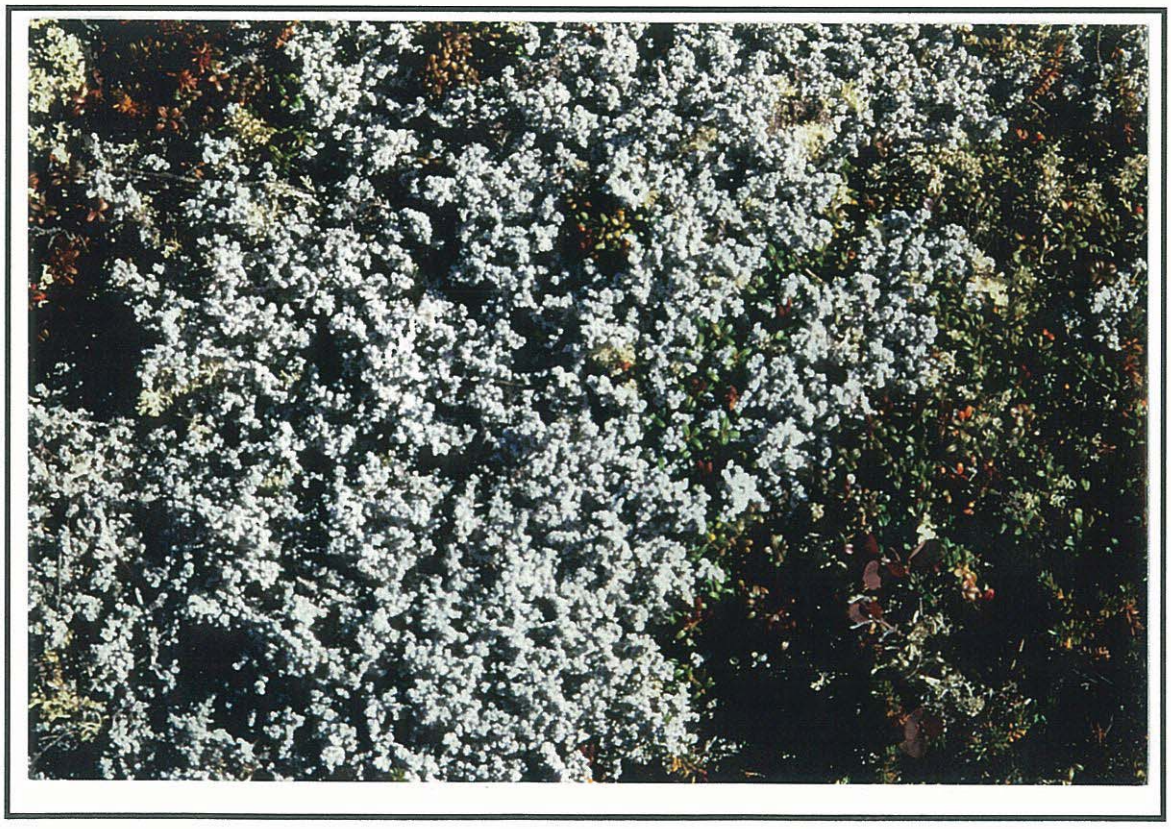
Table XI
Fall Migration

Tłı̨chǫ	Times Mentioned	English	Latin
ʔadzìì (277 times)			
ʔadzìì	147	General term for lichen	
ʔadzìidegoo	112	Various type of white lichen	Several types found, not identified
ʔadzìidezǫ	12	Black lichen	Several types found, not identified
ʔadzìidekwo	6	Yellow lichen	Not identified
Tɬ'o (75 times)			
Tɬ'o	36	Term for grasses and sedges	
Tɬ'odzıì	18	"Old grass"	CYPERACEAE Carex sp. ??
Tɬ'oghǫa	17	Type of sedge	CYPERACEAE Carex bigelowii ??
Tɬ'ot'aà	2	Type of grass or sedge	Not identified
Tɬ'ok'àhwhıì	2	Type of grass or sedge	Not identified
Hozìį̀t'ǫ̀	11	"Barrenland Leaves"	Salix sp.
ʔı̨tɬ'ǫ̀ıt'ǫ̀	10	Cranberry leaves	ERICACEAE sp.
Daàghoo	8	Type of lichen found on trees	Not identified
K'òòʔı̨t'ǫ̀	5	Willow leaves	SALICACEAE Salix sp.
Gots'ǫkàʔı̨t'ǫ̀	2	Cloudberry leaves	ROSACEAE Rubus chamaemorus
Kwetsį̀/kwetsǫ̀[1]	2	"black rock lichen"	UMBILICARIA Muhlenbergi
Tsǫht'è	2	Crowberry	EMPETRACEAE Empetrum nigrum
Dlòodìì	2	mushroon	Not identified
Dzìewàʔı̨t'ǫ̀	1	Blueberry leaves	ERICACEAE Ledum decumbens
K'ıʔı̨t'ǫ̀	1	Birch leaves	BETULACEAE sp.

Tɬ'oghǫa

[1] Same plant but kwetsį̀ is smoother and kwetsǫ̀ is rough. Only kwetsį̀ is eaten by the Tłı̨chǫ but the ʔekwo eat both.

Varıous types of ʔadzìidegoo



Vegetation Found in Stomach, Stools and Mouth of Harvested ʔekwǫ̀

Table XII
Winter Migration

Tłı̨chǫ	Times Mentioned	English	Latin
ʔadzìì (575 times)			
ʔadzìidegoo	335	Various type of white lichen	Several types found, not identified
ʔadzìì	158	General term for lichen	
Tłʼo (192 times)		Term for grasses and sedges	
Tłʼo	126		
Tłʼoghǫa	62	Type of sedge	CYPERACEAE Carex bigelowii ??
Tłʼodzìì	4	"Old grass"	CYPERACEAE Carex sp. ??
Daàghoo	52	Type of tree lichen	Not identified
ʔı̨tʼǫ̀ʔı̨tʼǫ̀	29	Cranberry leaves	ERICACEAE sp.
Kwetsı̨̀	12	"black rock lichen"	UMBILICARIA Muhlenbergi
Kʼòòʔı̨tʼǫ̀	7	Willow leaves	SALICACEAE Salix sp.
Gotsʼǫkàʔı̨tʼǫ̀	7	Cloudberry leaves	ROSACEAE Rubus chamaemorus
Hozìį̀tʼǫ̀	5	"Barrenland Leaves"	Salix sp.
Dzìewàʔı̨tʼǫ̀	2	Blueberry leaves	ERICACEAE Ledum decumbens
ʔetłʼedegoo	1	Not identified	Not identified
Degaetʼìì	1	Not identified	Not identified

Table XIII
Spring Migration

Tłı̨chǫ	Times Mentioned	English	Latin
ʔadzìì (326 times)			
ʔadzìidegoo	78	Various type of white lichen	Several types found, not identified
ʔadzìidezǫ	22	Black lichen	Several types found, not identified
ʔadzìì	6	General term for lichen	
ʔadzìidekwo	5	Yellow lichen	Not identified
Tłʼo (74 times)			
Tłʼo	34	Term for sedges and grasses	
Tłʼodzìì	24	"Old grass"	CYPERACEAE Carex sp. ??
Tłʼoghǫa	15	Type of sedge	CYPERACEAE Carex bigelowii ??
Tłʼotʼaà	3	Type of grass or sedge	Not identified
Hozìį̀tʼǫ̀	10	"Barrenland Leaves"	Salix sp.
Daàghoo	8	Type of tree lichen	Not identified
ʔı̨tʼǫ̀ʔı̨tʼǫ̀	8	Cranberry leaves	ERICACEAE sp.
Kwetsı̨̀/Kwetsǫ̀	8	"black rock lichen"	UMBILICARIA Muhlenbergi
Gotsʼǫkàʔı̨tʼǫ̀	5	Cloudberry leaves	ROSACEAE Rubus chamaemorus
Dzìewàʔı̨tʼǫ̀	5	Blueberry leaves	ERICACEAE Ledum decumbens
Kʼòòʔı̨tʼǫ̀	1	Willow leaves	SALICACEAE Salix sp.
Dlòodìì	1	General term for mushroom	Not identified

Tsǫht'eɤɻt'ǫ̀

Reports and articles (Thorpe 1999; Case et al 1996; Johnson and Ruttan 1993; Griffith et al 1998, 1999) consulted during the literature review discussed the variety of food the ʔekwǫ̀ eat and how the food sources they are dependent on differ between the boreal forest and the barrenlands. They do not contain any detail on vegetation that is comparable to that of the elders, as contained in the research results section.

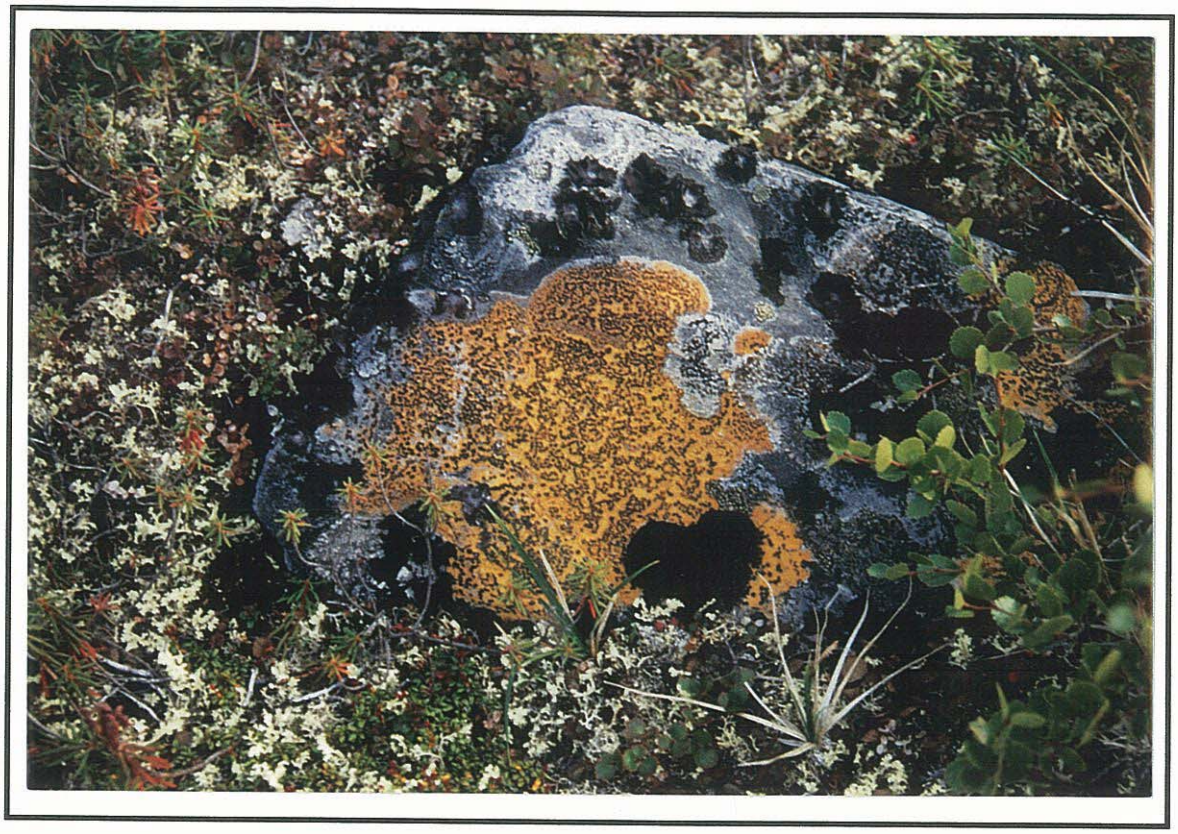
4.2.5 Oral Histories: Harvesting Distribution Patterns in Relation to Collared Cows' Distribution Patterns

The information discussed here comes from the Tłı̨chǫ elders and the Radio Collared Caribou data collected by RWED (Anne Gunn). As is evident from the map titled 'Dogrib and Caribou' in Appendix II, most ʔekwǫ̀ are harvested by Tłı̨chǫ hunters along river systems, whereas the maps titled 'Route of One Radio Collared Cow: 1996-2000' and 'Areas Used by Satellite-Collared Bathurst Caribou' in Appendix III do not show ʔekwǫ̀ traveling the same river routes as Tłı̨chǫ hunters. Although the data from these two approaches cannot feasibly be compared, there are some interesting similarities.

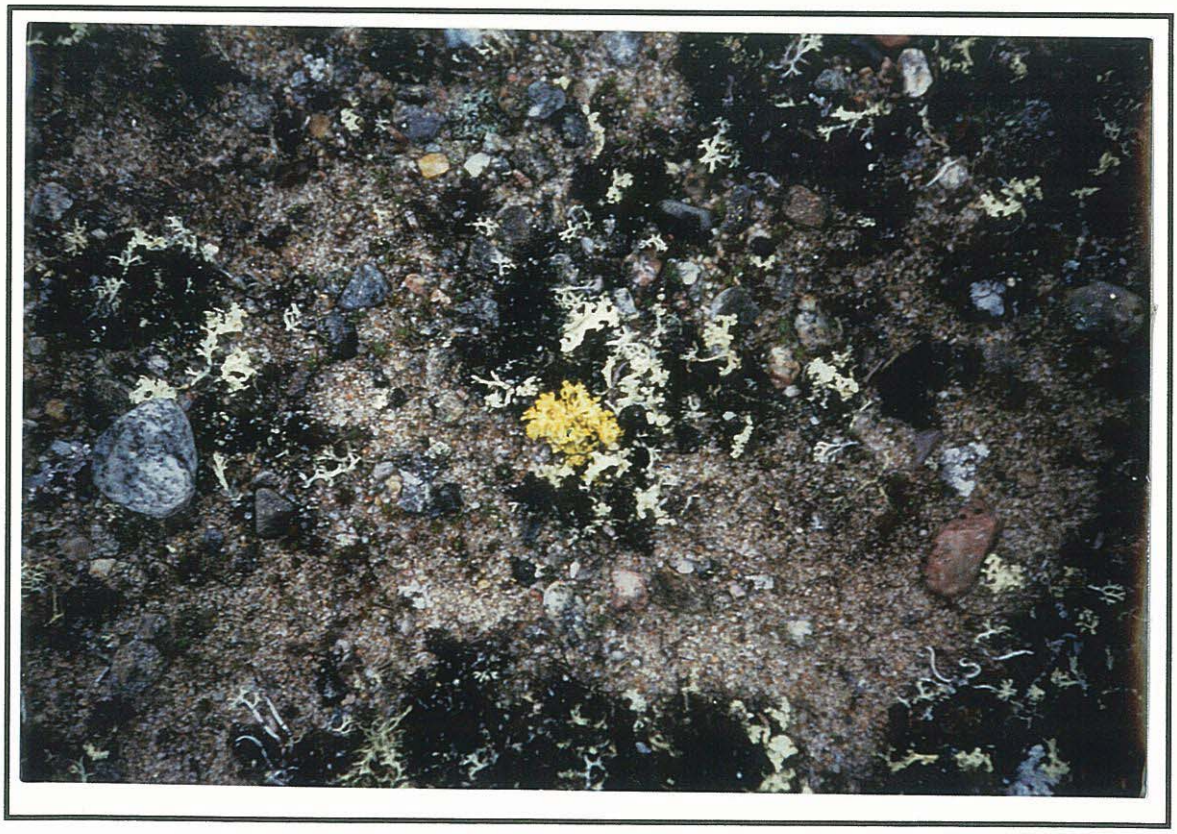
- The ʔekwǫ̀ harvested in Tłı̨chǫ̀ territory in 1998 did not provide enough meat for the hunters, and during the same year all radio collared caribou traveled east of Łutselk'e, and therefore away from Tłı̨chǫ territory.

- There are similarities in distribution when comparing data from 1949-50 and spring 2000 (RWED), for the years 1953-55 and spring 2000 (RWED), again in 1971 and 1977 and winter 2000 (RWED), and, lastly, 1961 and 1965 with the spring of 1999 (RWED).

- The one radio collared cow whose movements are shown on the map 'The Route of One Radio Collared Cow: 1996-2000' used the water



ʔadzìidekwo



ʔįtł'ǫ̀ʔįt'ǫ̀

Pıerre Beaverho and Charlıe Taılbone cleanıng ʔewǫ̀wò (carıbou hıde)
DeèzàaPtì 1999

crossings known by the Tłı̨chǫ and locations for fences 12 times in four (4) years.

4.2.6 Oral Histories: Summary of Harvesting Information

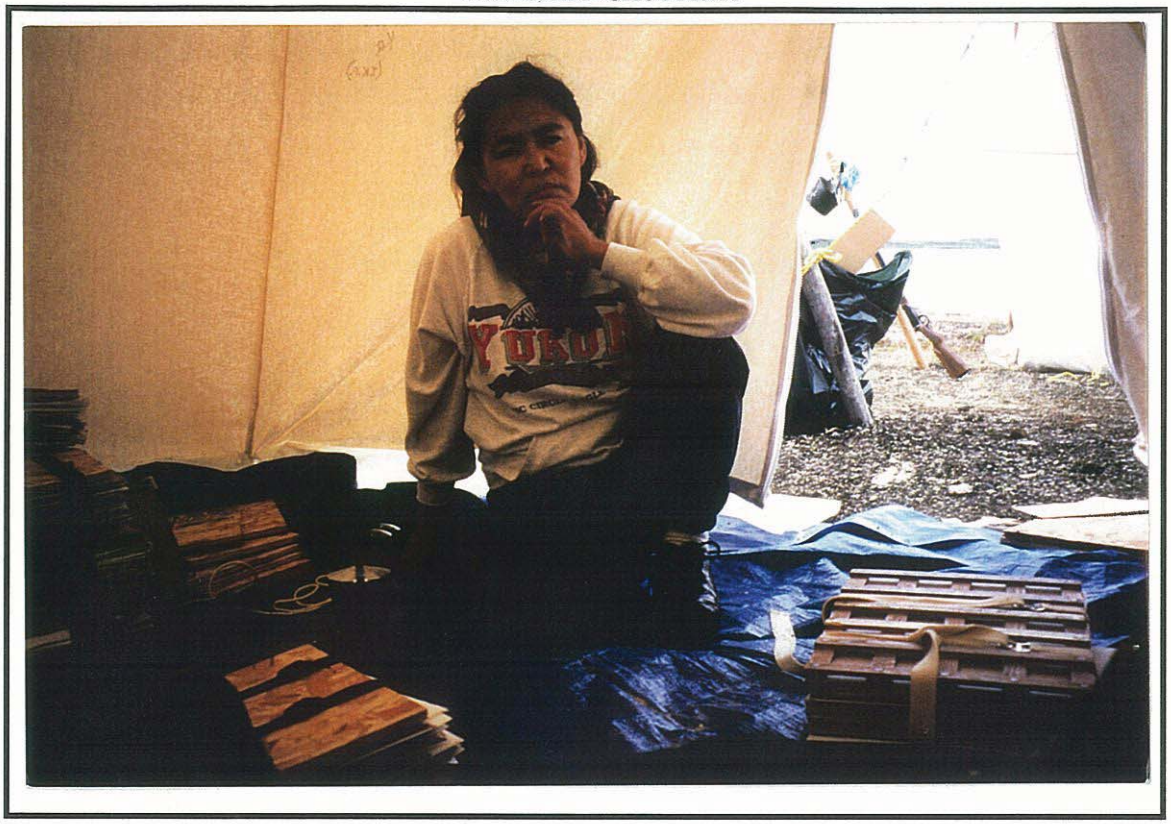
The distribution shown on the maps in Appendix II indicate ʔekwǫ̀ being harvested in various locations on Tłı̨chǫ traditional territory. The data in Table X indicates that in many years there were either not enough ʔekwǫ̀ for the camp or underweight ʔekwǫ̀ being harvested. Only in the fall of 1921 (1922) and the 1956 were the harvested ʔekwǫ̀ underweight and the number taken were not enough for the camp. Interestingly, these two cases the hides were reported as in bad shape as well. Throughout the period between the fall of 1956 and winter 1957 the harvested ʔekwǫ̀ were not enough and were underweight. This is interesting to note, particularly because the incident in the 1950s occurs at the same time Rae Rock mine was in full operation and the same time as when it is known that a boy hit an ʔekwǫ̀ with a stick in Whatì. The information in oral narratives reveals that the data on the maps corresponds with the elders' observations. The oral histories of harvesting also revealed the recorded vegetation found in the mouths, stools and stomachs of ʔekwǫ̀ were similar as to those included in the oral narratives for each season and environment.

4.3 Field Research Results

The elders consider there to be two sets of knowledge associated with ʔekwǫ̀, one for the barrenlands and one for the boreal forest. As Johnny Eyakfwo states:

> ... Its like it [the ʔekwǫ̀] has two separate naawo [knowledge]

Madelıne Chocolate



Researchers Revıewıng Data Associated wıth ʔekwǫ̀ dè (carıbou habıtat) and Vegetatıon Collected Durıng the Day

Georgına Chocolate, Allıce Legat and Sally Anne Zoe

> and that's how they [Johnny's elders] use to talk about it. So whatever land the ʔekwǫ̀ are headed to ... They [his elders] knew all of its [ʔekwǫ̀] knowledge! That is how they use to talk about the animal and its knowledge ... Sometimes, the animal when it moves on with its young, when they first start to move, they are not fast, is what they said I had said. And that, because they are teaching them, they don't move fast is what they are saying. They teach them and teach them and do that and do that as they move in this direction and when they are close to the bush, and because they have been taught well by their parents, whatever their parents will do, they do also. That's what they say as they talk about them. So then, once they find out, once they find out, how the animal is taught of its parent on how to eat, how their parents work, they see all of this. So then, whatever its parent does and even if its not told, "Do this!" whatever it wants to eat, it would begin to kick away the snow like this and look for its own food. It will not do for it! Because its already been taught, it will not do that for it again. That is how the animals teach one another and it becomes an animal. This was said as they talked about it. So then, that which you asked about, you are right. They are big animals and however its parent teaches it and it grows thereby is how it learns like you said—even with how we teach our own children, they teach their own even better and that's how the animals wander about. Even we don't do that! (Johnny Eyakfwo, age 73: 97/04/17).

ʔekwǫ̀ (barrenland caribou) habitat was studied at ʔek'atìʔezilıu̧ and Deèzàatì. The elders interviewed concentrated on landscape and the vegetation ʔekwǫ̀ is known to prefer.

4.3.1 Field Research in Barrenlands

ʔek'atìʔetsıu̧lıu̧ (mouth of Coppermine River)

During July of 1997, the research team spent 10 days at ʔek'atìʔetsıu̧lıu̧. Although photos were taken of vegetation and ʔekwǫ̀ were sighted and observed, more training took place than research.

The mud (ʔelè) caribou roll in to ward off insects
Deèzàatì 1999

Deèzàatì[45] (Point Lake)

ʔekwǫ̀ were observed at Deèzàatì the last week of August and the first week of September 1999. Most often small groups or single ʔekwǫ̀ were seen traveling along the ʔekwǫ̀ trails in the ts'oo (muskeg). The elders (Louis Whane, Pierre Zoe, Jimmy Martin, Personal Communication (data sheets): 99/08) stated that the ʔekwǫ̀'s preferred habitat in the fall is ts'oo since they can find a greater variety and abundance of food. During spring and early summer when mosquitoes and flies are a nuisance, the ʔekwǫ̀ prefer the what'a (eskers) and whagweè (open sandy areas covered with lichen), which are breezy, and the ʔela, which is a type of mud the ʔekwǫ̀ roll in to coat themselves with mud and which protects them from the insects (Louis Whane, Pierre Zoe and Jimmy Martin, Personal Communication (data sheets): 99/08).

During discussions while at Deèzàatì, elders continued to mention the vegetation listed in Table XIV as sources of food for the ʔekwǫ̀.

TABLE XIV
Vegetation Associated with ʔekwǫ̀ at Deèzàatì

Tłı̨chǫ Term	Translation
ʔadzìì	Lichen-general
ʔadzìidegoo	white lichen
kwetsı̨	rock tripe
ʔadzìidetł'e	type of lichen
ʔadzìidezo	type of lichen
dààghò	lichen-like vegetation on trees
dègogaet'ìì	red vine-like plant
dlòodìì	type of mushroom
hozıʔıt'ǫ̀	translates as 'barrenland leaves'
k'òòʔıt'ǫ̀	willow leaves
tł'odzìì	type of sedge or dog berries
tł'odzììʔıt'ǫ̀	type sedge or dogberries leaves
tł'oghoa	type of short sedge

[45] See Maps in Appendix II for harvesting patterns.

Bella Zoe

Predators and pests are acknowledged as being part of the ʔekwǫ̀ dè (barrenland caribou habitat), especially in the barrenlands, but are rarely discussed in relation to where ʔekwǫ̀ will migrate. Rather the Tłı̨chǫ elders discuss how most predators move with the herd, and the ʔekwǫ̀ behave in relation to these predators, and what type of habitat the ʔekwǫ̀ used to escape or protect themselves from mosquitoes and flies such as how they will go in the water to escape from the flies and mosquitoes.

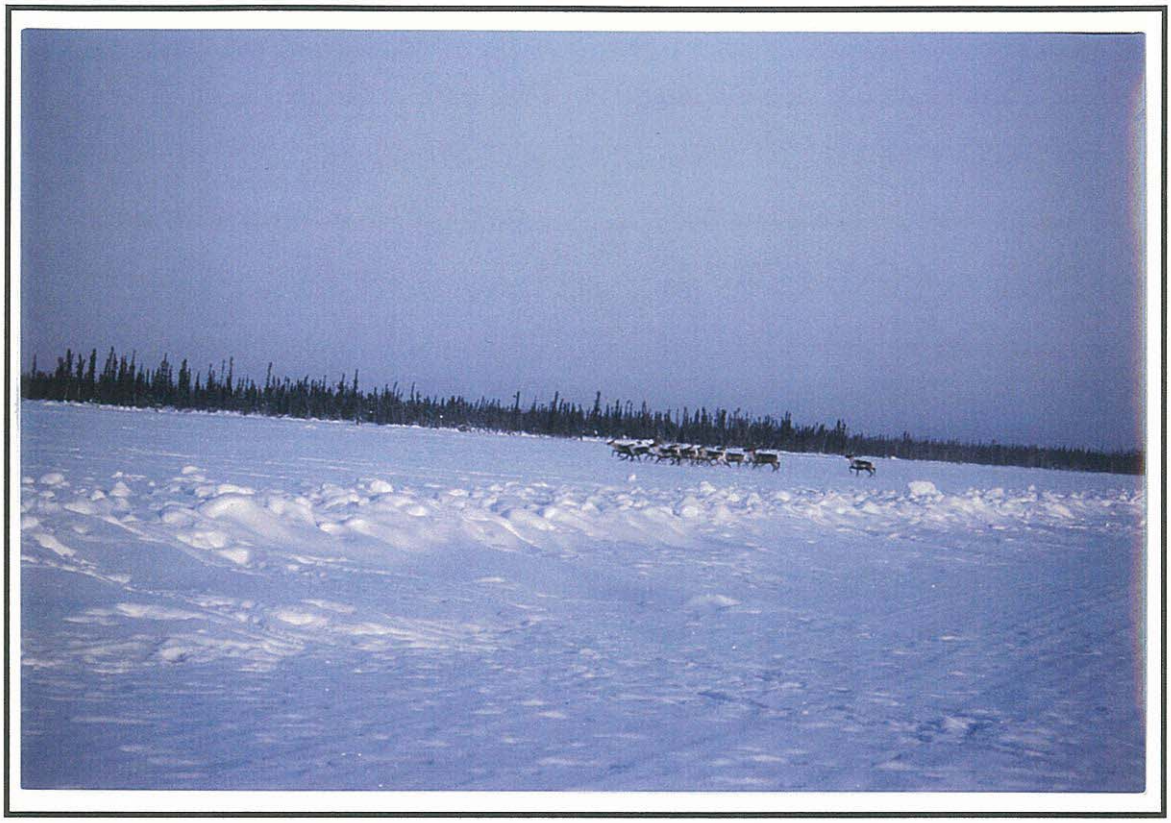
While at Deèzàatì, the elders observed that there is less lichen and other vegetation, important to ʔekwǫ̀, than even ten years ago[46]. They also stated that the ʔekwǫ̀ had an odor that was not there before. Further research could concentrate on narrowing down the time when these changes began, as well as determine the extent of these changes as a way to determine if they due to acid rain, global warming or if they are associated with more local industrial developments.

4.3.2 **Field Research Boreal Forest**

<u>Ice Road between Whatì and Gamètì (Rae Lakes)</u>

In February 2000 ʔekwǫ̀ were observed along the ice road between Whatì and Gametì. ʔekwǫ̀ observed along the side of the ice road to Gametì were very nervous. They appeared to want to travel in the open but were being forced into the bush to hide from the hunters. Twice the research team observer a small herd of approximately 15 ʔekwǫ̀ cross the road. They did not seem bothered by the snow banks. Although at times the ʔekwǫ̀ stopped and observe our vehicle they would run into the bush at the slightest noise.

[46] This observation was also made in the ʔek'atì (Lac de Graz) area.



ʔekwǫ̀ near Wınter Road to Gamètì
1999

They appeared tired probably because they had been hunted by several hunters.

Four (4) non-Tłı̨chǫ hunters and the vehicles of two Tłı̨chǫ hunters were observed. The non-Tłı̨chǫ hunters were butchering along the road, while the Tłı̨chǫ hunters had used their skidoos to hunt away from the road. The elders were extremely upset that the ʔekwǫ̀ were being butchered on the road and in three (3) cases ʔekwǫ̀ blood was spread across the road forcing the elders to be in a vehicle that drove over the blood. This is considered extremely disrespectful to the animal and the elders were upset at being put in this situation. We did stop and explain that the spreading of blood showed extreme disrespect and the hunters assured us that they would clean up. In the fourth case, no blood was observed although several ʔekwǫ̀ had been shot and were in the truck.

The trip was made for the purpose of observing the ʔekwǫ̀ in a boreal forest habitat that include snow, an ice road and where people were an part of the ʔekwǫ̀ dè (caribou habitat). Nevertheless, we discussed only the disrespect shown to the ʔekwǫ̀ in this situation and the potential for ʔekwǫ̀ to become extinct if they were continually disrespected in a way that would cause them stress.

ʔı̨hdaatì (Stagg River area)

In May 1999 the research team traveled to ʔı̨hdaatì (Stagg River) with 15 elders from Behtsokǫ̀ (Rae) to document vegetation that ʔekwǫ̀ forage on in the boreal forest. Being summer ʔekwǫ̀ were not observed at ʔı̨hdaatì. Nevertheless, the ʔekwǫ̀ preferred vegetation was discussed. While at

Tł’odzìì

Tł’ot’àa

ʔɻhdaatɻ the elders mentıon the vegetatıon shown ın Table XV as sources of food for the ʔekwǫ̀.

TABLE XV
Vegetatıon Associated wıth ʔekwǫ̀ at ʔıhdaatì

Tɬchǫ Term	Translatıon
ʔadzìıdegoo	whıte lıchen
kwetsʂ̀	rock trıpe
ʔadzìıdezo	type of lıchen
dààghoo	lıchen-lıke vegetatıon on trees
dègogaet'ıì	red vıne-lıke plant
gots'ǫkàʔɻt'ǫ̀	cloudberry leaves
k'òòʔıt'ǫ̀	wıllow leaves
tɬ'odzìì	type of sedge or dog berrıes
tɬ'oghǫa	type of sedge
tɬ'ot'aà	Type of sedge

4.3.3 Summary of Fıeld Work

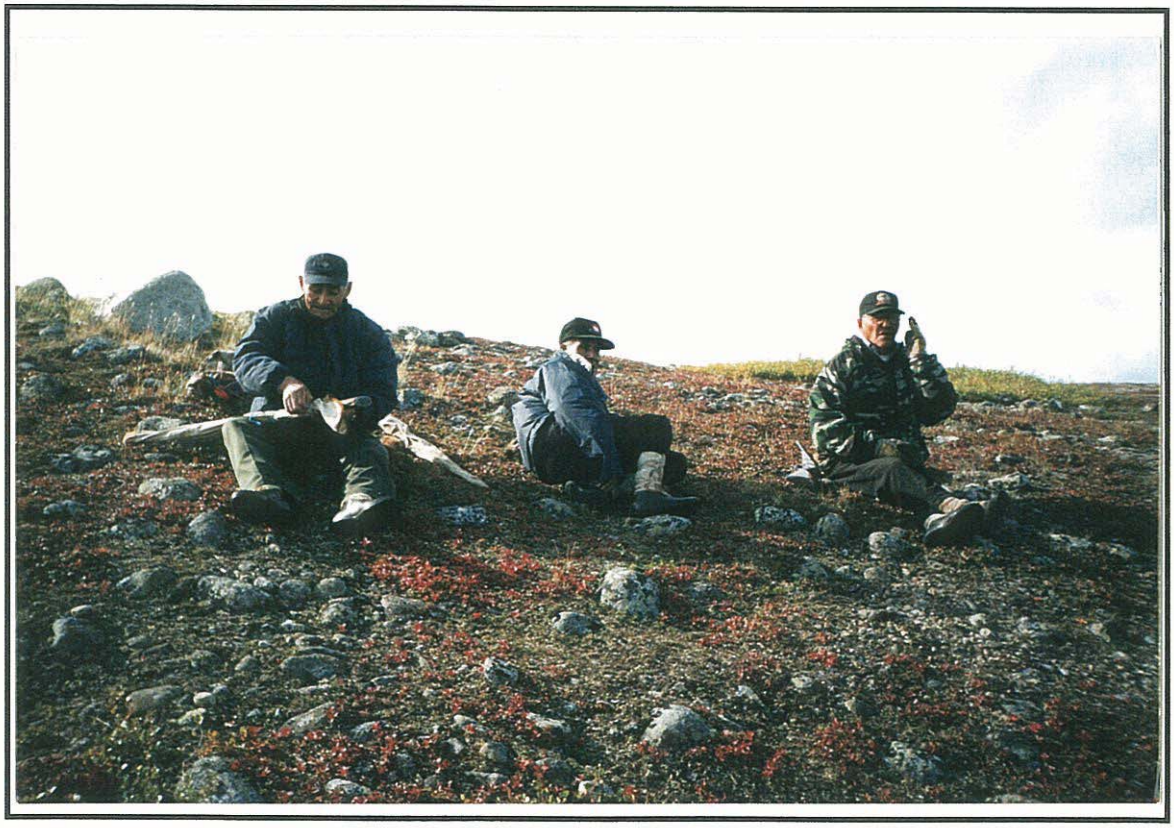
The fıeldwork served two purposes. Fırst, as traınıng for the staff, partıcularly wıth the elders. The elders wanted the research staff to see ʔekwǫ̀ habıtat so they could understand more clearly terms, concepts and descrıptıons used by the elders and harvesters, and to ınsure that the research staff understood the two sets of knowledge associated wıth ʔekwǫ̀. Second, to collect data, partıcularly on vegetatıon to ınsure approprıate translatıon from Tɬchǫ and Latın ıdentıfıcatıon. Tɬchǫ classıfıcatıon of vegetatıon and habıtat were documented.

NWT Archives N79-052-0042
1950s

5. DISCUSSION/CONCLUSION

In the circumpolar north, where industrial development is seen as important to the economic well being of northern communities, the Tłı̨chǫ are extremely concerned for the caribou and the habitat within which it survives. Current wildlife management is based on approaches that are grounded in scientific studies. There is a concern among the Tłı̨chǫ that these management techniques are not sufficient to protect and conserve the caribou from industrial developments. They feel these studies are insufficient on their own, as they are based on short-term observations and statistical analysis. For this reason, documenting knowledge that has its basis in long-term observations and the experience of living on the land, and incorporating this into monitoring and management techniques, may provide the Tłı̨chǫ with more assurance that the caribou will be protected in an appropriate manner. This concern is also expressed by other circumpolar people, which has culminated in conferences and workshops such as the annual, North American Caribou Workshop to be held in Kuujjuq, Quebec April 2001, and the Human Role in Reindeer/Caribou Systems Workshop held in Rovaniemi, Finland February 1999, in which traditional and biological knowledge were discussed and a resulting research plan was developed (Goldman 2000). Particularly important is the baseline data contained in the traditional knowledge as expressed by Dr. Piers Vitebsky's, Head of Social Science and Russian Studies at the Scott Polar Research Institute at Cambridge University. Vitebsky, who presented a poster at the Rovaniemi Workshop, is involved in a project on vegetation change and indigenous knowledge. This project is seen as a new approach to climate change through the interdisciplinary study of reindeer herding and because the research uses two contrasting case studies of intensive reindeer herding, to look at the

Jımmy Martın, Pıerre Beaverho and Phılıp Zoe
Deèzàatì 1999



Jımmy Martın, Louıs Whane and Harry Sımpson
Deèzàatì 1999

relationships between climate change and changes in vegetation, reindeer population and behaviour, human employment and culture and local control of resources. Vitebsky considers traditional knowledge as the most reliable form of baseline data and the most reliable source of information on changes relating to important variables.

In thinking about future monitoring and management of the ?ekwǫ̀, the Tłı̨chǫ also think baseline data is important when looking at environmental and social change. In establishing a premise on which Tłı̨chǫ knowledge could be documented for the purposes of establishing baseline data and change through time, the Whaèhdoǫ̀ Nàowo K'e[1] research team's working premise since 1997 was based on elders' comments made during previous research projects (Legat and Zoe 2000; 1995) which was how the caribou[2] moved and stayed in places where vegetation was abundant and accessible. Thus the guiding premise that caribou distribution and migration patterns are related to the state of their habitat. In focusing on this premise the research team came to understand that there are at least nine (9) general truths known to the Tłı̨chǫ elders. These are:

- ?ekwǫ̀ have unpredictable migration patterns, but when they migrate to a particular areas they are more likely to use certain trails and water crossings[3].
- ?ekwǫ̀ return to the same birthing grounds.
- ?ekwǫ̀ follow the same general annual cycle each year.
- ?ekwǫ̀ leaders, who are middle-aged cows with experience, have good memories.
- ?ekwǫ̀ migrate to where the vegetation is lush and will remain in an area if the vegetation is easily accessible and plentiful.

---

[1] Translated as Tłı̨chǫ Knowledge and Heritage Program.

[2] As stated above, the term 'caribou' in this report is used to refer to both the woodland and barrenland caribou. The Tłı̨chǫ term ?ekwǫ̀ refers only to barrenland caribou, and the Tłı̨chǫ term Tǫdzı is used when referring only to woodland caribou.

[3] These are areas harvesters consistently frequented and where they put up caribou fences prior to the late 1930s.

Paul Wetrade
Deèzàatì 1999

- ʔekwǫ̀ have a very strong sense of smell.
- ʔekwǫ̀ are fairly adaptable to changing environments making them susceptible to pollutants.
- ʔekwǫ̀'s survival and continued annual migration is dependent on the respect shown to them by humans.
- Only a few people have a spirit connection with the caribou, and therefore the knowledge and intelligence that comes from this. These people know where the caribou are at any given time, but cannot predict where the caribou will migrate to in the boreal forest.

These general truths contribute to a universal understanding of caribou and reindeer, and suggest that more attention be paid to both the manner in which the Tłı̨chǫ collected information on caribou and habitat, and on the oral narratives that contain the agreed upon and verified Tłı̨chǫ knowledge. Information is collected and remembered through observations and experiences while hunting and harvesting caribou. The information is discussed with others who have also observed and experienced caribou behaviours. During these discussion, knowledge is verified, processed and taught to younger people, and most importantly becomes part of the knowledge that is shared through the oral narrative. Observed changes to caribou behaviour and the habitat are remembered, shared and discussed, enabling other harvesters to watch and either verify or not possible changes. Once verified the information is shared on a regular basis through oral narratives.

5.1 Discussion

The general truths will be discussed separately in relation to the data collected over the last several years and in relation to information from other studies.

Hozììʔį̨t’ǫ̀

Although the tenth truth is listed: "Only a few people have a spirit connection with the ʔekwǫ̀, and therefore the knowledge and intelligence that comes from this. These people know where the ʔekwǫ̀ are at any given time, but cannot predict where the ʔekwǫ̀ will migrate to in the boreal forest", it will not be discussed in this report. Although elders discussed this when providing other knowledge of caribou, the research team as well as the elders agreed that this report is not the place to discuss the spirit relationship between some individuals and caribou.

5.1.1 Unpredictable Migration Patterns

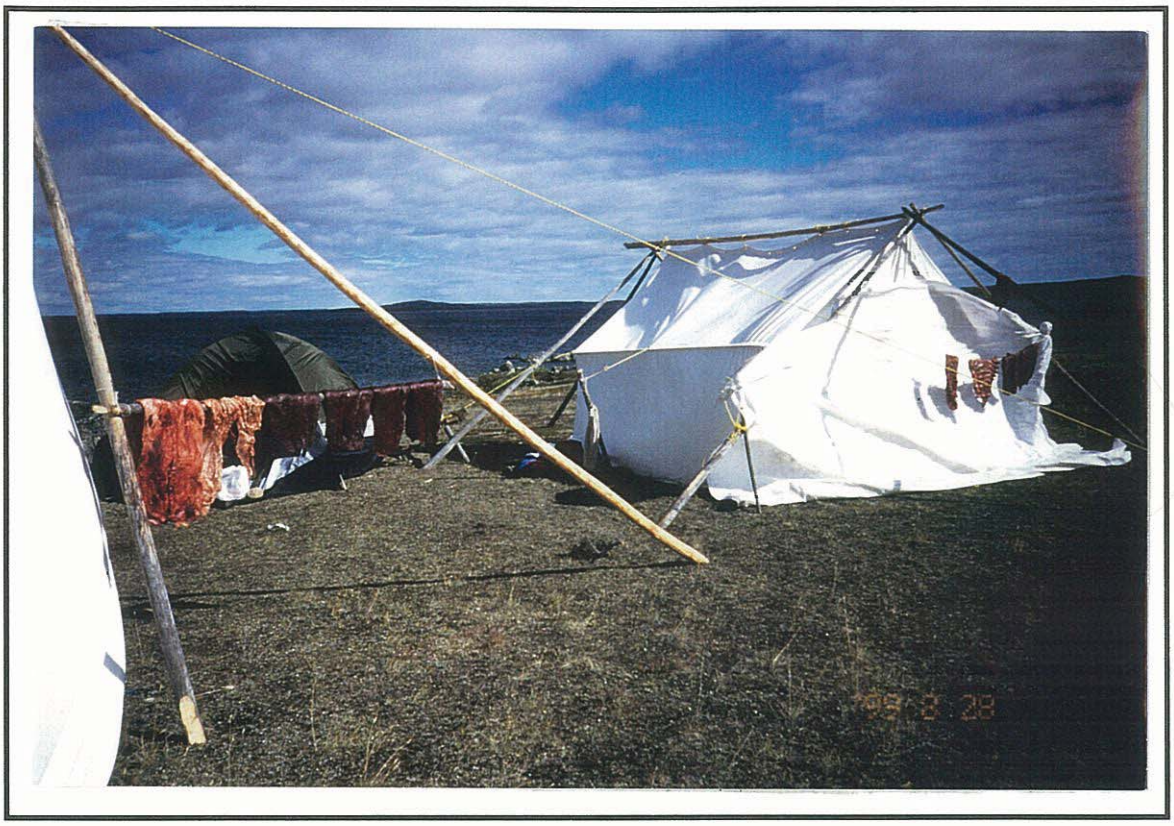
Both Tłı̨chǫ elders and caribou biologists accept there is no known pattern or consistent cause for shifting migration routes and distribution with which to predict future movements. Biologists Gunn (1999) Giest (1998) Case (1996) and Banfield (1980) focus on finding reasons why the caribou change their migration routes, with Geist (1998:316) suggesting the cycle as one of increases in population and dispersal followed by collapse and withdrawal of herd and decreases in the caribou's body size. Whereas, Tłı̨chǫ elders accept the ʔekwǫ̀'s unpredictable behaviour and concentrate on what is predictable to locate, observe and harvest them within what both biologist and elders consider to be a very extensive territory. At the 1999 conference in Roveneimi, Finland, entitled "The Human Role in Caribou and Reindeer Systems", biologists, reindeer herders and caribou hunters alike all stressed that both caribou and reindeer require a substantial range in which to forage and stressed the importance of the caribou relationship with humans (Goldman 2000).

Pıerre Zoe, Romıe Wetrade and Harry Sımpson
Deèzàatì 1999

The Tłı̨chǫ elders accept that the ʔekwǫ̀ do not always travel to the same place and that it is impossible to predict where the caribou will migrate and winter, however they also acknowledge that it is highly probable that there always seem to be at least a few ʔekwǫ̀ in most places. For example, although in 1998, the main herd moved south and west of Łutselk'e, Table X and the maps, in Appendix II, showing the 1998 harvesting distribution shows that at least a few ʔekwǫ̀ were taken between ʔek'atì, Wekweètì and Behtsokǫ̀. The hunters reported that in at least one case they could not locate enough for their own use. Similar information was reported in the early 1950s when few caribou were west of Wekwèetì and in several cases the caribou were underweight and/or there were not enough for the camp. Urquhart (1980:40) found similar patterns among the Porcupine caribou herd. He states that caribou from that herd will often use the some ranges for many years in succession, but not every year without fail, and that there are no known areas that are unoccupied every year.

Results from the life histories of harvesting[4] show distribution of documented harvested ʔekwǫ̀ between the years 1917-1998. Although there are no clear patterns that can be identified, the data suggests a slight shift every three to four years. These shifts do not seem to be as extreme as among other caribou herds such as those in the Arviat area, where one elder (name unknown) stated, "In 3-4 years they will move again. In Arviat now there's a lot of caribou in the winter, but in a few years there won't be" (Kruse et al. 1998: 453-54). Based on the data collected from the Tłı̨chǫ elders during the harvesting interviews, the distribution of the ʔekwǫ̀ harvested moved constantly with slightly more visible shifts occurring every four to five years, and more extreme shifts seem to occur ever every decade or two.

[4] See Table XI opposite page 58



Preparıng Bògǫǫ̀ (drymeat) and ʔek'a (fat) on poles at camp
Deèzàatì 1999

Kruse et al. (1998) have noted that although environmental conditions like snow cover and rain affect the numbers of caribou, they are also effected by mining, airplanes and jet planes (interview with someone from Rankin Inlet, p.453) and they claim this causes a decline in herds. Like the Tłı̨chǫ elders, elders from the Kitikmeot region (Thorpe, 1998: 10) state that there have been changes in migration routes as a result of the mining operation in the ʔek'atì area.

5.1.2 ʔekwǫ̀ Always Return to the Birthing Grounds

Although most Tłı̨chǫ elders did not travel to the birth grounds, they are well aware that the ʔekwǫ̀ always return to their birthing grounds. Like the Inuit, who have a stronger dependency on ʔekwǫ̀ in the summer than the Tłı̨chǫ, they did not disturb the cows and calves when they are at their most vulnerable (Thorpe 1999). Rather the Tłı̨chǫ traveled north in the fall during which time they met the ʔekwǫ̀ as they migrate south.

Because the ʔekwǫ̀ always return to the same area, both the Tłı̨chǫ and the Inuit are concerned about development in association with the birthing grounds. Scientists are also observing the reality of traditional knowledge.

5.1.3 ʔekwǫ̀ have an Annual Cycle that starts and end at the Birthing Grounds

The Tłı̨chǫ consider the home of the ʔekwǫ̀ to be in the barrenlands and consider knowledge of the annual cycle to be important. The elders acknowledge the barrenlands as the home of the ʔekwǫ̀ for two reasons: first the ʔekwǫ̀ didn't always come to the boreal forest, and second because the ʔekwǫ̀

Roseann Martın makıng Bògǫǫ̀ (dry meat)
Deèzàatì 1999

always return to their birthing grounds which are located in the barrenlands. For the Tłı̨chǫ elders the ʔekwǫ̀'s annual cycles starts and ends in the birthing ground with a general pattern of movement first in a southern or south-western fashion and slowly turning to the north, but often continuing westward, and then turning to the north and east again, and finally returning to the birthing ground at Bathurst Inlet.

Although Tłı̨chǫ elders will not predict when ʔekwǫ̀ will come into an area, they acknowledge types of movement within the annual cycle can be related to physiological changes in the ʔekwǫ̀, as well as traveling conditions. These are:

- When calves are about two feet start following the mothers around barrenlands in summer to fatten up on lush vegetation.
- When calves are about three feet high the ?ekwǫ̀ start traveling long distances towards the boreal forest, and cows teach the calves but the hoziiʔekwo will stay in barrenland
- Start of fall freeze up the ʔekwǫ̀ will start migrating.
- When bulls are fat the ?ekwǫ̀ start moving to the boreal forest.
- When ready to rub velvet off antlers move to boreal forest.
- In the spring when it is warm and the snow is slushy the small cows start migrating back to barrenland.
- In the spring when the larger cows are big with the fetus they start migrating to barrenland.
- When the snow is gone and the lakes are slushy from melting the large bulls start migrating to barrenland.

Johnson and Ruttan (1993:117-119) noted that Slavey hunters also watch for both traveling conditions as well as physiological indicators to determine aspects of the annual cycle.

What'a . at Nàdeɳìʔaàtì, north of ʔek'atì
Deèzàatì 1999

5.1.4 Lead ʔekwǫ̀, who are mıddle-aged cows wıth experıence, have good memorıes.

Tłı̨chǫ oral narratıves tell how ʔekwǫ̀ have excellent memorıes and start traınıng theır young as soon as they are strong enough to walk. These storıes also tell of lead cows who both teach the calves and lead the maın herd remembering where vegetatıon was ın abundance and where ıt was. Baskın (1970 ın Gıest 1998:322) found that "calves born to tundra reındeer held ın taıga not only learned to lıve ın the taıga but also assumed the larger body frame of taıga reındeer." It ıs ınterestıng to note, however, that Baskın also states that reındeer do not learn once they are adults (Gıest 1998:322), whereas Tłı̨chǫ elders claım the mıddle-aged cows contınually learn and know what areas have been grazed, and ıt ıs she that causes them to travel to areas wıth better grazıng possıbılıtıes. Tłı̨chǫ hunters do not kıll the lead cow for thıs reason.

5.1.5 When ʔekwǫ̀ are ın an area partıcular traıls and water crossıngs are used.

The elders know of clearly defined carıbou routes whıch ınclude water crossıng and excellent locatıons for carıbou fences[5]. The Tłı̨chǫ expect ʔekwǫ̀ to travel these routes ıf they are ın the area, however they also acknowledged that these routes may not be used for varıous reasons: snow depth, weather condıtıons creatıng crustıng snow cover, and avaılabılıty of food[6]. In associatıon wıth the traıls partıcular habıtat and landscape offer more varıed vegetatıon, escape from pests, easy access to water, or the landscape may be an obstacle, such as steep

---

[5] See Appendıx III: Map entıtled 'Tłı̨chǫ and ʔekwǫ̀'

[6] Thıs ıs also dıscussed by Case et al. (1996: 2), Ferguson et al. (1998: 213), Case et al. (1996: 2-13), Banfıeld (1980: 123-35), and the Internatıonal Porcupıne Carıbou Board (1993: 8-24)

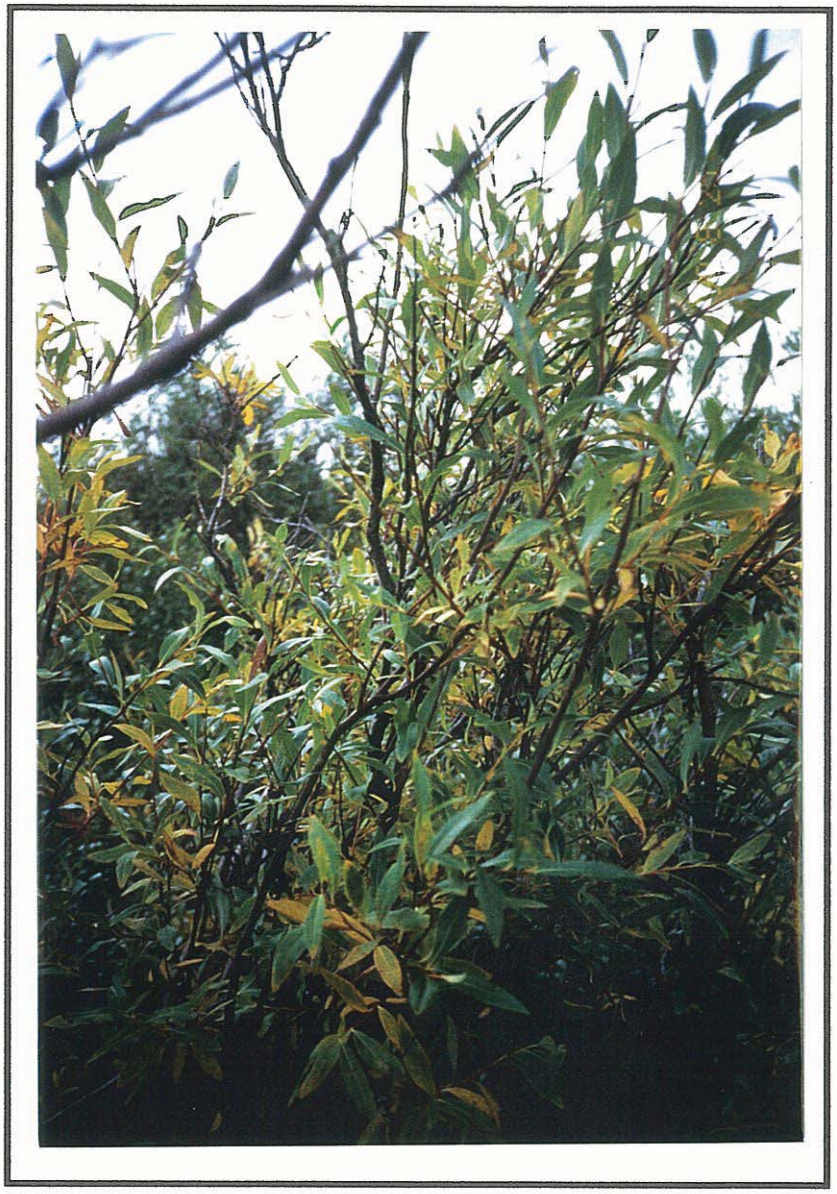
Tɬ'o
ʔɻhdaatì 1998

cliffs. Habitat that either provides favoured food, such as ts'oo (muskeg), whagweè (dry sandy area with lichen) and tl'otìa (type of moist grass land) variation of which can be found in both the barrenlands and the boreal forests. Wha'ta (eskers), whagweè (dry sandy areas with lichen) that are open and breezy, whereas ʔela (a type of mud) in which the caribou like to coat themselves and water are used to escape flies and mosquitoes. During the spring slushy snow on lakes is preferred as it provides relief to the ʔekwǫ̀ legs and hooves as well as the ability to see predators. Other indigenous knowledge studies have noted a variety of factors such as the need to find a good food source (Johnson & Ruttan 1993: 119), the season and weather conditions (Johnson & Ruttan 1993: 120-21).

It is clear that they avoid the areas with the most development and the greatest amount of activity and traffic (Cameron, 1995; Wolfe, 1999; Kruse, 1998; Klein, 1999; Nelleman, 2000). Cameron (1995: 6) states that the caribou can tolerate a certain amount of surface development, especially if they can pass under or over it, but if their movements are restricted they change their migration patterns, although the point at which they start to move away cannot be predicted.

5.1.6 ʔekwǫ̀ have a very strong sense of smell

Tłı̨chǫ elders say that ʔekwǫ̀ have a strong sense of smell that leads them to abundance and lush vegetation, and keeps them away from what they have learned is dangerous, such as areas where fires have been. The elders have expressed two concerns relating to the increase in industrial pollutants that often



K’òò ʔɻt’ǫ

smell like smoke, such as exhaust from vehicles and buildings. The elders feel that the ʔekwǫ̀ first become confused as they will be unable to smell vegetation and will be unsure as to where to travel, and then will learn they that these smells will not immediately kill them and that there is still vegetation in these areas thereby adapting to the area and digesting contaminated plants and water such as those plants with a yellow ash type substance on them around Diavik Claim Block in May 2000.

5.1.7 ʔekwǫ̀ migrate to where the vegetation is lush and will remain in that area if the vegetation is easily accessible and plentiful

Indigenous people and caribou biologists agree that caribou have a tendency to find lush and varied vegetation and agree they travel to where they can most easily access food (Geist 1998:316, 318; Johnson and Ruttan 1993:119-121). Hard snow and changing weather conditions make foraging difficult. Northern Yukon Ecological Knowledge Coop report (1996) explained that weather has influenced migration due to difficult feeding conditions, for example hard snow that is arduous to dig through.

Throughout the project, Tłı̨chǫ elders have explained that caribou highly developed sense of smell which leads them to the most lush vegetation. This is consistent with Anne Gunn's (WKSS presentation. 98/04) statment that ʔekwǫ̀ seem to always return to the location within their birthing ground where the vegetation is the richest and when the vegetation is the most lush. Although George Kuptana in Thorpe (1999:10) does not refer to the ʔekwǫ̀'s ability to smell, he did state that over a period of years the vegetation eaten by caribou

Gots'oka?ɻt'ǫ̀

will be trampled and disappear, thereby causing the caribou to migrate in search of new food.

5.1.8 ʔadzìì is the most important food for ʔekwǫ̀, however their varied diet is important to their overall fitness

Tłı̨chǫ elders continually stated in both oral narratives and their histories of harvesting that ʔadzìì (lichen) is the most important food for the ʔekwǫ̀. They also state that more varied vegetation is eaten in the barrenland than in the boreal forest. Tłı̨chǫ elders also emphasize the importance of kwetsı̨̀ (rock tripe) as vegetation that fattens ʔekwǫ̀. According to many biologists, dietary needs change throughout the migration cycle, depending on pregnancy or post-calving nutrition requirements of the cows. During calving labrador tea and lichens are the primary vegetation. Geist (1998:318) states that caribou herd size is affected by the accessibility of vascular plant and lichen biomass and that lichen, which Tłı̨chǫ oral narratives discuss as well as the time it takes for ʔadzìì (lichen) to regrow. Tłı̨chǫ elders constantly discuss seasonal vegetation important to the ʔekwǫ̀ in oral narratives as well as differences and similarities between the boreal forest and the barrenlands. These food sources were also documented in the Dene Cultural Institute Traditional Ecological Knowledge report (1993) and in Thorpe (1999: 11), where it is stated that cottongrass is the first food calves eat after they tire of suckling and that caribou like mushrooms because they contain a lot of water.

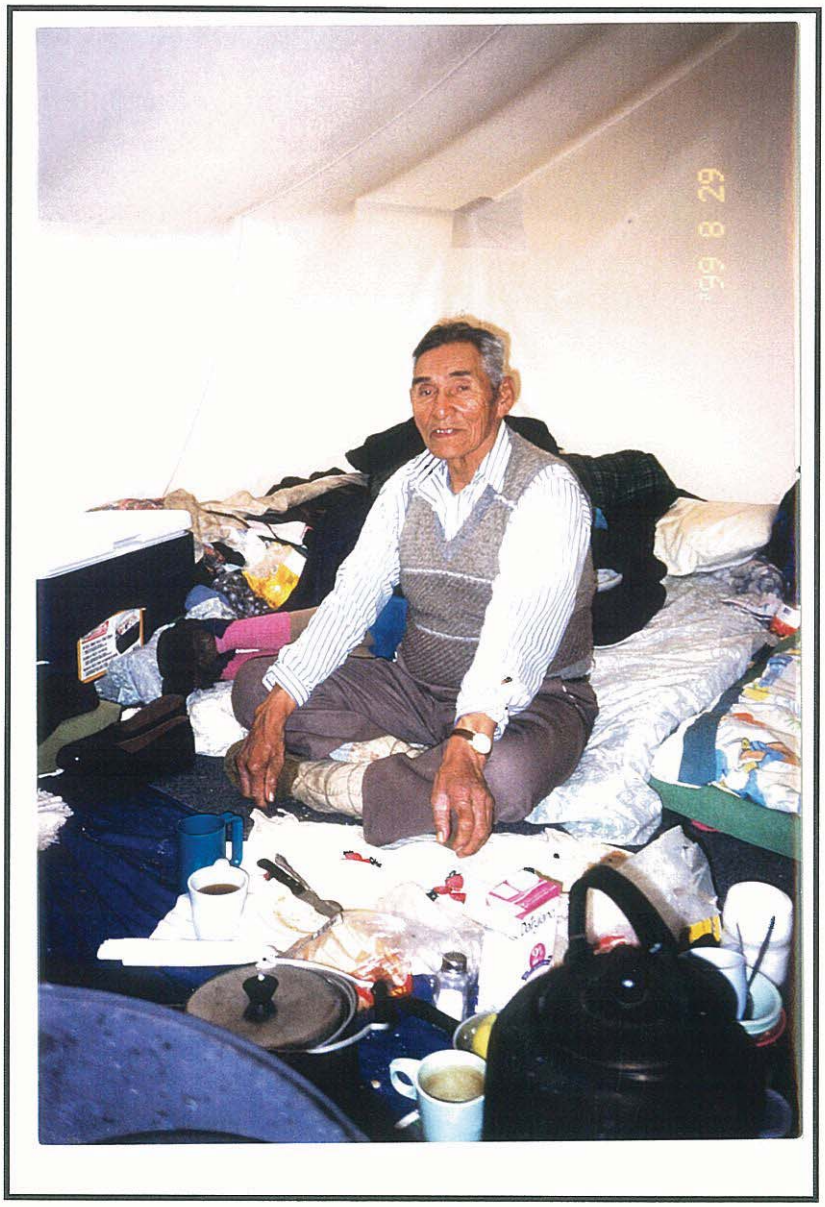
(Case et al. 1996: 4-5) documented both winter and summer food preferences. They found that in winter lichen species and green parts of sedge, horsetails, alder, birch, willow and preferred, with lichens being the food of choice due to their high protein content and because they are easier to digest. In the spring,

K’alatso (Type of Cotton Grass)

on the calving grounds, winter lichens are replaced with fruticose lichens, willows, dwarf birch, green alder and cottongrass. Preferred summer vegetation includes a variety of grasses, sedges, forbs, and select new sprouts and buds, and flowers. In the late summer the caribou eat willows, dwarf birch, bearberry.

5.1.9 Although ʔekwǫ̀ are Adaptable, Adaptability has it limits therefore ʔekwǫ̀ are Susceptible to Pollutants

Tłı̨chǫ elders have observed how adaptable ʔekwǫ̀ have been over the half century with ever increasing industrial developments and infrastructure. When discussing their concerns they often tell how caribou were once afraid of planes, running away and now they stand on runways often watch as planes land. They also point out that in 1998 ʔekwǫ̀ moved south rather than southwest, and now they are traveling through the areas again. The elders are very concerned the ʔekwǫ̀ will become more and more comfortable with mining sites and they and their meat will become contaminated. The caribou and reindeer's ability to adapt has been reported in other circumpolar regions. For example: Reimer et al.'s work (2000) on the effect of high voltage transmission lines in Norway has found that caribou avoid the transmission line areas during construction and that construction results in loss of habitat for caribou, and if they are not accompanied by roads, tourist tracks and settlements, they eventually become accustomed to their presence. However, they did conclude that there is insufficient data on the effect of the noise from the lines on caribou and this needs to be further studied.

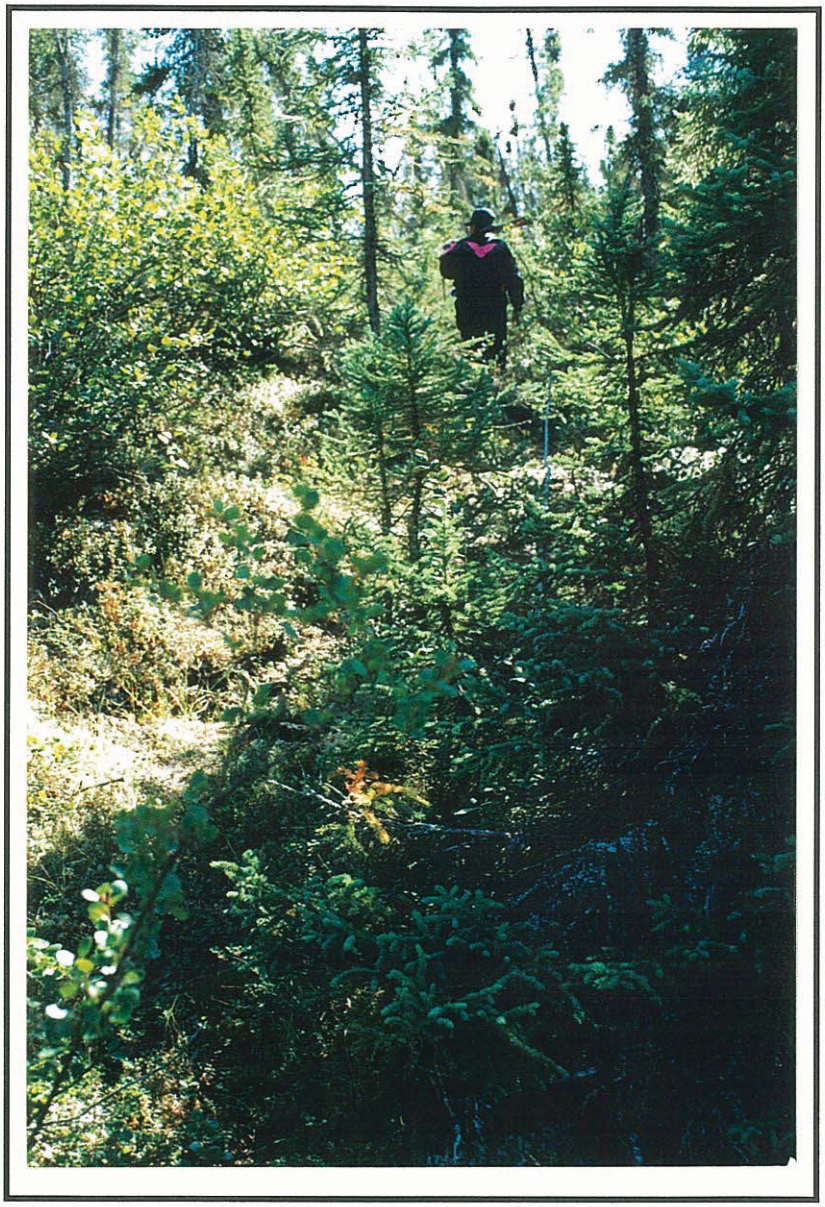


Jımmy Martın

The elders have observations of caribou for many years in most months of the year, including recent observations of caribou migration in relation to industrial development. They have witnessed some effects of mining development on caribou migration. During interviews, at meetings and during casual conversations the elders have expressed concern over things like dust affecting the vegetation the caribou eat, the noises from mining activity deterring them from migrating through the area, the possibility that if they do migrate through they may be harmed by contaminants from tailings ponds and they are worried the caribou may become confused by a combination of any of these occurrences.

The elders predictions have been noted by Wolfe et al. (2000) who studied the effects of roads and traffic on caribou and reindeer and found that roads serve as barriers, cause deaths from collisions, and may increase vigilance behaviour, taking away from foraging behaviour. Caribou have also been deflected by pipeline beams. In some provinces they have continued their migration across constructed railways or roads. Aircraft also has some effect. The caribou are not always affected, but often are, the calves being more sensitive, and helicopters are known to cause a stronger response than small planes. The response of the caribou is to run away, although cows do not abandon calves. Caribou have used gravel pads and shade provided by elevated production facilities, regardless of sex and age composition of group.

As the Tłı̨chǫ elders continually state all human behaviour is related to caribou migration and movements. A study by Nellemann et al. (2000) researched the density of caribou in differing radii from the central point of a lodge located near a national park in Norway. They found that there were lower densities of caribou near the lodge, which increased in number as the measurements moved



Boreal Forest

away from the lodge. It was also noted that lichen had been overgrazed in the areas farther from the lodge where the caribou had moved to obtain food. The researchers stated that this could prove problematic in the long term as eventually the caribou would run out of food to support their numbers (Nelleman: 12-14).

5.1.10ʔekwǫ̀ will Migrate to People with Whom They have a Respectful Relationship

The most important aspect relating to caribou migration and caribou survival for most circumpolarl indigenous people is maintaining a respectful relationship with caribou and reindeer. The Dene Cultural Institute lists Slavey principles and specific rules regulating human behaviour towards nature (Johnson and Ruttan 1993:189-193) most of which are similar to those listed above. Like the Tłı̨chǫ and the Slavey, the Cree of Chisaslie know that caribou population fluctuates and that declines are related to the ethical transgression of the people who use caribou and caribou dè. Two Cree elders explained how the caribou disappeared around the turn of the century due to overslaughtering of caribou as a result of newly acquired repeating rifles. The caribou did not come back to the area until 1982, at which time hunting rules were again not respected and hunters were letting wounded animals get away, killing more than could be carried, not caring for the meat properly, and not disposing of the bones properly. Cree leaders worried that this signaled a lack of respect for the caribou and was a serious transgression of the traditional code in which ritual respect ensures that animals will continue to make themselves available. (Berkes 1999:101-108).

Rosanne Martın removıng the Dehhǫ̀ (carıbou haır)
Deèzàatì 1999

5.1.11Human Behavıour ıs Key to the Success of ʔekwǫ̀

Tłı̨chǫ elders ınsıst that ʔekwǫ̀ and ʔekwǫ̀ dè must be respected. Some may feel that the ıdea of respectıng carıbou may be outdated, however the Tłı̨chǫ elders know once the ʔekwǫ̀ and ʔekwǫ̀ dè are no longer respected, socıal and economıc problems wıll follow. The research was ıntended to document the elders' knowledge on carıbou dıstrıbutıon and the state of theır habıtat. Based on the elders' wısdom and understandıng of both dè as ıncludıng humans and carıbou, ıt ıs suggested that the most ımportant changıng factor ın the carıbou dè ıs human behavıour and human respect for the carıbou. Although ıt was only ın Whatì that a carıbou was hıt, there are other ways that a carıbou can be offended. Tradıtıonally, a sıgn of dısrespect was shootıng the leaders because ıt was known that the leaders are vıtal to the well beıng of the herd. The Dogrıb Regıonal Elders' Commıttee are concern for the herd and wonder what wıll happen ıf the leaders become confused due to the smell of pollutants. They feel ıt wıll be as problematıc as shootıng the leader.

Lıke the Chıpewyan elders (Parlee), the Tłı̨chǫ elders are concerned about he lack of knowledge that both young Tłı̨chǫ have of carıbou behavıour and habıtat and the lack of knowledge of those who are overseeıng ındustrıal developments. They consıder the pollutants that are fallıng on carıbou habıtat and the ınfustruture to be sıgns that many ındıvıduals', of all cultural backgrounds to lack knowledge of how much terrıtory carıbou requıre to survıve.

The elders' fear of the extent of the lack of respect through a lack of knowledge was confırmed when:

Panda Pıt at BHP Ekatı Mıne on the north sıde of ʔek'atı̨

New road (2000) leadıng to BHP's Mısery Pıt on the north sıde of ʔeka'atì
Arrow ındıcates a tradıtıonal carıbou water crossıng

- Diavik's biologists did not know or observe the important water crossing associated with ?ek'adìì (Legat et al 1995); and
- BHP Diamonds Inc. built a road, leading to the new BHP Misery Pit, over another important caribou water crossing (Legat et al 2000).

The human role is key to the success or failure of reindeer and caribou. For example:

- In Norway hydroelectric projects have resulted in reduction of grazing area for domestic reindeer, have flooded grazing lands and in some cases obstructed traditional movement routes of the reindeer (Reimers: 75-82).

- Farnell (1999), Gunn (1996), Cameron et al 1995, and Reinmer et al (2000) have all conduced studies that looked at the effects of human activity, such as mine sites, power lines and construction on and found a reduction of caribou populations and dynamics in relations to habitat loss.

- Klein (1999) summarizes the impact of various developments in the circumpolar arctic on caribou and reindeer. In the Norilsk metalurgical complex in Siberia pipelines deflected movements, stopped caribou in their movements and as a result caused them to overgraze lichens and other vegetation. Techniques were used to deflect them to new feeding grounds. Pollutants from the mine spread over a large distance and have caused the widespread death of lichens or decrease in their growth rates, as well as to many of the vascular plants. There has been a reduction in the ability of area to support reindeer. No impact analysis was done and therefore no mitigation features incorporated into building and design, hence the serious later environmental problems (Klein: 93-94).

- At Alaska's Red Dog mine a road was constructed to the mine. It transects the migration route of the Western Arctic Caribou Herd (WACH) during their twice-annual movements. A system has been developed where the mine reduces road traffic during the two migration periods, through a notification process, thereby reducing the impact of road traffic during migration. An EIA occurred prior to development and steps were taken to minimize impacts. Local people were highly involved in this whole process (Klein: 94-95).

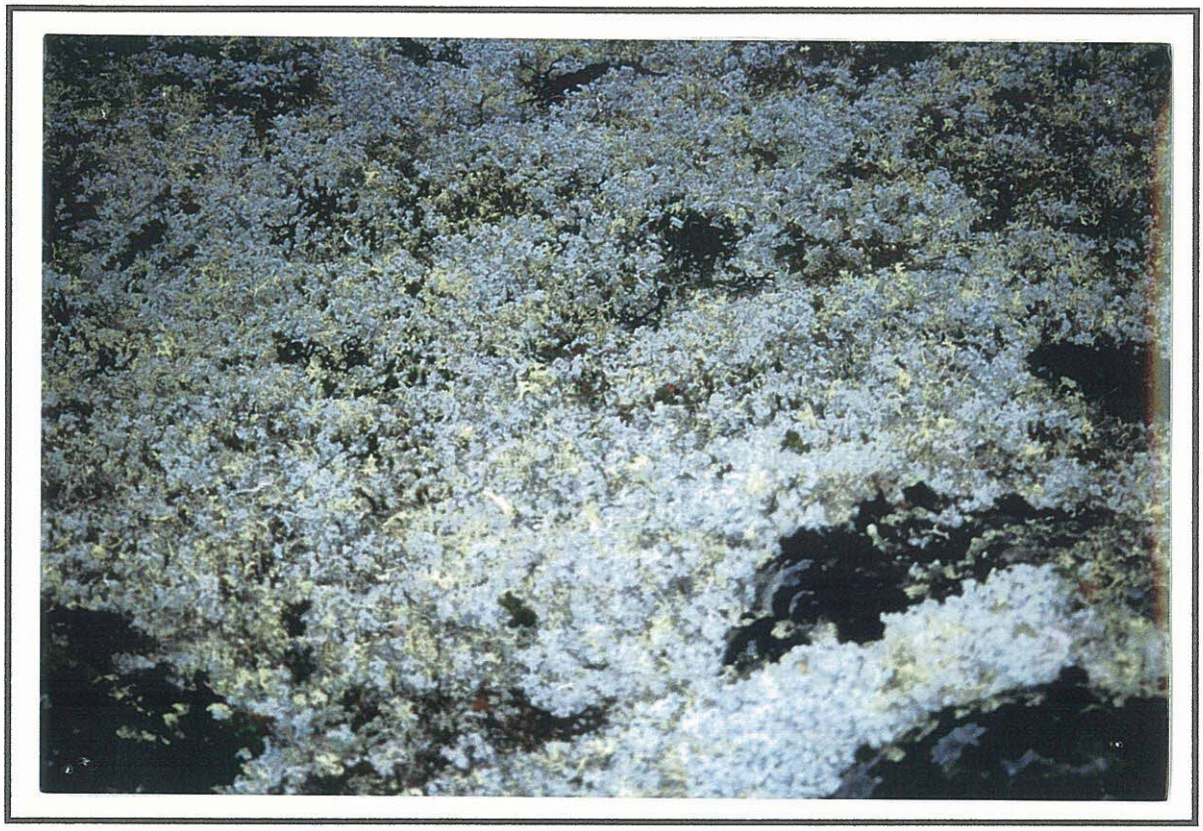
Margaret Lafferty from Wekweètì and Elızabeth Chocolate from Gamètì
Sıttıng on Whagweè (type of habıtat) where varıous types of ʔadzìì can be found
Deèzàatì 1999

5.2 Conclusion

The elders state that the most important factors affecting distribution are human activities and food availability. This is corroborated by others (Klein 1999; Cronin 1998; Wolfe 1997; Cameron 1995; Reimers unknown;) who have observed that recent increases in human activity, such as varying resource development, and other dramatic changes to the caribou habitat, affect caribou distribution and migration patterns. Documenting these changes, as observed by the Tłı̨chǫ hunters and elders, contributes to a base of knowledge that can serve as baseline data for future assessment and monitoring purposes. This is especially pertinent given that Tłı̨chǫ knowledge covers a long period of time, whereas scientific studies, which often correspond to the elders' observations, have been in existence for only a short period of time and as a result are sometimes unreliable due to gaps in information.

The elders are concerned about the rate and volume of change that is continuing to occur as a result of industrial development in the Tłı̨chǫ traditional territory. These elders want their own program which will continue to document their knowledge of the past and to used harvesters trained by them to monitor through cumulative effects assessment and other means as a way to mitigate harmful effect. Mining development in recent years places an imperative on documenting Tłı̨chǫ knowledge of the effects of industrial development on the habitat and the caribou that migrate throughout it.

The Tłı̨chǫ Treaty 11 Council is concerned that unless Tłı̨chǫ traditional knowledge of the caribou within their habitat is recognized and used, the caribou will be harmed by existing and potential industrial developments, such



Various types of ʔadzìidegoo

caribou will be harmed by existing and potential industrial developments, such as diamond, gold and uranium mining and hydroelectric development. Baseline data, as well as monitoring by harvesters, is necessary if the caribou and their relation to human activity associated with roads, mining and other common development activities, is to be understood and properly managed.

5.3 Recommendations

Given the importance of the ʔekwǫ̀ to the Tłı̨chǫ, and given the their limitations to adapt to changing environments, the following recommendations are made in the hope that the caribou will be protected from destructive bi-products from industrial development.

- Baseline data research continues to be collected on the habitat within which the caribou travel in both the boreal forest and the barrenlands.
- Known ʔekwǫ̀ water crossings are protected from highway development, and research is continued with the elders to document all caribou crossing,
- Baseline data is established about woodland caribou as they may be affected by industrial development resulting from the proposed pipelines,
- The collection of Tłı̨chǫ harvesting data continues, not only on the state of the caribou taken, but the state of the habitat on which it depends.
- Caribou habitat is protected.
- Strict guidelines are developed to limit pollution
- Fences are put up around all tailings ponds to protect caribou from using the tailings rather than ʔelà (mud) to coat themselves.
- Additional Tłı̨chǫ knowledge is documented on the use of stars to understand migration.
- Additional Tłı̨chǫ knowledge is documented to further understand the adaptability of ʔekwǫ̀ and associated problems.
- Wildfires in the boreal forest are put out as they deplete caribou winter forage.[7]

[7] Fires also destroy Tłı̨chǫ harvesters' trap lines.

Sally Zoe, Madelaine Chocolate, Georgina Chocolate and Allice Legat
University of Calgary, 1999

6. LINKS WITH PARALLEL STUDIES

Links were made to other studies through this report

7. TRAINING ACTIVITIES AND RESULTS

Training took place on a daily basis for all members of the research team. Discussion of training is discussed where relevant under the Activities section and the Research Results section.

Margaret Lafferty and Louis Whane leaving Deèzàatì for Wekweètì
1999

7. REFERENCES CITED

_____ "A Story of Caribou and Social Learning". Photocopy in possession of Whaèhdǫǫ̀ Nàowoò Kǫ̀, year and author unknown.

Anderson, David G. "*Rangifer* and Human Interests". Paper prepared for the 10th Arctic Ungulate Conference, Tromso, Norway, August 1999. Third Draft, May 24, 1999.

Back, Sir George. 1836 Narrative of the Arctic Land Expedition to the Mouth of the Great Fish River, and Along the Shores of the Arctic Ocean, in the Years 1833, 1834 and 1835. London: John Murray.

Banfield, A. W. F. and Jakimchuk, R. D. "Analyses of the Characteristics and Behaviour of Barren Ground Caribou in Canada". Prepared for Polar Gas Project, 1980.

Berkes, Fikret. Sacred Ecology: Traditional Ecological Knowledge and Resource Management. USA: Taylor & Francis. 1999.

Case, Ray, Buckland, Laurie, and Williams, Mark. "The Status and Management of the Bathurst Caribou Herd, Northwest Territories, Canada". 1996. Yellowknife, NWT, Department of Renewable Resources, Government of the Northwest Territories.

Farnell, Richard. "Evaluation of Diavik Diamond Mines Environmental Assessment in Relation to the Bathurst Caribou Herd". Report prepared for the Tłı̨chǫ Treaty 11 Council, March 1999.

Ferguson, A.D, Messier, Francois. "Collection and Analysis of Traditional Ecological Knowledge about a Population of Arctic Tundra Caribou". In Arctic, Vol. 50, Number 1, pp. 17-28, 1997.

Ferguson, M.A.D.; Williamson, R.G. and Messier, F. "Inuit Knowledge of Long-Term Changes in a Population of Arctic Tundra Caribou". In Arctic, Vol. 51, Number 3, pp. 201-219, 1998.

Freese, Curtis H. and Ewins, Peter J. "Guidelines for the Consumptive use of Wild Species in the Arctic, Wild Species Use by the Inuvialuit of Inuvik and

Paulatuk: An Analysis of WWF's Guidelines for Consumptive Use of Wild Species". A World Wildlife Fund Arctic Programme Discussion Paper, WWF International Arctic Programme, April 1998.

Goldman, Helle V. (Editor-in-Chief) Proceedings of the Human Role in Reindeer/Caribou Systems Workshop, Polar Research: 2000:19:1.

Griffith, Brad, Gunn, Anne, Russell, Don and Kielland, Knut. "Bathurst Caribou Calving Ground Studies: Influence of Nutrition and Human Activity on Calving Ground Location". Annual Report to West Kitikmeot Slave Study Society, Yellowknife, NWT, 1998.

Griffith, Brad, Gunn, Anne, Russell, Don and Kielland, Knut. "Bathurst Caribou Calving Ground Studies: Influence of Nutrition and Human Activity on Calving Ground Location". Annual Report to West Kitikmeot Slave Study Society, Yellowknife, NWT, 1999.

Grindal, Scott D. "Behavioural Monitoring of Barren-Ground Caribou During Spring Migration (1997)". Final report prepared for Diavik Diamonds Project, by Axys Environmental Consulting Ltd., Vancouver, B.C.

Gunn, Anne, Dragon, Judy, Papik, Stephanie, Panayi, Damian, Svoboda, Michael, Sutherland, Mika, D'Entremont, Marc. "Summer Behaviour of Bathurst Caribou at Mine Sites and Response of Caribou to Fencing and Plastic Deflector, July 1997". Final Report to the West Kitikmeot/Slave Study, prepared by the Department of Resources, Wildlife and Economic Development, April 1998.

Helm, June. "Dogrib." In Handbook of North American Indians, ed. William C. Sturtevant, *Subarctic*, Volume 6, 1981. Washington: Smithsonian Institute, pp.291-309.

Johnson, Martha; Ruttan, Robert A. "Traditional Dene Environmental Knowledge: A Pilot Project Conducted in Fort Good Hope and Colville Lake, NWT 1989-1993". Hay River, NWT: Dene Cultural Institute, 1993.

Klein, David. "Arctic grazing systems and industrial development: can we minimize conflicts?" In Polar Research, Vol. 19, No. 1, Rovaniemi, Finland, 10-14 February 1999, pp. 91-98.

Kruse, Jack; Klein, Dave; Braund, Steve; Moorehead, Lisa; Simeone, Bill. "Co-

Management of Natural Resources: A Comparison of Two Caribou Management Systems". In Human Organization, Vol. 57. No. 4, 1998, pp. 447-458.

Legat, Allice and Dawn Sprecher. "Caribou Behaviour in the ?ek'adìì Area". Rae, NT: Tłı̨chǫ Treaty 11 Council, 1999.
..... and Zoe, Sally Anne. "Traditional Methods used by the Tłı̨chǫ to Redirect Caribou, Tłı̨chǫ Treaty 11 Council". Prepared for Department of Renewable Resources, GNWT. Whaèhdǫǫ̀ Nàowo K'e, Treaty 11 Council, Rae-Edzo, NT, 1995.

Mackenzie-Scott, Gabrielle. "Mining and Caribou Distribution within the Monfwi Territory: A Historical Outlook". Submitted to Caribou Distribution and the State of the Habitat, Tłı̨chǫ Treaty 11 Council, Tłı̨chǫ Treaty 11 Council, 1998.
Notes: part of Caribou Migration and the State of the Habitat, Annual Report, May 1998 submitted to WKSS.

Nellemann, Christian, Jordhoy, Per, Stoen, Ole-Gunnar, and Strand, Olav. "Cumulative Impacts of Tourist Resorts on Wild Reindeer (*Rangifer tarandus tarandus*). In Arctic, Vol. 53, No. 1, March 2000, pp. 9-17.

Northern Yukon Ecological Knowledge Co-op. "Community-based Ecological Monitoring in Northern Yukon". 1996-97 Internet:
www.taiga.net/coop/reports/1997/rptcom971.html.

Petitot, Emile. 1884 On the Athabasca District of the Canadian North-west Territory. *Canadian Record of Science* 1:27-53. Montreal. (Reprinted from *Proceedings of the Royal Geographical Society*, 1883)

Porcupine Technical Committee. Sensitive Habitats of the Porcupine Caribou Herd. International Porcupine Caribou Board, January 1993.

Reimers, Eigil, Flydal, Kjetil, Stenseth, Rune. "High voltage transmission lines and their effect on reindeer; a research program in progress". In Polar Research, Vol. 19, No. 1, Rovaniemi, Finland, 10-14 February 1999, pp. 75-82.

Richardson, Sir John. 1857 Arctic Searching Expedition: A Journal of a Boat-voyage Through Rupert's Land and the Arctic Sea, in Serach of the Discovery of Ships Under Command of Sir John Franklin with an Appendix on the Physical Geography of North America. 2 vols. London: Longman, Brown, Green, and Longmans.

Thorpe, Natasha and Sandra Eyegetok. "Tuktu and Nogak Project". Report submitted to West Kitikmeot/Slave Study Society, Yellowknife, NT, March 31, 1999.

Urquhart, D. R. "The Bathurst Herd: A Review and analysis of information concerning the Bathurst herd of barren-ground caribou in the NWT for the period 6000 B.C. to 1980 A.D." First Draft, prepared for the NWT Wildlife Service, June 1981.

Vitebsky, Piers, Ed. "Vegetation change and indigenous knowledge: a new approach to climate change through the interdisciplinary study of reindeer herding". Year unknown (work in progress). Cambridge, England: Scott Polar Research Institute.

Wolfe, Scott A., Brad Griffith and Carrie A. Gray Wolfe. "Response of reindeer and caribou to human activities". In Polar Research, Vol. 19, No. 1, Rovaniemi, Finland, 10-14 February 1999, pp. 63-73.

Web Sites:

www.rangifer.net - This site is located at Dartmouth College, USA and contains information on the human role in reindeer/caribou systems

www.polarnet.ca.tuktu - This is the web page for the Tuktu and Nogak Project in the Bathurst Inlet area of the Kitikmeot region, Nunavut.

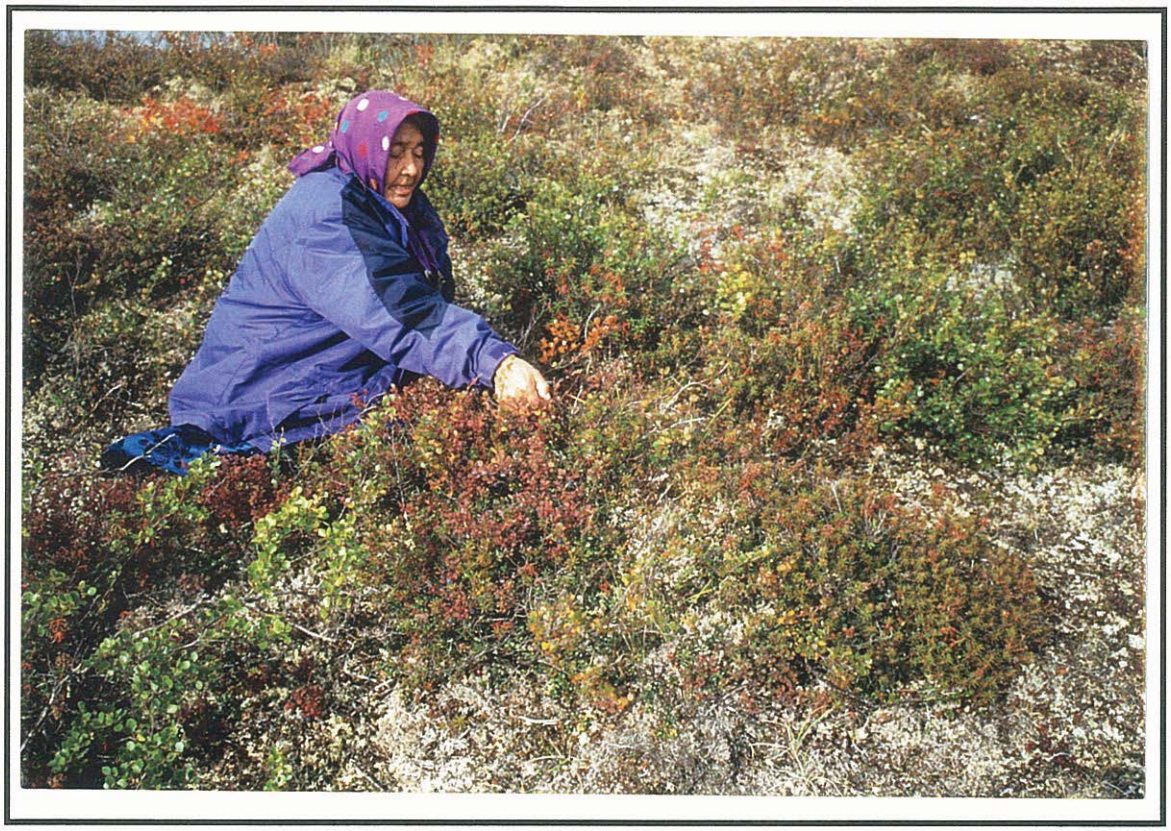
www.reindeer.salrm.alaska.edu - This is the location of the University of Alaska Reindeer Research Program.

www.deer.rr.ualberta.ca/caribou/newsletter.htm - The Boreal Caribou Research Program, based out of the University of Alberta, studies woodland caribou in northern Alberta.

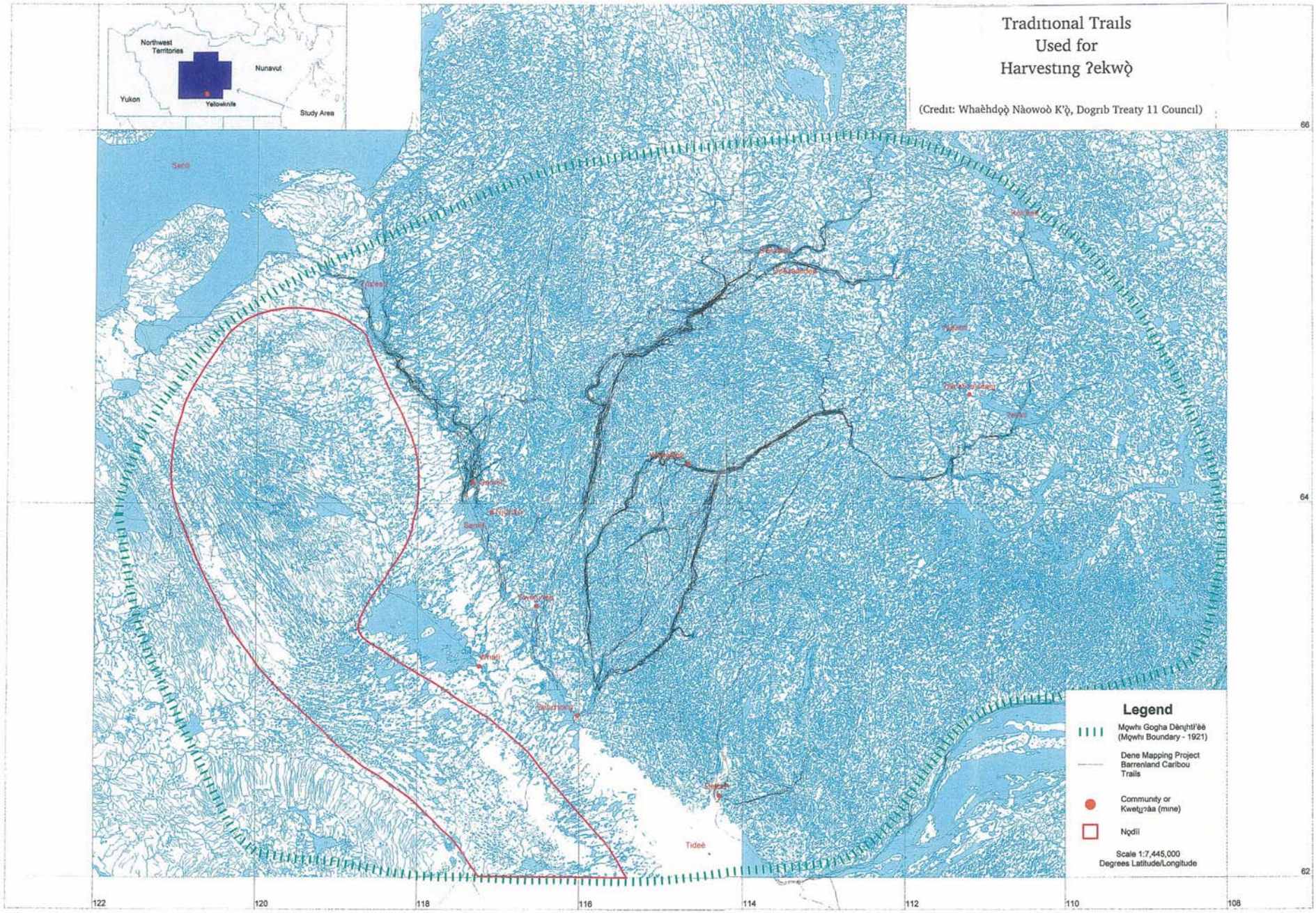
www.rangifer.no/eng/aboutrangifer.html - The home page for the Nordic Council for Reindeer Research. It lists publications available and links to other reindeer/caribou sites.

APPENDIX I

Traditional Trails Used for Harvesting ʔekwc̓ə̀

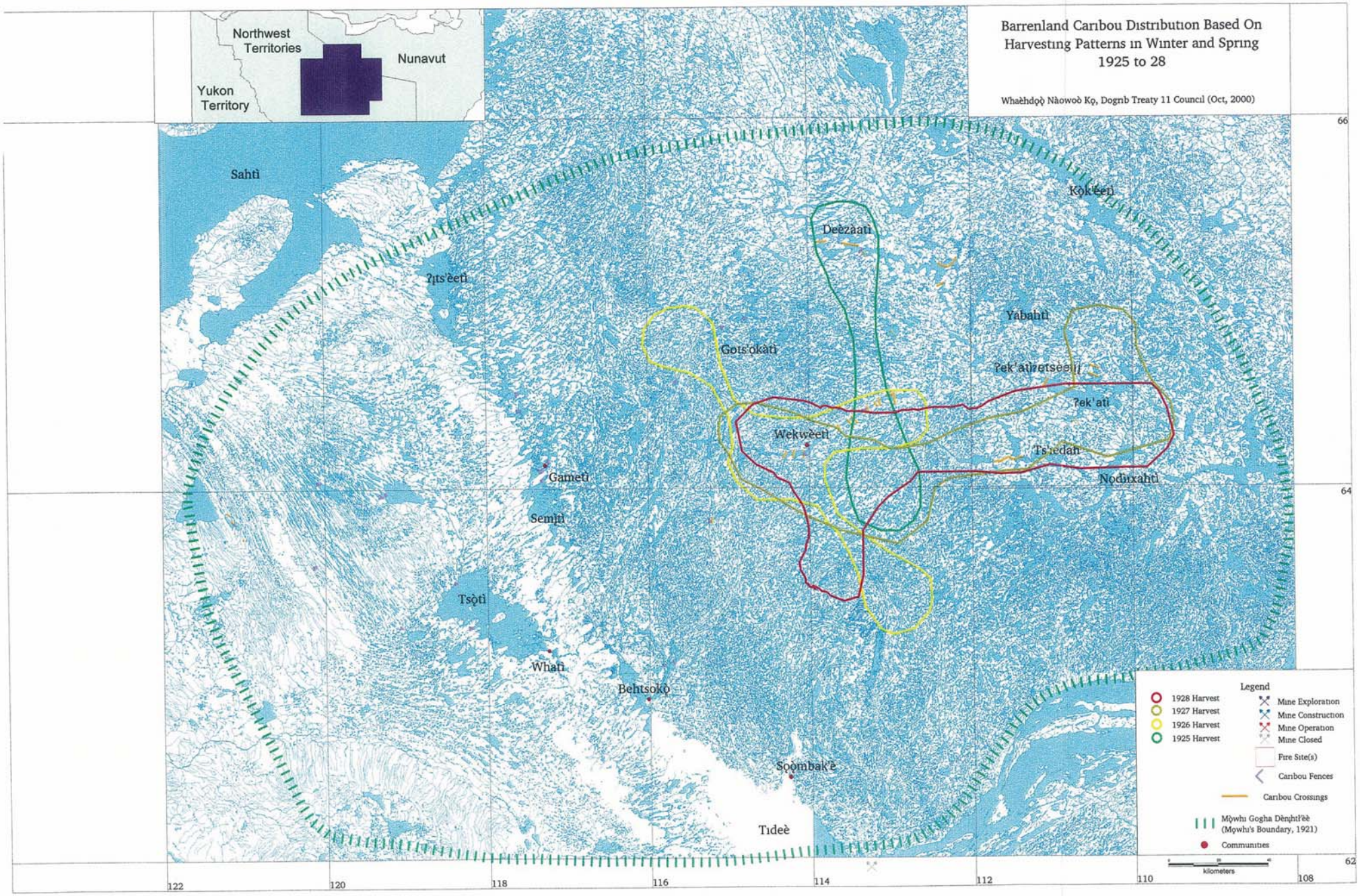


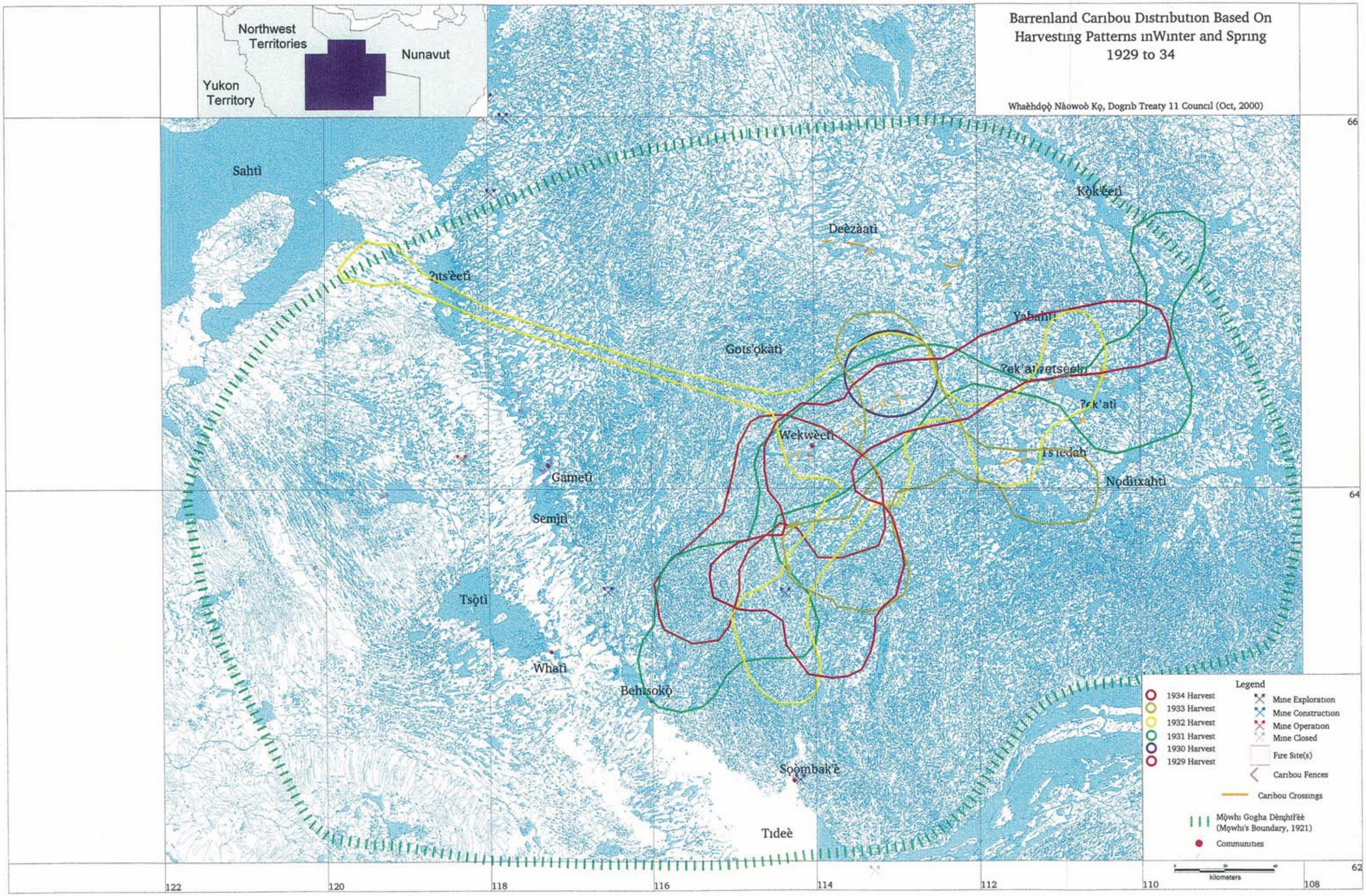
Elizabeth Chocolate
1999

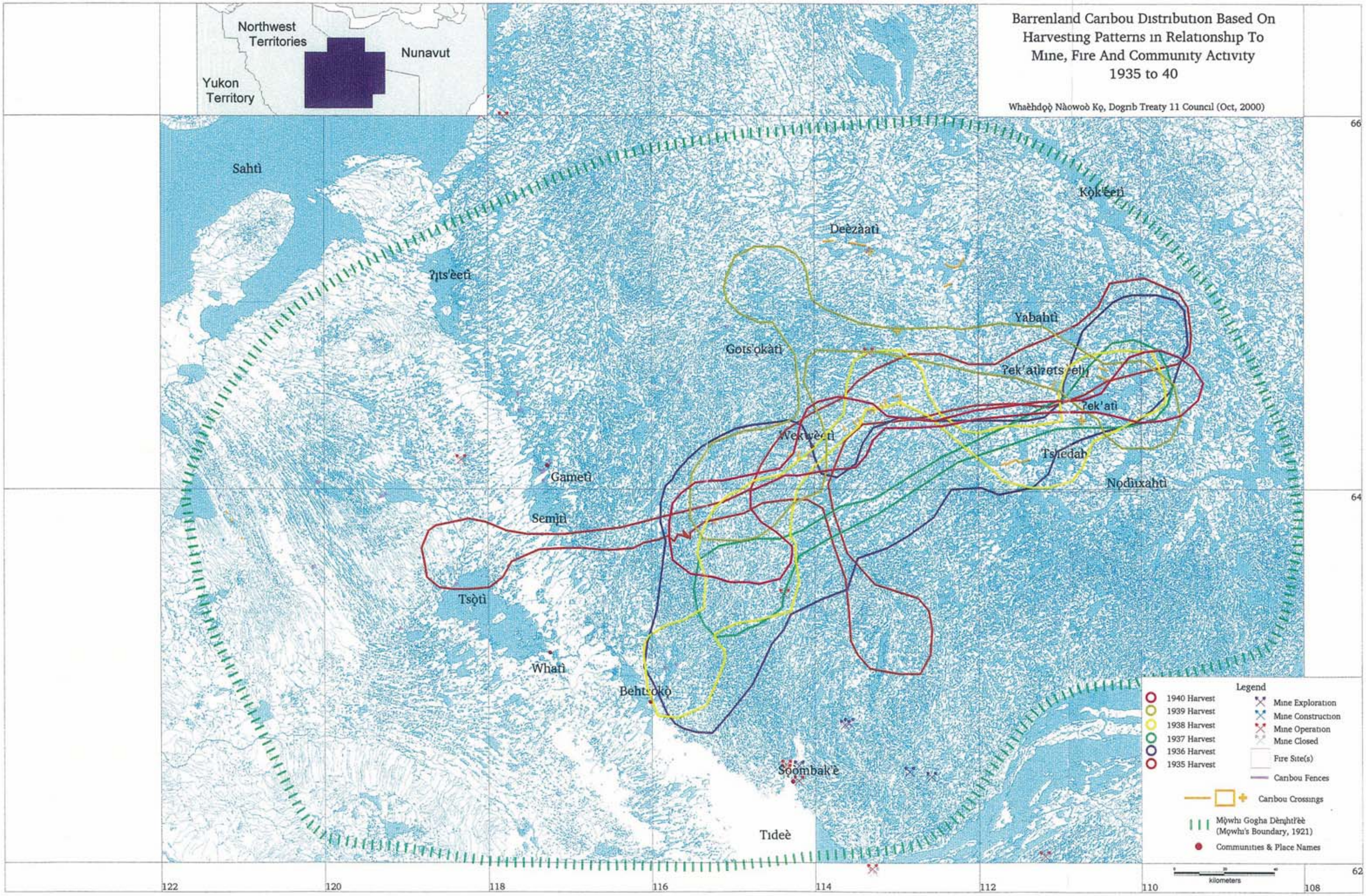

Traditional Trails
Used for
Harvesting ʔekwǫ̀
(Credit: Whaèhdǫǫ̀ Nàowoò K'ǫ̀, Dogrib Treaty 11 Council)
Northwest Territories
Nunavut
Yukon
Yellowknife
Study Area
Legend
Mǫwhì Gogha Dènìhtł'èè (Mǫwhì Boundary - 1921)
Dene Mapping Project Barrenland Caribou Trails
Community or Kwetǫ̀ǫ̀a (mine)
Nǫdìì
Scale 1:7,445,000
Degrees Latitude/Longitude
Tideè
66
64
62
122
120
118
116
114
112
110
108

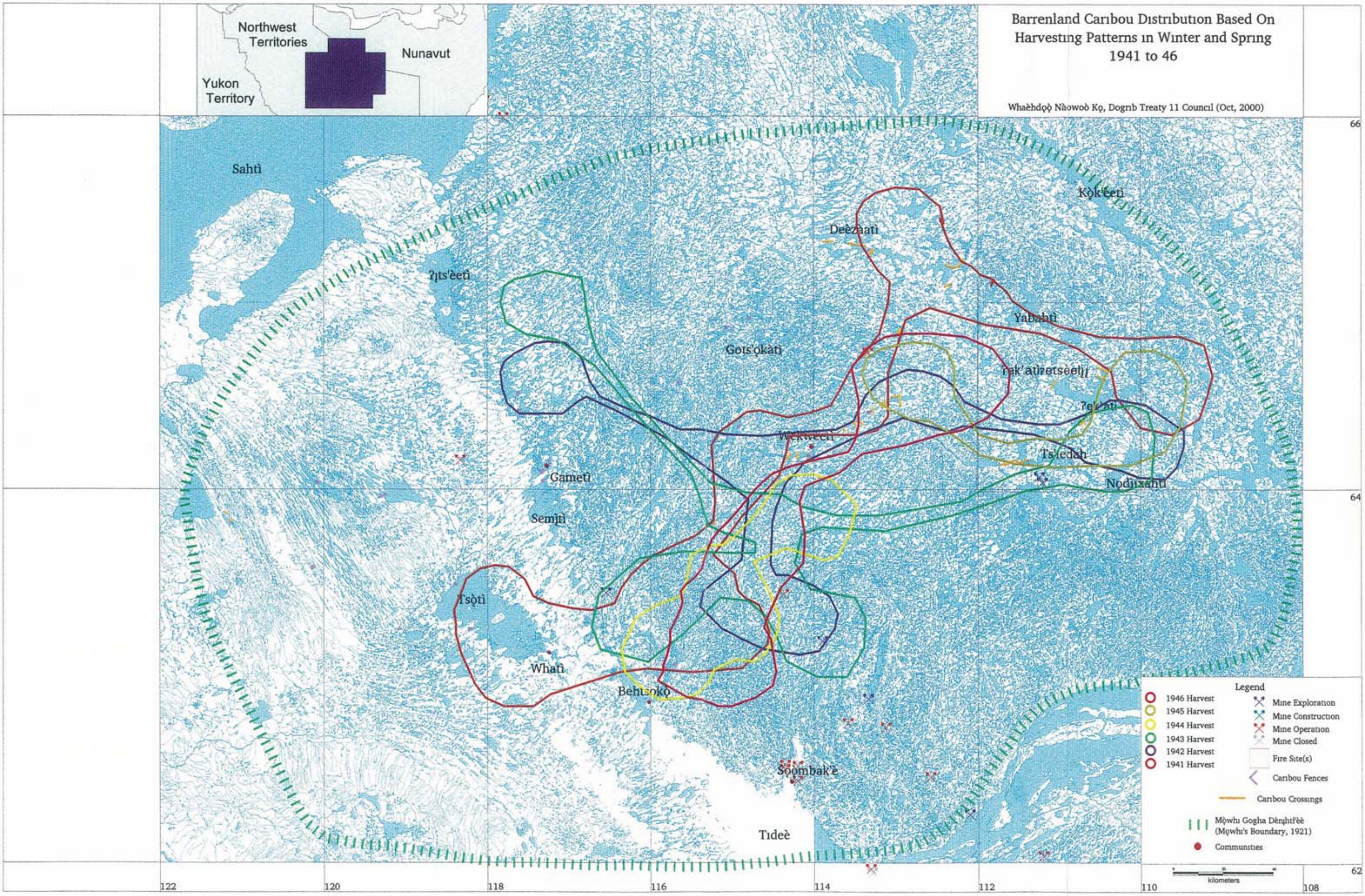
APPENDIX II

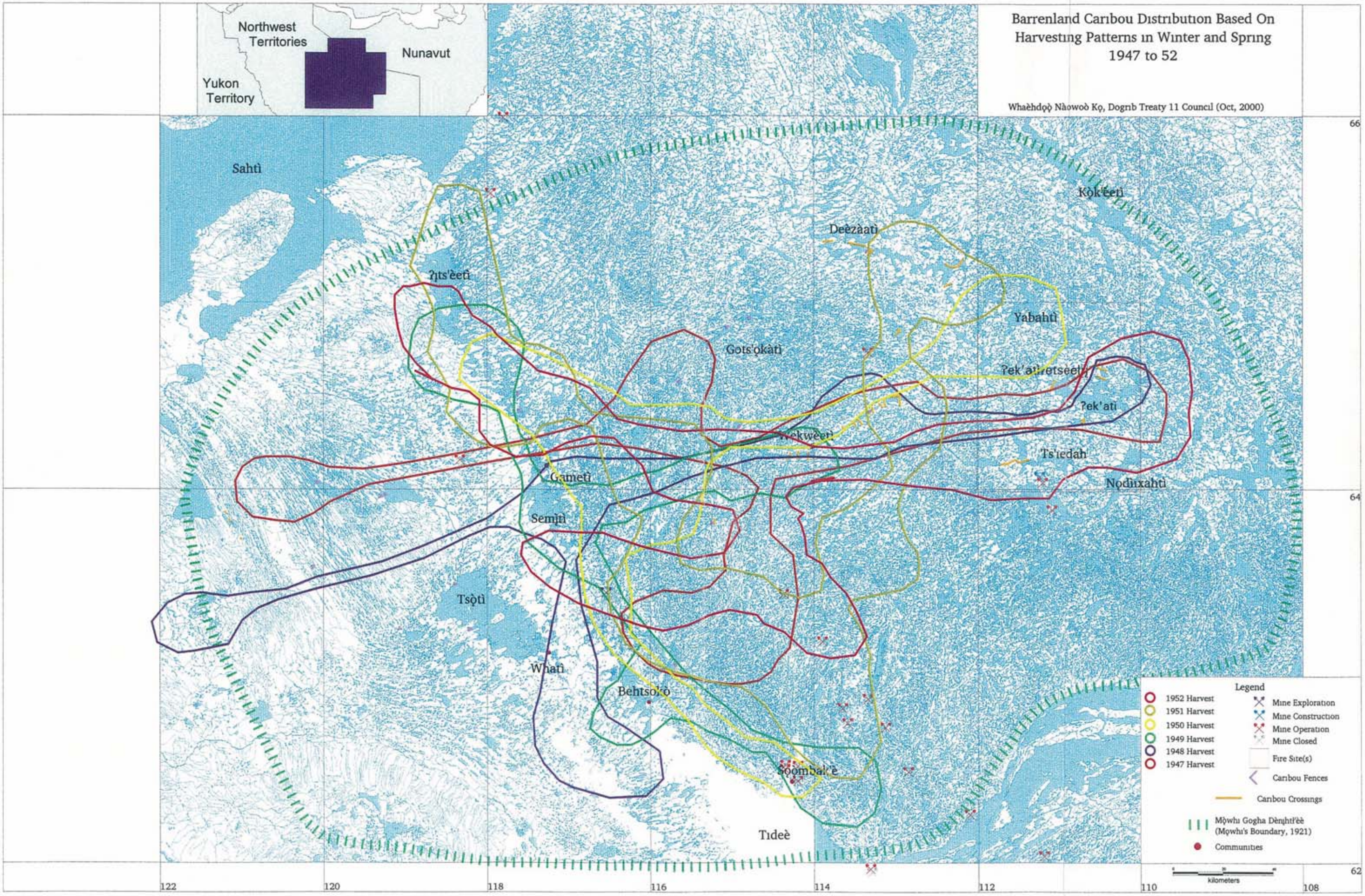
ʔekwǫ̀ (Barrenland Caribou) Distribution Based On Harvesting Patterns in Winter and Spring 1925 to 1998


Barrenland Caribou Distribution Based On Harvesting Patterns in Winter and Spring 1925 to 28
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
?ıts'èetì
Deèzàatì
Kǫk'èep
Yabahtì
Gots'ǫkàtì
?ek'atì?etsèe
?ek'atì
Wekwèetì
Ts'ıedah
Nǫdıxahtì
Gametì
Semıtì
Tsǫ̀tì
Whatì
Behtsokǫ
Sǫǫmbak'è
Tıdeè
Legend
1928 Harvest
1927 Harvest
1926 Harvest
1925 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhı Gogha Dènıhtl'èè (Mǫwhı's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108

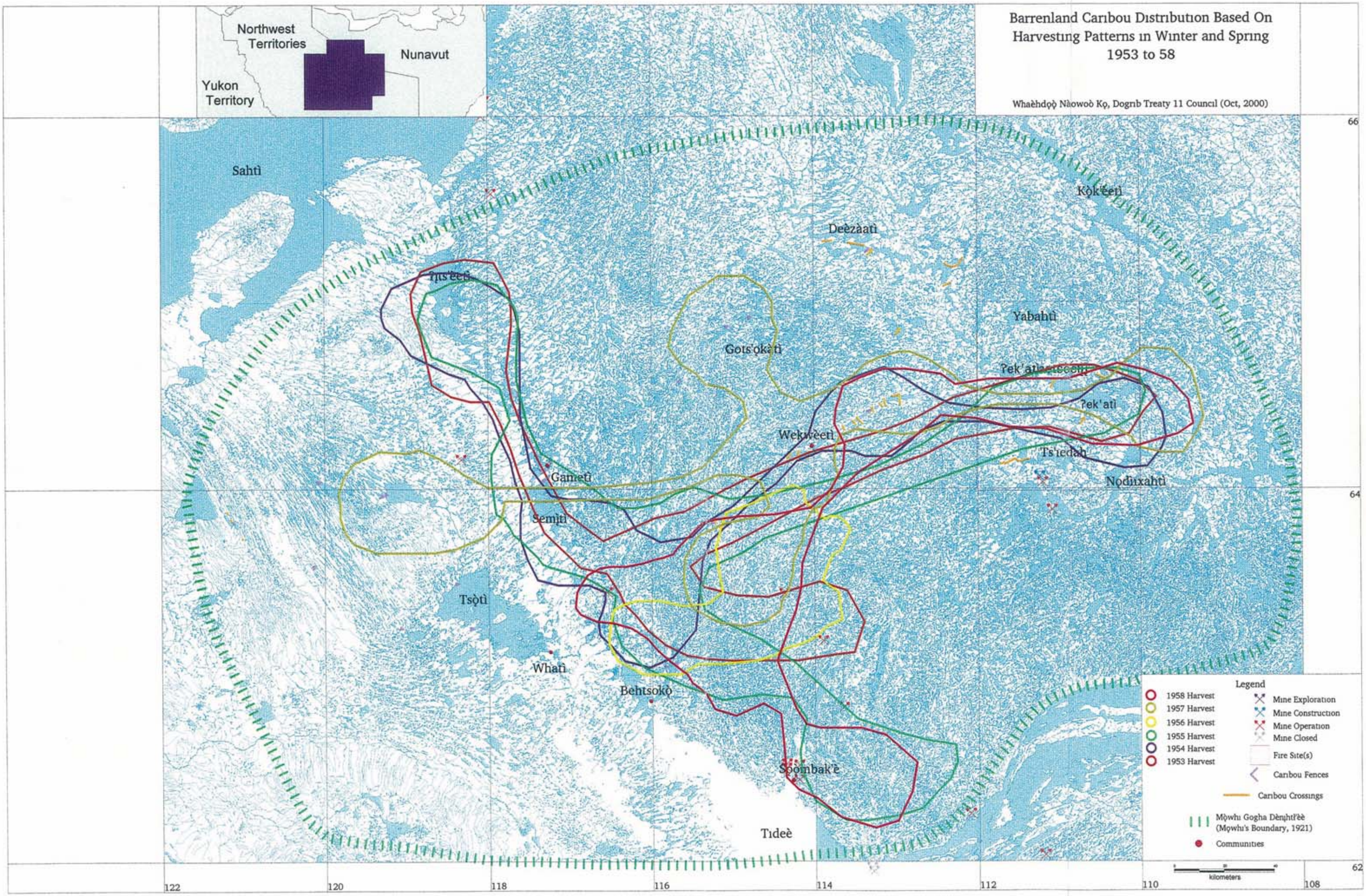

Barrenland Caribou Distribution Based On
Harvesting Patterns inWinter and Spring
1929 to 34
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
Deèzàatì
Gots'ǫkàtì
Wekweètì
Gamètì
Semįtì
Tsǫ̀tì
Whatì
Behtsokǫ̀
Sǫǫ̀mbak'è
Tıdeè
Nǫdııxahtì
Legend
1934 Harvest
1933 Harvest
1932 Harvest
1931 Harvest
1930 Harvest
1929 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhì Gogha Dènįhtł'èè
(Mǫwhì's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108

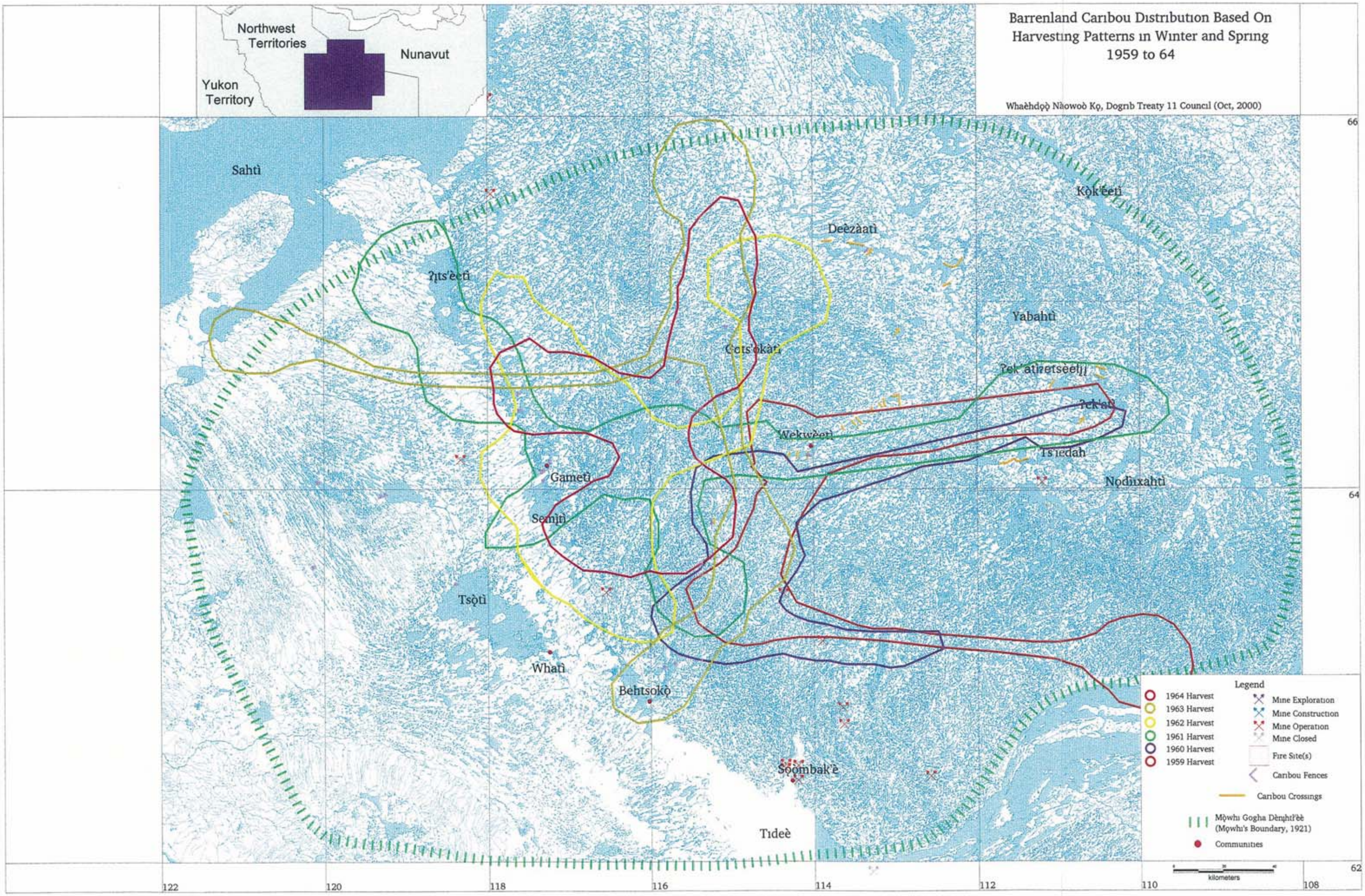

Barrenland Caribou Distribution Based On
Harvesting Patterns in Relationship To
Mine, Fire And Community Activity
1935 to 40
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
Kǫ̀k'èetì
Deèzàatì
ʔı̨ts'èetì
Yabahtì
Gots'ǫkàtì
ʔek'atı̨ı̨tsǫ̀'eetì
ʔek'atì
Wek'wèetì
Tsı̨edah
Nǫdııxahtì
Gametì
Semı̨tì
Tsǫ̀tì
Whatì
Behtsǫkǫ̀
Sǫǫ̀mbak'è
Tıdeè
Legend
1940 Harvest
1939 Harvest
1938 Harvest
1937 Harvest
1936 Harvest
1935 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhı Gogha Dènı̨htł'èè
(Mǫwhı's Boundary, 1921)
Communities & Place Names
kilometers
66
64
62
122
120
118
116
114
112
110
108

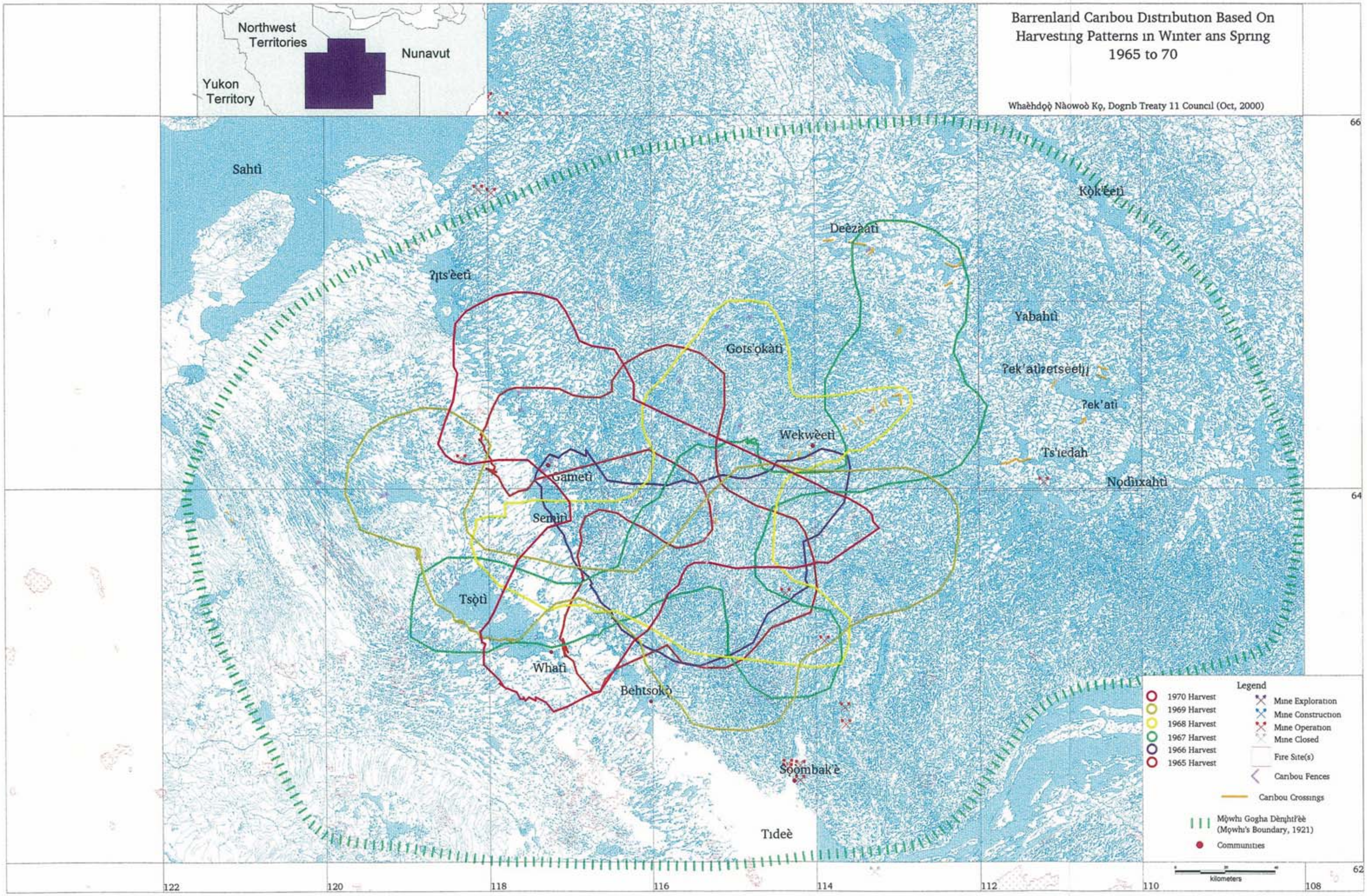

Barrenland Caribou Distribution Based On Harvesting Patterns in Winter and Spring 1941 to 46
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
ʔıts'èetì
Deèzàatì
Kǫ̀k'èetì
Gots'ǫkàtì
Yabahtì
ʔek'atıı̨tsèelı̨ı̨
ʔek'atì
Wekweètì
Ts'ıedah
Nodııxahtì
Gametì
Semı̨tì
Tsǫ̀tì
Whatì
Behtsokǫ̀
Sǫ̀ǫ̀mbak'è
Tıdeè
Legend
1946 Harvest
1945 Harvest
1944 Harvest
1943 Harvest
1942 Harvest
1941 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫ̀whì Gogha Dèneįtł'èè (Mǫ̀whì's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108

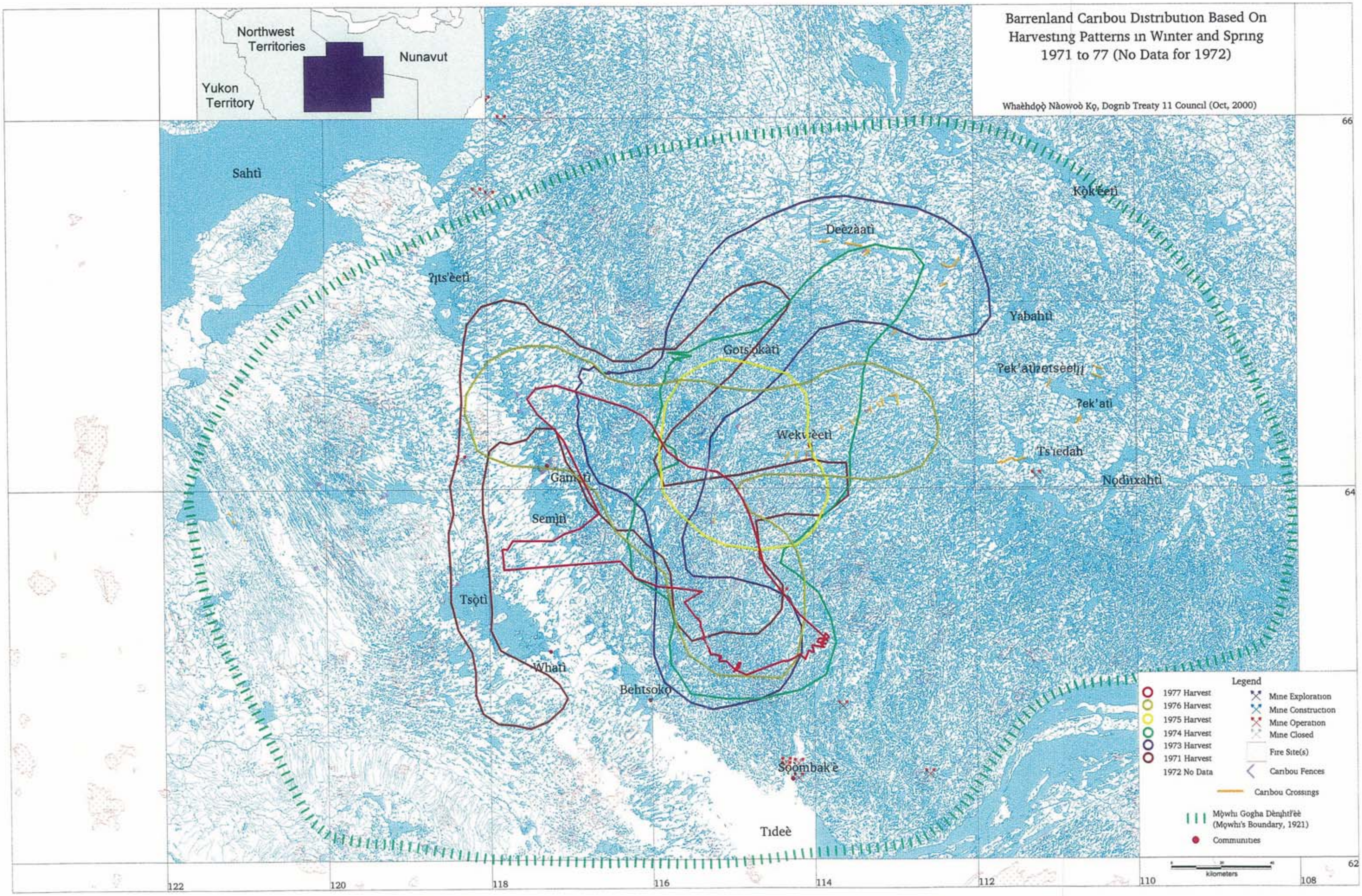


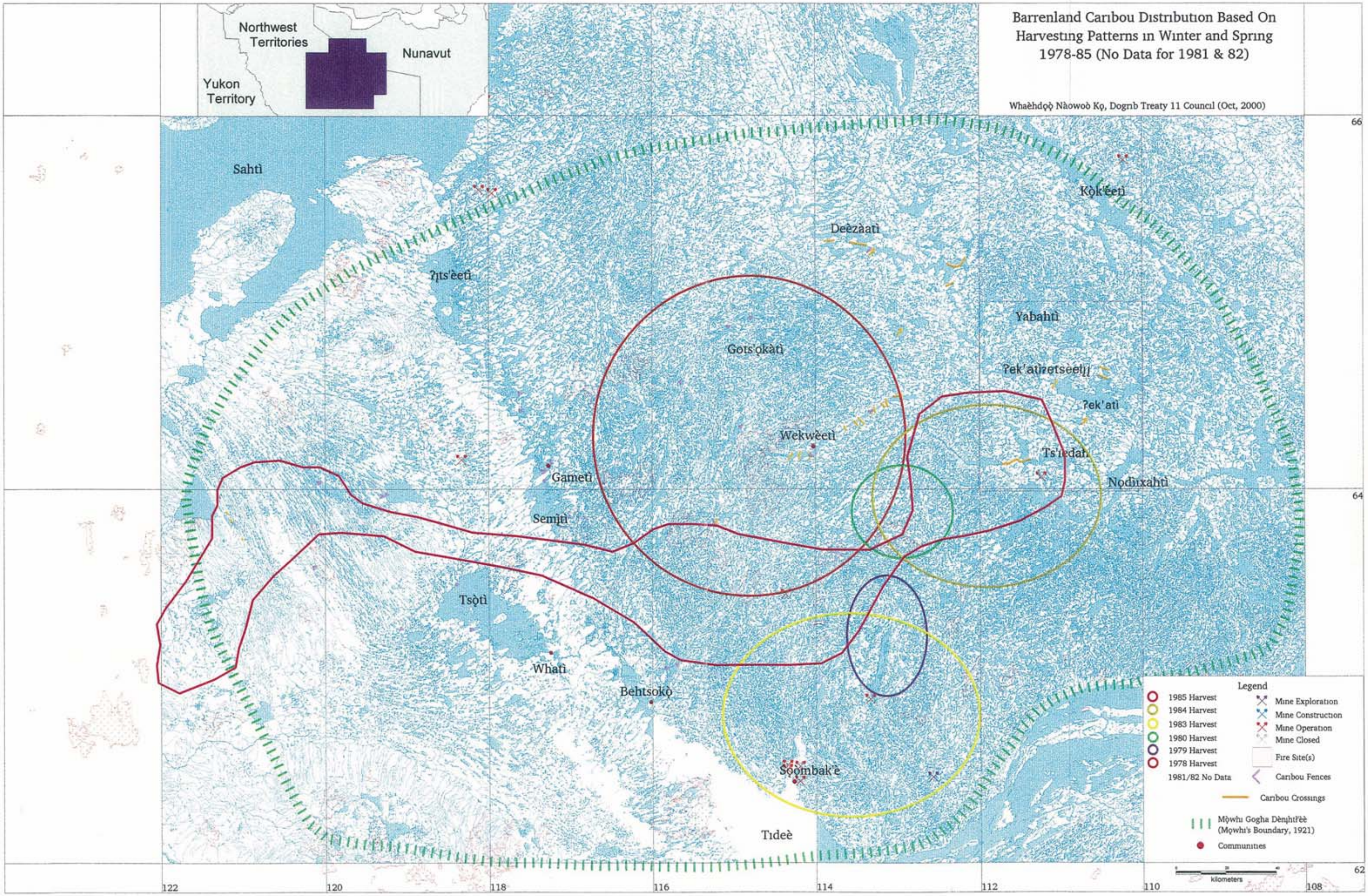
Barrenland Caribou Distribution Based On Harvesting Patterns in Winter and Spring 1947 to 52
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
Kòk'èetì
Deèzàatì
ʔı̨ts'èetì
Yabahtì
Gots'ǫkàtì
ʔek'atıı̨tsèetı̨
ʔek'atì
Wekwèetì
Ts'iedah
Gamètì
Nodııxahtì
Semìtì
Tsǫ̀tì
Whatì
Behtsokǫ̀
Sǫ̀ǫ̀mbak'è
Tıdeè
Legend
1952 Harvest
1951 Harvest
1950 Harvest
1949 Harvest
1948 Harvest
1947 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫ̀whı Gogha Dènı̨htł'èè (Mǫwhı's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108

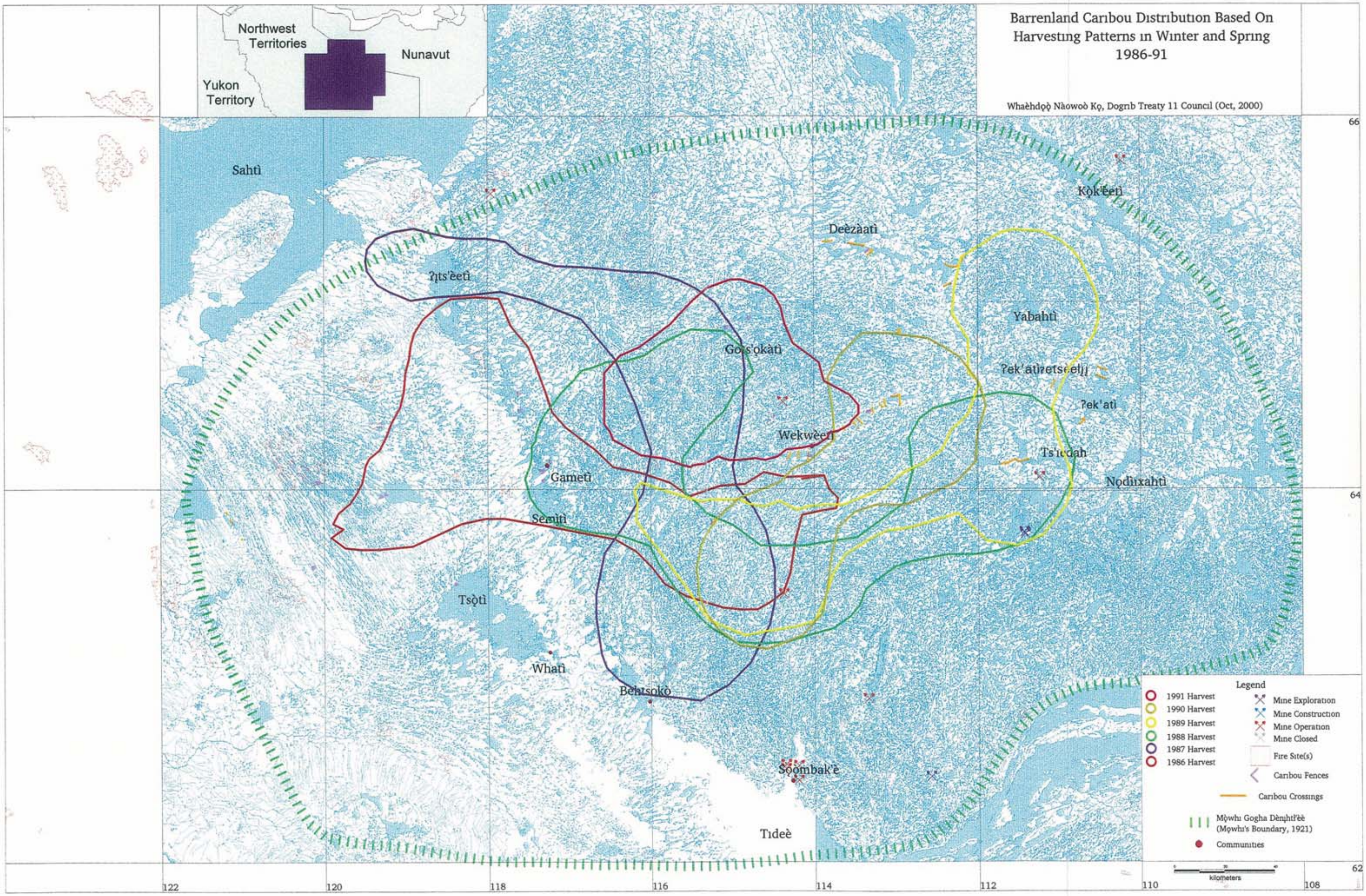

Barrenland Caribou Distribution Based On
Harvesting Patterns in Winter and Spring
1953 to 58
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
Kǫ̀k'èetì
Deèzàatì
Yabahtì
Gots'ǫkàtì
ʔek'atì
Ts'iedah
Nǫdìixahtì
Wekweètì
Gametì
Semįtì
Tsǫ̀tì
Whatì
Behtsokǫ̀
Sǫǫ̀mbak'è
Tideè
Legend
1958 Harvest
1957 Harvest
1956 Harvest
1955 Harvest
1954 Harvest
1953 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhì Gogha Dènįhtł'èè
(Mǫwhì's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108

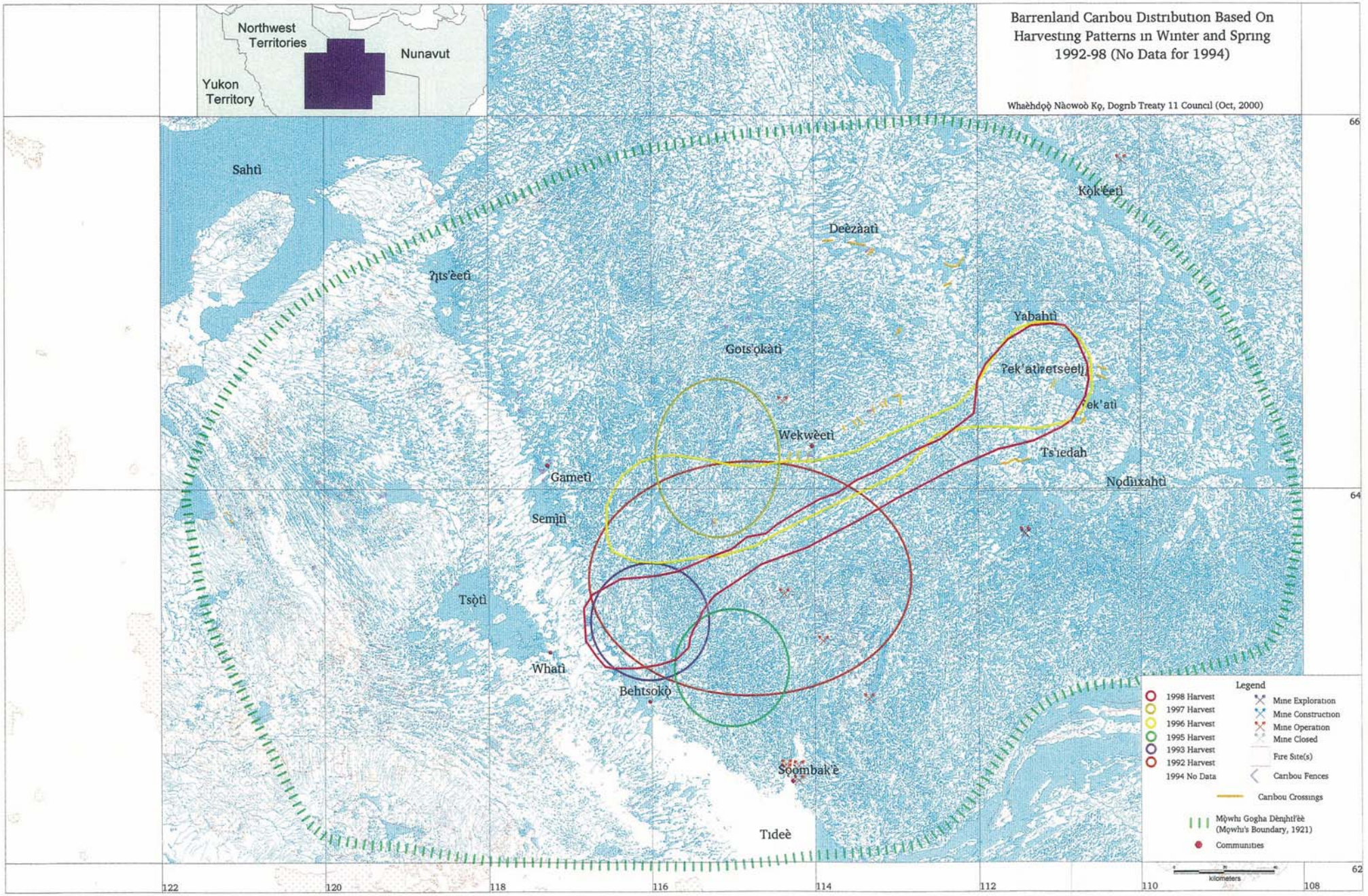

Barrenland Caribou Distribution Based On
Harvesting Patterns in Winter and Spring
1959 to 64
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
Kǫ̀k'èetì
Deèzàatì
ʔįts'èetì
Yabahtì
Gots'ǫkàtì
ʔek'atìıtseelįį
ʔek'atì
Wekwèetì
Ts'iedah
Nǫdìıxahtì
Gametì
Semįtì
Tsǫ̀tì
Whatì
Behtsokǫ̀
Sǫǫ̀mbak'è
Tıdeè
66
64
62
122
120
118
116
114
112
110
108
Legend
1964 Harvest
1963 Harvest
1962 Harvest
1961 Harvest
1960 Harvest
1959 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫ̀whı Gogha Dènįhtł'èè
(Mǫwhı's Boundary, 1921)
Communities
kilometers


Barrenland Caribou Distribution Based On Harvesting Patterns in Winter ans Spring 1965 to 70
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
ʔıts'èetì
Kǫ̀k'èetì
Deèzàatì
Yabahtì
Gots'ǫkàtì
ʔek'atıı̀zetsèetı̨
ʔek'atì
Wekweètì
Ts'iedah
Nǫdìıxahtì
Gametì
Semıtì
Tsǫ̀tì
Whatì
Behtsokǫ̀
Sǫǫ̀mbak'è
Tıdeè
Legend
1970 Harvest
1969 Harvest
1968 Harvest
1967 Harvest
1966 Harvest
1965 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhì Gogha Dènıhtł'èè (Mǫwhì's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108


Barrenland Caribou Distribution Based On Harvesting Patterns in Winter and Spring 1971 to 77 (No Data for 1972)
Whaèhdǫǫ̀ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
ʔı̨ts'èetı
Kǫ̀k'èetı
Deèzàatı
Yabàhtı
Gots'ǫkàtı
ʔek'atıı̨tseelı̨ı̨
ʔek'atı
Wekweètı
Ts'iedah
Nǫdıı̨xahtı
Gamètı
Semı̨ı̨tı
Tsǫtı
Whatì
Behtsokǫ
Sǫǫmbak'è
Tıdeè
66
64
62
122
120
118
116
114
112
110
108
Legend
1977 Harvest
1976 Harvest
1975 Harvest
1974 Harvest
1973 Harvest
1971 Harvest
1972 No Data
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhì Gogha Dènı̨htł'èè (Mǫwhì's Boundary, 1921)
Communities
kilometers

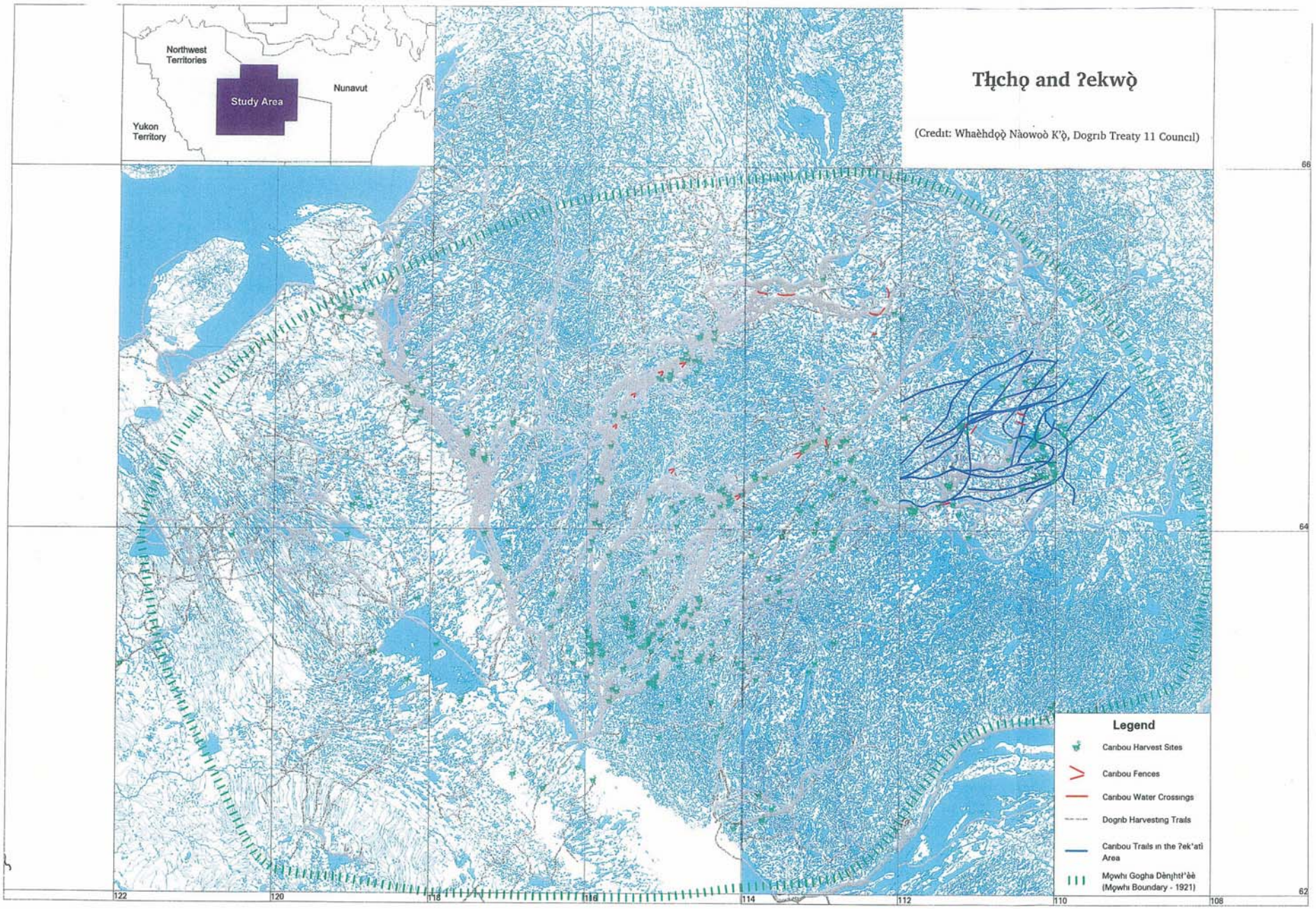

Barrenland Caribou Distribution Based On Harvesting Patterns in Winter and Spring 1978-85 (No Data for 1981 & 82)
Whaèhdǫǫ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
ʔıts'èetì
Deèzàatì
Kǫk'èetì
Gots'ǫkàtì
Yabahtì
ʔek'atìiʔetseelıı
ʔek'atì
Wekwèetì
Ts'ıedah
Nodııxahtì
Gametì
Semìtì
Tsǫtì
Whatì
Behtsokǫ
Sǫǫmbak'è
Tıdeè
Legend
1985 Harvest
1984 Harvest
1983 Harvest
1980 Harvest
1979 Harvest
1978 Harvest
1981/82 No Data
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫ̀whı Gogha Dèıhtł'èè
(Mǫwhı's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108


Barrenland Caribou Distribution Based On
Harvesting Patterns in Winter and Spring
1986-91
Whaèhdǫǫ Nàowoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest
Territories
Nunavut
Yukon
Territory
Sahtì
Kǫk'èetì
Deèzàatì
Yabahtì
Gamètì
Semìtì
Wekwèetì
Ts'ıedah
Nodıixahtì
Tsǫtì
Whatì
Behtsokǫ̀
Sǫǫmbak'è
Tıdeè
Legend
1991 Harvest
1990 Harvest
1989 Harvest
1988 Harvest
1987 Harvest
1986 Harvest
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhì Gogha Dènįhtł'èè
(Mǫwhì's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108


Barrenland Caribou Distribution Based On Harvesting Patterns in Winter and Spring 1992-98 (No Data for 1994)
Whaèhdǫǫ̀ Nàcwoò Kǫ, Dogrib Treaty 11 Council (Oct, 2000)
Northwest Territories
Nunavut
Yukon Territory
Sahtì
Kǫ̀k'èetì
Deèzàatì
?ıts'èetì
Yabahtì
Gots'ǫkàtì
?ek'atıɛetseelı
?ek'atì
Wekwèetì
Ts'ıedah
Gametì
Nǫdıɪxahtì
Semìtì
Tsǫ̀tì
Whatì
Behtsokǫ̀
Sǫǫmbak'è
Tıdeè
Legend
1998 Harvest
1997 Harvest
1996 Harvest
1995 Harvest
1993 Harvest
1992 Harvest
1994 No Data
Mine Exploration
Mine Construction
Mine Operation
Mine Closed
Fire Site(s)
Caribou Fences
Caribou Crossings
Mǫwhı Gogha Dènıhtł'èè (Mǫwhı's Boundary, 1921)
Communities
kilometers
66
64
62
122
120
118
116
114
112
110
108

APPENDIX III

Tłı̨chǫ and ʔekwǫ̀

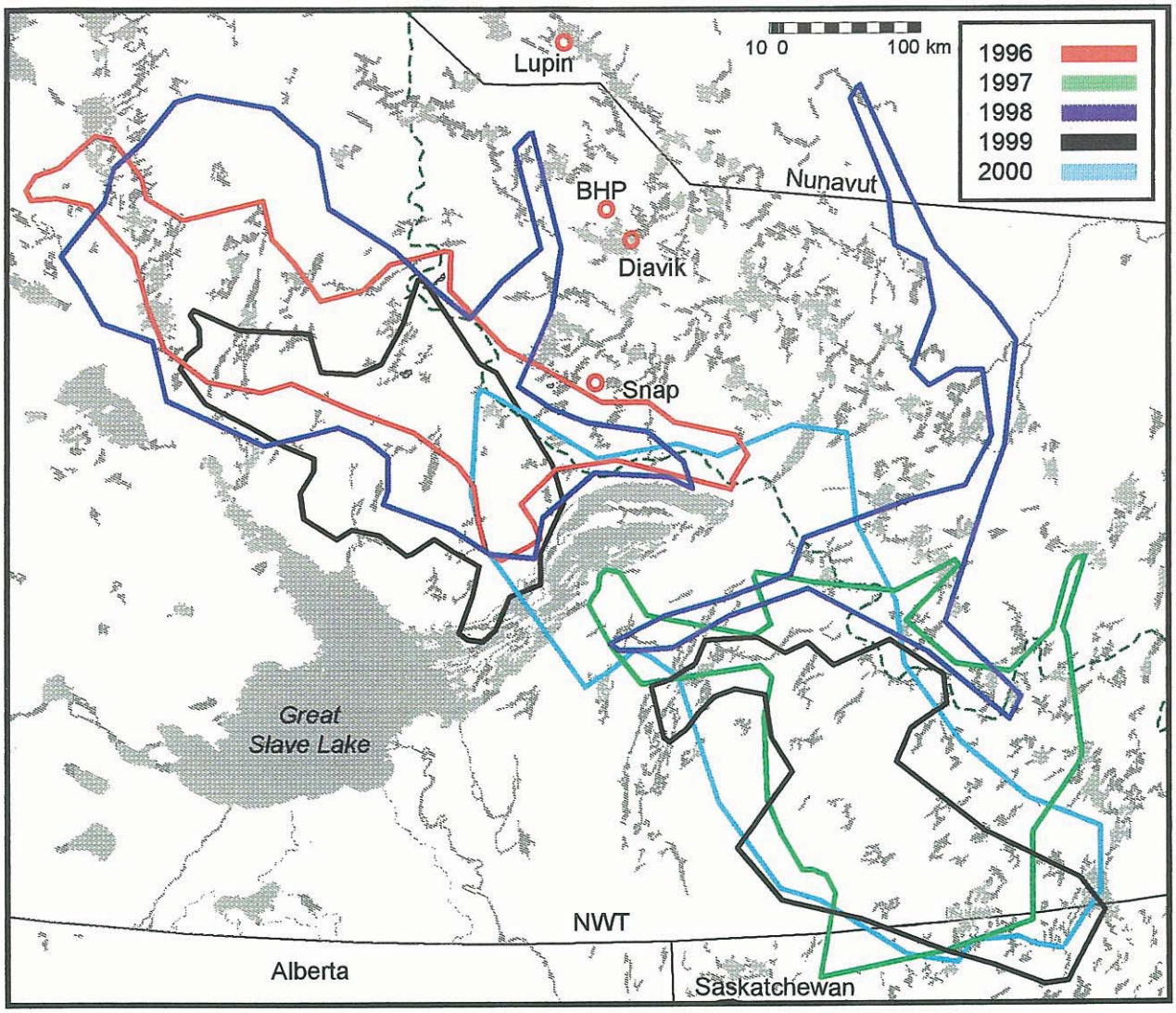

Northwest Territories
Nunavut
Study Area
Yukon Territory
Tłı̨chǫ and ʔekwǫ̀
(Credit: Whaèhdǫǫ̀ Nàowoò K'ǫ̀, Dogrıb Treaty 11 Council)
66
64
62
122
120
118
116
114
112
110
108
Legend
Caribou Harvest Sites
Caribou Fences
Caribou Water Crossings
Dogrib Harvesting Trails
Caribou Trails in the ʔek'atì Area
Mǫwhı Gogha Dènı̨htł'èè (Mǫwhı Boundary - 1921)

APPENDIX IV

Areas Used by Satellite-collared Bathurst Caribou
During Winter, 1996 to 2000 (Draft)

Spring Migration of Collared Bathurst Caribou Cows,
19 April – 29 May 1996
27 April – 29 May 1997
20 April – 22 May 1998
29 April – 30 May 1999
3 April – 28 May 2000

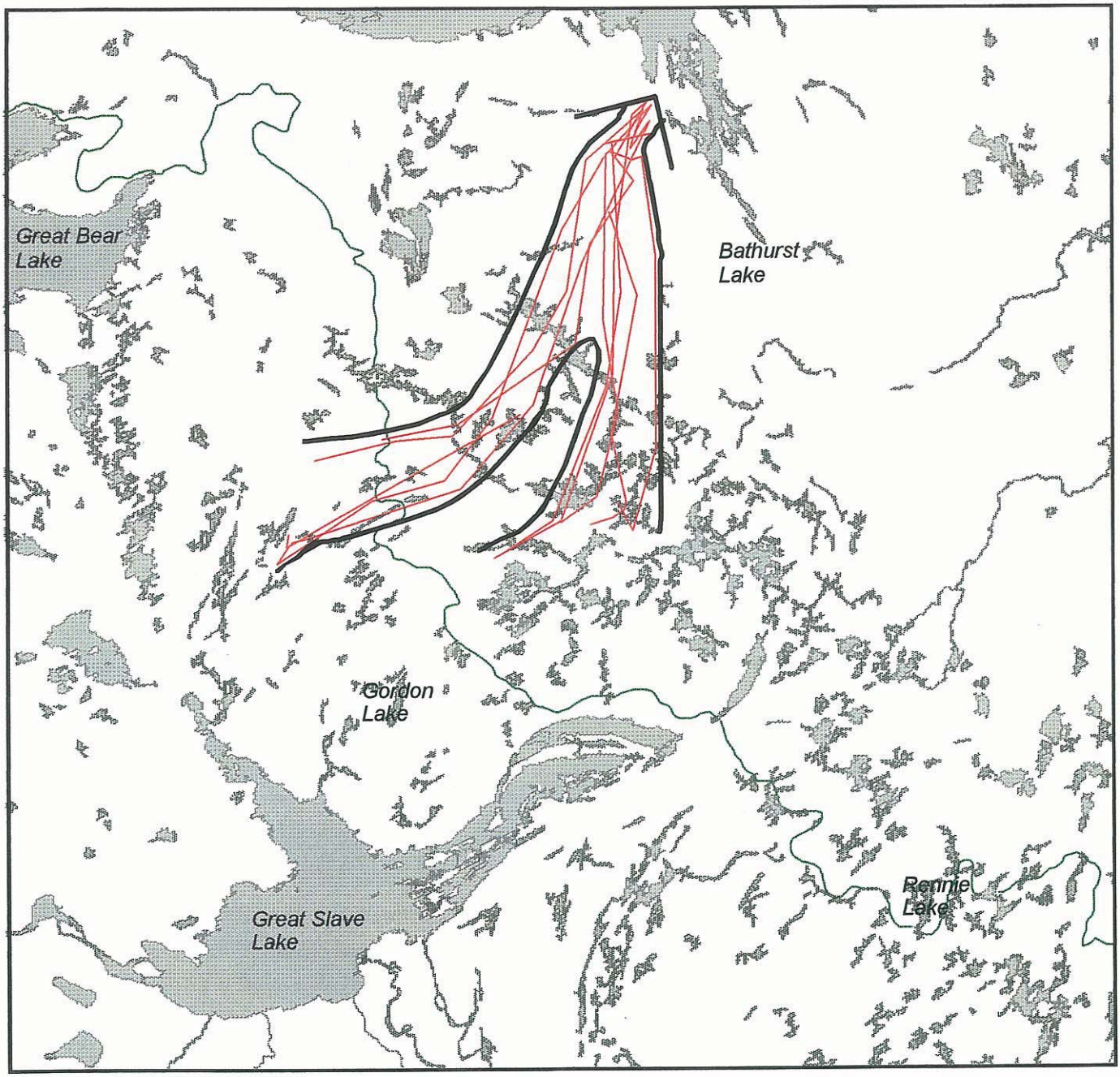
Route of One Radio Collared Caribou 1996-2000



Areas used by collared Bathurst cows during winter (Nov to Feb), 1996 - 2000.

Renewable, Wildlife and Economic Development

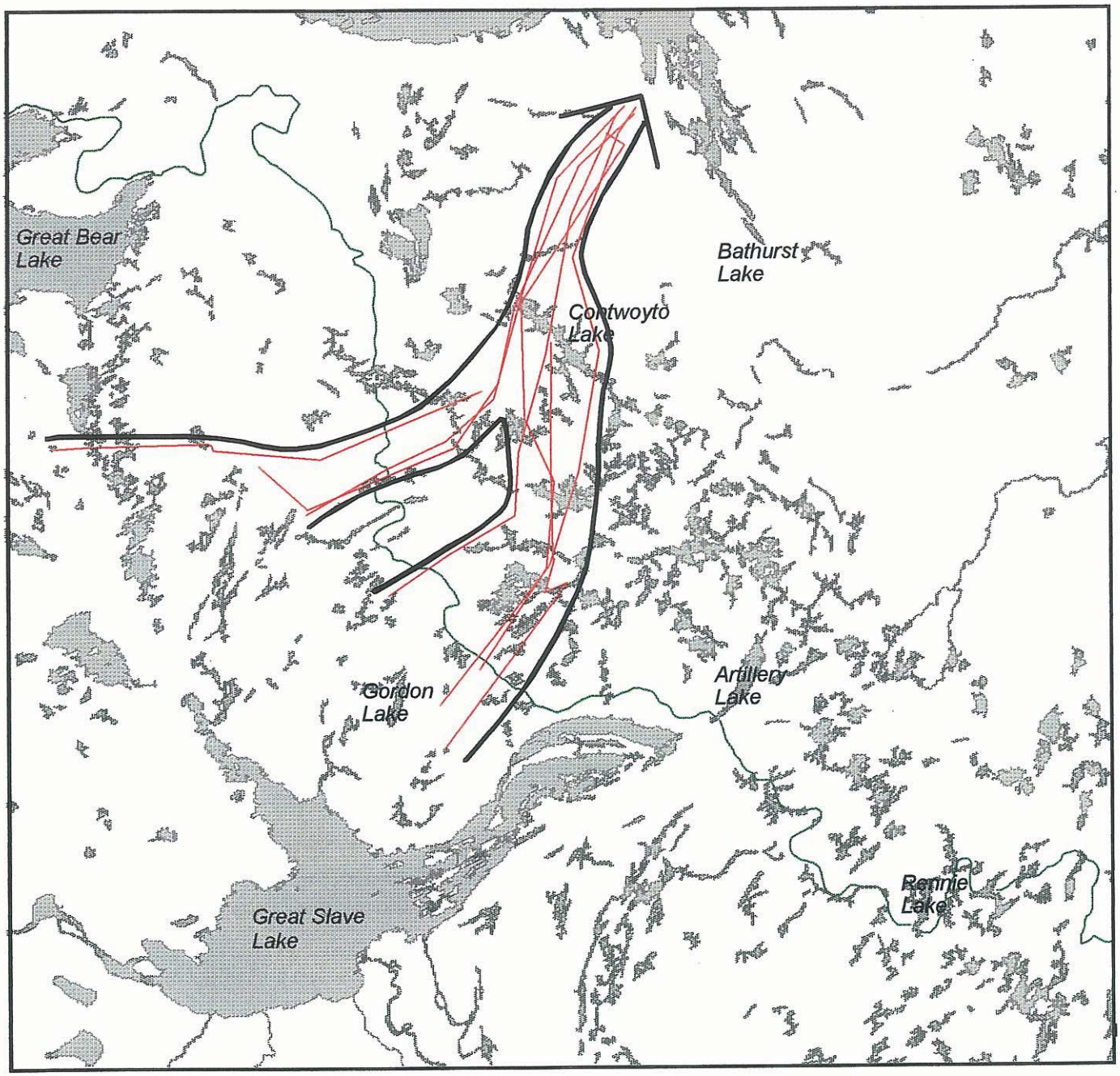
DRAFT



Spring migration of collared Bathurst caribou cows, 19 April - 29 May 1996.

Renewable, Wildlife and Economic Development

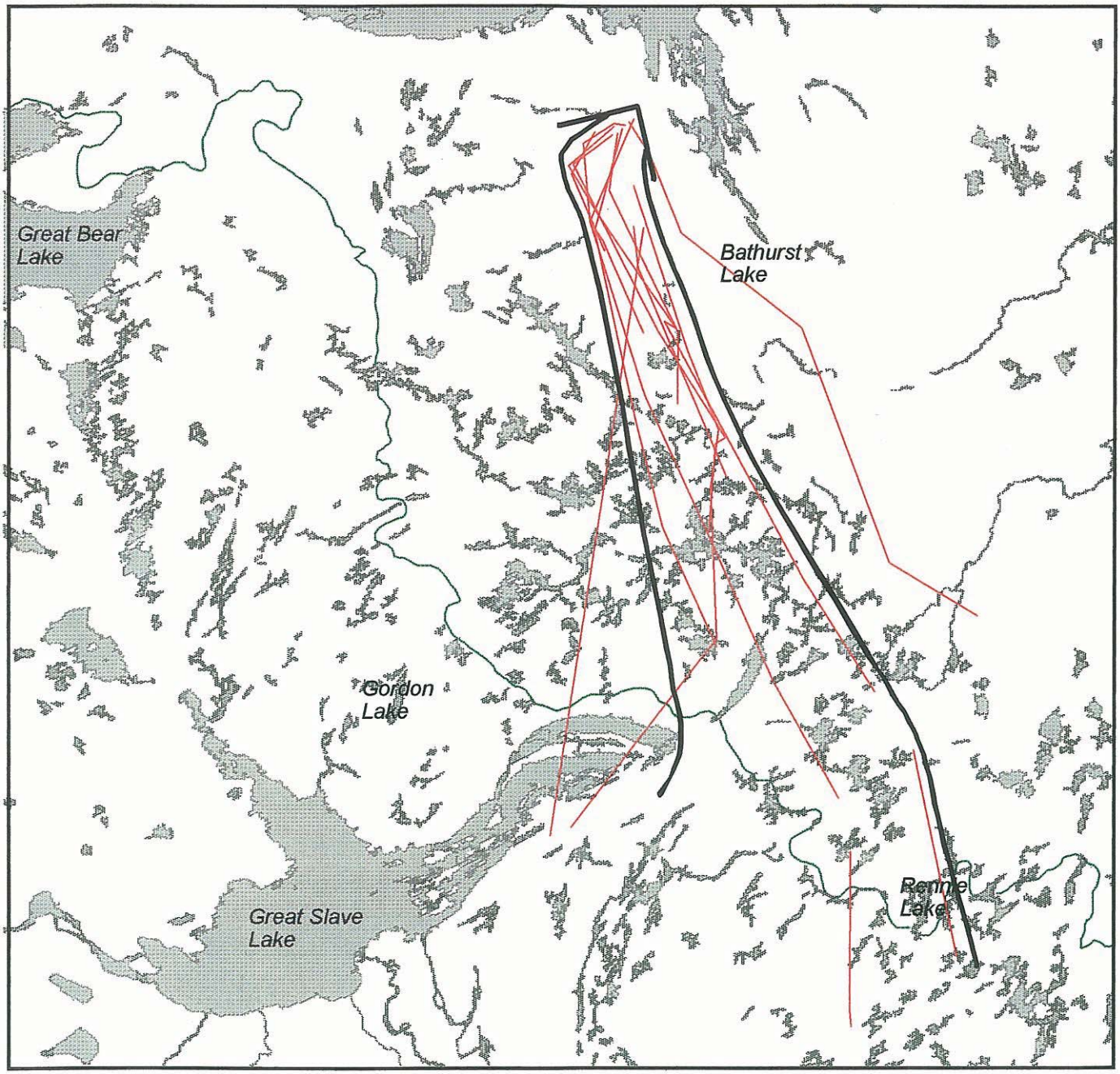
DRAFT



Spring migration of collared Bathurst caribou cows, 27 April - 29 May, 1997.

Renewable, Wildlife and Economic Development

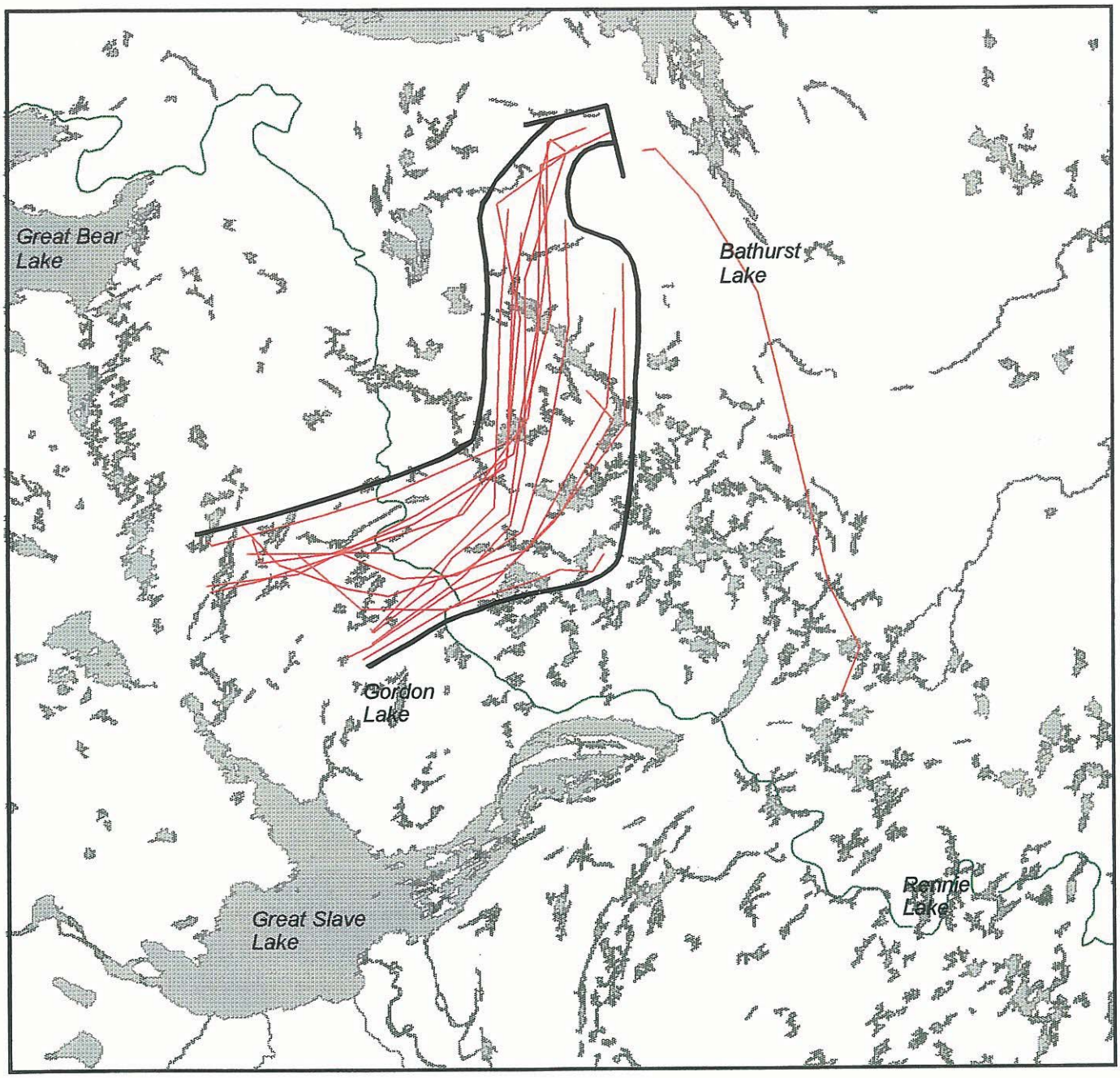
DRAFT



Spring migration of collared Bathurst caribou cows, 20 April - 22 May 1998.

Renewable, Wildlife and Economic Development

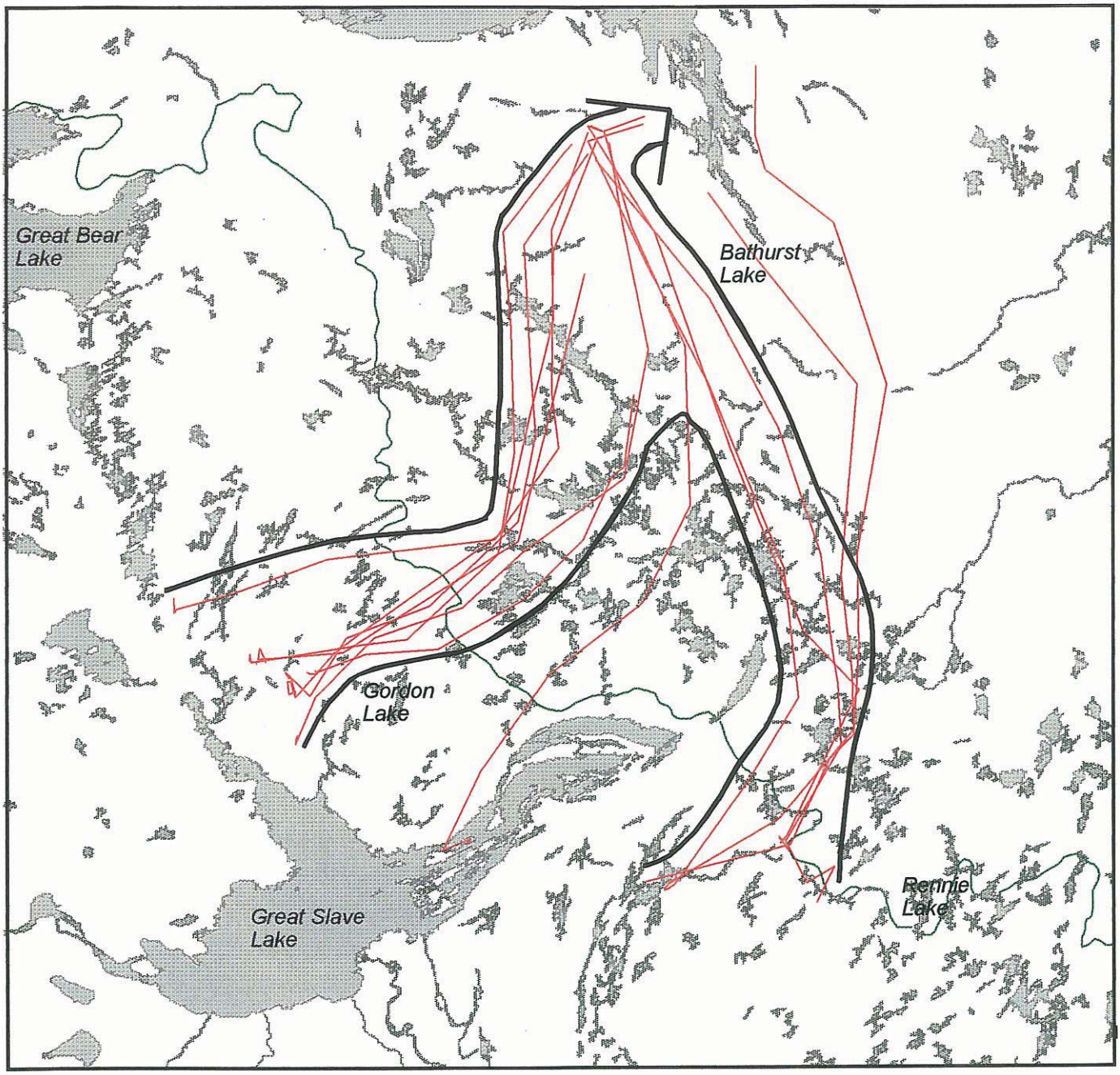
DRAFT



Spring migration of collared Bathurst caribou cows, 29 April - 30 May, 1999.

Renewable, Wildlife and Economic Development

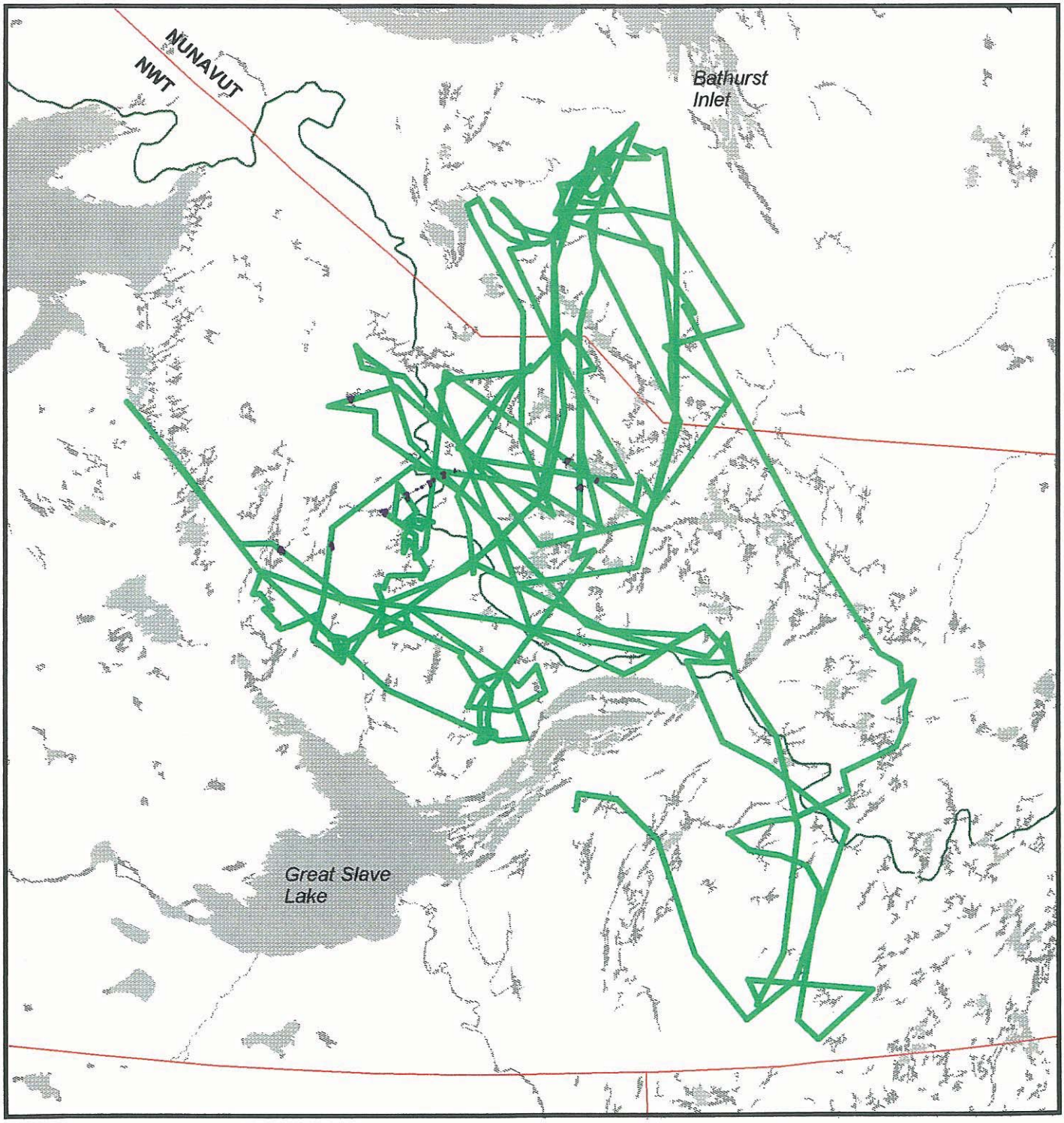
DRAFT



Spring migration of collared Bathurst caribou cows, 3 April - 28 May, 2000.

Renewable, Wildlife and Economic Development

DRAFT



Movements of collared Bathurst caribou cow #60, April 1996 to December 2000.

- Location of ʔekwǫ̀ water crossing and traditional ʔekwǫ̀ fences

APPENDIX V

Mining and Caribou Distribution Within the Monfwi Territory: A Historical Look

By
Gabrielle Mackenzie-Scott, 1998

MINING AND CARIBOU DISTRIBUTION WITHIN THE MONFWI TERRITORY: A HISTORICAL LOOK

Prepared by:
Gabrielle Mackenzie-Scott 1998

Submitted to:
Caribou Distribution and the State of the Habitat
Dogrib Treaty 11 Council

March 1998

Monfwi Territory:

Monfwi: "Many of my people are scattered across this country, some at Lac La Martre(Whati), Snare Lake (Wekeèti), Contwoyto Lake, many of whom are still in the bush yet. The size of the land has to be large enough for all my people."

Monfwi declared the boundary as: "from Fort Providence, all along the Mackenzie River right up to Great Bear Lake, then across to Contwoyto Lake,Seymour (Alymer)River to Snowdrift, along Great Slave Lake and back to Fort Providence"[1]

[1] Fumoleau, Rene, As Long As This Land Shall Last p192

Background:

Prospecting in the Monfwi Territory goes back as far as 1770 when Samuel Hearne who was employed by the Hudson's Bay Company travelled to the vicinity of Great Slave Lake and north past Artillery and Clinton-Colden Lake to the Coppermine River.

In 1930, silver and pitchblende were discovered by Gilbert LaBine on the east shore of Great Bear Lake. By 1932 there were between 200 and 300 men in the Great Bear Lake prospecting. Between 2,500 and 3,000 claims were recorded up to the end of the year. Considerable prospecting was done near Great Bear Lake in 1933. However between 1936 and 1939 the prospecting centred in the area between Great Bear Lake and Indin Lake and very little was occurring near Great Slave Lake. In 1938 about 3500 claims were recorded between Indin Lake and Great Slave Lake. It's estimated there were between 300 and 400 prospectors who had moved into and begun working in this region during the summer of 1938.

In 1939 about 1,400 claims were recorded with approximately 125 men prospecting during the summer. Six months later, by the end of the year, there were about 7,700 claims in good standing in the Northwest Territories. About 5000 of these were between Great Slave Lake and Indin Lake.[2] Many of the properties that were successfully staked and explored, remain undeveloped and have been restaked since the early rush.

As I conducted this research, I read about the uranium rush during early 30's and gold rush in the mid 30's, and now in the 90's the diamond rush has occurred, all within the Dogrib Monfwi territory. It was reported in the December 93/January 94 issue of Up Here that the two years following the 1991 rush, 21,089 claims were recorded, covering over 45 million acres of land. In 1997 the Mining Recorder office reports that 2,291 claims were staked in the Northwest Territories.

For the Dogrib people the migration of the caribou was critical to their survival. For generations as a nomadic people, the livelihood of the Tlicho (Dogrib) depended on the caribou as their main source of food, clothing and shelter. Historically recorded observations of caribou were made by early explorers, anthropologists, traders, prospectors, bush pilots, surveyors, the Canadian wildlife service, the RCMP, game wardens and renewable resource officers.

One of the earliest recordings was made by Samuel Hearne in the 1770's. During his travels through the Dogrib Nation (1770-1772), he noted in his diary on September 3, 1771 that as they arrived at a small river on Point Lake the "the deer (caribou) were so plentiful."[3]

---

[2] Lord, C.S, Mineral Industry of the Northwest Territories, Geological Survey Memoir 230, Printer of the King's Most Excellency, 1941, pp 9.

[3] Hearne, Samuel, A Journey from Prince of Wales's Fort in Hudson's Bay to the Northern Ocean, M.G. Hurtig Ltd, 1971 pp201

According to A.W.F. Banfield in his report " **The Barren Ground Caribou**" anthropologist Frank Russell notes in the late 1800's the caribou had largely forsaken the crossing point at Fort Rae. In the book "**The Settlement of the Great Slave Lake Frontier, NWT Canada from the Eighteenth to the Twentieth Century**" George Ramsay Rae writes extensively on the migration of caribou at Rae Point, the sight of what is now known as Old Fort Rae. He says Rae Point bordered on the migration route of great herds of barren land caribou. "In the fall of each year with the commencement of the heavy storms in August, thousands of caribou began leaving the country between Great Bear Lake and Great Slave Lake and moved southward in a broad arc that impinged on the upper shore of the North Arm and crossed the outlying quarter of the east arm. A reverse surge northward took place in the spring and again millions of caribou passed Rae Point."[4]

He goes on to say that after Fort Rae was established in 1852 the Dogrib people would bring in eight to ten thousand caribou each year and exchange them at the trading post, in the same way trappers bartered fur at other trading posts. He says the traders used the caribou as provisions for the York boat crews. "Caribou meat from Fort Rae, until the arrival of the steamboat, was the 'fuel' on which the transport facilities on the Great Slave Lake – Mackenzie River trade route were operated."[5]

The objective of this report is to locate and determine mines within the Monfwi region and their length of operation; where possible define the construction phase of each mine and finally determine where the caribou migrated during the construction phase of the mine.

[4] Rae, George Ramsay, "The Historical Geography of Fort Rae 1852 – 1956", The Settlement of the Great Slave Lake Frontier, NWT Canada from the Eighteenth to the Twentieth Century, 1963 pp 191

[5] Rae, George Ramsay, pp191.

Mines Developed in Monfwi Territory:

Early 1900's

1. **Aurous Gold Mining Company [Gold]**

Location: 90 KM SE of Yellowknife on Wilson Island in the East Arm of Great Slave Lake. Its west end is 46 miles north 20 degrees east of Fort Resolution.

Mine History: The claim, named the Big Moose, was stake in September 1916 by R.H. Wilson three quarters of a mile from the west end of Wilson Island. Another claim called the Big Bear, adjoins the Big Moose on the east. This claim was staked by C.P. McTavish in September 1916 as well. During 1921 and 1922 trenches and shafts were dug. A cabin was constructed in Safety Cove, 2 miles from the west end of the island. The Big Moose claim consisted of two shafts about 100 feet from the south shore. The mine was abandoned after 1922. The both claims remained in good standing through to June of 1931.[6]

In 1993, an environmental assessment recommended mine the unmarked mine shafts be backfilled as they posed a potential risk to wildlife.[7]

Caribou Migration: No specific data was found regarding caribou migration at time of construction. However, during the summer of 1923 Guy Blanchet reports that during a canoe trip with Sousi Beaulieu and Black Basile, they sighted a herd of caribou moving southward on Thonokied Lake.[8]

It may be worth noting that in 1910 when the RCMP made their first patrol to Fort Rae, it was reported that people were starving because of entire absence of caribou. The priest, a Father Roure, told the police it was the first time the caribou had failed to arrive during his forty-two years as a missionary at Fort Rae.[9]

---

[6] Lord, C.S., GSC Memoir 230 p124

[7] Acres International Ltd., "Environmental Assessment and Remedial Options for Abandoned Mines of the Northwest Territories," March 1993, pp 44-46

[8] The Beaver Magazine, Fall 1964

[9] Rae, George Ramsey, pp199

1930's

2. **Eldorado Gold Mines Ltd [Radium and Uranium, Silver]**

Location: Port Radium, Great Bear Lake Latitude 66° 05' 05"
Longitude 118° 02' 10"

History of Mine: In May 1930 Gilbert LaBine and Charles St Paul staked claims for silver and radium. Subsequently some ore was sent to the Mine Branch in Ottawa where a method was found for extracting radium (1931-32). By July 26th, 1931 a cookhouse and bunkhouse had been built. Workers had **mined and hand picked** seven tons of high grade ore. the main source of food for the camp was caribou, whitefish and trout provided by local Indians.[10] In 1932 diesel power was installed at the property and underground work began. The first commercial shipment of silver -radium ores occurred. In 1933 a processing plant designed to mill 25 tons of ore concentrate a day began operating in December. By 1933 there were about 300 people living in and around Port Radium. Many were prospectors. Between 1934-1939 Eldorado produced radium and uranium products. The mine temporarily closed June 18, 1940 and re-opened two years later in April 1942. By early 1943 concentrate was being shipped again. Operations continued until 1960 when its ore was exhausted. In the 1970's and early 80's the mine was reactivated to extract silver and copper. It was finally closed down in 1982.[11]

Caribou Migration: J.P. Kelsall writes that caribou frequently wintered on Caribou Point between Dease and McTavish arms of Great Bear Lake. He says the lake discourages the caribou from moving further once migration is over in early winter. Kelsall says Yellowknife geologist, W. Macdonald and bush pilot E.J. Boffa report a marked and progressive reduction in the number of caribou wintering between Yellowknife and Port Radium after 1945.[12]

3. **El-Bonanza[Silver, Copper, Uranium]**

Location: The mine is situation on the Dowdell Peninsula about 6 miles south-southwest of Port Radium. Latitude: 66° 00'10"
Longitude: 118° 04' 30"

Mine History: First stake in 1931, it was first mined for the high grade silver found. Surface work and some underground work on the eastern arm began in 1934. Work ceased in 1936 on this part of the property. Some work was done

[10] Peet, Fred J., Miners and Moonshiners, Sono Nis Press, Victoria, 1983, p106
[11] McGlynn, J.C., Geological Survey of Canada, Paper 70-17, Metallic Mineral Industry, District of MacKenzie, 1971, pp117-118
Pitt Publishing Company, "Historical Highlights of Canadian Mining"
"Our Northern Legacy 1989", NWT Chamber of Mines
[12] Kelsall, JP, The Caribou, Queen's Printer, 1968 p134

underground on the western arm of the property in 1938 by Eldorado Mines and the ore was milled in its Labine Point mill. In 1956 an old incline shaft was repaired and deepened. However the property was closed down in late 1956 before work was completed.

Caribou Migration: No specific data found.

4. **Contact Lake [Uranium]**

Location: This mine is located 330 KM northwest of Yellowknife on the northeast shore of Contact Lake, - (NTS 86F-13)Latitude 65° 59' 40";
Longitude 117° 48' 00"
It is about 9 miles southeast of Port Radium.

Mine History: Staking occurred in 1931. Between 1936 and 1939 a mill was operated. However, a fire destroyed the mill in 1944. Exploration at the site continued from 1944 through to 1949. Exploration resumed in 1969 and continued through to 1975 when the mine was finally abandoned.[13]

Caribou Migration: No specific data found

5. **Burwash Yellowknife Mines Ltd [Gold]**

Location: (Mineral Claim Sheet 85J-8) East shore of Yellowknife Bay, Great Slave Lake, southeast of the Yellowknife townsite.

Mine History: Geological Survey Canada conducted mapping of Yellowknife Bay and the east arm of Great Slave Lake, Yellowknife River and the barren grounds north of the east arm of the lake. This was available in 1933 to the public. In September 1934 24 claims were staked for Yellowknife Gold Mines on the east shore of Yellowknife Bay opposite Yellowknife, by CJ Baker and H Muir. Burwash Mines Limited was formed to take over these claims the same year. In the summer of 1935 exploration work continued and a vertical shaft to a depth of 125 feet was started. Early the next year (1936) exploration work continued and by the summer more than 2000 feet of diamond drilling and 300 feet of trenching were done on the discovery and on adjacent veins. Work halted in September. It closed in 1937. In 1945 the Rich Group Yellowknife Mines was incorporated, acquired the Rich claims and completed about 9,200 feet of diamond drilling that year.[14] This was Yellowknife's first mine.

Caribou Migration: No data acquired regarding caribou migration at this location.

---

[13] Environmental assessment and Remedial Options pp 77-80
[14] Lord, C.S., GSC Memoir 261, pp 103-104

6. **Miramir Con Mine Ltd. (Nerco Con, Con and Rycon Mines)[Gold, Silver]**

Location: At Yellowknife on the shores of Great Slave Lake.
Latitude: 63° 26' 22"
Longitude: 114° 22' 08"

Mine History: The discovery of visible gold was made by a government geologist, Norman Jennejohn in 1934 on the west side of Yellowknife Bay. The Con Group of claims were staked in September and October of 1935 for Consolidated Mining and Smelting. Almost a year later, in August 1936 the P&G Group of claims were staked by G. Latham and Tom Payne and development work was begun by Rycon Mines, with diamond drilling on the Consolidated property. Construction of the first shaft and the mill began in 1937. By August of 1937, Consolidated had gained control of the P&G Group. The first gold was produced in September 5, 1938. (It has produced over 5.4 million ounces of gold since then.) In December a shaft was started at the Rycon Mine and the extracted ore was put through the Con Mill. By year end 6,794 ounces of gold had been produced. By the end of 1939 almost 54 thousand tons had been mined to produce 33, 750 ounces of gold. In 1996 414,113 tons of ore were milled to produce 111,021 ounces of gold.[15]

The mine has been in continuous operation since it opened, except in 1942 and 1943 when it closed because of WWII.

Caribou Migration: No specific data found

7. **Giant Mines Yellowknife Ltd [Gold, Silver]**

Location: situated on the west side of the north end of Yellowknife Bay
(NTS 85 J-9) Latitude 62° 30' 10"
Longitude 114° 21' 25"
Supercrest {Akaitcho} (NTS 85J-9) Latitude 62° 31' 30"
Longitude 114° 21'

Mine History: Staking occurred in 1935 by C.J. Baker and H.M. Muir for Burwash Yellowknife Mine Ltd. Between 1936 and 1938 some work was done on the claims by several companies, including Consolidated Mining and Smelting Company of Canada Ltd and Anglo-Huronian Ltd. Giant Yellowknife Gold Mines Ltd was incorporated and acquired the property in 1937. In 1938 D. W. Cameron discovered an outcrop of a gold bearing shear zone near the southeast boundary of the property. Between April 1939 and June 1940 Giant maintained a continuous exploration program. 74 tons of ore were shipped to Trail BC for processing. This ore contained gold and a little silver. During 1941 the southeast boundary of the property was re-examined. In 1943 the Frobisher Exploration Co Ltd acquired

[15] Heath, Brad, "Mining Update", Mining North Magazine, 1996, p8.
McGlynn, GSC paper 70-17, p58-64.

operating control of Giant. In the summer a geological examination by A.S. Davidson led to the concept that the drift filled Baker Creek Valley, an area neglected by previous exploration, was underlain by a major system of gold-bearing shear zones. Diamond drilling continued in 1944 in Baker Creek Valley area resulting in the largest tonnage of gold ore known in the NWT. Construction of Shaft No.1 began September 24th 1945 and was completed the by January of 1946. In April, 1946 work was started on Shaft No. 2. In November equipment for 500 ton mill had been ordered and construction of the Snare River hydro-electric power plant had begun. Although the company began work on the dam, the project was taken over by the Department of Mines and Resources. In the summer of 1947 excavations for the crushing milling and roasting plants were completed. Work on Shaft No 3 near the crushing plant was initiated. In 1948 shaft No 2 was deepened to 780 feet. Milling operations commenced on May 12th but much of the gold remained in floatation concentrates, so further processing could be done pending the completion of the roaster early in 1949. June 3, 1948, the first gold brick was produced and on July 31st the 90 mile transmission line connecting the mine to the Snare River dam was completed. October 4th transmission of electricity began.

In 1949 a new roaster referred to as the Edwards type was installed. Then in 1952 a two stage Fluosolids roaster was put into service. Five years later a kiln roaster was installed for high temperature treatment and a new two stage fluosolids roaster was installed to increase the efficiency to 80 %.[16]

By 1960 it was the largest mine in the Northwest Territories. There were 26 claims in the Giant property. A number of other mines have been associated to Giant Yellowknife Mine. Varying amounts of information is available on them. Their name location and any data found is listed below:

8 **Supercrest (Akaitcho)[Gold, Silver]**

Location: Lat. 62° 31 '30"; Long. 114° 21'
This property is on the north edge of the Giant property and includes 8 claims.

9.**Salimata [Gold]**

Location: Lat 64° 04'; Long 111° 14'

This property was staked in first stake in 1945. It's located 150 miles northeast of Yellowknife on the east side of Matthews Lake between Mackay and

[16] McGlynn, J.C., GSC Paper 70-17
Lord , C.S., Memoir 261 pp155-171
Memoir 230 pp 99-102

Courageous Lake.
Between 1945 and 1953 about 90 diamond drill test holes were sunk and four main zones were trenched. In 1952 a building for a gravity mill was partially constructed as where a number of other buildings. The property was closed in 1953. Between then and 1971 there was no activity. However, Giant Yellowknife put the mine back into production and in 1982 .14 million tons of ore were extracted. Production continued until 1987.

10. **Tundra Gold Mine (formerly Bulldog)1963[Gold]**

Location: Lat 64° 02'12", Long. 111 11'36"

The property consists of 54 claims at the south end of Matthews Lake. It was staked in 1945 by Jack Matthews. Between 1945 and 1951 the property was explored on the surface and by drilling. Rock trenches of 1500 feet were used to open the vein. In 1951 underground work began and in late 1952 a headframe, powerhouse, garage and a hoist building were constructed. The mine was closed and not re-opened until 1957. In 1957 and 58 worked ceased during the winter months. Construction on a steel frame two storey building, 200ft by 32ft, started in 1959. In subsequent years buildings were winterized so it could became a year round operation. A 4000 ft. airstrip was built on an esker about 8 miles from camp. Production of gold was continuous between 1964 and 1968.[17] No date was found on when it was acquired by Giant Mines.

Caribou Migration: Prior to the development of Giant Mine, in the late 1920s, Walsh Lake was known as a crossing point for caribou. The author of *Prospector North of 60,* notes "beyond the Yellowknife settlement and about 25 miles south of Walsh Lake my guide (Indian) had built his cabin at a place renowned as a caribou crossing place and although the winter had been a hard one his place was one of the best provisioned on Yellowknife Bay."[18] It was reported by JP Kelsall that caribou shifted calving areas in 1952-53 and again in 1955-56 when they wintered on the north shore of Great Slave Lake. He says the caribou moved south into a triangle formed by Yellowknife, Gros Cap and Thompson Landing on the north shore of the lake. As fall approached the herds moved into the forest at the headwaters of the Taltson and Snowdrift Rivers. "In 1952-53 some animals

[17] McGlynn, J.C., GSC Paper 70-17, pp58-64
[18] Nagle, Ted, & Zinovich, Jordan, the Prospector North of Sixty, Lone Pine, 1989 p181.

crossed the North Arm of Great Slave Lake to the west and spent time in the Gypsum Point area before rejoining the main herd to the east.....the herd numbered about 25,000 animals"[19]

11. **Negus Mines Ltd [Gold]**

Location: Negus is 2 miles south of Yellowknife on the west side of Yellowknife Bay. Latitude: 62° 02' 12'
Longitude: 111° 10' 55"

Mine History: The property was staked in 1936 by O. Hagen and other unnamed prospectors. Prospecting activity continued through the summer of 1937 and diamond was commenced with winter. The diamond drill work continued through the winter of 1937-1938. In March a prospecting shaft was opened and the main shaft was started in September. The mill began operating February 5, 1939, with the first gold brick being poured February 21st. By year end, almost six thousand ounces of gold had been recovered. Work continued at the mine until September 1952 when the mine closed. It did not operate from October1944 to July 1945 because of a labour shortage. In 1953 COMINCO bought the mineral rights, one claim, the headframe and some buildings. In1957 the mill, roaster, buildings and surface rights were sold to Rayrock Mines.[20]

12. **Pensive Yellowknife Mines[Gold]**

Location: The mine is located on the east side of the upper Pensive Lake, 68 KM NE of Yellowknife, about 41 KM from the Thompson Lundmark Mine.
Latitude: 64° 44' 10'
Longitude: 113° 20"

Mine History: The property was staked in 1938. Development work began in 1939 when a prospect shaft and small amalgamation mill were constructed. A headframe was erected in the spring of 1941. The property has not seen activity since 1947.[21]

Caribou Migration: No specific data found.

---

[19] Kelsall,J.P., The Caribou, Queens Printer, Ottawa, 1968, p121
[20] Lord, C.S., GSC Memoir 230, pp112-118
McGlynn, J.C., GSC Paper 70-17, pp 40
[21] Environmental Assessment and remedial options pp27-30

13 Philmore Yellowknife Mines [Gold, Copper, Tungsten]

Location: The mine is located on the Outpost Islands in the east arm of Great Slave Lake about 88 KM SE of Yellowknife.

Mine History: This property was staked in July 1935 for the Athabasca Syndicate. Sometime after Slave Lake Gold Mines bought the claims. Exploration work was carried out on the property from November 1935 through to March 1938. During this period, a 450 foot shaft and 1700 feet of drifts were developed. The mine was abandon and then re-opened in September 5, 1940. A 50 ton mill was constructed and milling began May 1, 1941. The mill shut down in August of 1942 and the property was closed in October the same year. The mill resumed operations in 1950 but was abandon a second time in 1952. Three years later a fire completely destroyed all buildings at the site.[22]

Caribou Migration: No specific data found.

Caribou Data 1930's:

Reports of C.H.H. Clarke:

1936

In late July and through August caribou were seen passing in waves through the sanctuary and the south barrens as far as Thekulthill Lake. The numbers of animals began to decrease in late August. During the first two weeks of august a small herd moved in over the whole region of Hanbury, Artillery Clinton-Colden and Aylmer Lakes.

August 1st – small herd of caribou sited travelling the Taltson River between King and Taltson lakes.
August 11th – caribou spotted 18 miles southwest of Taltson Lake
August 16th – caribou seen at the southwest end of Thekulthill Lake
August 18th – caribou travelling on Nonacho Lake
August 19th – a large herd seen migrating northward between Hanbury and Clinton-Colden Lakes. The migration lasted all day.

During a search and rescue operation Flight Lieut. L.E. Wray observed a herd he estimated to be several thousand moving rapidly south, in a long line six or seven animals abreast. The column was led by a buck about 100 yards in front of the column.

As well it was reported by a Mr Eric Fry, that the upper back River Valley was full of caribou. He notes these caribou were part of a second swing that moves into the Reliance region around freezeup every year. Reports indicate that in the autumn and winter of 1935-36 caribou had been plentiful at Reliance. In 1936-37 fewer caribou were in the

[22] Lord C.S. Memoir 261 p236
Environmental assessment and Remedial Options p22

Reliance region but were plentiful at Snowdrift.

Clarke reports that on June 1937 a few stragglers were spotted at Hess Lake. But while making a portage at Grove Rapids on July 3rd a band was seen near the shore. He says the foot of Hanbury Lake was a moving mass. He estimated the herd to be about 20 thousand animals. He says the herd stretched through to Lac du Bois. In total, the whole herd was estimated to be least 100 thousand animals.

1940's

14 **Ptarmigan Mines/Tom Mines(Treminco Mines) [Gold]**

Location: The mine is located approximately 15 miles east of Yellowknife on the Ingraham Trail. Latitude: 62° 31' 10"
Longitude: 114° 11' 50"

Mine History: The first staking by J.A. Morie occurred 1936 and was part of the Jack Group of six claims. In 1938 the Consolidated Mining and Smelting Co did some trenching and diamond drilling. Ptarmigan Mines was incorporated in October 1938. A 100 ton mill was constructed and milling operations commenced November 27th 1941. The first gold brick was poured Jan. 3 1942. In August of that year the mine closed because of WWII. Treminco Resources developed a decline on the Tom property in 1985. In 1987 Treminco purchased all the Ptarmigan property and extracted ore was taken to the mill at Giant Mine for processing. In 1989 it opened its own mill which ran at a capacity of 250 tons per day. Work continued through to August 1997 when operations were 'temporarily' suspended.[23]

Caribou Migration: No specific data was found.

15 **Thompson Lundmark[Gold]**

Location: This property is located 48 KM NE of Yellowknife on the south shore of Thompson Lake.

Mine History: Staking first occurred in 1938. In 1941 a mill was constructed. A 55 mile winter road was used to access the site. The route crossed Jennejohn, Reid and Hidden lakes. The mill was operated for two years then shut down because of the lack of labour until 1947. Milling continued at the mine until May 1949 when operations ceased. Gold recovery was by chemical means. There was an 85 man camp which included a two storey bunkhouse, a small hospital and a curling rink as well as warehouses, headframes, shops and offices. Power was attained from

[23] Heath, Brad, Mining North Magazine 1997 p13
Lord C.S., GSC Memoir 261 pp247-249
Mining, Our Northern Legacy, p35

the hydro plant at Prosperous Lake. It should be noted that some discussions have occurred on developing the mine site as a historical tourist attraction.[24]

Caribou Migration: In his book *Miners and Moonshiners*, Fred J. Peet says that at the time the powerline was being constructed to the mine site, he was located in a camp about forty miles from the barrens. "During the first week of October, the lake started freezing over....and the barren land caribou passed by seeking protection and refuge afforded by the trees growing in the valleys."[25] It is also worth noting that the winter road location was in area of the normal path of caribou winter migration.

16. **Discovery Mines [Gold]**

Location: The property is located on the west end of Giauque Lake 100 KM N.N.E of Yellowknife. (NTS 85P-4) Latitude: 63° 11' 12"
Longitude: 113° 53' 30"

Mine History: The claim was staked in the summer of 1944 by A.V. Giauque and subsequently acquired by Jakeway Prospecting Syndicate. Discovery Yellowknife Mines was formed in 1945. Prior to August diamond drilling was initiated. In November the north vein was discovered by one of the employees, Bert Wagenitz. Between January and September of 1946 extensive diamond drilling was conducted on the North vein and the adjacent area. In June underground development started and mining and plant supplies were ordered. A small plant had been flown into the site by October. In November a shaft was started. Work continued on the shaft until March 1947 when the first units of a permanent plant were installed. Underground work was continuous throughout 1947.Permanent buildings were erected in 1947. Milling commenced January 1 1950. A power line was built to the site in 1953 and an airstrip was constructed in 1956. The mill burned down in 1960. Discovery Mine closed down in 1968 after 19 years of production. It was reactivated in 1994 by GMD Resources Corp.[26]

Caribou Migration: No specific data found.

17 **DeStaffany Tantalum Beryllium Mines Ltd [Tantalite - columbite, Beryl]**

Location: The mine is on the north shore of Great Slave Lake, 117 KM E.S.E of Yellowknife. (Mineral Claim Sheet 851-1)

---

[24] Lord C.S., GSC Memoir 261 pp279
Environmental Assessment and Remedial Options pp18-21
[25] Peet, Fred J., Miners and Moonshiners p180
[26] Our Northern Legacy 1989
Lord C.S., GSC Memoir 261 pp124-131
McGlynn, J.C., GSC Paper 70-17 pp 44-49

Mine History: Staked in 1942 as Moose No 1 and 2 on behalf of De Staffany Tungsten Gold Mines Ltd. Three tantalite claims were staked in July and August 1943. The next year a claim called the Best Bet No 1 was registered. In 1945 DeStaffany T. (tantalum) B. (beryllium) Mines Ltd was incorporated. Their property also included the Bill No 2 claim. In 1946 a crew of six men were employed. A 5 1/2 foot by 7 foot shaft was sunk to a depth of 40 foot on Moose No 11 or No 12 claim. A mill was erected on Moose 11 claim at the shore of Great Slave but did not operate until 1947 during the months of September and October. It remained in operation until 1954. Unrefined concentrates were produced. However a fire destroyed the mill and the mine was abandoned shortly afterwards.[27]

Caribou Migration: No specific data found.

18 **Peg Tantalum [Tantalum]**

Location: The mine is located 71 KM ENE of Yellowknife between the upper Ross Lake. Redout Lake. Latitude: 62° 43' 40"
Longitude: 113° 06'50"
The mill is 1.7 km east of the upper Ross.

Mine History: The property was staked in 1943 by J.R. Saunders and acquired by Peg in 1944. Nine men were employed in the summer of 1945 and pegamite was stock piled. In the spring of 1946 mill machinery was brought as far Reid Lake then flown from there into the mill site at Upper Ross Lake. By September 21 men were employed and mill was under construction. Beginning in October of 1946 the mill operated intermittently for five weeks until mechanical problems forced a shutdown. Milling resumed in April of 1947 and operations continued on an intermittent basis through the summer. Most of the ore was taken from one surface mine. Work was never resumed after 1947.[28]

Caribou Migration: No specific data found

19 **Ruth Mines[Gold]**

Location: This gold mine is located 90 KM east of Yellowknife on the west side of Tam Lake. It's about 56 km from the Ingraham trail. Latitude: 62° 27' 45"
Longitude: 112° 34' 15"

Mine History: The property was staked originally in the summer 1940 by J. Michelson. In 1941 12 men were employed to sink a shaft. In the winter a 25 ton mill was brought in tractor train. In the summer of 1942 the mine operated for two months and the mill operated for 12 days from August 1st and 186.8 tons of

[27] Environmental Assessment and Remedial Options pp14-17
[28] Environmental assessment and Remedial Options p9
Lord C.S., GSC Memoir 261 pp231

ore were processed. The buildings constructed included a cottage, a two storey bunk house and a shop, a office/staff house, hoist and mill. About 90 surface trenches were dug. Work halted until 1959 when mining and milling resumed for another season. Work at the site ceased again until 1973 when extensive diamond drilling occurred and then from 1982 to 1988 sampling and exploration were undertaken.[29]

Caribou Migration: No Specific data was found

20 **West Bay Mine [Gold]**

Location: This mine is located on the southeast shore of Gordon Lake, about 77 KM NE of Yellowknife.

Mine History: The property was first staked in 1946. The mine went into operation in 1947 and worked continued through the fall of 1948 when it was shut down. In 1983 work was reactivated at the site with an extensive drilling, trenching and reworking of the original pit. The claim remained active over the next ten years.[30]

Caribou Migration: No specific data found.

21. **Liten [Gold]**

Location: It is situated 53 KM NE of Yellowknife on the southwest shore of Little Sproule Lake.

Mine History: The property was staked in 1947. Gold was recovered by hand until 1964, at which time a mill, using mercury amalgamation, was installed. It operated for only 1 year. The 3 buildings on site remain intact. The mine was abandoned in 1972.[31]

Caribou Migration: No specific data found

22. **Beaulieu Yellowknife Mines Ltd [Gold]**

Location: 74 KM east of Yellowknife between Hansen Lake and John Lake, about 3 miles north of Campbell Lake.

Mine History: The claim was first staked in 1939 by S. Hanson and Associates of Yellowknife. A mill was constructed 1947. The mine was abandoned after two

---

[29] Lord, C.S. GSC Memoir 261 pp251
Environmental and Remedial Options p65
[30] Lord, C.S. GSC Memoir 261, pp 279-290
Environmental Assessment and Remedial Options pp39-43
[31] Environmental assessment and remedial Options pp34-38

seasons of milling, using mercury amalgamation to extract gold. In 1982 and then again in 1987 different companies different companies acquired the property but allowed the claims to lapse. In January 1992 a new claim was stake over the mine site.[32]

Caribou Migration: No data found in reference to caribou migration passing this site during construction phase.

1950's

23. **Indore Gold Uranium Mine [Uranium]**

Location: The mine is located south end of Hottah lake about 225 KM NE of Yellowknife

Mine History: The mine was staked in 1950. By 1952 underground work had commenced and a mill was in operation. However, by 1955 work had ceased and the mine was abandoned. The property was closed in 1956. Five wood frame buildings remain on the site and both entrances to the mine, an adit and a mine shaft have been left open[33].

Caribou Migration: J.P. Kelsall forwarded a brief report to the chief of the Canadian Wildlife service, Dr Lewis, on December 21, 1950. In it he says caribou are spread over a large area along the Arctic coast and the adjacent area. He says he believes the Lac La Martre herd is currently near Wrigley, although he hadn't visited the area yet. He also notes that the small herd which moves from the Coppermine River to east shore of Great Bear Lake, was moving northward in the area where he had seen them the previous April.[34]

In a letter the on January 11, 1951 J.P. Kelsall writes after a ground patrol on the Lac La Martre Caribou herd, " We located the Lac la Martre herd without difficulty. Although scattered, animals from the herd extended within 35 miles of the southeast end of Lac La Martre. The main body which we discovered is only a few miles east of Fish Lake, within 50 miles of Wrigley. In this area, the heavy bush is literally crawling with caribou."[35]

In October 1951 R. Douglas reports that while on patrol to Lac La Martre on the evening of October 26th a scattered herds of caribou in groups of 4 tot 20 were in the vicinity of the village at latitude 63° 08'N, longitude 117° 16' W. Within two

[32] Lord, C.S., GSC Memoir 261 pp 70-84
[33] Environmental and Remedial Options p73
McGlynn, J.C., GSC Paper 70-17 pp115
[34] Kelsall, J.P. Northern Administration Ref. #G79.003 110.5
[35] Kelsall, J.P., Northern Administration Ref.#G79.003

days in a six mile radius about 200 animals were killed. Douglas says the small herds extended as far south as James Lake. He says there were reports of caribou at Russell Lake as well.[36]

In another report, which Kelsall wrote to Dr Lewis on January 2, 1952, he refers to efforts to locate the Lac La Martre herd. " Warden Bulmer and myself accompanied the regular supply flight to Hottah Lake, Contact Lake, Eldorado, Sawmill Bay, and the lumber camp at McVicar Arm....There were small scattered bands of caribou along McVicar Arm. Most of the animals were the forest and we only saw about 24. I have now covered a great deal of the usual winter range...without finding the herd. I might add we are not the only people having trouble finding this herd. The Rae Indians have not found it either and one group lost all their dogs and nearly starved themselves before they made it back to Rae on foot."

A report filed by J.P. Richards on January 29th 1952, quoting A.G. Loughrey indicates that the Rae herd wintered in the Blackwater /Fish Lake area.[37]

In another letter dated November 13, 1952, Chelae writing to a Mr. F. A. McCall says, "the movement of caribou on to their winter range, as it is presently shaping, is quite different from the patterns displayed during the past four or five years. The Hanbury herd which should be in the country between the east arm of Great Slave Lake and Lake Athabasca is massed about Drybones Lake some 100 miles northeast of Yellowknife. The Rae herd is also far from its usual position for this season. "

On January 17th 1952, F.A. McCall writes in a letter to Kelsall caribou have been reported about 20 miles northeast of Fort Smith. He says very few have been brought in by hunters but while on flight from Fort Resolution a few small herds and a lot of tracks were seen on the east side of the Slave River.

In his book, *The Caribou,* Kelsall writes in the winter of 1952-53 several thousand caribou moved along the south side of Great Bear Lake and wintered around Fort Franklin. "In the spring of 1953, instead of taking the usual routes eastward toward Bathurst Inlet, all the animals moved northward to find calving areas and summer pastures north of Great Bear Lake."[38]

24. **Rayrock Mine [Uranium]**

Location: The Rayrock property is located on the Marion River system at Sherman Lake about 100 miles northwest of Yellowknife. Latitude: 63° 26' 54"
Longitude: 116° 32'18"

[36] Douglas, R., Caribou report File 70, Ref. # G79.003
[37] Richards, J.P., File #3769 Northern Administration Branch Ref. #G79 003.112.4
[38] Kelsall, John P. The Migratory Barren-Ground Caribou of Canada, Queens Printer 1968

Mine History: A team from the Geological Survey of Canada first found uranium in this area in 1934. A.W. Joliffe investigated the property in 1944 but it wasn't until 1948 when a claim was staked by A.V. Giauque and Associates. In 1953 Rayrock Mines was formed by American Yellowknife and Lodge Uranium in order to finance further exploration. In the spring of 1954 test drilling was done on the best showings. In 1955 the drill program was used to outline the ore body and underground work began. The next year the mine went into production. A mill and treatment plant were constructed and the first uranium concentrates were produced in 1957. The mine closed July 31, 1959. A number of buildings were constructed, including a powerhouse, carpenter and electrical shops office - warehouse and three two storey bunkhouses to accommodate 100 men, 9 residences, a staff house for 14 and a cookhouse.[39]

Caribou Migration: A report to the commanding officer of RCMPolice for the Fort Smith Sub Division in July 955 states very few caribou were shot in comparison to the previous year. He notes 10 families from the Coppermine area who normally camp and hunt caribou at Contwoyto Lake stayed on the coast.

"Around the middle of October 1954, a herd of caribou was located approximately 50 miles southwest of Coppermine in the Rae River District. It is believed that approximately 1000 caribou would be in this herd." [40] In another report sent from Port Radium on June 23, 1955 the officer notes that herd of about 200 stayed for most of the winter between Hottah Lake and Cameron Bay. He says the caribou returned north early in the year, though no large herds were noticed in the area. According to reports from local Indians plenty of caribou were killed to meet their needs for meat and skins and the officer reports that the caribou were considered to be in better shape than the previous year.[41]

Two officials from the Canadian Wildlife Service, John P. Kelslall (1955) and A.G. Loughrey (1952) estimated the winter herd at Caribou Point to be over 10 thousand each year since 1950. However in 1954-1955 the winter population dropped to the lowest on record of around 500.[42]

The area between Great Bear Lake and Great Slave Lake, wildlife officer Banfield estimated 1954 the herd to be about 219,000. In 1948-49 Banfield estimated the herd at 219,000. In 1950-51 Kelsall estimated the herd had dropped to 147,000. Kelsall continued to report a further drop in 1952-53 to 51,000. However he reported a slight increase in 1954-55 to 59,500. Officials would not attribute the decrease either to hunting pressures or disease. In this period Rae people took an average of 9000 animals a winter. Wildlife officer expressed concern that continued hunting may result in a disaster for the herd.

---

[39] McGlynn, J.C., GSC Paper 70-17 p88

[40] Northern Administration Lands Branch, Dept. of Resources and Development "G" Division , Royal Canadian Mounted Police Ref. #G79.003.3 July 1, 1955.

[41] Northern Administration Lands Branch, #G70.003 100.3 June 23, 1955.

[42] Northern Administration Branch #79.003 112.5

A herd of 7,000 is reported to winter regular at Lever Lake. In March 1955, it was estimated the herd in the Fort Franklin area to be about 26,100. The herd arrived near Fort Franklin late in 1954. Over 130 wolves were taken using poison bait traps. Another 25 wolves were spotted during the census flying. Officials believed the high number of wolves in the area resulted in a high caribou kill by predators. it was also estimated the people of fort Franklin and Fort Norman took between 1500 and 2000 animals.

Another small herd of 3000 was reported to have wintered at Lac Grandin. A census flight late in the winter over Gordon Lake estimated that herd to be about 3,900. On March 30 a herd of about 16,600 animals was spotted at Indian Mountain Lake moving north. It was believed this herd had come from south of Great Slave Lake. During the airial surveys only 144 animals were seen in the Artillery –MacKay Lake area. It was estimated about 2,900 caribou would have been in the area.[43]

An extensive airial survey was conducted in 1955. Over 38 thousand miles where flown in the sector alone. In a confidential report of July 15, 1955, the results showed a steady decline since 1948-49. The reports were as follows:

	1949	1955
North of Great Bear Lake	35,000	4,928
Between Great Bear and Great Slave Lakes	219,000	55,952
Between Athabasca and Great Slave Lakes	315,000	79,534

Kelsall believed the decline in the Rae herd began in 1951. He also speculated the Rae herd had moved because of the unusual numbers of caribou reported from Bathurst and east.[44]

A RCMP report dated July 1, 1959 from the Port Radium detachment states that local Indians reported that caribou had been shot between Port Radium and Fort Franklin. Cst G.H. Johnson reports that no caribou migrated through this area during the period from July 1958 to June 30th, 1959.[45]

25. **Hidden Lake [Gold]**

Location: The mine site is located 45 KM NE of Yellowknife on the west shore of Hidden Lake.

[43] Northern Administration Branch #G79.003 112.5
[44] Northern Administration Branch Ref. #G79.003 110.5
[45] Northern Administration Branch #G79.003 100.6

Mine History: The site was first staked in 1938. Activity has been intermittent with most activity occurring between 1959 and 1969. There are nine buildings at the site. Several tons of ore were milled in 1968. The site is accessible by an 11 kilometer winter road and is located in a recreational area.[46]

Caribou Migration: Caribou migrate usually on an annual basis through this region.

1960's

26. **Echo Bay Mine [Silver, Copper]**

Location:(NTS 86L-1;K-4) Latitude 66" 06'
Longitudes: 118" 00'
Leased the former radium producing property, Port Radium and adjoining Cominco property

Mine History: This property was in operation 1964 to 1976. It is adjacent to what is known as the El-Bonanza Property. It was staked in 1930 with some diamond drilling occurring in 1932.[47]

Caribou Migration: A report dated October 18, 1963 provides some information regarding caribou movement early in the winter. L. Skov writes from Yellowknife, that ten days previously no caribou were sighted on trip to Pellatt Lake. He says visibility was poor. However he says on October 5th, reports of massive herds just milling around on Contwoyto and Pellatt Lake were received. As well, he says on October 11th Gus d'Aoust said caribou had been in the Reliance area most of the summer. Also the Chief at Snare Lake, Pierre Wedzin said caribou were only a days journey from the settlement in the Winter Lake area.

27. **Terra Silver Mine [Silver, Lead, Copper, Zinc]**

Location: The mine is located between Ho-Hum Lake and the south shore of the Camsell River about 280 KM NW of Yellowknife. Latitude: 65° 36' 15"
Longitude: 118° 06' 55"

Mine History: The mine began producing silver in 1969. The site includes a mill, service buildings and a camp. There are five underground entrances. Tailings from the mill were deposited on the shore and in Ho-Hum Lake. There are also three large tanks farms at the site. Operations ceased in 1985 and the mine was abandoned.

[46] Environmental Assessment and Remedial Options p 27
[47] McGlynn, J.C., GSC Paper 70-17 p118

1970's

28. **Smallwood Silver Mine [Silver, Lead, Zinc & Copper]**

Location: The site is situated on the northwest shore of Smallwood Lake about 270 KM NW of Yellowknife. Latitude: 65° 35' 15"
Longitude: 117° 57' 25"

Mine History: There has been very little activity at the site since it was first staked in 1930. In the 1970's exploration and surface diamond drilling occurred. In the early 80's some underground activity occurred. Ore from the mine was hauled on an 18km road to the mill at Terra Mines for milling and processing. Only five small service buildings were constructed on the site.[48]

Caribou Migration: No specific data found.

29 **Northrim Silver Mine [Silver]**

Location: The mine is located on the north shore of the Camsell River 270 KM NW of Yellowknife.

Mine History: The property was first stalked in 1932. Between 1934 and 1970 intermittent drilling and a little underground mining took place. A mill, which operated for two years, was installed in 1971. The mill was reactivated in 1976 and continued operations in 1977. In 1978 the mine ceased operations after a fire destroyed the mill. The sight remains silent but requires cleanup of fuel storage tanks, remaining buildings and processing chemicals.[49]

Caribou Migration: No specific data found

30. **Norex Mine [Silver]**

Location: 270 KM NE of Yellowknife, 1KM south of Camsell River. Latitude: 65° 35' 15"
Longitude: 117° 57' 25"

Mine History: The property was staked in 1950. This mine was developed as a satellite mine to Terra Mines. There are only three buildings and a small two container tank farm at the site. The mine was abandoned in 1985.

[48] Environmental and remedial Options p65
[49] Environmental Assessment and Remedial Options p65

1980's and 1990's

29. Lubin [Gold]

Location: The mine is located on the shores of Contwoyto Lake, 90 KM south of the Arctic circle and 400 KM NE of Yellowknife Latitude: 65° 45'52"
Longitude: 110° 13'35"

Mine History: Initial production at the mine started in May 1982. However, the construction phase of the operation was unique. The only access to the mine was by air. The parent company, Echo Bay Mines, purchased a Hercules and a Convair to fly in everything thing needed to build and put the mine into operation. Up to nine Hercules flights a day were dispatched from Yellowknife, on a 24 hour basis, six days a week. This continued for 20 months. Over 1,600 flights were required during the construction phase. As well the company constructed a 360 mile ice road across the barren lands to haul 3.5 million gallons of fuel and an additional 750 loads of freight during a 10 week ice road season. In 1996, 31 million pounds of freight and 22 million litres of fuel were trucked into the mine. The trip takes about 48 hours with rest stops at two camps, one at Lockhart Lake and one at Lac de Gras. The mine remained in operation, using a 737 for crew changes. According to Mining Update, 1997, it cost $299 US to produce an ounce of gold. The mine was shutdown in early winter of 1997.[50]

30. Colomac Mine [Gold]

Location: 220 kilometres north of Yellowknife

History of Mine: Colomac began production in May 1990. The mine was initially owned Neptune Resources but due to financial difficulties was sold and then resold to Royal Oak Mine. The ore was considered low grade but open pit mining, new technology, and higher gold prices made it economical. The mine was closed in October 1997 after producing half a million ounces of gold.[51]

Caribou Migration: No specific data, however winter roads were used to access the mine site during construction and operation. Parts of these winter roads were in the migration paths of the caribou. They also provided increased access by hunters to caribou.

---

[50] Our Northern Legacy, 1989
Mining North, 1997

[51] Heath, Brad, Mining North 1997 p 8

31. Ekati Mine [Diamond] (originally called Koala)

Location: Lac de Gras about 200 Km northeast of Yellowknife

Mine History: In 1989 Chuck Fipke staked mineral claims in the Lac de Gras area. In August of 1990 a joint venture agreement was signed between DiaMet and BHP's for the NWT Diamond Project. The NWT diamond rush was sparked by the discovery of diamonds at Point lake by BHP and Diamet in 1991.

The Diamond rush is the largest mineral staking rush in North American mining history. Over 10 million acres were staked. In 1992 BHP carried out a winter drilling program. Their drilling continued in the winter of 1993 at the Leslie, Fox and Koala sites. Bulk sampling was initiated and the company began work on environmental protocols. An office was opened in Yellowknife and a camp was established at the Koala site. As well, underground work started at the Fox site. In the fall of 1994 BHP built an extended runway and the first jet, a 727, landed at the Koala Camp. The winter drilling program continued at Panda Koala, Fox, Leslie and Misery sites. The underground bulk sampling at the Fox site was completed and work was initiated at the Panda pit begins. In 1996 the mine received final approval after an Environmental Review process and construction of a permanent camp was accelerated, with an estimated 1000 workers on site at the height of construction. In April 1997 the main camp was completed , the nine million fuel storage tanks were completed in August and ammonium storage buildings were completed by year end. Production is scheduled to in the summer of 1998.[52]

32. Diavik Diamond Mines Inc. [Diamonds]

Location: About 200 KM north east of Yellowknife on the eastern edge of Lac de Gras. This is known by the Dogrib people as Ekadi.

Mine History: The projected mine life is 16 to 22 years. Licensing process has just begun. The site was staked in 1991. In June 1992 the Diavik partnership was established. In 1993 a Yellowknife office was opened. In March 1994 pipes A154N and A154S were discovered. Work on Environmental Baseline Studies began in October the same year. Two new pipes, A418 and A21 were discovered in February of 1995. Diavik had established a 75 person exploration camp by February 1996. Underground bulk sampling on pipes A 154S and A418 was completed in July 1996. A corporate office was opened in Yellowknife in December 1996. By June of 1997, the Environmental Baseline Study had been completed and a Prefeasibility Study was completed in September.

[52] Hannock,Lynn, Mining North 97, NWT Chamber of Mines, 1997.

Caribou Migration:

Studies completed in 1996 indicate the Bathurst caribou herd occupied a range of about 250 thousand square kilometer. The calving ground historically is at the south end of Bathurst Inlet. During the early 80's the area east of the Inlet was used. Most of the cows reach the calving area by late May, while bulls, yearlings, and non-pregnant cows generally do not migrate as far as the calving grounds. The animals regroup with the cows and calves in late June and early July to form large aggregations because of the harassment of insects. Throughout the summer the herd is spread throughout the summer grazing areas of the tundra. By October the herd moves to the treeline for rut then the bulls and cows segregate and return to the forest. "The precise movements of caribou are unpredictable. Only large scale movements such as the movement towards the calving ground in May and June and the movement southward in the fall can be predicted with any degree of certainty. Even timing and routes vary....an area where there were thousands of caribou one year may not have a single animal the next. With few barriers to their movement, with the possible exception of the large lakes such as Contwoyto and Point lakes in the fall, there are no specific migration corridors which are used each year."[53]

From both photo and visual surveys scientists have documented a decline in the herd in the late 1970s which was followed by a substantial recovery after 1980. A 280% increase was observed between 1982 and 1986. It is believed though this large increase was a result of recruitment and immigration.[54]

Biologists indicate that the ratio of adult male to female is difficult to assess because the herd only comes together during the fall rut. Otherwise it is separated by age and sex. The average estimate used throughout North America is 36% male and 64% female.

The Status and Management reports notes numerous mining activities have been conducted in the Bathurst range during the period between 1986 and 1996. It says the only major documented impact on the herd are associated with winter roads. Hunting data indicates that 49% of General Hunting Licence holders and 51% of resident hunters use winter roads. The largest recorded harvest occurred on the Lupin winter road in 1983/84 when 3,744 caribou were taken.[55]

[53] Case, Ray et al, The Status and Management of the Bathurst Caribou Herd, Gov't of NWT, 1996 p2
[54] ibid p6
[55] ibid p22