WEST KITIKMEOT / SLAVE STUDY SOCIETY

Re: Tuktu and Nogak Project: A Caribou Chronicle

STUDY DIRECTOR RELEASE FORM

The above publication is the result of a project conducted under the West Kitikmeot / Slave Study. I have reviewed the report and advise that it has fulfilled the requirements of the approved proposal and can be subjected to independent expert review and be considered for release to the public.

Study Director

Sept 19/01

Date

INDEPENDENT EXPERT REVIEW FORM

I have reviewed this publication for scientific content and scientific practices and find the report is acceptable given the specific purposes of this project and subject to the field conditions encountered.

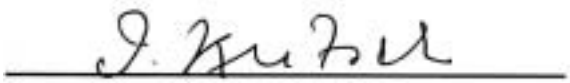
Reviewer

12/18/01

Date

INDEPENDENT EXPERT REVIEW FORM

I have reviewed this publication for scientific content and scientific practices and find the report is acceptable given the specific purposes of this project and subject to the field conditions encountered.



Reviewer

Feb. 21, 2002

Date

BOARD RELEASE FORM

The Study Board is satisfied that this final report has been reviewed for scientific content and approves it for release to the public.

Chair West Kitikmeot/Slave Society

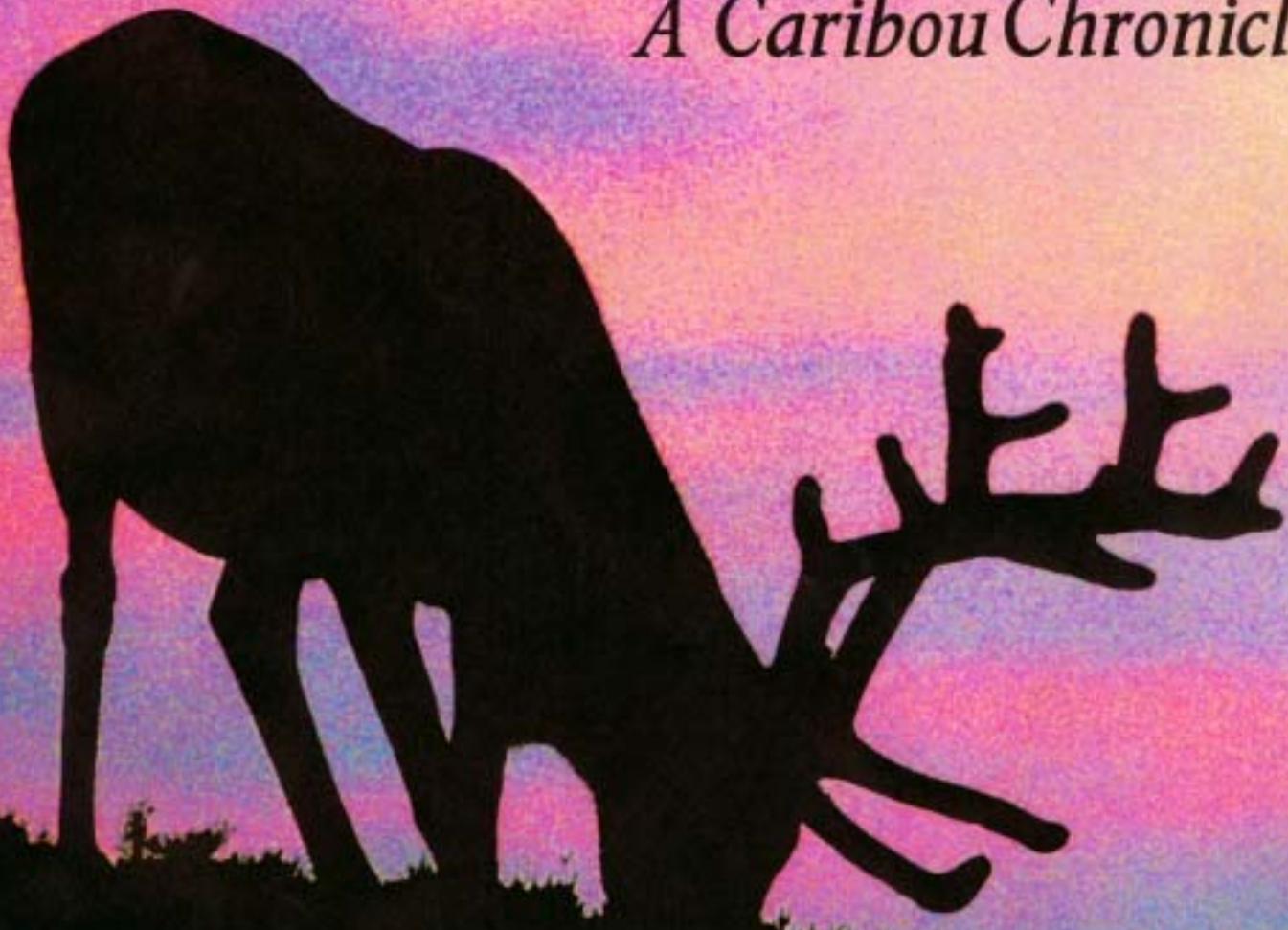
Apr 13/02

Date

Box 2572, Yellowknife, NT, X1A 2P9 Ph (867) 669-6235 Fax (867) 920-4346
e-mail: wkssa@internorth.com Home Page: http://www.wkss.nt.ca

Tuktu and Nogak Project

A Caribou Chronicle



Final Report

Submitted to The West Kitikmeot/Slave Study Society, Yellowknife, NT

Submitted by Natasha Thorpe, Naikak Hakongak, Sandra Eyegetok and Qitirmiut Elders, Tuktu and Nogak Project, Ikaluktuuttiak, NU

March 31, 2001

Credits:
Authors: Natasha Thorpe, Naikak Hakongak, Sandra Eyegetok, and Qitirmiut Elders
Contributor: Margo Kadlun-Jones
Writing Committee: Bobby Algona, Jack Alonak, Mary Kaniak, Jimmy Maniyogina, Paul Omilgoitok
Principal Researcher: Natasha Thorpe
Senior Researchers: Sandra Eyegetok, Naikak Hakongak and Margo Kadlun-Jones
Interviewers: Sandra Eyegetok, Naikak Hakongak, Nancy Haniliak, Eileen Kakolak, Myste Kamingoak, Eva Komak, Meyok Omilgoitok, Karen Ongahak, Natasha Thorpe
Principal Translator and Transcriber: Mary Kaosoni
Translators and Transcribers: Martha Angulalik, Sandra Eyegetok, Margo Kadlun-Jones, Mary Kaosoni, Eva Komak, John Komak, and James Panioyak
Reviewers: Bobby Algona, Gerry Atatahak, Gord Comer, Douglas Fugger, Chris Hanks, Margo Kadlun-Jones, Gary Kofinas, Jimmy Maniyogina, Cristina Soto, and Doug Stern
Illustrations: Qitirmiut Elders and Youth
Cover: Laurie Campbell taken from The Nature of Caribou, Greystone Books, 1998, and Lynn O'Rourke of Rubber Boots Productions.

A version of this chronicle has been separately published with the support of Indian and Northern Affairs Canada. Please contact tuktu_nogak@hotmail.com or the Kitikmeot Heritage Society to purchase a copy of Thunder on the Tundra: Inuit Qaujimajatuqangit of the Bathurst Caribou.

Citation or reference to this report:

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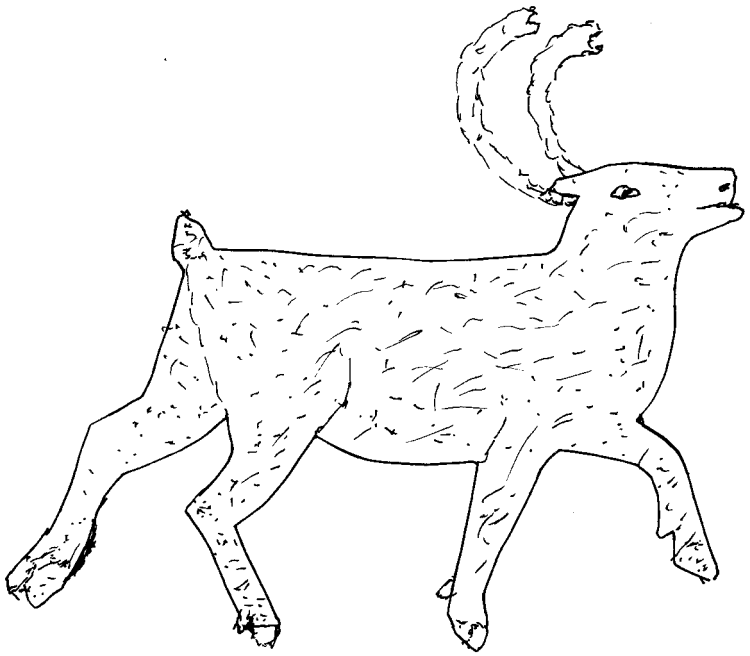
Dedication

To Qitirmiut elders and hunters who have shared their valuable insights into Inuit traditions and their intimate relationship with caribou. Through the *Tuktu* and *Nogak* Project, they have provided a window into the Inuit ways of yesterday for all peoples today and tomorrow.

Special thanks to Akana, Alligoknalok, Alonak, Analok, Angnaoyok, Angnaoyok, Ayalik, Ekvana, Hagialok, Kailik, Kaitak, Kakok, Kamaoyok, Kaniak, Kanuvak, Kaosoni, Keyok, Koihok, Komak, Kudlak, Maniyogina, Ohokmik, Omilgoitok, Pihoak, Tomnigitok, Tunik, Tunokahak, Nahok, Naikak, and Wikiak. We miss you Alligoknalok, Kuptana, Nahok, and Nalvana.



Alice Anablak, Kugluktuk, 2000.

Summary

The *Tuktu* and *Nogak* Project was a community-driven effort to document Inuit knowledge about caribou and calving areas in the Bathurst Inlet region. The idea for the Project originated at the Kugluktuk[1] Angoniatit Association (KAA) in 1996. Since this time, the Project evolved into a regional effort led by an advisory committee called the *Tuktu* and *Nogak* Board. This Board consists of elders and other community members, mostly from Umingmaktuuk (Bay Chimo) and Kingauk (Bathurst Inlet), although Kugluktuk (Coppermine) and Ikaluktuuttiak (Cambridge Bay) were also included so that people who used to live, travel, hunt and/or trap in the study region were also consulted.

The study area is defined as the historical and current hunting grounds of the communities of Umingmaktuuk and Kingauk. Individuals from Kugluktuk and Ikaluktuuttiak are also consulted so as to include former residents of these primary communities and people who have hunted, trapped or traveled in the region. The project officially began in the summer of 1997 and was finished in 2001.

The goal of the project, as defined by the Board, was to collect and share Inuit knowledge of caribou and calving grounds to improve caribou management in the Bathurst Inlet region for present and future generations in Nunavut. This knowledge will assist northerners understand Arctic environments, improve wildlife management, and assess possible effects from use of Inuit lands and resources. Results from this regional project could easily be applied to other areas in Nunavut and the Slave Geological Province.

Inuit knowledge of caribou and calving grounds was collected through interviews with elders and hunters. Community members suggested that trips on the land would be the best place to record stories because this where people hunt and observe caribou. As a result, an elder-youth camp held on the Hiukkittaak River during the summer of 1998 provided opportunities for researchers to record traditional stories and observations of

[1] Other than this official name, please note that within this report Inuinnaqtun place names follow the new language system. Instructors from Nunavut Arctic College provided place names for Kugluktuk (Kugluktuk), Cambridge Bay (Ikaluktuuttiak), Bathurst Inlet (Kingauk) and Bay Chimo (Umingmaktuuk).

caribou. It also brought together elders and youth from different communities to strengthen Inuit culture.

Information collected through interviews with 37 elders and hunters is recorded on over 100 one-hour audiotapes. Words on these tapes were copied (or transcribed) onto paper and translated into English and Inuinnaqtun. Next, those people who were interviewed checked the information on paper to make sure that the words were right. This was to make sure that they were accurate so that they can be used in the final report and a computer database that links words and stories with places on the map. While members of agencies like to have reports, people in communities prefer videos of their work. Accordingly, videos and photographs were taken and returned to communities throughout the project. A collection of slides and photos was burned onto a CD.

Videos, audiotapes, transcripts and reports are kept in the communities to be used by elders, youth and other community members. All information from the transcripts has been entered into an interactive textual and spatial computer database system so that regional Inuit and Nunavut agencies can use it to make decisions about lands and resources. People who were interviewed have made all decisions related to how, where and when the information that they shared will be used in the future.

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Acknowledgements

Qitirmiut elders and other community members have taught us a lifetime of stories in our moments sharing *muqpauyaq* (fry bread) and *mipku* (dry meat). *Quana* (thank you), for your laughter, brilliance, patience, forgiveness, graciousness, and compassion. You have shown us a glimpse of the ocean through a crack in the sea ice.

On behalf of the *Tuktu* and *Nogak* Board, we wish to thank everybody who shared their knowledge and experiences with the *Tuktu* and *Nogak* Project. We are grateful to the elders and other community members who gave us the faith, and support we needed to make the *Tuktu* and *Nogak* Project a success. We hope that we have made you special people proud.

The *Tuktu* and *Nogak* Project relied upon a unique collaboration between elders, hunters, youth, researchers, and academics from the initial stages of community consultation to the production of this final report. Such co-operation would not have been possible without the enormous camaraderie, trust, and dedication demonstrated by many people.

Interviews with hunters and elders were led by Sandra Eyegetok, Naikak Hakongak, Nancy Haniliak, Eileen Kakolak, Myste Kamingoak, Eva Komak, Meyok Omilgoitok, Karen Ongahak, and Natasha Thorpe. Doris Angohaitok, Martha Angulalik, Sandra Eyegetok, Margo Kadlun-Jones, Eileen Kakolak, John Komak, Mary Kaosoni, and James Panioyak provided transcription and translation services. On the recommendation of many elders, local students were encouraged to learn from their elders while working for the *Tuktu* and *Nogak* Project. These students included Jason Akoluk, Ovik Akoluk, Tommy Akoluk, Arnold Angivrana, Shauna Angulalik, Yvonne Angohaitok, Thomas Apsimik, Bobby Ayalik, Tasha Daniels, Karen Kamoayok, Doris Keyok, Vanna Klengenberg, Neal Mala, Pitik Niptanatiak, Donna Tikhak, and Joseph Jr. Tikhak.

Quotes within this chronicle are from interviews with the following elders and hunters:

Hanigakhik
Kingnektak, Alice
Kingnektak, Doris

Ikaluktuuttiak
Analok, Frank
Angulalik, Bessie
Angulalik, Mabel
Hakongak, Naikak
Kaosoni, Annie
Kaosoni, Mackie
Kaniak, David
Kavanna, George
Koihok, Moses
Komak, Annie
Komak, Archie
Maniyogina, Jimmy
Omilgoitok, Bessie
Omilgoitok, Paul

Kugluktuk
Alonak, Jack
Algona, Bobby
Algona, May
Hikok, Nellie
Kailik, Buster
Nalvana, Connie

Kingauk
Akoluk, Martha
Hagialok, Jessie
Haniliak Kapolak, George
Kapolak, Allen
Anonymous C

Umingmaktuuk
Akana, John
Kamoayok, Lena
Kaniak, Mary
Keyok, Charlie
Keyok, Mona
Kuptana, George
Kuptana, Noah

Throughout 2000, elders and youth from across the Kitikmeot gathered to create drawings of caribou for this chronicle.

The final report was a collaborative writing effort by Natasha Thorpe, Naikak Hakongak, and Sandra Eyegetok with contributions from. Margo Kadlun-Jones. The first draft was reviewed by members of the TNP Writing Committee, namely, Bobby Algona, Jack Alonak, and Jimmy Maniyogina. Gerry Atatahak, Gary Kofinas, and Chris Hanks also generously contributed their comments. The second draft was edited by Gord Comer, Douglas Fugger, Margo Kadlun-Jones, Cristina Soto, and Doug Stern. Inuinnaqtun-speaking members of the Committee, Paul Omilgoitok of *Ikaluktuuttiak* (Cambridge Bay) and Mary Kaniak of *Umingmaktuuk* (Bay Chimo), will review a translated copy of this chronicle.

Illustrations for this book were created during several elder-youth drawing workshops that were held in communities for this purpose. Contributing artists include AJ Aknavigak, May Algona, Alice Anablak, Frank Analok, Catherine Anayoak, Alice Ayalik, Sandra Eyegetok, Bessie Hayohok, Nellie Hikok, McCotter Ihumatak, Christopher Ilgok, Bella Kapolak, Buster Kailik, Mary Kaniak, Jack Kaodluak, Bella Kapolak, Chad Keadjuk, Adam Kikpak, Mary Kilaodluk, Mathew Kokak, Annie Komak, Connie Nalvana, Cheryl Niptanatiak, Pitik Niptanatiak, Teddy Novoligak, Bessie Omilgoitok, Jim Oniak, Avigak Pedersen, Elva Pigalak, and Julian Tolok. Natasha Thorpe, Sandra Eyegetok, and other researchers supplied photos.

The *Tuktu* and *Nogak* Project was a tremendous example of individuals and agencies working together for a common goal that would not have been possible without the dedication of several key people. We would like to give enormous thanks to Gerry Atatahak, Alex Buchan, Sarath Chandrasekre, Kim Crockatt, Luke Coady, Grant Corey, James Eetoolook, Charlie Evalik, Betty Harnum,Chris Hanks, Gary Kofinas, David Livingstone, Allen Maghagak, Jack Meyok Omilgoitok, Lynn O'Rourke, David Pelly, Evelyn Pinkerton, Rose Spicker, Doug Stern, Alex Thomson, Leslie Tse, Mary Whelen-Grey, and Mindy Willett. We apologize if we have forgotten anybody, but there is such a long list of people who have helped us out along the way! We appreciate each and every one of your contributions.

Many others participated in public meetings and provided guidance to the *Tuktu* and *Nogak* Project. Thank you to Edith Aklok, Alice and George Anablak, Doris Angohaitok, Junna Ehaloak, Bessie Emingak, Lena Evalik, Jack Hikhaitok, Connie and Allen Kapolak, Martina and Peter Kapolak, Susie and Sam Kapolak, Mona Kigiuna, Emma and Clarence Klengenberg, June Klengenberg, Lena and Sam Kikpak, Luke Kudlak, Alice Kuptana, George Panegyuk, Annie and Walter Pokiak, Mona Tigitkok, and Gwen and Joseph Tikhak.

We are grateful to the following agencies for recognizing the value of Inuit ecological knowledge and respecting the process of community-driven research.

Major contributors included the:

- Association of Canadian Universities for Northern Studies
- BHP Minerals Incorporated
- Department of Sustainable Development, Government of Nunavut
- Kitikmeot Inuit Association
- Indian and Northern Affairs Canada, Government of Canada
- Northern Scientific Training Program
- Nunavut Tunngavik Incorporated
- Nunavut Wildlife Management Board
- Social Science and Humanities Research Council
- West Kitikmeot / Slave Study Society

Other significant contributions came from the:

- Arctic Institute of North America
- Education, Culture and Employment, Government of the Northwest Territories
- Hamlet of Ikaluktuuttiak
- Kitikmeot Economic Development Corporation
- Nunavut Planning Commission

Additional support and contributions-in-kind were donated by:

- Calm Air
- Co-Op Stores
- First Air
- Government of Nunavut
- Kitikmeot GeoSciences Limited
- Kitikmeot Heritage Society
- Kugluktuk Angoniatit Association
- Northern Stores
- Nunavut Arctic College
- Nunavut Impact Review Board
- Polarnet
- Simon Fraser University

Finally, our family and friends have given us their unconditional love and strength over the years. You were brave in accepting our moods and absences! For *Uaakkallaaluga*, you are the crimson sunrise that dances fire on the horizon and lures me home from the long, cold, and dark Arctic night. For Donna, Ovilok and Nuka, a heartfelt thanks for enduring my time away from home. For Henriguluq, *quana* for your patience, understanding and support all of the time. And to Bella Rose and Jorgen—*quanapiaqqutik*!

Midnight sun catches caribou carcasses drying on the rocks near Umingmaktuuk.

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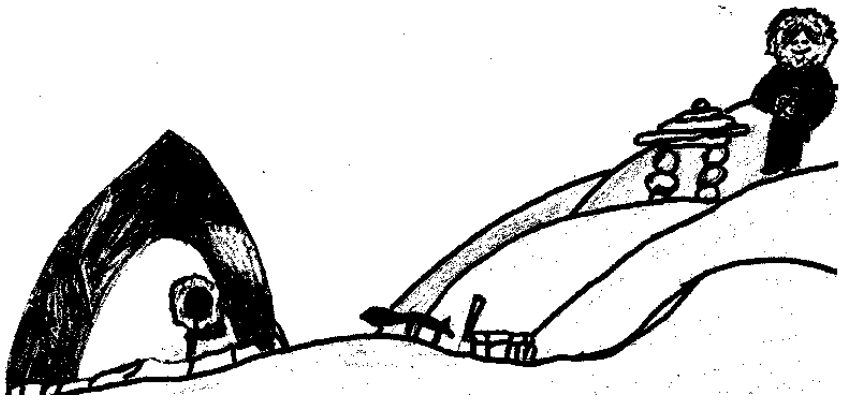

Unknown Artist, Ikaluktuuttiak, 2000.

Preface

It is difficult to imagine that what started as a conversation over tea led to this major study, the *Tuktu* and *Nogak* Project, to document Qitirmiut knowledge of caribou in the Kitikmeot region. Five years later, we present this story: a caribou chronicle. Through our effort, we hope that all Qitirmiut will feel pride in celebrating and passing on their wisdom. This unique knowledge, *Inuit Qaujimajatuqangit* (IQ), will guide northerners concerned with caribou in the Kitikmeot region.

For us, the *Tuktu* and *Nogak* Project has provided exceptional and rewarding challenges from start to finish. We hope that this chronicle is just the dawn of many more efforts to share *Inuit Qaujimajatuqangit*.

We have tried to retain the voice of our co-authors, Qitirmiut elders. Thus, the information contained throughout this chronicle comes from elders and hunters who were interviewed for the *Tuktu* and *Nogak* Project unless otherwise stated.

Quanaqpiaqquhi,
Natasha Thorpe, Naikak Hakongak, Sandra Eyegetok, and Margo Kadlun-Jones
Ikaluktuuttiak
July 2000

1.0 Objectives

The goal of the Tuktu and Nogak Project is to collect and share Inuit ecological knowledge of caribou and calving grounds in order to improve caribou management in the Bathurst Inlet regions for present and future generations in Nunavut. As defined by the advisory board, the guiding objectives are to:

- protect caribou during calving seasons
- protect caribou from development activities
- encourage youth to speak their language
- encourage elders and youth to interact with each other; and
- document and communicate Inuit knowledge of caribou, calving and caribou management for the Bathurst Inlet area.

The commensurate research priorities concerning caribou and calving areas in the Bathurst Inlet region are:

- changes in weather and climate
- habitat
- protection and management
- behavior
- migration
- location and habitat of calving grounds
- traditional use and hunting areas
- seasonal changes
- interaction of different herds
- health; and
- historical changes/trends.

2.0 Description

The *Tuktu* and *Nogak* Project ("TNP") began in 1996 as a community-driven effort to document local Inuit (Qitirmiut) knowledge of mainland caribou in the Bathurst Inlet area. Although western-science based research continues to provide a wide body of literature on caribou, less attention has been given to these animals as observed, experienced, and explained through Inuit knowledge. This body of local or traditional knowledge, known as *Inuit Qaujimajatuqangit* ("IQ"), has been poorly recorded historically. Thus, a piece of the puzzle was missing when it came to understanding caribou in the Kitikmeot region of Nunavut. As a result, the TNP began with the primary goal of filling some of these gaps, thereby contributing a new understanding of caribou.

Another goal of the TNP was achieved in documenting IQ of caribou by interviewing elders and hunters. Thirty-seven community members from *Ikaluktuuttiak* (Cambridge Bay), Kugluktuk (Coppermine), *Umingmaktuuk* (Bay Chimo), and *Kingauk* (Bathurst Inlet), as well as the outpost camp at *Hanigakhik* (Brown Sound) contributed their insights, observations, experiences, wisdom, and stories for current and future generations (Map 1). Of course, this is not a complete record in that the surface of IQ present in communities was only scratched. Still, through the TNP, elders and hunters have presented an understanding of caribou from which anybody can learn.

2.1 Formal Methods

An emic methodology, one that evolves with community direction, formed the foundation of the project. Emic methods are enhanced by a combination of participatory action research, participant observation and semi-directed interview techniques (Spradley 1980; Whyte 1991; Huntington 1998).

Participatory action research is "a form of action research in which professional social researchers operate as full collaborators with members of organizations in studying and transforming those organizations" (Greenwood, Whyte and Harkavy 1993, 177) through

the process of "mutual inquiry and local ownership" (Chataway 1997, 747). Important components of PAR include the following between community members and outside researchers:

- collaboration
- incorporation of local knowledge
- eclecticism and diversity
- case orientation
- emergent process; and
- linking scientific understanding to social action (Greenwood, Whyte and Harkavy 1993, 179).

More than just a methodology, PAR is "an important scientific and moral goal for social research to achieve" (Greenwood, Whyte and Harkavy 1993, 175). Most contemporary community research is no longer characterized by an expert academic descending upon a community. Instead, it is a "cooperative research venture" between researchers and community members (Dene Cultural Institute 1994). Although cooperative, the venture should empower community members through their capacity-building and control over most stages in the research process. For the TNP, this was our working goal that was, in part, realized through the creation and participation of the *Tuktu* and *Nogak* Board.

2.2 The Importance of Recording Local Knowledge of Caribou

In addition to the two goals described above, there were three other driving forces behind the *Tuktu* and *Nogak* Project. The first was identified by Gerry Atatahak of the Kugluktuk Angoniatit Association and others who began the Naonayaotit Traditional Knowledge Study (NTKS). When the NTKS started, Atatahak soon realized the importance of caribou to local history, lifestyle, ceremony, and culture, particularly since caribou migrate and calve in areas nearby. Local Inuit, especially of *Umingmaktuuk* (Bay Chimo) and *Kingauk* (Bathurst Inlet), continue to depend upon healthy caribou.

Map 1a: Study Area with Traditional Place Names ***(Please see "Project Maps" in seperate pdf)***

Map 1b: Study Area with Traditional Place Names (cont.) ***(See "Project Maps" in seperate pdf)***

The scope of the NTKS was broad and its range of topics was varied such that Gerry called for another project that might focus on caribou alone, while maintaining close ties with the NTKS.

Secondly, many elders living in the 1990s belong to the last of a generation whose members recalled living traditionally on the land before the conveniences of established settlements. Unfortunately, these Inuinnaqtun-speaking elders were passing away before their stories were recorded. In addition, many youth faced with modern pressures of change and more fluent in English than Inuinnaqtun, did not seem interested in camping or hunting, practicing their language, or learning from their elders. If IQ were shown to be valuable, it was hoped that youth might feel encouraged to learn about caribou from their elders. Hence, the TNP was important to community members so that valuable IQ of caribou was not lost. Moses Koihok (1998) explained that by recording and documenting of IQ, youth could visit their elders once they are gone.

The third of these reasons for the TNP involved the potential for mineral exploration and development, and a new transportation infrastructure (i.e. roads and a port facility) within the ranges of several caribou herds in the Bathurst Inlet area. This meant that everybody -- Inuit and non-Inuit, members of governments, industries, aboriginal and environmental organizations -- wanted a better understanding of caribou. In response, both scientific and local knowledge research projects began, sharing at least one common goal: to assist northern communities, agencies, and interest groups in making informed decisions related to lands, resources, and wildlife. Together, these three ideas helped to give the TNP the momentum necessary to start, continue, and complete such a sizeable endeavour.

2.3 Chronicle Outline

The WKSS requires specific a specific format for final reports that does not parallel the wishes of the TNP Board. For example, many Inuit are offended by an attempt to categorize IQ into headings such as “Results” or “Discussion and Conclusions”. As a

result, the chronicle includes the requisite headings as well as the titles slected by the TNP Writing Committee.

The remainder of Chapter 2 describes how this chronicle is arranged. Further, it details important Inuinnaqtun and English issues, in particular, that relate to the elders' and hunters' quotes found throughout this document. Chapter 3 describes the activities research methods used, whereas Appendix A presents a forthright account of some of the struggles and successes felt by the researchers. Chapter 4 is the first of the Results chapters, and elaborates on the concept and understanding of *Inuit Qaujimajatuqangit* by including descriptions of the many elements of IQ that together render it important in furthering an understanding of caribou. With that groundwork laid, Chapter 5 delves into the content of the TNP, starting with a description of the importance of caribou to Inuit. In Chapter 6, the annual lifecycle of caribou is recounted through the eyes of local Inuit. Chapter 6 presents the views of elders and hunters on the many strategies, techniques, traditions, customs, and rules of hunting. The different caribou herds and locally observed changes in their population levels are presented in Chapter 8. Chapter 9 shows the depth of IQ with respect to caribou movements, migrations, and behaviour throughout the seasons. Local observations of the relationships between caribou and their predators are described in Chapter 10. Chapter 11 details the various places that are important to caribou. Chapter 12 offers locals' accounts of the calving cycle, including caribou behaviour before, during, and after calving. Chapter 13 elaborates on IQ of calving in presenting the various reasons why caribou calve where they do. Chapter 14 offers local observations of a warming climate and how this has had an impact on caribou. These issues are expanded in Chapter 15, with local observations of less predictable and more variable weather patterns having an influence on caribou. Chapter 16 presents our concluding remarks.

2.4 Background to Inuinnaqtun used in this Chronicle

This document is a chronicle of IQ presented by a specific group of Inuit from the *Kitikmeot* region. Thus, people of the region are referred to as *Kitikmeot (Qitirmiut)*. The

term “Inuit” is used to mean all “peoples” in general. Throughout this document, we use the term “Qitirmiut” to mean Inuit from the Kitikmeot region. The following section was contributed to largely by Margo Kadlun-Jones, Betty Harnum, and Doug Stern.

Inuktitut is part of the Eskimo-Aleut language family, and is spoken, in some form, from Siberia to Greenland. Inuinnaqtun is a dialect of the Inuktitut language and is primarily spoken in the Kitikmeot region of Nunavut.

There are two methods of writing Inuinnaqtun: one sanctioned system (standard Roman orthography) supported by the Nunavut Government, and one older system that was originally taught by Anglican and Roman Catholic mission schools. This older system, used mostly by elders today, is not consistent so there can be many different spellings for the same word. One reason for the new system is to standardize spellings and to make the written word better represent the actual sounds of Inuinnaqtun.

In many cases, the old Inuinnaqtun uses k, g, and o, rather than q, r, and u as in the new Inuinnaqtun. For example, the old Inuinnaqtun word “Kitikmeot” is written as “Qitirmiut” in the new Inuinnaqtun because there is an important difference in the way one pronounces k and q. The same can be said for g and r. If one does not spell the words correctly, younger people will have a difficult time knowing the right way to pronounce them.

While many elders and middle-aged people prefer the old Inuinnaqtun, the newer orthography is used in Nunavut schools, colleges, and governments because it is standardized and a better tool for representing the important sound differences in Inuinnaqtun. Thus, with the new writing system, a non-Inuinnaqtun speaker, with a little study and practice, could learn how to pronounce correctly an Inuinnaqtun (or Inuktitut) word by sounding out the letters. If the written word actually represents the Inuinnaqtun sounds, it may be easier for people to retain their language and speak across dialects, long after the fluent Inuinnaqtun speakers have passed away. Still, many people resist changing to the new Inuinnaqtun writing system, despite the fact that the language is

being lost quickly. Elders are passing on while few youth seem to be curious to learn their language.

For these reasons, and to support the official Nunavut Government directive, we use the new Inuinnaqtun wherever possible throughout this chronicle. We recognize that people feel strongly about whether to use the old or new Inuinnaqtun, and that it is difficult to please people of differing opinions. Choosing spellings for place names posed a challenge. For names of places important to Inuit, the old Inuinnaqtun spellings are used out of respect for the elders. Other old Inuinnaqtun and new Inuinnaqtun spellings are listed in Appendix B. English names do not exist or are not known for many places, particularly traditional hunting and fishing camps. In Inuinnaqtun, these places are usually named for natural phenomena or some other descriptive term to make their identification easier.

Since most interviews were conducted in Inuinnaqtun and then translated into English, the quotes presented throughout this chronicle may not perfectly represent the ideas of the interviewee. This is because many Inuinnaqtun words do not translate into English without some shift in their meaning.[2] For example, the word "*hila*" is usually translated as "weather" or "the outdoors" while it actually embodies much more than this: *hila* includes the relationships between Inuit, climate, weather, plants, wildlife, spirits and the land. Similarly, the word "*nuna*" is typically translated as "land" when most people say that *nuna* includes not only the land, but also the relationships between the land and other biological, spiritual, and physical elements of the world. Throughout this chronicle, where the English translation does not do justice to an Inuinnaqtun word (as in *hila* and *nuna*), we have used the Inuinnaqtun word instead.

[2] Inuinnaqtun speakers will have the benefit of reading the Inuinnaqtun version of this report once it is available (fall 2001).

2.5 Quotes in this Chronicle Explained

The *Tuktu* and *Nogak* Board guided us to ensure that quotes formed the majority of the text. In this way, Qitirmiut could be authors, and IQ of caribou could be told more from the elders' and hunters' perspective. We have tried to be true to this wish, but this was not always easy.

Quotes are from one person and may or may not represent the views, ideas or opinions of other people. When several people agreed with the content of a quote and a common theme emerged, we included several complementary quotes together. Sometimes we found unique statements within quotes that differed from the knowledge of the members of the Board or other respected interviewees. If it was suggested that the content or idea presented was at least possible, we included the quote. However, we did not include quotes with content that our advisors suggested was inaccurate or impossible.

AJ Akanavigak, Ikaluktuuttiak, 2000.

3.0 Activities

There were many stages that formed the research process for the TNP, as illustrated in Figure 1.[3] Throughout nine major stages, the uniting principle was to simultaneously ensure a high level of community consultation and participation, and remain flexible and adaptable to local input. Adhering to this principle was both time consuming and costly, yet according to participants, it made the research both possible and successful. Indeed, the voices of community members spoke loudly throughout the research process and form the content of this final chronicle.

Another key principle that guided the research and came as a directive from the Board was to ensure youth participation where possible. Youth helped to interview the elders and record what was both said and learned. In addition, youth created drawings and took photos for the chronicle.

Youth, community members, and researchers reported a feeling of empowerment gained through the TNP owing to their involvement in training, planning, researching, writing, public relations, and other capacity-building activities. Further, the high value placed on IQ by researchers, funding agencies, and other supporting organizations, meant that people felt proud that their knowledge was seen as valuable. This is a welcome change from a history of not recognizing the importance of IQ.[4]

[3] Standard and accepted ethnographic techniques and ethical principles agreed to by the Association of Canadian Universities for Northern Studies (ACUNS), the *Ethical Guidelines for Research* prepared by the Royal Commission on Aboriginal Peoples, and the WKSS *Guidelines for Traditional Knowledge Research* informed all research.

[4] Many historical records report on early explorers who perished because they did not follow local IQ of how to survive in the Arctic.

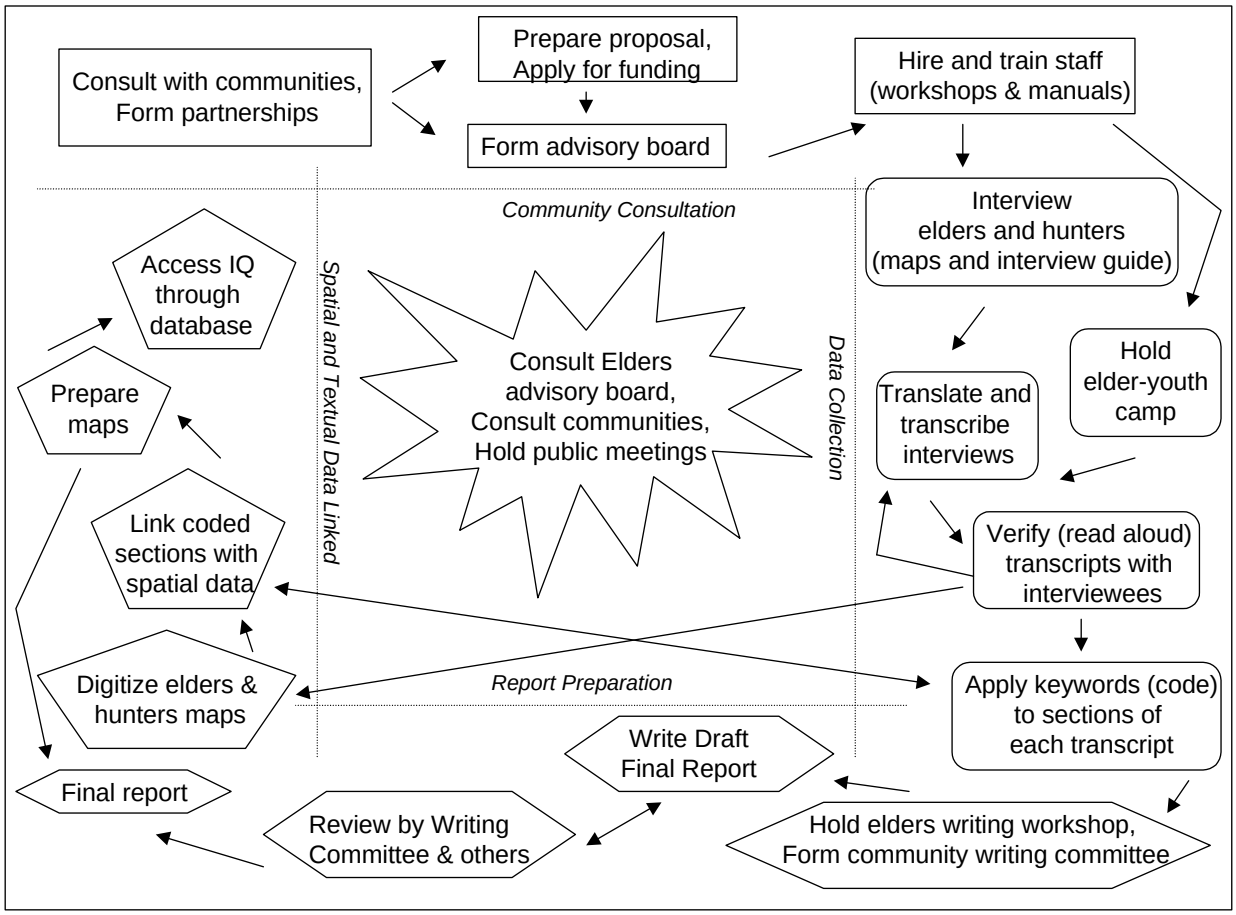

Figure 1: The Research Process in Detail

successes and struggles alternately pleased and plagued TNP researchers, staff, supporting agencies, and the Board. In some cases, our struggles made our successes possible and, in others, our struggles became lessons learned. Based on our observations of our strengths and trials, we offer suggestions and forthright reflective accounts in Appendix A in the hopes that it might inform future IQ efforts.

3.1 Consulting with Communities

We started in the spring of 1996 with community consultation. Although the idea for the TNP came from a community member, it was important to meet with as many other community members as possible and to seek their advice on how to proceed with the research. After several months of meetings, both formal and informal, community members nominated representatives to sit on an advisory board called the *Tuktu* and

Nogak Board ("Board") whose members are listed in Table 1. During this initial phase, the Board gave the study a name, defined the research goals and structure, and suggested specific people who could join the TNP as research staff or translators. Once the staff members were hired and trained, they collaborated with the Board to write research agreements that detailed how and where the research would proceed, how funds should be spent, and what would be done with the final products. After several days of discussion in workshops, a ceremonial signing of the agreement took place in *Umingmaktuuk* (Bay Chimo).

Given the importance of community consultation, researchers shared information about the TNP through radio announcements, web-sites, posters, meetings, and word-of-mouth. Community meetings were held on a regular basis, at least four times per year in each community. Informal visits with Board members and other elders were critical to maintaining key relationships and levels of trust and communication necessary for carrying out the TNP. This was particularly true for meeting with the elderly who could not move about easily.

TNP Board members Lena Kamoayok (L); John Akana, Moses Koihok, and Lena Kamaoyok (C); and Ella Panegyuk sign research agreements after the first Tuktu and Nogak Project Board meeting. Umingmaktuuk, 1997

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Name	Community
Akana, John	Umingmaktuuk
Akoluk, Martha	Kingauk
Alonak, Jack	Kugluktuk
Kakolak, Eileen	Umingmaktuuk
Kamoayok, Lena	Umingmaktuuk
Kaniak, Mary	Umingmaktuuk
Kilaodluk, Mary	Ikaluktuuttiak
Kilaodluk, Tommy	Ikaluktuuttiak
Koihok, Moses	Ikaluktuuttiak
Omilgoitok, Bessie	Ikaluktuuttiak
Omiltoitok, Paul	Ikaluktuuttiak
Panegyuk, Ella	Umingmaktuuk
Thorpe, Natasha	Victoria

Table 1: List of Board Members for the Tuktu and Nogak Project. George Kuptana of Umingmaktuuk was a former member.

3.2 Hiring and Training Local Researchers

The second phase of the TNP involved training researchers in the ways of IQ research through workshops that were held in each community during 1997 and 1998. Researchers worked together to polish their interviewing, photographing, writing, and computer skills, as well as sharing important tips on the appropriate ways of conducting community research. TNP researchers from *Ikaluktuuttiak* (Cambridge Bay), *Umingmaktuuk* (Bay Chimo), *Kingauk* (Bathurst Inlet), and Kugluktuk included Sandra Eyegetok, Nancy Haniliak, Naikak Hakongak, Margo Kadlun-Jones, Eileen Kakolak, Myste Kamingoak, Eva Komak, Meyok Omilgoitok, and Karen Ongahak. Natasha Thorpe of Simon Fraser University was the principal researcher.

In 1998, upon suggestion by the Board, the TNP set up an office at the *Ikaluktuuttiak* (Cambridge Bay) Elders' Centre to ease the process of having frequent meetings, and ongoing community consultation, communication, and participation. While this public space was ideal in some ways, the researchers found it difficult to focus on TNP tasks since other activities (e.g. sewing classes, drum dancing) also took place at the centre. As a result, the

office was moved to the house of the senior researchers, Sandra Eyegetok, and later, Margo Kadlun-Jones. While it may have been beneficial for the TNP to operate from a professional office space, this would have likely intimidated community members and discouraged them from dropping by to talk with researchers. At the same time, Natasha Thorpe maintained a small administrative office in Vancouver.

Board members meet early in the research process to decide upon how the Tuktu and Nogak Project is to proceed. Kingauk, 1997.

3.3 Conducting Interviews with Caribou Experts

The third step was to identify and interview elders and hunters who were local caribou experts. The Board decided that the best interviewing would take place during trips on the land since this is where people typically hunt and observe caribou and therefore their memories could be triggered more easily. In response, an elder-youth camp was held on the *Hiukkittaak* River during the summer of 1998, as detailed in Section 2.3.1. This provided tremendous opportunities for researchers and youth to learn first-hand about IQ of caribou. It also brought together elders and youth from different communities to share in the event. Whenever possible, interviews were held on the land.

TNP staff worked with local hunters to develop an interview guide that was tested by several elders (Appendix C). Once the interviews began, we had to revise the

questionnaire when we learned that it was too long for most interviewees, and that researchers had difficulties using the interview questionnaire as a discussion guide rather than as a list of questions that all needed to be asked. When the interviewee answered simply "yes" or "no" to a question, the interviewer usually skipped to the next question because s/he either was new to the job, did not want to be responsible for 'breaking the rules', or was uncomfortable carrying out a more relaxed conversation. Sometimes a lengthy questionnaire hindered more free conversation, the guiding intent of the interviews. In later interviews, it was easier to be at ease and have more informal and comfortable conversations about caribou with interviewees. In these cases, elders and hunters spoke more openly and seemed to enjoy better the process.

In addition to the questionnaire, researchers used visual aids such as photographs, maps, drawings, and books to help with the interviews. Only 19 of 35 people marked on maps, the majority of whom were men. One reason why several people did not like using maps is that the elder Inuit traditionally relied on their mental maps rather than paper maps. Some people had difficulties moving from images in their minds to representations on paper. Of those who did use maps, many did not feel comfortable marking areas that they had not been to before. Instead, they suggested key people who might know more about a region.

With clear plastic (mylar) overlays taped to 1:250,000 map sheets of the study region, interviewees used felt pens to mark out hunting areas, caribou migrations, calving grounds, and whatever else related to their stories. These markings were digitized and incorporated into a geographic information system (GIS) for viewing on a computer or printing out maps.

Between 1997 and 1999, 35 elders and hunters from *Hanigakhik* (Brown Sound), *Ikaluktuuttiak* (Cambridge Bay), *Kingauk* (Bathurst Inlet), Kugluktuk (Coppermine), and *Umingmaktuuk* (Bay Chimo) were interviewed and over 100 hours of interviews were recorded (Appendix D). Only 19 people marked on maps during the interviews, held in elders' centres, homes, camps, and on the land.

Some of the many faces in the process of documenting Qitirmiut knowledge of caribou.

3.3.1 The Hiukkittaak River Elder-Youth Camp

The elder-youth camp provided an unexpectedly good source of information for the TNP in that we did not anticipate the high quality of the interviews that were conducted. On the land, it was both easy and enjoyable for elders to share their knowledge of and experience with caribou and calving areas, demonstrate caribou and people interactions (e.g. hunting, butchering, skinning), and spend quality time with youth. Elders led the camp by sharing what they felt was most important for the youth to learn through demonstration rather than responding to what other people determined was valuable as can be the case when using a questionnaire. Details of the event are reported in both Inuinnaqtun and English in other sources (Thorpe and Eyegetok 1998; 2000a; 2000b; Thorpe 1998).

Participants gather around a caribou skin tent made by Ella Panegyuk at the Hiukkittaak River Elder-Youth Camp.

Textbox 1: Sounds from the Hiukkittaak Elder-Youth Camp

Ayaa-ya-ya

Ayaa-ya-ya-ya-yaa

Yaa

Yaa

Yaa-a! …

These sounds echo into the midnight sun as Inuit elders and youth gather to watch Jack Alonak drum dance. He hops from one foot to the other with a limber grace that betrays his years. Other elders sing along with the same tireless energy while youth clap and giggle. Young twins, Becky and Nathan, stand motionless, mouths agape, while grasping onto the tent lines for balance. Soon Jack pauses to explain the "olden times" song he sings and everybody listens -- even the lone bull caribou that watches from the bank across the river as if invited. And he is.

--Researchers Notes, Hiukkittaak Elder-Youth Camp, August, 1998

Bobby Kakolak of Kugluktuk dances after learning traditional ways of drum dancing from elders at the Hiukkittaakk Elder-Youth Camp.

3.4 Translating and Transcribing the Interviews

Once the interviewing was finished, Martha Angulalik, Sandra Eyegetok, Mary Kaosoni, John Komak, James Panioyak, and listened to the interview tapes and transcribed the recorded words onto paper. Next, they were translated into both English and Inuinnaqtun. The majority of the interviews were conducted in Inuinnaqtun.

Translation and verification with elders required the researchers to meet frequently with elders and hunters in order to ensure that the words were correct.

3.5 Verifying the Interview Transcripts

One of the most important steps in our research process was to make sure that every person who was interviewed had the chance to check over his/her transcript in detail. Younger hunters read through the transcripts quickly, made necessary changes, and responded to additional questions that arose. For elders, verification required that each transcript was read aloud to them. This was time consuming, but a necessary step to ensure the accuracy of the transcripts and to respect the elders. For the researchers, reading aloud gave us the opportunity to ask additional questions about either confusing or interesting issues.

3.6 Sorting and Organizing the Transcripts Using a Database

Once the transcripts were verified and approved, they were entered into a computer database that was engineered by BHP Diamonds Inc., Kitikmeot GeoSciences Ltd., the Kitikmeot Inuit Association, the Kugluktuk *Angoniatit* Association and the TNP. The database is like a giant library that classifies and stores all of the interview transcripts and maps in a manner that provides for easy retrieval of specific information. We coded sections of the transcripts with keywords, such as 'traditional use', 'calving', or 'migrations', so that like sections could be grouped together. Thinking of the database as a library, each transcript section is filed under several different headings on various bookshelves. In this way, anybody using the database can learn more about a particular topic by simply entering a keyword that triggers a search through all of the interview transcripts.

Within the database, interview transcripts were linked with the map overlays created by the interviewed elders and hunters (see Section 2.3). The database allows the interviewees' knowledge to be connected with places on the land through the use of maps and text boxes that pop up when one uses the mouse to point at a specific feature on a map. For example, a story about caribou migration was linked to a series of arrows on a map, whereas a traditional camp, marked with an 'X' on a map, was linked to an elder's

story about how he spent the summer hunting caribou with his family at this camp. The maps that are found throughout this chronicle are a sample of the total number of maps created by the TNP.

A key advantage of this database[5] is that it is compatible with the *Naonayaotit* Traditional Knowledge Study, introduced in Section 1.1. In this way, the two Inuit IQ projects can easily supplement one another and future IQ efforts can build upon this database.

3.7 Communicating Results through Video

From the beginning of the TNP, elders and hunters emphasized the importance of sharing IQ through non-written means. As a result, the Inuit Broadcasting Corporation (IBC) was invited to become a partner to the project. Through this partnership, IBC producer Sam Itkilik of Baker Lake worked with several elders and youth to prepare two documentaries about the TNP that were aired across Nunavut.[6] Documentaries were distributed to each community, albums or photos were sent to elders' centres, and photos were given to specific project participants. People were very appreciative of these efforts, especially receiving photos.

3.8 Communicating Results through this Chronicle

This written chronicle is the result of an enormous yearlong effort by the participating elders and hunters as well as the TNP Board, staff, and writing committee. The staff met repeatedly with the board to learn how the final report should be written, designed, produced, and illustrated. At the same time, the Board selected a Writing Committee to edit the first draft. English-speaking members reviewed early drafts and Inuinnaqtun-speaking members will review a translated copy of this chronicle once available.

[5] For more information about this database, contact Rose Spicker, Kitikmeot GeoSciences Ltd. in Vancouver, BC, (604-638-0690).

[6] For copies of these documentaries, contact Sam Itkilik, Inuit Broadcasting Corporation, Baker Lake, NU, (867-793-2893).

The Board suggested that local elders and youth make illustrations for the chronicle. In 2000, workshops were held in each community that brought together elders and youth to draw caribou and caribou-related activities. In each workshop, the elders interacted with the youth and explained to them what they were drawing. This often triggered an elder to tell a story about caribou.

3.9 Arranging for Storage and Distribution of Material

Copies of the original data have been distributed to the hunters and trappers organizations in *Umingmaktuuk* and *Kingauk*, the Kitikmeot Heritage Society in *Ikaluktuuttiak*, and the Kitikmeot Inuit Association in Kugluktuk (Coppermine). Until a safe storage facility is built in *Ikaluktuuttiak*, the original tapes are being stored at the Prince of Wales Heritage Centre in Yellowknife. [7] This does not give the Centre permission to use the data.

[7] "Safe" in the sense of fire proof safes and humidity-controlled rooms. Standards for safekeeping have been set by the Canadian Museum of Nature.

4.0 Results

All research results documented through the TNP form a body of *Inuit Qaujimahatuqangit*. Research materials such as interview transcripts are the property of the interviewees, together known as the Qitirmiut (Kitikmeot) Elders and Hunters of the TNP. The TNP Board represented their collective interests. All requests for information should be directed to the TNP Board, Kitikmeot Heritage Society or Kitikmeot Inuit Association.

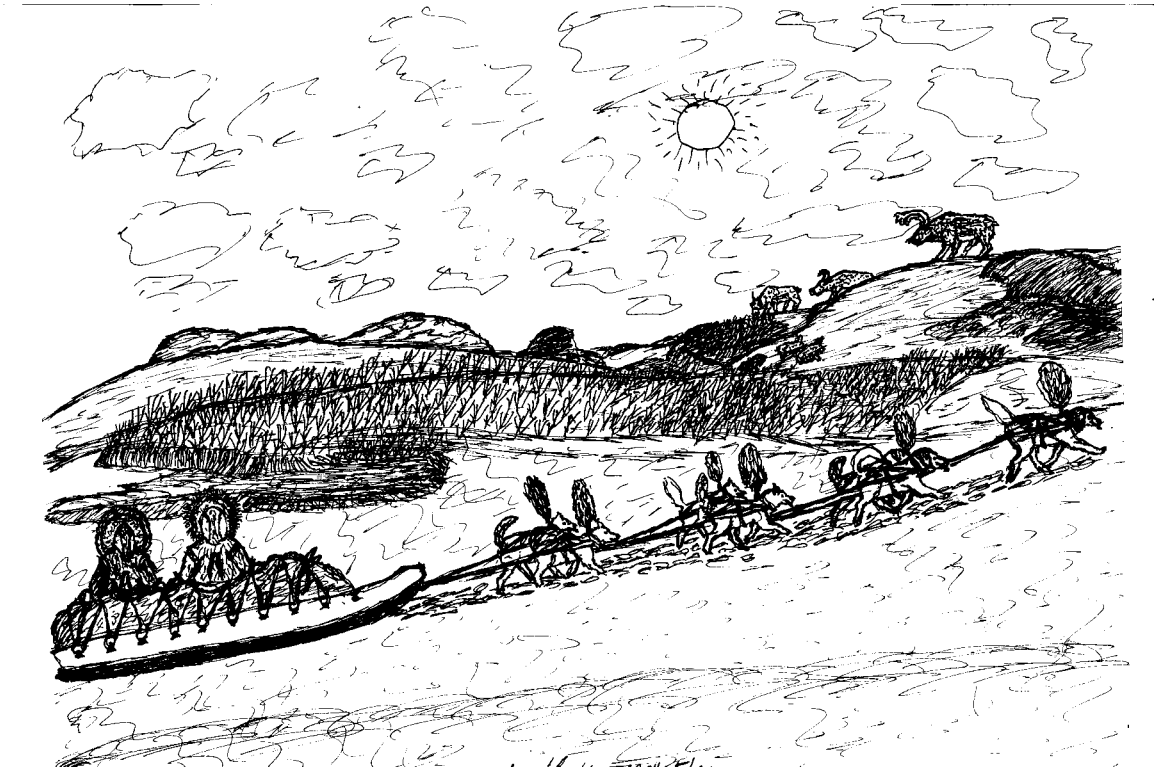
4.1 Inuit Qaujimajatuqangit

Inuit Qaujimajatuqangit (IQ) is "what has always been known" or, in other words, Inuit knowledge, insight, and wisdom that is gained through experience, shared through stories, and passed from one generation to the next. More than just knowledge, as it is typically termed, IQ includes a finely tuned awareness of the forever changing relationship between Inuit and *nuna*, *hila*, wildlife, and the spiritual world.

One of the strengths of IQ is that it has many characteristics that together make it unique: it is a book with many pages or a prism with many colours. Unlike other knowledge systems that inform our understanding of caribou, IQ is local in scale, changing, aggregating, iterative, adaptive, based on oral tradition, intergenerational, complex, and spiritual.

Through the TNP and within this chronicle, we have taken IQ from the oral to written domain. In doing so, it may be that the complexities, interconnectedness, and additional wealth of information that characterizes IQ are partially lost. This is owed to difficulties inherent in the interview process, translation, and because some essence is necessarily lost when IQ is written down rather than explained, demonstrated, or acquired through experience. In some ways, recording IQ on paper forever locks IQ into position and the 'magic' conveyed through oral versus written traditions vanishes. Indeed, the written form should never be a replacement for the oral teaching and actual learning or acquiring

of IQ. Youth will learn more from watching and listening to an elder hunt a caribou and then experiencing the hunt oneself, versus simply reading a book about hunting. However, given that IQ is not fixed in one era but is continuously updated and enhanced by current observations, much can be lost when IQ is not recorded. In the current world, recording is the next best way to ensure that IQ is accessible to future generations.



Mary Kilaodluk, Ikaluktuuttiak, 2000.

Gerry Atatahak provided a definition for IQ based on his experience running the *Naonayaotit* Traditional Knowledge Study (NTKS). He said that IQ is *ingilraat* (long ago) *ilihimayaghat* (what they should know) (pers. comm. 2000). Margo Kadlun-Jones (pers. comm. 2000) added that the word *ilihimayaghat* embodies a more urgent tone and could be translated as "what they must or have to know". She suggests that the Inuinnaqtun word *pitquhiit* could be used also to describe IQ in that it includes what is known, what has always been known, and what must be known.

Atatahak further explained that "this information has been passed down through the generations as what [Inuit] know from their forefathers or mothers and it is a way of still doing things (i.e. beliefs, tradition, art of surviving etc." (Atatahak pers. comm. 2000). In this explanation, Gerry highlights the spiritual connection of IQ as "beliefs". Further, he referred to "the art" of surviving which suggests that creativity, talent, and lateral thinking are required to endure the northern climate.

Longevity is another key component of IQ that Gerry emphasized. For generations, IQ has been acquired, revised, enhanced, sorted, and then passed from one person to the next. In the Arctic, the western scientific record of wildlife dates back approximately 200 years (Gunn, Arlooktoo and Kaomayok 1988) whereas Inuit ecological knowledge can be traced for millennia (Gunn, Arlooktoo, and Kaomayok 1988; Gordon 1996; Fox 1998; Berkes 1999; Eyegetok pers. comm. 1999; Atatahak pers. comm. 2000; Hakongak pers. comm. 2000; Riedlinger 2000, 2001; Tigullaraq pers. comm. 2000; Riedlinger, Fox, and Thorpe 2001). The fact that IQ spans generations is one attribute that distinguishes it from other ways of knowing and makes it valuable as a contribution to our understanding of caribou. Experiential knowledge, insights, and skills that were specific to Qitirmiut living have passed the test of time and remain in use today.

Another distinguishing quality of IQ is that it is based on repeated local observations. These observations may or may not have relevance on a regional or global scale, but they typically contribute most at a local scale. People often make their observations on a local scale and do not extrapolate and apply these to unfamiliar areas. This is, in part, because people are not comfortable speaking about that which they have not seen and they do not want to mislead or pass along second- or third-hand information.

As we listened to stories, we noticed how IQ was continuously expanding and changing depending on the person. Each person made their own observations that were added to the stories that they had heard from elders and hunters. IQ passed from one generation to the next is filtered through the listener and understood within the listener's experience or ability. IQ changes with each new listener in a way that is iterative and adaptive so that

IQ of the past is contributed to that of the present. In the 1990s, IQ expanded to include everything from political change with the creation of Nunavut, to climate change with new observations of variations in weather, water, land, and wildlife.

Jim Oniak, Kugluktuk, 2000.

Another key element of IQ is that it is infused with spirituality that is grounded in respect and animism as well as more recent traditions such as those from the Anglican and Roman Catholic churches. While all people are spiritual, sometimes people do not embrace spirituality within their knowledge systems, lifestyles or careers, especially in the western world. Throughout the TNP, there were many cases when elders and hunters explained strange happenings on the *nuna* or with *hila* in a spiritual context. For example, Mary Kaniak (1998) told of a bull who came so close to the community of *Kingauk* (Bathurst Inlet), that it must have been a relative coming to visit and must not be harvested. In IQ, the overlap of observations and beliefs are welcomed.

5.0 Discussion

5.1 Inuit and Caribou

Although Qitirmiut lifestyles have changed today compared to long ago, caribou continue to be central to culture, identity, and diet. In traditional times, people moved with the caribou and set camps along their migrations routes. This is particularly evident in Map 2, which shows traditional Qitirmiut camps and travel routes along with caribou movements and migrations.

Currently, Qitirmiut are no longer as nomadic and do not follow the caribou as they did in the past. Still, they remain concerned about the health and condition of caribou, especially given modern-day social and environmental pressures. Before detailing the relationship between people and caribou, we introduce a recent history of the Qitirmiut.

5.1.1 A Brief History of the Qitirmiut

Missionaries and trading posts settled into the Kitikmeot region starting mainly in the 1910s and 1920s. Small settlements sprung up at Arctic Sound, Bathurst Inlet, Perry River, Warrender Bay, Wilmot Island, and Western River. In those days, Qitirmiut families and their ancestors such as the Akanas, Avaluks, Amiraiqniqs, Kadluns, Katiks, Koihoks, Komaks, Kullaqs, Kamoayoks, Kaniaks, Ekaluns, Hikoks, Niptanatiaks, Novoligaks, Omilgoitoks, Panegyuks, Uqaittuqs, Utuqiaqs and Quahas usually spent most summers and winters inland as far south as the Back River and Contwoyto Lake. People usually visited the trading posts at Christmas and Easter. In the 1940s, after the trading posts started to sell boats and small motors, people moved to the coast for the summer.

> We were at Arctic Sound (*Katimanik*) for a while and had fun. We would walk and collect eggs around here. . . We were there for many summers because there are fish and caribou there. . .We were alone with Uqaittuqs, Amiraiqniqs, Kullaqs, Utuqiaqs and Quahas were at the [caribou] crossings. (Nellie Hikok, 1999)

Map 2: Qitirmiut travels and camps, and caribou migration routes ***(See "Project Maps" in seperate pdf)***

> People would spend the winter inland until the spring ... They would spend the winter inland in caribou skin tents ... There would be many tents side by side in the spring when the people gathered to pick up supplies from the posts ... preparing to go inland. People would go to the ocean and hunt seal for boots. They hunted seals and bearded seals for boots that they would use to walk inland in the summer up past Bathurst Inlet (*Kingauk*) towards Beechey Lake (*Hanningayuk*). They would reach Beechey Lake (*Hanningayuk*) walking with all the mosquitoes around. Dogs would be packing supplies. (George Kuptana, 1998)

With the posts established, people exchanged their furs for goods such as flour, guns, stoves, sugar, tea, tobacco, and traps. Qitirmiut built small houses using the wood from the crates that were shipped to the posts.

> We would use the fox pelts to buy what we needed, as well as wolves, wolverines, red foxes, blue foxes, cross foxes. . . We did not see any cash then. When people needed stuff a long time ago, they would use match sticks as markers for the foxes they used to trade with. After the foxes were prepared, the people would be given match sticks to use when they needed stuff. After the clerk documented the number of foxes, he would give the trapper a number of sticks. . . When I was younger I used to trade like that, after I started trapping when I was younger, I did not have a lot of traps so I got a few foxes. (Frank Analok, 1999)

> I bought myself a record player that winds. I enjoyed that. I stored it on the sled, only when we stopped to camp I would use it. There were two things that I most enjoyed, that and my watch. (Frank Analok, 1999)

During the 1940s and 1950s, some families began travelling less and spending more time in the Bathurst Inlet area. Qitirmiut gathered at *Hanigakhik* (Brown Sound), *Kanikhuakyuk* (Daniel Moore Bay), *Katimanik*[8] (Arctic Sound), *Nauyaat* (Parry Bay), *Kingauk* (Bathurst Inlet), and *Umingmaktuuk* (Bay Chimo). In the 1960s, the federal government moved prefabricated "matchbox" houses to *Umingmaktuuk* (Bay Chimo) and people began staying in these new houses in the winter while going out to their favourite hunting and fishing areas throughout the rest of the year, especially the summers. In the

[8] *Katimanik* translates as "meeting place" indicating the importance of families coming together at this place.

mid 1960s, the trading post in *Kingauk* (Bathurst Inlet) was moved to *Umingmaktuuk* (Bay Chimo) and soon was modernized to became more of a store. In the 1970s, a school was established in *Umingmaktuuk* (Bay Chimo) and a tourist lodge was built in *Kingauk* (Bathurst Inlet). Today, these two communities are dwindling quickly as people move towards the larger centres of Kugluktuk (Coppermine) and *Ikaluktuuttiak* (Cambridge Bay) which are serviced by medical facilities and schools. Between 1996 and 2001, the population of *Umingmaktuuk* (Bay Chimo) was reduced by three quarters. *Kingauk* (Bathurst Inlet) and *Umingmaktuuk* (Bay Chimo) are commonly labelled two of the most 'traditional' communities because people subsist largely on country foods, speak Inuinnaqtun frequently, live without running water, and use generators for electricity (since the 1980s).

5.1.2 Honouring Caribou

There has always been a kindred relationship of gratitude and respect felt by Qitirmiut for caribou based on many factors. With the caribou migrations, people are grateful for the long awaited meat, skins, and other bounty that is soon eaten or made into tents and clothing. People can become animals in the afterlife which is another reason to respect caribou.

> [Inuit] say that relatives, close brother or close father or sister or whatever, that recently passed away . . . if they ever die one day they are going to come back to this place and stay in this place and come back again. And I heard a bear coming to camp and being very shy and everybody had a rifle on them, but he was trying to tell the people that he was not harmful or not going to eat anybody. Something clicked in one of the person's minds who said "Oh yeah, maybe it is my grandfather coming to visit.". . . Even birds would come right into the house and sit up, just watch, watch you move or the ceiling, stay there for a while and fly back out again, and some old folks say that of their relatives that have recently passed away come for a visit. (Bobby Algona, 1999)

Caribou can also become people. There are many comparisons between caribou and people.

> I heard of one person becoming a caribou. He dressed up as a caribou, trying to make himself look like a caribou to sneak up on caribou. So he got a caribou hide, put it on his face, and started to crawl to the caribou. Somehow the hide became the hide of that person and that is how he became a caribou. . .There was a certain thing he had to do if he wanted to come out of being a caribou, but he forgot what it was. And he became a caribou and he could not remember any more. So he became a caribou, the hardest thing he ever did was try to dodge all those bulls and those teeth, how to stay right in the middle of the herd. He was always stumbling. . .Then he remembered the old man telling him to keep his head high, just like a caribou, caribou stays high when he is walking and running. So he started keeping his head high and not looking at the ground and started not stumbling anymore. So he migrated with the herd for the winter and spring time he migrated all the way back again then he remembered what to do in order to become a person again. The way he remembered, he said, was he saw that person hunting that told him. That old man who had told him how to be caribou. "Oh yeah, that person told me how to do that." He did it and became a person again. (Bobby Algona, 1999)

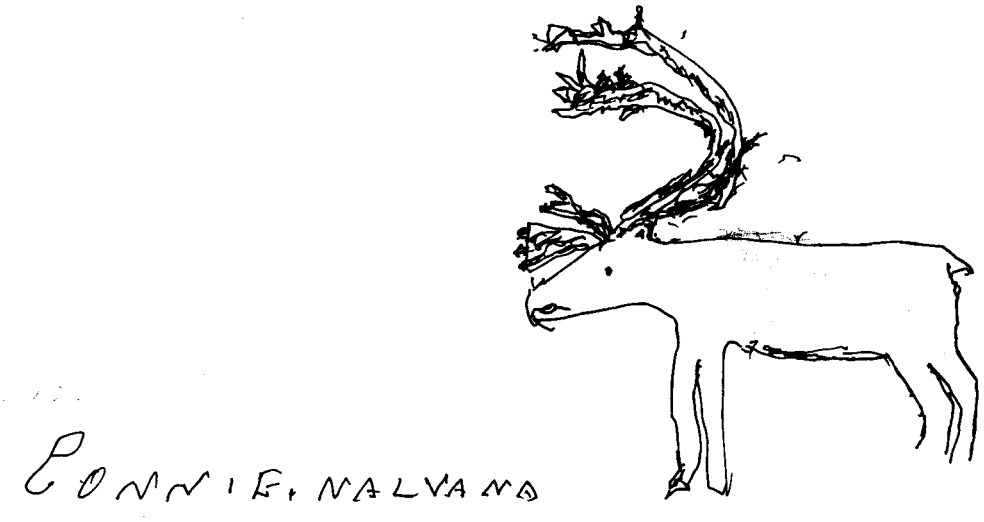
> [Cows] are the same as humans. Like women do not have babies after they have reached a certain age, that is how it is with caribou as well. (Archie Komak, 1998)

> When a calf is born before reaching the calving grounds, they [cows] would take care of their young like people do. Like a person would. (Mackie Kaosoni, 1999)

Caribou are not particularly bright animals which is one of the reasons why they are hunted relatively easily. In comparison, the wolf, wolverine, and grizzly are respected for their cunning and strategic ways of fooling hunters.

> Caribou are not like people, and do not wait till [the ice] is solid. . . [The caribou] were skinny; they had fallen into the water. Just after freeze-up they would go on the side [or shore of the lake]. They are not afraid. They do not think like people do. (George Kuptana, 1998)

Qitirmiut care about the health and survival of caribou. Two hunters in *Kingauk* (Bathurst Inlet) told of a time when they helped a young calf that was struggling to swim across a long channel. They loaded the calf into the boat and drove it to the shore. Another year, a group of barren and pregnant cows became stranded on an island in Bathurst Inlet and were helped by Qitirmiut.



Connie Nalvana, Kugluktuk, 2000.

> [In the early 1990s] caribou got stranded here on Rideout Island (*Kikiktakafaaluk*). They got stuck there so most of them died. They tried to cross back, but this whole island got wiped out because there was no grass left for them to eat. . . Joseph Tikhak was there and he tried to help by bringing grass from the other side to the island. He would bring some to the island but the caribou finished it right away. (Alice Kingnektak, 1998)

The acts of hunting, butchering, preparing, eating, and sharing the caribou harvest are important in uniting people, families, and generations. Qitirmiut give thanks to caribou for the way in which this animal provides for quality time spent together. Caribou is soul food for the way it brings happiness to the self and togetherness to the community.

Youth today do not harvest caribou as they had to in the past and therefore do not feel the pride and self-worth that is gained by participating in a caribou harvest. This is part of the reason why youth complain of being 'bored' so often. Since traditional times, Qitirmiut have honoured caribou for the ways in which this animal has contributed to Qitirmiut subsistence.

Surviving on caribou meant that people had to recognize the many stages in the life of a caribou. There are different names for various types of caribou (Table 2).

English	Inuinnaqtun (New)
Foetus	*Iblau*
Calf	*Nurraq, Nurralaaq*
Spring caribou (when all the old hair has fallen off)	*Kan'ngalaq*
Summer caribou (same as above but when the hair has grown a bit)	*Hagganguqtuq*
Caribou with antlers that have velvet on them	*Amiralik*
Cow	*Kulavak*
Bull	*Pangniq*
Yearling	*Nukatukkaaq*
Barren cow	*Nurraittuq*
Young bull	*Anguhalluq*
Summer newborn calves	*Auyalingnik*
Fall caribou	*Ukiakharnitaq*
Spring caribou	*Upin'ngaaliq*
Winter caribou	*Pitiktaakkat*
Mainland caribou	*Ahiarmiut*
Island caribou	*Kiilliniq*

Table 2: Inuinnaqtun Names for Caribou

5.1.3 Relying on Caribou for Food

Feelings of gratitude and respect for caribou may have been stronger in traditional times when Qitirmiut depended on these animals for survival. Although there was some wastage of meat in traditional times, it was not as common as today. In the past, meat was scarce whereas today there are other foods and so wastage does not threaten survival. It may be that since caribou are easier to hunt today and have become "more tame", they appear to be more plentiful and therefore considered less valuable. This may contribute to some of people wasting caribou meat. In the modern world, it is easier to hunt caribou yet it is not necessary to hunt caribou in order to survive.

> Now they just leave the foetus with the rest of the remains when they bring a caribou home. I do not know, it is probably politically incorrect to do that! All that has to do with politics. It is just a difference of how people treat animals. Now they can go to the store and buy food. (Naikak Hakongak, 1998)

Text Box 2: The Dawn of a New Spring

Spring is here! The first geese have returned, their wings cutting through the still cool air like your knife cuts through snow when making blocks for an iglu. With the geese and cranes finally overhead, you know that the caribou will not be far behind.

Imagine crouching strategically behind a hunting blind made of rocks, warm in your caribou skin pants, parka and *kamngit* (boots), and waiting patiently for the first caribou to come close. You look over at your brothers, uncles, cousins, and father, who hide behind a rocky outcrop nearby. These men are hunched over, curved backs like boulders and camouflaged perfectly in their weathered caribou skin clothing that fades into the brown hues of the parched spring tundra and gravel. They wait without weariness, their bows and arrows ready. Meanwhile, your sisters, aunts, and kids are off in the distance, moving methodically and deliberately to steer the caribou towards you. It is a joyous time and the excitement builds quietly. The caribou are here! The caribou are here! Let them walk to the waiting hunters.

At last, the caribou are funnelled towards you. The thunder of hooves shakes the tundra as you launch arrows from your hiding place, all the while shooting accurately but quickly. You are careful to aim for the neck, so that the kill is fast and less painful. Sometimes you wait for two caribou to be side-by-side so that one arrow will hit fatally both animals. Your heart races as you hunt as many caribou as you need: one, two, three . . .

For the hours following the last caribou that passes, you skin and butcher the carcasses to be packed back to nearby caches or camp where the women will cut the meat and prepare the skins. Spring has arrived, the feeling is festive, and the caribou are back: once again, you can feed your family. This year, you will not starve. The caribou have come.

– Researchers' Notes, Hiukkittaak Elder-Youth Camp, 1998

It is common nowadays for most people to bring the meat to their communities and leave parts of the hides, legs, heads, liver, and intestines at the kill site for scavengers to feast upon. In modern times, some people are discouraged by the amount of time and energy it takes to pack, dry, butcher, and process meat and hides.

> I break all traditions. Guts are always left and parts of the meat that I cut off. Sometimes I forget to take out the kidneys or the liver. And I throw the lungs away and cut the throat right from the jaw right down to where it connects with the lungs. The bronchial tube. I always used to throw that away. What else do I throw away? Too much of it I guess. I never take the blood home to make blood soup. When my mom was alive she used to always say "Why do you not bring the blood home?" and I said "I do not know. I did not bring a container for it." She used to always give us heck. . . . One time Tommy Kiloadluk got a caribou and brought it back outside the house in Cambridge. I guess my mom was complaining that she did not get some parts of the caribou that she really liked so he went and got a caribou and took the blood out and took the parts that she wanted out and brought them in so she had a feast. She used to like the stomach contents. (Naikak Hakongak, 1998)

Stemming from the days before modern conveniences and the availability of store bought foods, many elders are accustomed to using all parts of the caribou. One elder expressed his worry about seeing several caribou, untouched except for their missing tongues, lying dead on the sea ice outside of *Ikaluktuuttiak* (Cambridge Bay). Caribou tongues are considered a delicacy and one of the most favoured parts of the caribou. Other elders listening to this story, shook their heads, talked about how this was "bad", and complained that Qitirmiut were not treating caribou with proper respect.

> In the old days, when [people] caught caribou, they used everything . . their vegetables were the insides of the caribou stomach . . . the tips of the antlers are just cartilage. I still eat those. There are lots of nutrients in that. The head, the cartilage in the head, the brains, the eyes, the ears . . . Now they leave everything behind. There are different uses now than a long time ago. A long time ago, nothing was wasted. My mom still makes caribou feet when she can and I still eat caribou feet too. They are really fatty. Rubbery too. Inside of the hooves. They are inside of the hooves. You just pull it out. It is like a fat layer in there. . . I grew up in the era, when we used to always . . . try not to waste at all. (Naikak Hakongak, 1998)

Bella Kapolak, Kingauk, 2000.

Inuit even cook the hooves. I just call it hooves, hoof stew, and eat the tendon out of that too just right in the hoof. They even cook the head and use the antlers for things like making some stuff to soften the caribou with or they could just use every part of the caribou. They eat the bone marrow and every part is used except for the guts. (Anonymous C, 1998)

Because [caribou are] the main source of food, people would never throw away caribou meat. There was not too much to hunt for food so we never threw anything away except the stomach and the contents of the stomach. The intestines were used for food as well. The blood is used for broth . . . The older people still cook and eat the head. The caribou heads are used for food as well. Sometimes the stomach would be eaten mixed with seal fat. Some elders still eat it today. (Frank Analok, 1998)

Sometimes there would be hard times when the caribou were scarce. The people from the land and the ocean would buy supplies during the spring. The people from inland would go to the ocean to catch seal to make boots, water boots. People who lived inland would hunt seals for waterproof boots. (May Algona, 1999)

> When there was a large herd close by, people would hunt, sometimes without much sleep. They would get as many as they could to use for clothing. When the timing was right, during the migration, we would catch as many caribou as we can which was used for clothing and food. That is what has been told. (Mabel Angulalik, 1998)

In the past, there were *pitquhiit* (strong traditions and rules) about not wasting meat (see Section 6.6). The breakdown in social customs and traditional lifestyle may contribute to younger people wasting meat.

> Once you start wasting caribou meat, you are going to have hard time in the future. So I try not to do those things, never do them anyway. I try to share my meat. (George Kavanna, 1999)

Today, in the spring, it is common for some meat to go to waste, especially recently, when sudden warm temperatures can spoil meat that has been stored frozen outside. Sometimes, people do not have time to process the meat before it is covered in fly eggs and maggots. Spoiled meat that is not yet dangerous is often fed to dogs.

Caribou Shortages: Times of Starvation

In traditional times, Qitirmiut lived on the land and moved according to the seasonal migration of the caribou because they counted on the caribou to provide food, shelter, clothes, tools, and, ultimately, much of what they needed to survive. People starved when the caribou migration failed to come by a traditional route, if wolverines or other animals raided meat caches, or if too much soft snow made travel difficult. It is too painful to talk about these times because of the memories of relatives and friends who starved.

> In the olden days, people used to throw away babies if they had no food to make them live. I was thrown away. Too bad. . . Qigarhana had to go along, she wanted to adopt me. She kept me alive. (George Kuptana, 1998)

> In the past, when there was not much food inland during the winter, people would come down to the ocean by dog team where there were seals and tomcod. People would come down because they know there is game

> during the winter. . . Not too long ago, when there were a few people left at Beechey Lake, when Ella Tunnuqahak's husband and my parents were still alive, we spent our last winter inland without food. We were having a hard time back then. Even for far distances, there was no wildlife. It must have been around May. There was nothing to see close by. Nirlaaq reached our camp unnoticed. We had been out of food for a long time. We would catch a few fish, even a small amount, which would not last but we waited for people. We would take the hair off caribou skins, cook them and eat them. (John Akana, 1998)

> I remember we spent one fall near Beechey Lake (*Hanningayuk*) without food. I cannot remember much. . . We were without food and moved down from Beechey Lake (*Hanningayuk*). It happened more than once. (Mary Kaniak, 1998)

5.1.4 Relying on Caribou for Subsistence: Traditional Uses

Caribou can be used for almost everything imaginable. Generally, skins are used for bedding, clothing, drums, kayaks, packs, rope, shelter, and sled runners, while antlers and bones are joined to pieces of sinew, rope, copper, or plastic, and made into tools such as arrows, bows, harpoon heads, knives, fish hooks, or scrapers. While many of these uses have fallen out of favour for more modern equivalents, some grandparents and parents still try to teach their younger relatives about the older traditions.

Clothing and Needles

It is much easier today to find clothing. In the old days, Qitirmiut women and girls made various types of clothing and sewing tools from caribou, depending on the occasion, what season the caribou was harvested, or how the hide was prepared. Caribou hides can be made into parkas, pants (inner and outer), boots, gloves, hats, diapers, menstrual pads, and more. Many people prefer the *Kiilliniq* caribou for *kamngit* (boots) because they are thinner skinned, easier to scrape, and whitest in colour. Needles and thimbles were made from caribou bone.

Hunters select caribou for their furs during the late summer and early fall because this is when the caribou fur has a rich colour and does not shed as much. Further, wounds in the

skin from warble fly larvae have healed. When the furs are used for clothing, the hunters cut them carefully and in particular ways. For example, legs from the caribou can be used to make a pair of *kamngit* for which eight legs are required.

A caribou skin covered in warble fly larvae.

> The people in the olden days would cache meat for the winter and use the skins for clothing, bedding. The furs would be properly skinned in the summer. (Annie Kaosoni, 1998)
>
> [Qitirmiut] make outer pants from cow skins because they are softer and easier to scrape. Bull skins are not used [as much] for clothing, but female and calf skins are used. (Lena Kamoayok, 1998)
>
> In August, people would start hunting caribou for clothing when [the caribou] are heading south. . . When the fur was not too thick, [the furs] would be used to make patterns with. Patterned trimmings. . . The legs from the fall or summer caribou would be used for boots. (May Algona, 1999)
>
> The skins with thin hair were used for hats too. On some parts of the hat, the hair would be shaved off. Some had black hair and some red, and would have loon beak on the front. That is what Inuit used a long time ago. They used caribou skins any way they can a long time ago, The white breast part of the caribou would be used for designs on dark fur. (Archie Komak, 1998)
>
> [The calves'] furs would become darker as they are growing. When they are unborn, their furs are red. We wait until August to hunt caribou because the fur is better then. . . The Inuit would try to catch them when the furs from the calves and cows are good enough for clothing. People prefer to get caribou in August for food and clothing. When the furs get nice, the people would split up. They would be together during the spring

until the caribou furs are ready. When people wanted clothing, they would go hunting. When the furs are ready for use for warm clothing, they do not shed as much. (Mackie Kaosoni, 1998)

[Qitirmiut] would call [the caribou] *kanngalat* because they would be losing their fur. And in the summer they would be called *haggaruq*, because their fur is good enough for clothing. That is when they are in the summer. Then they would be called *ukiuliqmik* in the fall when their fur was thickest, good enough for clothing ... (Nellie Hikok, 1999)

I had needles made from bones, not the ones white people make. I have seen needles that my mom and dad used. They were made from caribou antlers, copper, and they were made for different purposes. *Kainnitot*, bone needles. (Lena Kamoayok, 1998)

The [caribou thigh] bone where you have marrow from, they used them for needles also. (Annie Komak, 1998)

Mary Kilaodluk, Ikaluktuuttiak, 2000.

Bedding

Caribou skins are warm for bedding when you have to overnight. For travelers, they are the best because they are warmer and do not collect moisture. (Lena Kamoayok, 1998)

Lamps for Heat and Light

> You know when caribou get really fat? [People] hammer the tallow to make oil for heating lamps. (Annie Komak, 1998)

Bows, Arrows and Spears

> Making bows and arrows . . .. Caribou antlers, you got to make them thin so they do not bend. So they will not break, you cook them and boil them. . . Before you cool it off, these two bones, and these caribou horns, you stick them in the earth. . . They would stick them in moss to cool faster. . . They do not let them air cool, they are cooled off quicker in order to make them bend, strengthening them. (Jack Alonak, 1998)

> I remember seeing my grandfather using a bow and arrow. . .When I was younger, it was fun to use a bow and arrow. . . It was even better than the white man's bow. I do not like the white peoples' bow and arrow, the arrow is not as strong. (George Kuptana, 1998)

> Caribou antlers are used for bows. Tendons [sinew] are used on the bows as well . . Caribou tendons are braided and used. (Bessie Omilgoitok, 1998)

> The antlers are used for . . . spearheads. They are used for fishing. There would be sort of like barbs in between the antlers. They are called *nuiyaaqpak*. The other is a fish spear (*kakivak*). (Paul Omilgoitok, 1998)

A spear used to catch fish (kakivak) sits beside dry meat (mipku). In the past, caribou antlers were used to make the kakivak. Today, they are replaced by plastic.

Medicine

In the past, some parts of the caribou were used for medicinal purposes. Fat from the neck of a caribou was used for soap, sometimes to clean a wound. Lymph nodes from the neck were used as medicine.

> When people cut themselves, they would use the outer covering of the heart as a bandage. . . [It] was dried up and used as a bandage. . . because it does not leak. (Mabel Angulalik, 1998)

Caribou Skin Sleds, Kayaks, Drums, Buckets, and More

Caribou made survival easier in the olden days, but people had to be especially clever and creative in how they used various parts of the caribou.

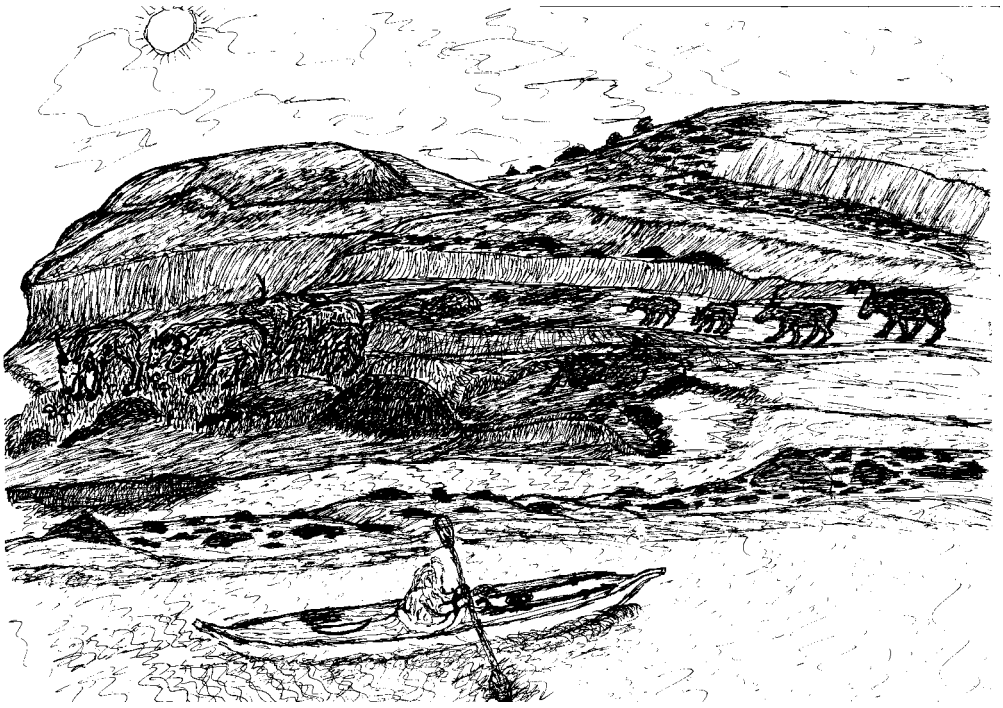
> They used caribou skins for water buckets and the handles for carrying. The fur is removed when it is to be used for strings. They used them for sleds and strings. They would cut the caribou skins and remove the hair to make ropes. They would soak the skin until the fur peels off then make ropes from it. (Annie Komak, 1998)

> [Caribou skins] were made into dog harnesses and even to cover dog teats. . . Caribou skins were used to cover the sleds. This protected whatever was on the sled [so it] did not get broken during travels. (Lena Kamoayok, 1998)

> Caribou skins, they even used them for sliding down hills. (Annie Komak, 1998)

> Even though ski-doos are used, caribou skins should not be forgotten nowadays. If ski-doos break down, they can use the skins for sleds. . . Anything is traditionally made should not be forgotten. Never leave [home] without them. (John Akana, 1998)

In traditional times, late summer or early fall skins without fur were also used to make kayaks for the following spring by soaking the hides, removing the fur, sewing the skins together and stretching the sewn together skin around a wooden (usually spruce) frame. Willows were used for ribs. Using similar techniques, skins were also used to make drums. Caribou skins wrapped around wood were used to beat the drums.



Mary Kilaodluk, Ikaluktuuttiak, 2000.

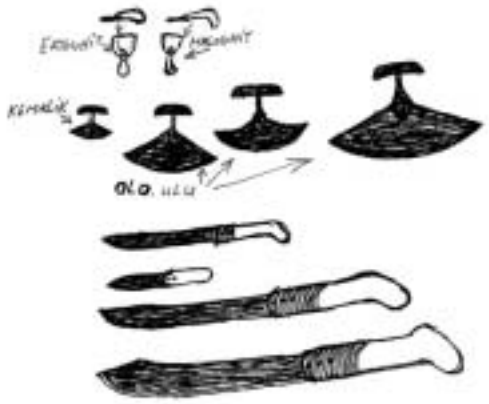
Tools

Caribou antlers and bones could be split and carved into such implements as bows, arrows, scrapers, drills, and knives. The shoulder blades from caribou are good for making into scrapers for skins. With scrapers, knives, and other tools, a little bit of copper was often tied to the bone with sinew.

> [Inuit] had drying racks as well, used for drying clothing over the stone lamp. We would make tea as well using the lamp. It tasted better when we used caribou tallow for fuelling the stone lamp. Some of the drying racks

were big [one half meter by one quarter meter]. They were made of caribou antlers in a circular shape and used as hangers. (May Algona, 1999)

Caribou and musk-ox ribs were used as bows and drills. Caribou kneecaps were used as mouthpieces when using the drill. (Lena Kamaoyok, 1998)



AJ Aknavigak, Ikaluktuuttiak, 2000.

Tents

Caribou skins were very important to Qitirmiut for making tents, especially during the traditional times. During the spring, summer and fall, Qitirmiut made tents by sewing caribou hides together, and pushing them up in the middle with a pole made of such wood as drift-wood, or long willow or alder branches, especially from shorelines. Sometimes, fish spears or harpoon shafts doubled as tent poles.

Tents were secured by seal or caribou skin ropes or stones laid on the tent at the base. A ring of stones remained where the tent was taken down. These rings remain today, scattered throughout the land, and marking places where Qitirmiut once gathered to hunt, fish or visit their friends and families. At these places, there are dozens of rings clustered together especially where two rivers meet, the fishing or sealing is good, or along rivers at places where caribou are known to often swim across. Old tent rings clustered together

and scattered bones mark where families met as a large group, whereas singular tent rings show where people lived for a brief period.

> In the fall time, in September, we would hunt caribou to be used as tents and bedding, preparing meat for the winter, stocking up on tallow. It would rain outside when we were trying to dry caribou skins. Then you would wish you were in a tent. Tents were made even when the caribou skins were still damp. . . Canvas tents are not so warm in September. When the caribou skin tent was done, boy was it ever warm! It would be just like being in a house once the tent was done. . . A lot of people had caribou skin tents, as well as bedding. There was no other material except caribou. (May Algona, 1999)

Since the 1950s, Qitirmiut have mainly used square (or rectangular) canvas tents. One way to tell the difference between old and new campsites is to look at whether stones are found either in squares, or ovals and circles, or how deeply the rocks have sunk into the tundra. Fireplaces that are inside the ring are a sign that a camp is very old. One can barely make out the circles at some ancient sites. Many sites continue to be used today as they were in the past, evidenced by the number and types of remnants from both kinds of tents.

Other Uses

Caribou innards were also used. For example, the stomach of the caribou was often used to carry blood from the hunting site back to the camp to mix with broth for blood soup.

> The esophagus of the caribou was used for storing caribou tallow. When the tallow cooled, it was poured in. (Lena Kamoayok, 1998)

> When a woman adopted and did not have any milk to nurse the baby, she would use caribou milk. They also used [blood] soup for feeding the baby. (Annie Komak, 1998)

> Inuit who grew up on [blood] soup drink it more and crave it more. (Lena Kamoayok, 1998)

> They would make bottles out of the thin area of skin from a caribou. They would blow it up, tie it, and dry it up, just like little bottle. And nipples too. (Jack Alonak, 1998)

> [Qitirmiut] used Arctic cotton to make strings and dipped them into caribou tallow to make candles. (Annie Komak, 1998)

5.2 Caribou and Qitirmiut: A Seasonal Round

The way that Qitirmiut and caribou interact has always changed with each season. In traditional times, Qitirmiut travel routes paralleled the caribou migrations, as people moved from one camp to another throughout the year, as illustrated earlier in Map 2. Today, depending on the time of year, caribou are often the reason for peoples' camps and travels.

5.2.1 Seasons of the Year

The spring migration north, the summer calving period, the fall rut and the winter migration south of the caribou, form part of an annual cycle that links Qitirmiut and caribou. Changes in the nature and activity of wildlife and the weather are tied to the phases of the moon and define six seasons in a year.

> We did not have calendars back then. [Inuit] used the moon only, the moon. . . They used the moon as a way to tell seasons long ago. It was a way to tell the seasons. When the moon would come during the spring thaw, when there is water, the caribou are calving and the birds are nesting. That is how it was used. . . The moon would go away again during the month of June. When it returns you know when the birds are moulting . . . which is during the month of July. The moon was the only way the Inuit knew the time of the year. . . We did not know it was July then. After it disappeared, it would return and then it would be August. That is when the caribou furs would get nice. . . The birds would be flying again. The young birds would have grown then. That is how they knew the seasons. (Frank Analok, 1999)

Changes in local wildlife, weather, and the moon are signals that inform where people choose to hunt, camp, and travel. These camps and travel routes are often the same ones used by their ancestors who also relied on their acute observations of the animals,

weather, and moon. Many of these routes are different now because the majority of Qitirmiut do not live inland anymore.

5.2.2 Qitirmiut Travels and Caribou Trails

In the past, there were many arduous challenges for Qitirmiut moving with the caribou. Some women told of having to give birth one day, the newborn "caught in a caribou skin", and packing the baby on their backs the very next day while walking or sledding to a new camp. A few men recalled carrying heavy caribou skin tents and other camp materials for long distances across the tundra. Walking overland in the summer is more difficult than riding on the sled in the winter.

With the establishment of the trading posts, Qitirmiut generally spent the summers along the coast and the winters inland (Map 2). During the spring migration, people followed the caribou northwards to the calving grounds. Come fall, Qitirmiut followed the caribou southwards as they returned to their wintering grounds.

Upin'ngakhaq *(March/April)*

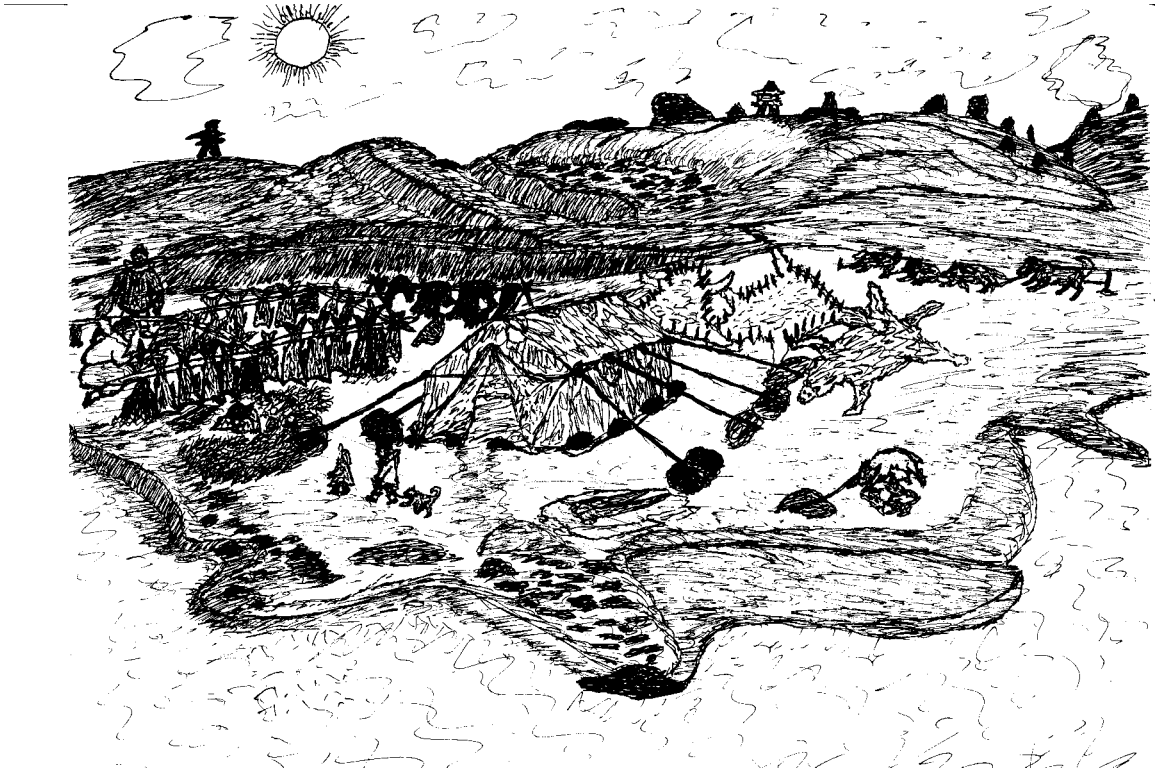
The early spring has always brought great happiness. With the warmer sun and longer days, comes the return of animals and birds from their southern wintering grounds. This time has always been tied to caribou migration and a bounty of meat after a winter of scarcity.

Today, starting in the early part of May, going to the cabins or tents to hunt the migrating caribou is fun. Here, one can watch as yearlings and pregnant cows lead the way northwards to the calving grounds. A few weeks later, the bulls follow. In traditional times, Qitirmiut families travelled to meet with large groups in common camps nearby their caribou hunting grounds.

People would gather in the spring when the caribou would migrate inland. They have always hunted there. It is their land and they know it well, even before the white people came. (John Akana, 1998)

Most people lived where the caribou were plentiful. There were hardly any people living by the ocean because there were no caribou, nothing at all. The caribou were inland only, there would be people anywhere inland from Contwoyto Lake (*Tahikyoak*). The people would winter inland where the caribou were. During the spring, around April, people would head to the ocean. There was a lot of people inland. (May Algona, 1999)

That is *Hingik*, where we used to spend our springs there. . . There are many old campsites there. . . We would only spend the spring there to make dry meat. . . Also at *Hanningayuk*, I had camps there during the summer and winter. . . Also around Contwoyto and Beechey Lake. (Jessie Hagialok, 1998)



Mary Kilaodluk, Ikaluktuuttiak, 2000.

Upin'ngaaq *(May/June)*

Elders and hunters explained that as spring advances, the long hours and warm temperatures make it easier and more pleasurable to both hunt caribou and prepare *mipku* (drymeat).

> My parents would hunt caribou in the spring for drying, when there are no flies. (Frank Analok, 1998)

As the month of May progresses into June, hunters are more selective because they know that the caribou will be migrating for several weeks. Hunters look for caribou that are the healthiest or the fattest, although one cannot be too fussy. One hunter told of the time that he went out hunting for the day and within half an hour he saw a caribou. The caribou was small and rather skinny so he decided to leave it. Much to his dismay, he did not see another caribou for the next twelve hours of hunting. He explained that the reason why was that he had been too fussy.

Auyaq *(July/August)*

One must watch the *nuna* (land) and sea-ice closely so that once the ice melts and travelling over the land becomes difficult, one can start using boats to hunt caribou. Today, going by boat to look for caribou on the islands in Bathurst Inlet is a fun way to hunt compared to hunting inland and fighting off all the bugs.

Narrow places along a river where caribou are likely to swim across are called *nalluit*. In the olden days, people would hunt by kayak and use spears while on the water, and bow and arrows while on the land.

> During the spring and summer they come back to their campgrounds that are near caribou crossings. . . The narrow parts are where they catch fish. (Annie Komak, 1998)

> This is where I have heard people talk about caribou crossings. Back then, it was just like people had rifles because they caught so many here. They used kayaks. (Nellie Hikok, 1999)

> They used a kayak for hunting caribou that are swimming. The *inukhuit* (stone markers) were used. It was a necessity when they hunted without rifles. All they had were bows and arrows. (Mabel Angulalik, 1998)

> When [caribou] are crossing the main route, there is always hair on the river. Along the shore, just along the Burnside River. See balls of hair, bunch of balls. There is ball of hair along the river, along the whole Burnside. (George Kapolak Haniliak, 1998)

Since it can be hot and mosquitoes and flies become pests in the summer, people hunt less and fish more than in other seasons. As in the past, early summer is a good time for catching fish and making *piffi* (dry fish) for the coming winter while enjoying the cooler and windier air along the coast. In contrast, hunting on the land in the summer is a challenge because the meat has to be packed back to camp while one walks through thick clouds of bugs. During the elder-youth camp, caribou was cut up so that it could be folded tightly into a "suitcase" and carried on peoples' backs more easily.

> Sometimes people would stop hunting, usually in July when the weather gets too hot. . . People would stop hunting during the month of July, because of the worms. In August they would store or cache meat. . . (Charlie Keyok, 1998)

> We would hunt less when there are flies, as the worms would spoil the meat. Every August, when the fur gets nice to use for clothing and the meat will not spoil, they would hunt again. (George Kuptana, 1998)

> Hunting caribou in July? Too many mosquitoes! (Moses Koihok, 1998)

Ukiaqhaq *(August/September)*

Hunting resumes again in the early fall because it is cool enough that the meat does not spoil and the fur is good for clothing. During the summer, warble fly larvae burrow out from under the fur and create tears in the hide that look like bullet holes. A skin with these holes is not very good for clothing, bedding, drums, kayaks, tents or other uses.

Johh Akana shows Joseph Tikhak Jr. and George Panegyuk, all of Umingmaktuuk, how to package a caribou carcass like a suitcase for easy carrying back to camp.

Early fall is a good time for hunting because the caribou, particularly the bulls, are the fattest and healthiest after a summer of grazing and storing fat on the rump known as backfat. If the summer has not been too hot, backfat can be over 8 cm thick. When it is this thick, it makes the bulls looks like they have small tails. This is one sign of a prime bull.

> The bulls would get real fat during the fall . . When the meat of the [caribou] has been cached. . . they are really good for eating. We would eat more frozen meat. During late summer the yearlings would get beautiful and they would be hunted most for clothing, inner parkas, the bull skins would be used for bedding as well as tents. There were lots for bedding, large tents as well. People would catch a lot of caribou. (May Algona, 1999)

> Usually in the . . . early fall I usually go for the bulls, cause they have more fat, more meat, for drymeat in the fall. The hides are good too. (Allen Kapolak, 1998)

Ukiaq *(October/November)*

Unlike the spring when hunger and the desire for new foods were the driving forces behind the hunt, *ukiaq* is when Qitirmiut planned ahead to store enough meat in caches to last the long winter.

> People used to pile up a lot of skins for future use in case there were not any caribou the following year. (Lena Kamoayok, 1998)

> They used to make piles and piles of skins for next years' use. For future use because maybe the next year there will not be any caribou. (Annie Komak, 1998)

Nathan Kakolak, Umingmaktuuk, 2000.

Today, one way to plan ahead is to bring much more food and heating fuel than necessary for a short trip. In the past, to plan for the future meant to put away stores of meat in stone caches at popular campsites or along typical travel routes.

> When people hunted for the winter back then they were hardly home. I was like that myself. They would be quite a ways from camp. Hunting to stock up on tallow, caching meat for the winter. They would try to get enough to last them the winter. Stocking up on skins, meat, taking the whole caribou. When we were not cutting up and preparing caribou, it was fun watching hunters, but we would have to haul [the caribou meat] as well. (Nellie Hikok, 1999)

> On the land, down by Beechey Lake (*Hanningayuk*) and Contwoyto Lake (*Tahikyoak*), in their wintering grounds, they would bury food to use in the winter and for the dogs as well. They still hunt for caribou in Bay Chimo (*Umingmaktuuk*). They would catch 5, 5.2 or 9 to make drymeat. (Charlie Keyok, 1998)

In the past, just before the first snow was a good time to store meat in stone caches as the flies were gone and the temperatures were cool enough to keep the meat from becoming rancid under the stones. These caches still can be seen almost everywhere, especially near high points on rocky outcrops and along caribou migration routes and crossings.

> Sometimes caribou meat was cached, when there was no chance of the meat being spoiled by worms and heat. When the weather starts cooling off, maybe in August, they would cache meat for later when there was less food. Nothing went to waste. Whatever was not needed right away was cached or stored. That is the way it used to be back then. (Mabel Angulalik, 1998)

> When they are heading north in the fall, people would put away food for use later on, digging in the ground, wrapping the meat in the skins and burying it. . . just like a freezer, deep freezer. People would boil [meat] for eating when there were not any caribou around. (May Algona, 1999)

Usually around the time when the rut began was when Qitirmiut started to travel with the caribou as they travelled southwards to their wintering grounds.

> I remember walking from Hope Bay (*Kapihiliktuuk*) to *Kalgilik*. . . In the fall time we came down by this river to our outpost camps. From there, from Hope Bay (*Kapihiliktuuk*), is where we would stop while travelling inland during the fall. (Annie Komak, 1998)

> During the fall they would stay down there [inland]. . They would start travelling from [Hiukkitaak River] and hunt or fish along the way. They did not depend on the white people for help then. They would spend the summer along the river and during freeze-up they would start travelling down that way ... That is how they lived back then. They had to find food to survive. It seemed like they never got tired. (Mary Kaniak, 1998)

At this time, Qitirmiut followed the herd inland in search of caribou that would be grazing where the new snow was still thin enough for them to paw through for food. Once the caribou migrated out of the region, people subsisted on fish, small game and cached caribou until the spring migration.

Ukiuq *(December/January/February)*

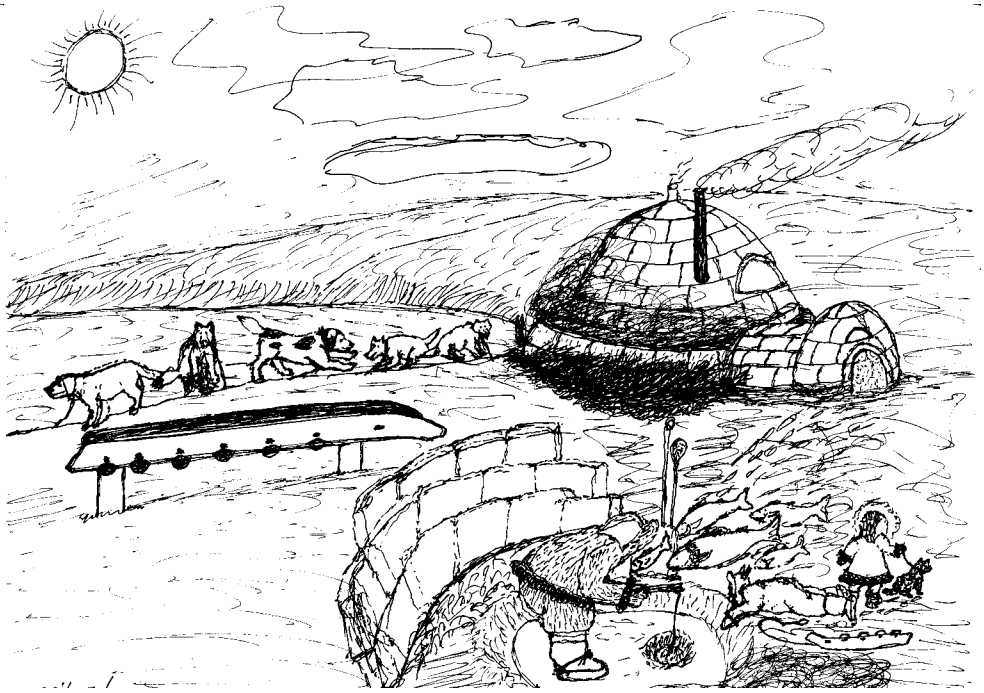
Qitirmiut usually went to different places during the winter that varied for each family or group of families. People would camp where the trapping, fishing or seal hunting could carry them through the winter. Today, the winters are not as tough as they were in the past because store bought food is available. Nobody starves to death anymore unless they get caught out on the land in a storm and cannot be rescued because of bad weather.

When trapping and trading for fur was introduced, Qitirmiut camped where there was an abundance of furbearers. The men would set up a camp for their families and then leave for long periods, trapping, hunting or travelling to the trading posts. Women experienced loneliness and hardships when their husbands and other male family members were gone.

> I left my family at this base camp and stayed away for about nine days ... [It was] around here, near the place where our first child died. They called it Beechey Lake (*Hanningayuk*). People used to camp there during the springtime. Inuit used to travel from the coast and spend the winter there because there was a lot of game to hunt. (George Kuptana, 1997)

In the wintertime, the people go to the ocean to hunt seals and fish for cod. That is where they would stay during the winter, the people long ago ... They would get stones to make seal oil lamps to keep warm in the winter during their stay inland while hunting and fishing. (John Akana, 1998)

They would cache food to last the winter. They bought necessities such as tea and kerosene in those days ... People would offer us food while we waited. The men would catch enough food for their wives before leaving them at camps. (Mary Kaniak, 1998)



Mary Kilaodluk, Ikaluktuuttiak, 2000.

Long ago, Inuit did not have rifles. They stayed at their traditional camps inland, further inland than here ... The Inuit then started using traps and rifles at their traditional hunting grounds, more after the post on the coast opened. Shortly after that, the [Hudson Bay Company] began buying skins. So after the freeze-up, the inland people would travel down to trade the skins they had caught ... The Inuit would come down by dogteam to trade and then return to their traditional camps further in the barrenlands. Since they started to own rifles, they started trapping all the way down to the coast. Shortly after that, the inland people, as they were called, settled along the coast to trap. (John Akana, 1998)

5.3 Harvesting Caribou: Means and Rules

Hunting, butchering, preparing, and cooking caribou meat as well as all of the traditions that surround each of these events together make up a caribou harvest. Each event flows into the other and may be either carried out by one person, or handed from one person to another. In any case, people like to work together to share in the importance of harvesting caribou.

5.3.1 Hunting

There are many ways to hunt caribou. To hunt, one has to show respect and "get inside the head of a caribou" to understand how a caribou feeds, moves, sees, hears, and smells.

> When the people were watching the caribou, it would seem like they are part of the caribou. (Nellie Hikok, 1999)

If there is snow, one must look for tracks that lead to the caribou. While looking for tracks, one has to think like a caribou to know where it might go, or otherwise anticipate their behaviour.

> In the olden days, they used to try to figure out where the migration pattern was going. They would have their camp set up where they could easily ambush the caribou on their route, on their migration route to the calving grounds. (Naikak Hakongak, 1998)

Depending on where one is hunting and the time of year, there are different strategies and techniques that can be used. One might think of a strategy as IQ that Qitirmiut apply in order to be successful in their hunt, for example, a specific way of approaching caribou or guessing to where caribou would likely go. Map 3 shows some typical hunting grounds used by Qitirmiut.

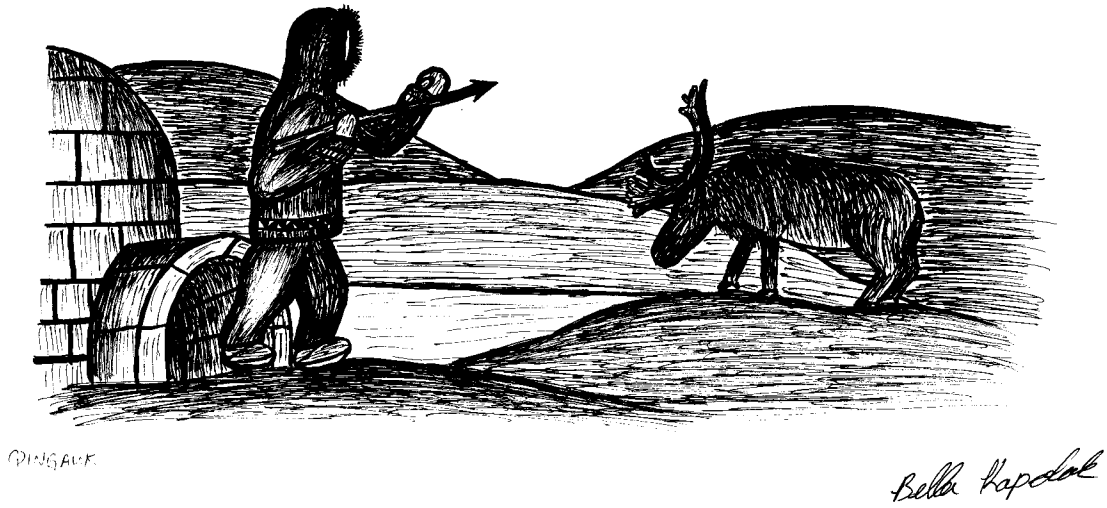
Hunting strategies and techniques can vary from person to person or camp to camp, but some were commonly used. In particular, most people talked about how Qitirmiut

Map 3: Qitirmiut Hunting Grounds ***(Please see "Project Maps" in seperate pdf)***

traditionally used hunting blinds (*talut*), and human-like rock figures (*inukhuit*) to steer caribou towards the hunters, especially at river crossings or along migration routes.

Many traditional strategies have been passed to current generations and are in use today. For example, it is commonly known that one should stand downwind so the caribou cannot smell you, stay still or move slowly so the caribou cannot see you, and tread and talk quietly so the caribou cannot hear you.

> Nowadays we have Sorrels [commercial boots] and they make lots of noise [on the snow]. Caribou boots are much quieter. They make it easier to sneak up on caribou. (Naikak Hakongak, 2000)

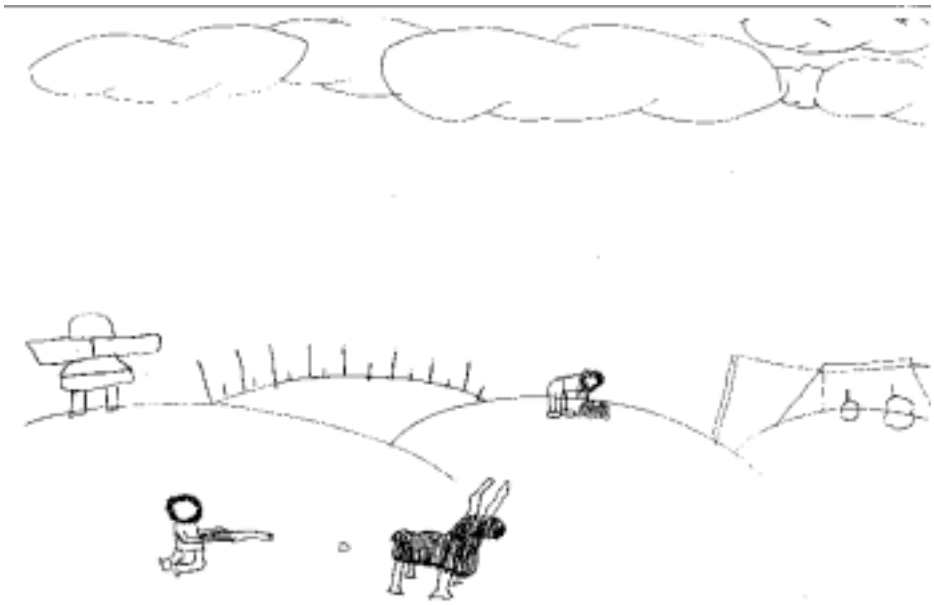


Bella Kapolak, Kingauk, 2000.

Getting to think like a caribou comes from spending years and years of watching caribou. Starting as a young child, a person learns how to spot a caribou, and then patiently observe and study it for a period of time. Taking time to watch caribou move, eat, rest, and mingle, gives one a chance to start thinking like a caribou, predicting where the caribou will go next, and finally, hunting the animal.

> We would look for fresh caribou tracks; we would follow the fresh caribou tracks. They are not seen in the summer, only on trails. In the winter we would hunt caribou when we spotted fresh tracks. That is how we would get to the caribou. (Charlie Keyok, 1998)

> People would hunt caribou by dog teams. They took care of their dogs, trying to keep them quiet. They would get close to the caribou on either side, and the dogs did not go after the caribou. They would be careful not to make any noises. (Moses Koihok, 1998)



Artist Unknown, Ikaluktuuttiak, 2000.

In the past, hunting techniques included using hand-made spears, and bows and arrows. Stone *talut* (hunting drives and blinds) and *inukhuit* (stone markers) steered caribou towards waiting hunters. Women and children would sometimes yell and chase the caribou towards the hunters too. Many *inukhuit* and *talut* remain today across the land.

> There would be many landmarks in place over a long stretch. For those using bows and arrows, my parents would tell stories about using bows and arrows and landmarks. They would pile rocks to look like people. They would use landmarks to move the caribou to the direction of the hunters hiding behind blinds. They would use kayaks too. I have seen that at a caribou water crossing before. . . I used to ride on [a kayak] on my belly. I would be lying down; I would try not to lift my head up. (Charlie Keyok, 1998)

> There are still quite a few hunting blinds . . . you might still see all those rocks standing. Those are all to drive the caribou. Nowadays we do not need those. We use rifles. (Charlie Keyok, 1998)

> *Inukhuit* [stone markers] were erected by the caribou water crossings and used during the hunt. They were used to steer the caribou towards the direction of the hunters. (Frank Analok, 1998)

> People used kayaks where the caribou normally crossed; they would catch caribou from their kayaks . . . There were blinds in the olden days. There were stone markers that were put up which were used to divert the caribou toward the blinds where the hunters were. (May Algona, 1999)

To know where caribou would usually cross over rivers, one must look for narrow sections. Another good clue is to look for caribou fur washed up along the shore or tracks along the shorelines.

> The [caribou] skin would go inside the kayak, because they are narrow. They were made to go smoothly in the water and to fit you as well. We would fill in the front and back and the top with whatever it could hold. . .[When Inuit hunted caribou by kayak] they would pull them with a rope. They would knot it . . and pull [the caribou] to the area where they would bury it or by the tent where they would make drymeat. People used to travel in kayaks, hunting on the land, carrying their kayaks because they were light. They were made for the water so they can stay long in the water. (George Kuptana, 1998)

> A bow and arrow is more difficult to use than [a spear used when hunting in] the kayak. I learned to use the kayak. . . from my grandfather. He made me one. You have to be careful though how much meat you carry on the kayak: you have to keep in mind how much the kayak can carry. The bow and arrow was more difficult to use, although they were fun to use, and you were sure for a catch. Sometime you would catch nothing though. I found them difficult to use. Others handled them very well in the olden days. That is what they have always used for hunting. There were rifles then, but we would shoot for fun with the bow and arrow . . . (George Kuptana, 1998)

In the past, communicating between one another during the hunt was an important technique. Especially during the spring migration, people had to communicate the arrival of the caribou. Hunting efforts were more successful when people spread out and distracted the caribou by making noises and frightening the caribou towards a waiting hunter.

> When people were expecting caribou, they would all scatter. They would scatter and wait for caribou to come. (May Algona, 1999)

> When a [man] was looking out for caribou and spotted them first, he would let others know by making a fire showing off thick smoke. Everyone would go towards him happily. That was when a person would first spot caribou. . . it would be a happy time when we saw that smoke! (May Algona, 1999)

5.3.2 Traditional Versus Modern Hunting

Caribou hunting techniques today are very different from those of the past. Bows and arrows, skin kayaks, and stone blinds and markers used to be common whereas nowadays rifles are used. It is easy for people to track or access caribou using snowmobiles, powerboats, airplanes, and all terrain vehicles. Although the migrations for the herds might shift, as discussed in Chapter 8, modern technology has made it easier for people to adapt to changes in caribou distributions. In many ways, the transition away from traditional hunting techniques has changed the relationship between Qitirmiut and caribou.

> It is not as it used to be in the past. People worked hard then, suffering sometimes, beyond their ability. Nowadays, people do not work as hard when they are hunting. They do not have to walk long distances, they can just sit and hunt. Today they have rifles and scopes, so it is not as hard to hunt. (Frank Analok, 1998)

> They never caught a lot [of caribou] because they did not have rifles then. . . They do not catch too many caribou nowadays because they have guidelines. There are stores now. (Mabel Angulalik, 1998)

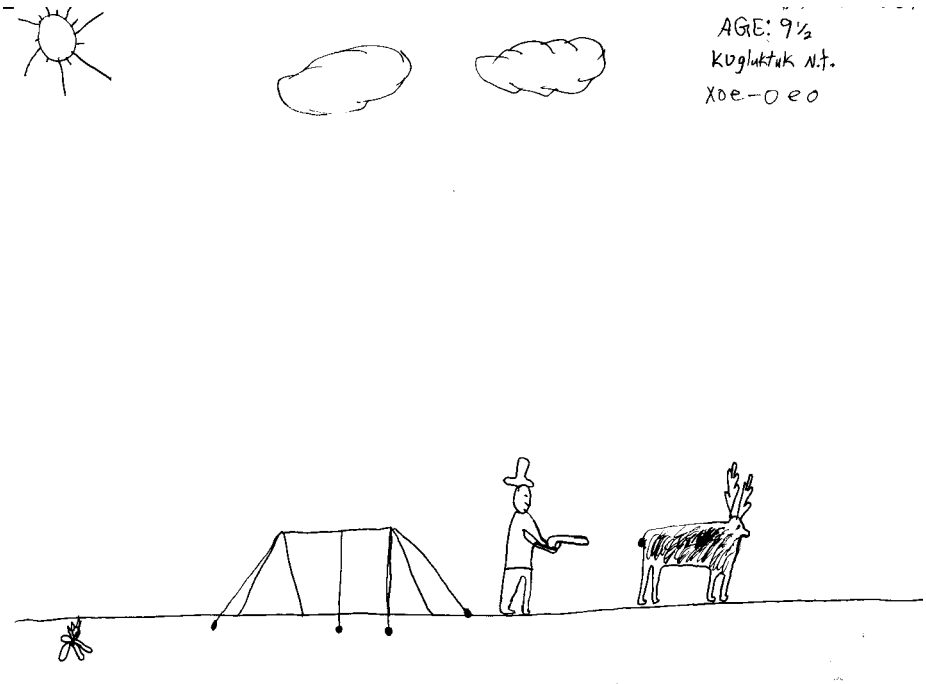
> In the past, [Inuit] used bows and arrows to hunt. There were not any rifles then, before the white men came. (Frank Analok, 1998)

> I grew up when rifles were already in use. There was hardly any ammunition then and hunting was their only job. Sometimes [Inuit] would make ammunition with whatever they had using the same shell. We did not know then that they would be plentiful. (George Kuptana, 1998)

> Every August people would hunt relentlessly for caribou to be used as clothing. The thin fur. Nowadays it seems people do not know how to work with them. (Bessie Omilgoitok, 1998)

> I used to go around visiting other camps, anywhere with a dogteam. Now there are a truck and a ski-doo. When I was younger I had a six-dog dog team. When I was younger, when I started travelling around, I used to go around visiting anywhere down that way around Beechey Lake (*Hanningayuk*). . . Even to Contwoyto Lake (*Tahikyoak*)! I went visiting other camps on a dog team. There were not any vehicles then, none at all. (Archie Komak, 1998)

Today, Qitirmiut still rely on caribou as a source of food which can be a problem when the caribou migration routes are many kilometres away. Hunting caribou that are far from communities can cause hardship because of the high costs of gasoline, ammunition, and food as well as time needed for a caribou-hunting trip. When hunters harvest an abundance of caribou, they should share the meat with others, particularly elders, rather than leaving any excess. In this way, everybody remains tied to the land and the legacy of sharing and caring for one another.



Chad Keadjuk, Kugluktuk, 2000.

5.3.3 Becoming a Hunter

Boys and girls learn to hunt early by listening to and applying lessons taught by elders and experienced hunters. In addition, they make their own observations of caribou that continue to inform how they understand caribou throughout their lives.

> When you reach 14, 15, 16, that is when you start hunting, that is when you get to understand and learn to hunt. . . That is the age you are stronger and more energetic. That is how it is nowadays. When you reach 13, 14, teenage girls and boys learn to do things, even to this day. (Moses Koihok, 1998)

> The last time I watched a big migration was when I was about 7 years old and we were living in Bay Chimo. I sat on top of a hill and this caribou herd was coming towards the houses. So my brother, two older brothers, and I went on a dogteam and they went towards where the caribou were. We sat on top of a hill and watched them. They just picked off [hunted] a couple and then the snow hook came out of the snow. My older brother, Allen, was sitting on the sled when that happened and he could not get it back in the snow. He just disappeared into the caribou herd. The dogs went right into the caribou herd. The caribou [grouping] just sort of split

> and it seemed like nothing was going to stop them. . . From what I remember, there must have been a good three thousand animals in the herd. (Naikak Hakongak, 1998)
>
> When I was child, my father made me stab a calf, close by *Kuugyuak* (Perry River). . . [I stabbed it with] Piruana's pocket knife. I chased the calf and stabbed it. (Bessie Angulalik, 1998)
>
> You listen to your dad closely and not stay away from him too long. Learn everything from your dad if he is a very good hunter, he usually passes it on to the younger generation, sons, daughters. Paying attention is more important. I grew up with hunting. I have always hunted all my life. First caribou I shot was when I was 4 years old. And, I guess a yearling caribou, yearling, took me over an hour to skin it out but I did it anyway. I cheated on my boy, I helped him out, helped him skin his first caribou. He was 4 years old also. His was a big bull. Mine was a yearling. (Bobby Algona, 1999)

Text Box 3 : Teaching Youth How to Hunt

Every day brings a new activity. Elders tell stories about *qingnit* (meat caches), *talut* (caribou blinds), *anguniaqpauhiniq* (hunter's survival skills), *Tuktuhiuqtut* (caribou hunting), *amiiyaiyuq* (taking fur off), *aakturniq* (skinning), *pilangniq* (slicing meat), and *niqiliqinirlu* (butchering meat).

Lena Kamoayok wakes at her usual time (4 am) and prepares her teaching props. She squats in the gentle light and, with her army knife, she expertly slices through the Frosted Flakes box, carefully tracing the outline of a caribou. Within minutes she produces a target. Today, youth will learn how to hunt with the bow and arrows, crafted last month and sitting in a sacred box in her tupiq (tent).When the youth awake several hours later, Lena scarcely lets them finish breakfast before she wanders up the hill towards the talut. Silently she beckons the eager students to her outdoor classroom. Here they learn to hunt caribou at the same place as their ancestors.

--Researchers' Notes, Hiukkittaak Elder-Youth Camp, 1998

People and caribou are connected in the way they both undergo maturation.

> Mary Kaniak: [Caribou] become bulls after four years. . . Maybe after six years, they start mating. . . These boys [teenagers] are almost bulls.
>
> Bessie Omilgoitok: You boys are going to turn into bulls pretty soon!
>
> John Akana: These young people will find out when they have spouses. They will understand what we are talking about.

5.3.4 Skinning, Butchering, Preparing, and Cooking Caribou

There are various ways to skin, butcher, prepare and cook harvested caribou. What way is used depends on where you are from, how you were taught, or the purpose for the skin and meat. People from other regions of Nunavut have very different ways of skinning and butchering. Even people between families or communities within the Bathurst Inlet region have distinct methods. For example, one hunter might start skinning the caribou from the legs whereas another hunter might start from under the chin. These different techniques are taught to younger generations through demonstration and instruction.

Traditionally, the caribou were skinned and butchered according to the season and how the skin and meat were to be used. The same was said for butchering, preparing, and cooking caribou. For example, when one makes drymeat, the caribou meat has to be sliced into thin sections whereas thicker pieces with marrow bones are left to be boiled. These methods have not changed over time.

Skinning

The hide of the caribou changes in texture, thickness, strength, and colour with each season and thus Qitirmiut change how they use the skin. When you are not butchering caribou to save the skin, you follow the cutting lines that you have been taught.

> The hide has lines visible to the eye that show where cuts should begin, meet and end. (Naikak Hakongak, 2000)

Skin from legs to legs. Start from here to the back then to the legs. Then the head. It does not matter if you do the front legs first or the back legs first. On the leg, you start from around here, the chest. You go down from the neck down to the tail. After the legs, you turn it over and do the same thing. Cut the meat up. Take the skin off first and cut the meat up. Cut up the legs, and the hindquarters to make it lighter and the head. . . You take the skin off, take the guts out, and cut it up. First the caribou leg . . . you take the guts out . . . first from the back, inside behind the guts . . . Pull it out this way and it comes off. You cut the diaphragm right on the edge here and take it off. . . I take it out with the esophagus. It comes right out. Sometimes we leave it in the winter when it's so cold out. Just cut it off and pull the lungs out. (Doris Kingnektak, 1998)

I usually start with the front leg. Just start with the front leg and cut it right off where you could see . . the tendon (*nukik*). . . Just the shoulder blade. . . start off with that part and leave it all attached to the hoof. From the shoulder blade right to the hoof leave it all attached and just cut it right off. I just start at the back leg of the side that I did the front leg from. I would start with the front leg first, get the shoulder blade off and then start with the back, the hindquarter, and get that off and then the back strap. I would turn it over and start over the same way with the other side of the caribou. Same thing as the other side that I just did. I usually start with the front legs to cut it up and make it into drymeat. Like I cut the shoulder blade off right off the leg and I would make that into drymeat and then I would use the top bone in between the shoulder blade and the front leg. The [leg] one with just the bone marrow, use that for making boiled caribou. Then I would start off with the back strap too. (Anonymous C, 1998)

I find [the bulls] are really hard to skin, in the summer time. In this fall weather, I do not mind. But summer time, I have noticed they are hard to skin. Must be too hot. Warm. Like you are pulling harder all the time. . . I find it is much easier to skin in winter, but summer time just like they have got some kind of crazy glue. Some people I have noticed summer time, like my brother in-law, I went out with him, he was cutting it up with his knife. We usually just pull it, but kind of hard to pull, and you are cutting all the time, using your pocket knife. (George Kavanna, 1999)

Text Box 4: Butchering Caribou out on the Land

After a successful hunt, elders Lena Kamoayok, Mary Kaniak, and Ella Panegyuk (*Umingmaktuuk*) and Annie Komak and Bessie Omilgoitok (*Ikaluktuuttiak*) attend to the finer details of butchering. Between laughter and smiles, the women tell stories. They show how to dry and care for the meat by cooling it, identifying different cuts, using the meat, preparing the skin, cleaning and drying the sinew, and recognizing bad or pussy meat. They tell the young women about how times have changed now that people do not have to depend upon hunting for survival.

Mary Kaniak says that sometimes we waited a long time because of bad weather and high winds and in the winter during storms. We would lose a lot of weight just waiting. That is how we lived back then.

Part of surviving on the land is preparing caribou for everybody in the community to enjoy. Using an ulu, the women slice the meat into wedges. Thick pieces are for the elders since it is easier for them to chew slightly raw meat. Others are thin and dry as the younger people generally prefer. The young women must understand the importance of sharing in Inuit culture, the elders say. They must think of everybody when preparing food.

-- Researchers' Notes, Hiukkittaak Elder-Youth Camp, 1998

Butchering, Preparing, and Cooking

It takes patience and practice to learn how to cut up the meat because certain techniques must be used depending on how the meat is going to be prepared. In the early spring and fall, *mikpu* (drymeat) is popular. In the summer, caribou meat should be cooked as soon as possible because there are lots of flies (*niviuvak)*. Boiled caribou and caribou stew are always popular at this time.

Caribou meat keeps you warm in the winter. In the cooler temperatures of late fall and winter, people like to eat *quaq* (frozen raw caribou) or *uuyuq* (boiled caribou). *Quaq* (frozen caribou meat) is cut into various sized pieces and eaten frozen. An axe is used to cut off pieces of meat that are then cut into bite-sized pieces with an *ulu* (knife shaped like a half-moon) or knife. For *uuyuq* (boiled caribou), the meat is cut into chunks that are thicker than those for *mipku* (drymeat) and the marrow bones are often attached. This way of preparing caribou makes the meat tender and easy to eat. The *patiq* (marrow) from the leg bones, a delicacy, is eaten using a long and skinny *haulluut* (tool) made from either a rib or the bone in the lower foreleg of a caribou. Meat from a large bull might feed about 30 to 40 people.

> You cannot carry the whole [caribou] to the boat so you have to cut it up. [In the winter], when we take it home we cut it up . . . but when you are out, you do not cut it up, otherwise it might fall all over [off the sled]. . . Sometimes I cut it up. It all depends on how cold you are. If you want to take it home, the whole thing, you can warm up and cut it up later on. (Doris Kingnektak, 1998)

> It is really hot right now [July] and if [my husband] goes hunting and if he gets caribou then we put it in the freezer right now or just if we make drymeat. We . . . check it every couple of hours, turn it over and make sure there are no flies. (Anonymous C, 1998)

Drymeat (*mipku*) continues to be a favourite way to prepare caribou regardless of the time of year. Making *mipku* in the fall is an important way to stock up on caribou for the winter. *Mipku* is made from caribou that is cut into thin slabs, strips and pieces that are

Scenes from butchering, preparing, cooking, and drying caribou meat.

laid out on a clean rock, bushes, or on racks to dry in the sunlight and wind. The ribcage is dried too. When you dry meat out on the land, it takes on the flavour of the fresh air and smells of the tundra and will therefore taste different depending on where it has been dried. Once the *mipku* dries, the surface becomes hard and people said that it becomes impossible for flies to lay their eggs on top.

> If it were really still cold . . . I would make it really thin. Like if we get caribou early in the spring when it is still cold out . . . you need your mitts on all the time, you could make your drymeat thick. But on days like this, you need to make your drymeat really thin cause otherwise they get flies that make worms on them. That way you do not have worms on your meat when you make it into drymeat. That way you have meat all summer . . . you could have drymeat till the fall. So you got to be careful how you prepare your meat if you do not want it to go rotten. . . Old people . . . they have poor teeth and they need some soft meat to chew on. They are not young like us and they cannot chew really stiff, hard drymeat. So you do not just think of yourself when you are doing meat, you think of other people too. (Anonymous C, 1998)

> Like when it is still really cold and there is lots of water on the ice and there is snow all over. It is good if you can make drymeat then. . . . You got to check your drymeat every now and then. Just use a rock and scrape the fly eggs off or use an ulu or spoon to scrape it off. If somebody grabs a piece of meat you know they might have a worm without knowing it, so you got to be careful this time of year. Worms (*qupilrukhaq*) will not hurt you. They just do not taste too good. (Anonymous C, 1998)

Caribou soup is the broth in which the boiled meat has been cooked. Today, it is commonly made with an assortment of rice, and vegetables. Seasonings and soup mixes are also used, especially if there is not much caribou fat to provide flavour. In the olden days as well as today, people make thick and tasty *qayuq* (blood soup) to make people strong and warm.

In the olden days, people used a *kikhuk* (fireplace made of rocks) to cook caribou meat. To make a *kikhuk*, two rocks are placed side-by-side about 15-20 cm apart and one rock is propped upwards at the back. Next, a large flat slab of rock is put atop these three rocks so the structure looks like a flattop roof on a house. The meat is placed atop this flat rock

and cooked by a fire underneath. The fire burns willows, heather, driftwood, and whatever else is found easily on the tundra. Some places on the land are known for having large flat rocks that are good for making *kikhuk*. Today, *kikhuk* are used as a special treat when camping. The heart and liver are especially delicious when cooked using a *kikhuk*.

> Sometimes I have a craving for cached meat. I would think about the liver . . .Every time I get hungry when I was butchering caribou I would make a fire and fry liver on a pan. (Nellie Hikok, 1999)

5.3.5 Taste

The flavour of caribou changes throughout the year, depending on what they have been eating, the level and kind of their activity, the amount of fat, and the part of the animal. Caribou taste like lichen or trees when they first arrive in the Bathurst Inlet area in the spring.

> They winter down there [south] in the treeline, and get all spruced up. They taste like spruce when they start to come back north again, spring time. Taste the trees. You shoot caribou, is like shooting down a tree and eating it, it tastes like spruce. . . They would migrate from south heading back north again and they taste like spruce tree. And [the meat] is brittle. It is healthy alright, but it is really easy to dry. After you cook it, you leave it sitting down for a little while, it tends to get dry really quick. . . As they stay up north or stay up out of the trees a little longer they, their meat starts to change a little and after a while the taste is almost all gone already, totally different meat, just about, they spend the summer up north, feeding on lichen or willow up there, willows or baby birch or grasses up north. (Bobby Algona, 1999)

As the spring progresses and the snow melts, caribou start feeding on the fresh tundra. At this time, the caribou start to taste more like willows and birch. During the rutting time, the bull caribou meat tastes *qiurhungi* (musky, gamey, or like “soap”, “onions”, “garlic”, or “mayonnaise”). The bulls have tough meat after the rut, not tender like the young calves or female caribou.

> We hardly hunt bulls in the fall, mostly cows, young caribou. Whatever they can get. The bulls have a different flavour to them when they are rutting in the fall, but the other caribou we would hunt. Our ancestors ate the bull caribou, either cooked or frozen, caught in the fall. They did not mind the different flavour. Nowadays they are not eaten because of the flavour. (Frank Analok, 1998)

> Taste good all year. In the fall, the bulls are kind of strong, strong meat. Strong, bull caribou have strong taste like mayonnaise. (Doris Kingnektak, 1998)

> A few years back, I took a sports hunter out. He wanted me to cut a piece of [bull] back strap for him, so I cut him one. He wanted little bit fried, although I told him it was rutting season. . . So I fried some for him. He said "Mmm, lots of garlic in it." I told him they are rutting that is why the meat gets really sweet. He said "Anyway, I will take some home with me. Can you pack the other side for me?" . . . I could not even have any. It was too strong for me. . . They are really fat all right, you are skinning them, big bull. (George Kavanna, 1999)

Texture is also part of how the meat tastes. Many elders prefer the young and tender calf meat over the tougher bull meat. Some younger people do not like to eat the calves, even though they are tender, because they feel sorry for them. Some kids are "grossed out" by the sight of blood.

> [Inuit] like to eat tender meat. The unborn calves and seal pups are tender when they are cooked. They would eat the unborn calves because they are tender. (Annie Kaosoni, 1998)

> In the olden days, when there was a shortage of food, people would kill a pregnant cow. They would eat the unborn calf as well. They would skin and cook the meat. (Frank Analok, 1998)

> People eat the unborn calf, same as baby seals. It is the source of food. (Charlie Keyok, 1998)

> [The unborn calf] is a delicacy. (Naikak Hakongak, 1998)

William Koaha Kakolak, Umingmaktuuk, 2000.

5.3.6 Caribou *Pitquhiit* (Traditions, Customs) and *Maligaghat* (Rules)

Many *pitquhiit* (beliefs, traditions and customs) surrounding caribou ought to be followed. If you do not follow the *pitquhiit*, elders say that you will not be a good hunter, or even that you will not be a good person. Many *pitquhiit* are also *maligaghat* (rules) in that they are absolutely necessary for the good of everybody.

One *pitquhiq* is to make caribou death as painless as possible.

> Do not let the caribou suffer . . . you shoot it. You just do not let it run off. You chase after it until you shoot it down and never let it go. That is what we do. Even if it is 10 miles away, we still go after it. Make sure that it is not just left to suffer and die somewhere. Like my brother when he goes hunting . . . He makes sure if he wounds a caribou, he gets it. . . Except only if he does not have enough gas or bullets too. Then you do not have a choice and you have to make your way home too. . . If we see a wounded caribou just hobbling or just laying there without moving except just to look around, we shoot it cause we know it is sick or been wounded . . .We would rather shoot it than let it suffer. (Anonymous C, 1998)

> We usually catch the caribou, shoot the caribou. We go to it and if it is still alive, we kill it right away. People used to say, "do not let the animal suffer" so we have to kill it right away when we get to it. . . When the caribou is still alive, you grab the antler and have a knife and poke it right on the back of the neck. It dies right away. Poke in the brain, here behind the neck. (Nancy Haniliak, 1998)

A second *pitquhiq* is that a hunter must share his or her caribou harvest.

> [If somebody does not share their meat, people] would probably say 'that person cannot even share his meat!' They would say that that person should not even go out hunting since he cannot share or whatever. Cause everybody shares. They share their meat. (Nancy Haniliak, 1998)

> We send the meat out to family all the time for the ones that do not really go out and have drymeat to eat. . . It is not only for us that we shoot the caribou. We always give out drymeat, pack it up and send it out and call to make sure somebody gets their meat before it gets rotten. So it is not only for us that we hunt caribou to make drymeat. It is for family all over [the region]. . . [If you do not share your meat] nobody is going to like you. You are so greedy, get out of my cabin! You are not [going] to have any of mine . . . I do not want to know you. (Anonymous C, 1998)

Another *pitquhiq* is not to be too fussy when you are hunting.

> If you ignore the first caribou you see and you do not shoot it then you are not going to have good luck after that. You should not be choosy when you are out caribou hunting. That is one thing that I have heard. . . The story I told earlier was that you are not supposed to just bypass the first caribou you see hoping to see a bigger or better one or a bigger one. I just bypassed that one caribou and I said we might see more today. Sure enough we did not see any more caribou all day long so it is. Some things are true. Especially when the caribou are not plentiful then you try not to ignore the first you see. If you really want it, you will get it. Otherwise if you just ignore it, you won't see any more and we did not see any more. (Naikak Hakongak, 1998)

Respecting caribou and being a modest hunter are important.

> It is the same with all the other animals, they can hear you talking no matter how many miles away or you are in the house. All animals, they listen to you talking, they hear you talking. I have heard from the old folks

> that one person was saying how great a hunter he was, very great hunter. He really knows how to hunt, bragging, bragging all the time, and then one day he said he was really sure of himself, he was going to get an animal, he was going to shoot a caribou, he said "I am gonna go get a caribou from over there." So he went over there, hunted all over the place, cannot find anything. . .Came back home with nothing. And people kept telling him that he should not brag about these things, otherwise the animals going to hear you and they know, know exactly where you want to go. They are going to move away from you and nothing is going to be there. Everything is going to hide from that area. (Bobby Algona, 1999)

> I can remember one time my mom saying when you catch a pregnant cow in the spring you are supposed to take the foetus out and put snow in it's mouth as water for the after life. Give it snow, put snow in its mouth for its first taste of water or something fresh other than mothers milk. Supposed to give you good hunting luck too. Supposed to be able to always have good luck after that. (Naikak Hakongak, 1998)

Other *pitquhiit* are to do with hunting luck.

> I believe a lot of superstitions about caribou, like for boys there are some certain rules that you could not do anything to the girls, tease the girls, fight the girls or whatever, fight with the girls. In order to be a good hunter, you do not tease your sisters or your younger siblings. Do not fight with them, otherwise if you do you would have a hard time hunting, if you go out hunting. (Bobby Algona, 1999)

Some *pitquhiit* seem to have been started in order to explain supernatural or strange events while other *pitquhiit* appear to give hope. During traditional times, baby boys were valued for their strength and ability to hunt when they grew up. Families hoped for boys and were considered lucky if a baby boy was born. Baby girls were seen as a burden when wildlife was scarce or weather was especially harsh.

Many *pitquhiit* surround childbirth. One way for a woman to have a baby boy is for her to eat tendons from the leg of a bull.

> My grandpa used to tell me to have the *nukik* [tendons] of the bull. I was saying "no way I do not want any of those". . . But he was telling me that if I have those *nukiks* from the certain part of the male caribou, . . . I

> would have only boys. He was telling me that he wanted me to have them. I told him no, it doesn't look too good, I do not want any of it. So he did not force me. . But it is because in the olden days the boys were more useful than the girls. But nowadays I do not know if it is still the same. But to me it is okay. I do not mind having girls. I do not mind having just one boy and three or four girls it won't bother me. But I guess long ago after some people use to have baby girls, I heard they just left them there to die. To them they were more work, just feed them until they get old enough and take care of them until they get old enough to go off with a man, which was also work for the old people long ago. But I guess it is okay now. (Anonymous C, 1998)

A woman of childbearing age must not eat the meat on top of the caribou snout or she will have difficulty breathing during childbirth.

> I am not passing that [not eating the meat on the caribou snout] on to my daughter too because if she grows older and if she likes to eat it then I'll just let her have it. I liked it and I use to eat it and I never knew about the story. The story was when you are pregnant you cannot have those because when you are about to deliver your baby you are going to breathe really hard and have a hard time breathing. I never heard of that and it never bothered me when I was having a baby or when I had my babies so I was okay. I guess as long as you do not know what the story is, then you should be okay. (Anonymous C, 1998)

There are differences in the parts of caribou that boys and girls should eat.

> I have heard a lot of things that, because you are a boy sometimes you eat the certain parts of the caribou. Or you are almost unlimited to what you can eat of the caribou. Whereas little girls are little more restricted to some parts of the animal. Like cartilage or what else is there, stomach contents I think is one of them. . .There are some things that girls could eat, a lot of superstitions. (Bobby Algona, 1999)

With modern influences, many younger Qitirmiut have not heard, do not believe, or fail to follow *pitquhiit*. This may be because of a changing relationship between Qitirmiut and caribou. Alternatively, it may be that some of these traditional *pitquhiit* have not been passed down or recorded and so they have been lost to the culture. That young people do not speak the same language as elders or live in the "old way" is also a factor.

I believe that [you must not brag about being a good hunter]. Even though being the younger generation, I do not want to take chances. It is folklore, but I am not going to muddle with it. (Bobby Algona, 1999)

George Haniliak Kapolak leads the way home after a day of hunting near Fishing Creek, south of Kingauk.

5.4 Numbers and Kinds of Caribou

Qitirmiut hunt several different 'kinds' of caribou. One herd, what scientists call the "Bathurst" and "Queen Maud" caribou, is collectively known as *Ahiarmiut* or the "Mainland" or "Barrenland" caribou herd since most elders and hunters do not distinguish between different herds of *Ahiarmiut*.

Some *Ahiarmiut* caribou spend the winter south of the treeline in Indian lands. Come spring, the caribou return to Inuit land, northwards through Contwoyto Lake, and to the Bathurst Inlet area. Another herd, the *Kiilliniq* ("Victoria Island") caribou, spends the winters on the mainland and migrates to Victoria Island for the summers. *Ahiarmiut* caribou are larger and darker than the smaller and whiter *Kiilliniq* caribou.

> They are big caribou, even the legs look so thick on the caribou from the south that are from the mainland. Because they eat moss, berry leaves, willows on the mainland during the winter. There probably is not too much for them to eat here on Victoria Island (*Kiilliniq*), but there is more grass and vegetation growing nowadays. They would return to the mainland where there is more vegetation for them to eat, a mixture of vegetation, there is all kinds of vegetation that grows down there, they would return to where there is more for them to eat. (Moses Koihok, 1999)

Some people have heard about and occasionally seen very small caribou that look like yearlings in size although they are adults. Caribou from this herd are known to live in the northern parts and northwards of *Kiilliniq* (Victoria Island). These are known as Peary caribou and are not discussed in this chronicle.

Qitirmiut from *Hanigakhik* (Brown Sound*), Ikaluktuuttiak* (Cambridge Bay), *Kingauk* (Bathurst Inlet), and *Umingmaktuuk* (Bay Chimo) harvest the *Kiilliniq* caribou during the fall, winter, and spring. People from *Hanigakhik, Kingauk*, and *Umingmaktuuk* hunt the *Ahiarmiut* caribou during the spring, summer, and fall seasons. In the summer and fall, when it is easy to travel from Victoria Island to the mainland, Qitirmiut from

Ikaluktuuttiak also harvest the *Ahiarmiut* caribou although there are lower numbers at these times of the year.

Since the 1970s, the ranges of the *Ahiarmiut* and *Kiilliniq* caribou herds have been overlapping more than usual, especially in the areas between *Kingauk* (Bathurst Inlet) and *Umingmaktuuk* (Bay Chimo). The *Ahiarmiut* caribou have been moving further northwards during the summer while the *Kiilliniq caribou* have been moving further southwards during the winter.

> During the spring, I have noticed some barrenland caribou up in Victoria Island, and heading to Victoria Island from the mainland. I guess maybe a mixed breed, I do not know. (George Kavanna, 1998)

Since the range has moved a little every year, caribou from different herds have interacted more than before. In the last ten to fifteen years, migration routes of the *Ahiarmiut* and *Kiilliniq* caribou have come together more frequently and individual caribou from the different herds have started to actually migrate jointly. Individuals or small groups will mingle during this time and create their own small herd before joining the larger herd.

One Qitirmiut theory for the creation of caribou herds is that new caribou arise as a product of the mixing of two other herds and that different herds have always overlapped and intermingled. Indeed, some individuals from one herd might spend a year or two with another herd before coming back to his or her original herd.

A few people think that another herd has emerged that is a mix of the *Ahiarmiut* and *Kiilliniq* herds. The new herd, also known has the Queen Maud herd, has been coined by some locals as the "Heinz 57" herd because it is a mixture of the *Kiilliniq* and Bathurst herds. Some *Ahiarmiut* caribou appear not to return south with the rest of the herd which make it seem like the herd is larger. Instead, they stay around the Bathurst Inlet region. Some caribou stay around all year and form what is known to caribou scientists as the Queen Maud herd.

Since most people do not distinguish between types of *Ahiarmiut* caribou, an Inuinnaqtun term for what is known to scientists as the Queen Maud herd has not yet gained popularity. Only one interviewee spoke about the differences between the herds, including the Queen Maud caribou.

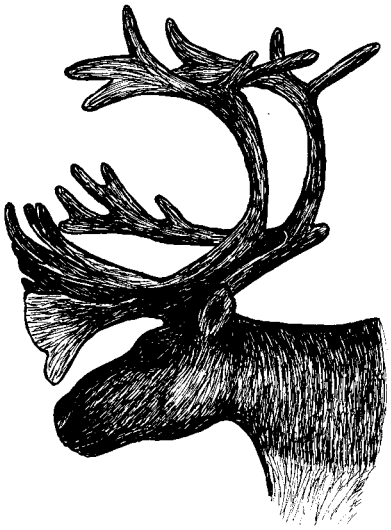
> Over in the mainland the caribou are much larger and darker the ones from Victoria Island. *Kiilliniq* caribou, the caribou are much smaller from the mainland caribou. . .I have seen quite a bit of caribou in the Queen Maud Gulf, and the Bathurst Inlet (*Kingauk*) caribou. . . It is on the north side of upper Garry Lake where I have seen caribou. They are much bigger than the caribou from the upper mainland, say from the Queen Maud Gulf area. The caribou down here in Garry Lake are a lot bigger than the Queen Maud Gulf caribou and the Victoria Island caribou. I noticed they are a little bit bigger, way bigger than the Victoria Island caribou. I noticed they are much darker, darker and bigger. Those caribou I really like the meat (*niqi)* and I like the skin. They are really good for clothing, say for pants (*qarliik),* inner parkas, (*ilupaaq)* or mitts (*pualuk)* or outer parkas (*qulittaq).* I notice the caribou are much darker colour, south, upper from Garry Lakes than the Queen Maud Gulf caribou and the Victoria Island. I have seen both kinds, the island caribou and the barren land caribou. (George Kavanna, 1998)

Mixing of *Ahiarmiut* and *Kiilliniq* herds has become a common sight out on hunting trips. The overlap is related to the warmer weather experienced in the 1990s that has meant caribou can find plants to eat on the tundra that are of better quality and support more individuals.

> Do you know how the *Kiilliniq* caribou came to be? The Bathurst caribou met up with the Peary caribou. Might not be, but that is what I think. (Naikak Hakongak, 2000)

> The caribou from the Bay Chimo and Bathurst Inlet area usually get together with those from the east and south. They would gather in one area. That is how the herd would grow. . . The caribou would gather in the Bathurst Inlet area. They would get together with other herds from other areas. They would get together in that area during the spring. That is what they do. (Archie Komak, 1998)

The caribou were mixed. They were mixed, few island caribou, really small and mainland caribou. Small, just a few. I guess they come all the way down. We noticed, my father in-law, right away, he said he saw some Victoria Island (*Kiilliniq*) caribou. (George Kavanna, 1999)



Bella Kapolak

Bella Kapolak, Kingauk, 2000.

The mainland caribou are probably more abundant [than the *Kiilliniq* caribou]. . . They are not all the same. You can tell by the meat as well. There is a difference in the fur. I have never seen a *Kiilliniq* caribou in the summer, only in the winter. They must be nice when their fur is thin in the summer. (Mabel Angulalik, 1998)

During our first few years it was hard to get caribou because there were not so many. Now [the Bathurst herd] is coming from [the mainland], coming to Cambridge Bay (Mackie Kaosoni, 1998)

There are more caribou too. Even on Victoria Island there are lots. They are returning to Victoria Island. The bull caribou nowadays look like the winter caribou. They are starting to catch them. (Mary Kaniak, 1998

5.4.1 Factors Influencing Caribou Numbers

The numbers in caribou herds appear to be forever changing. Some years, there seems to be lots of caribou whereas other years there are very few. Sometimes when there are fewer caribou, it is simply because their instinct led them on a different route. In other words, it is not that there are *actually* fewer caribou, only that they have decided to use migration routes which are farther away from those most familiar to locals (see Section 8.2).

> It seems that the white people think that the numbers are declining, from what I have heard that at meetings, but sometimes wildlife goes a different route. And because of that, the numbers seem to be smaller. (Jessie Hagialok, 1998)

> Sometimes the caribou would go elsewhere. Even though there are lots, sometimes there would be no caribou around. (Archie Komak, 1998)

In traditional times, the actual number of caribou was not as critical to Qitirmiut as whether the herd would migrate nearby or if there were any large changes in the population level. Today, the true number of caribou is important as well as the relative change in the population level in order to monitor change and manage wildlife.

Caribou populations may fluctuate because caribou suffer a population loss, but over time, populations remain generally constant. Several reasons for changes in population include human activity (hunting, feeding dogs, mineral exploration), predation, climate, the environment, migration shifts, and the interaction between these variables. The influence of climate is elaborated in Chapters 13 and 14, predators are the topic of Chapter 9, and migration shifts are discussed in Section 8.2. Thus, only human activity and climate are presented below.

Human Activity

> [My husband] was saying, "Gee I am catching caribou with babies in them. They will not have any baby caribou this summer." And his granny said, "Do not worry. You know there are lots. There are lots of other caribou. Probably lots of calves running around by now." . . . I guess she knows that there are probably hundreds and thousands of caribou around and killing ten or fifteen with babies inside will not affect the population. But I know there is always a lot of other animals chasing after the little caribou and eating them also after they are born. (Anonymous C, 1998)

> People have asked that no mining take place near calving grounds because they are afraid it would diminish the number of caribou. (Paul Omilgoitok, 1998)

Climate

> When the weather goes below freezing, some calves would freeze to death and that would lessen the number of caribou. (Paul Omilgoitok, 1998)

> The snow was covered in ice and that is how the numbers [of caribou] dropped. The number of musk ox went down too. The land was covered in sleet and there was no place for them to eat. This was by Wellington Bay. . . . I remember it well, but I cannot remember what year. . . The snow was covered in ice. It had rained after a big snowfall. That is when some of the caribou had starved to death, but in another area of the land where it is not so rough, they were fine. Some areas were fine where it did not rain. There are not so many caribou around this area, but when it rained during the cold weather some caribou froze to death. I have seen that happen to a lot of caribou. There were musk ox frozen as well. There were a lot of dead caribou on an island. A lot of dead bulls. A lot of them had died at once. . . This was close to *Ungahitak.* (Archie Komak, 1998)

> [In the spring] when the snow is soft and deep, some of the caribou would get skinny. They would get skinny when there is too much soft snow during the spring. When that is how it is. Some of the caribou would be okay. (Archie Komak, 1998)

> They would come just after freeze up, but some would fall through the ice and drown. Caribou are not like people and do not wait until it is solid and would fall through ice. . . (George Kuptana, 1998)

If born too early, many calves do not survive. Drastic changes in weather conditions can cause calves to freeze and therefore decrease the numbers of caribou.

5.4.2 Changes in Numbers

The question of whether caribou numbers are increasing or decreasing is not easy to answer. It depends on people's perception of change as well as references to particular time frames or seasons. Some people believe that the population is generally increasing. At the same time, many others say that there are increases in certain types of caribou fatalities, most of which are directly linked to climatic influences (as detailed in Chapters 13 and 14).

In the 1990s, warmer temperatures arriving earlier in the spring and during freeze-up led to more caribou drownings, suffocations, and starvations. While skidooing, Qitirmiut noticed hundreds of caribou frozen along the shore, with their antlers sticking out of the ice like a forest. Caribou fall through the ice in the fall when the temperatures are not cold enough to form a safe ice surface on top of which caribou can cross. In the spring, some caribou cross through water in open cracks in the ice and cannot get out.

In the fall, warmer temperatures combined with sporadic freeze-thaw cycles and freezing rain can cause ice to form a layer over the vegetation. This layer then locks lichen into the ice and makes it impossible for caribou to dig through in order to find nourishing tundra plants.

> [It was] raining heavily. That is what happened once in Bay Chimo, it must have been 1987. There was hardly any caribou to eat that time because of the ice on the snow. It was really slippery. (Charlie Keyok 1998)

> The snow was covered in ice. It had rained after a big snowfall. That is when some of the caribou had starved to death. (Archie Komak 1998)

> [The caribou] had starved to death because of sleet. They had nowhere to eat. The ice was too thick. . . They could not dig through it. (Moses Koihok 1998)

While some Qitirmiut report increasing numbers of caribou and others say that the populations are in decline, most people point out that nothing is a simple equation. The interconnectedness and complexity in ecological relationships suggests that many factors are influencing populations as various scales.

Decreasing Numbers

> We have seen large herds migrating, but nowadays we do not see as many so I do not know. The bulls would be together on their own path when everything goes well. (Mary Kaniak, 1998)

> Usually there are about 2000 caribou. . . It is slowing down . . .these days. Maybe a change of climate of going further to the east. Exploration? I do not know, it is hard to say. (Allen Kapolak, 1998)

> There were no caribou at all in this area [*Ikaluktuuttiak*]. . . People went to the mainland to hunt caribou during the winter because there were none here. . . in the 1970s. (Bessie Angulalik, 1998)

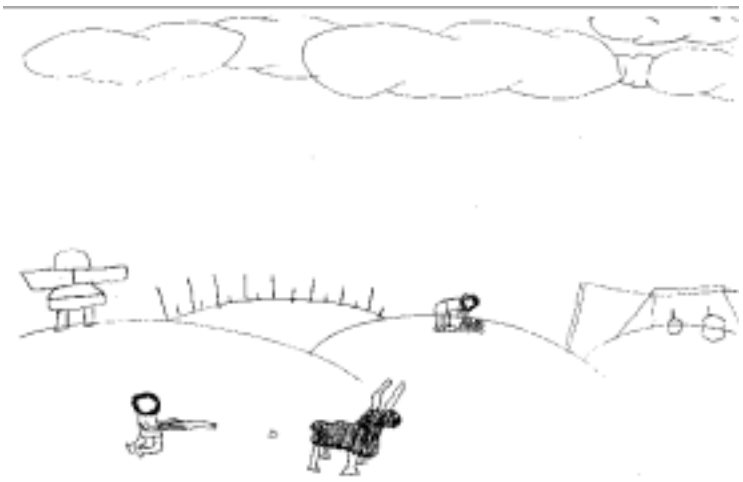
> There are a lot of *Kiilliniq caribou*. During the winter, the number seems lower because they winter inland. (Archie Komak, 1998)

> It seems that the numbers in the Bathurst herd are declining. I do not know why. But here in *Kingauk* (Bathurst Inlet), there are always a lot of caribou in the springtime. Lots in number. A couple of years ago there seemed to be lots in number as they were passing through. (Jessie Hagialok, 1998)

This year there were hardly any [caribou]. This year, this spring, [there have been] hardly any caribou since April. . . Less caribou compared to last year. Like the caribou never came from south. . . There were always caribou around in the springtime [in other years]. Coming from south. (Doris Kingnektak, 1998)

There are less [caribou] now. There are never as many as there used to be. They probably walk the other way. . . There is less that comes around. Even though they are high in numbers elsewhere. (Jessie Hagialok, 1998)

Everything happens naturally. Fish and caribou existence is always shifting. (Paul Omilgoitok, 1998) Yeah. Everything in the environment happens naturally to wildlife. It is not the fault of the people. (Bessie Omilgoitok, 1998)



Artist Unknown, Ikaluktuuttiak

Increasing Numbers

It has changed. There are more animals now during the spring because the [Bathurst] caribou would come across from the mainland like they used to a long time ago. (Mackie Kaosoni, 1998)

A long time ago, it seemed like the [*Kiilliniq*] caribou had vanished. There was no caribou at all. They were in abundance before they completely

> disappeared. For how many years, I am not sure. They started catching the odd caribou. Now they are plentiful again. I remember when caribou started coming around again. Today, they even come close to town (Cambridge Bay). (Frank Analok, 1998)

> There probably are more [caribou] nowadays. There were not any caribou around Pond Inlet in the past, when I used to travel for meetings. Along those areas by Igloolik and the east, the Islands and Iqaluit. Now the *Kiilliniq caribou* are starting to show up in those areas. Sometimes they can be seen on airport runways in the eastern communities. . . (Moses Koihok, 1998)

5.4.3 The Return of the Kiilliniq Caribou

Especially since the 1970s, the *Kiilliniq* caribou have crossed to the mainland for the winter and moved as far south as *Umingmaktuuk* (refer to Map 1). The herd appears to move further south each year.

> There was a time when there were no caribou at all. There were a lot of caribou then later on there was less . . . Sometimes they would catch a lot of caribou and sometimes less. When I became an adult, I think after we had children . . . That was before the *Kiilliniq* caribou started crossing. We came back here (*Umingmaktuuk*) in the 1970s. They returned like they used to in the past. They are always around now. It is that way now except the white caribou are coming too, the smaller ones. The mainland caribou are darker and bigger. They come down like they used to in the past. (George Kuptana, 1998)

> This was how it was told. There was absolutely no caribou on [Victoria] Island. I know they have returned like they did in the past. (George Kuptana, 1998)

> I remember a long time ago when there were less caribou and musk-ox. When the caribou numbers were going up in the past, about the same time the white men started coming around . . . This was quite some time ago; the caribou numbers were going up after one winter. (Archie Komak, 1998)

> [Caribou have known to cross ice] for as long as they have been around. Before we were even born, they have always travelled to the Mainland then back. They would head back to Victoria Island in April and May. They would stay on the Island during the spring thaw. . . The *Kiilliniq* caribou would go to Bay Chimo, going through *Iqalulialuk* [Island]. The

> mainland caribou and *Kiilliniq caribou* would sometimes get together. . . Caribou would come from different areas and gather. They would go down to the shoreline from the west. Caribou would come and go from all directions, to Igloolik and other settlements like Hall Beach, Rankin Inlet. Caribou would migrate in the winter. They would winter there. They would go and winter in the east, part of the Mainland. They do not always stay in one area. They would come from all directions and mix sometimes. (Moses Koihok, 1998)

> A long time ago, people would travel to [Victoria] Island [from the mainland] when there was no caribou. The caribou would not come across. Must be close to a hundred, the number of caribou started coming around. I am getting old now and the caribou are showing again. My father-in-law used to tell me that there used to be a lot of caribou on the Island and they would hunt with a bow and arrow. They did not have rifles then, when I was born, when I was just a child. . .In the past, when the caribou were travelling across from the Island, when it is just freezing up between the Island and the mainland, the ice broke and the caribou fell in. That was what Quighuk used to say. . . Sometimes the ice would break up again after freeze up. . . (George Kuptana, 1998)

> In the past there were hardly any caribou. The caribou started coming around since we have been in Bay Chimo (*Umingmaktuuk*). There are usually caribou at *Tahikaffaaluk*, on the other side of Bay Chimo. . . There were less probably in 1978. There were a lot of seals though. (Charlie Keyok, 1998)

5.5 Distribution, Movements and Migrations

Caribou are always on the move: their need to move is as basic as their need to eat, drink, and mate. There is a certain pattern of change to their migration routes. One reason for these changes is that caribou shift their migration routes once they "eat up" most of the tundra along their traditional routes. Another reason is that caribou trample and eat tundra in one area so that soon they have to look to other regions for migration and calving. Bugs, wind, heat, and the weather also play a role in where caribou migrate.

Qitirmiut understanding of distribution and movements, illustrated in Map 4, comes from observing caribou throughout the seasons and over several years. While elders and hunters are on the land, they are always watching for caribou and reporting their

sightings. In this way, word of the where the caribou can be found spreads quickly and informs hunters.

Caribou are found “everywhere”, “anywhere” and “all over” the tundra. Caribou are not fussy about where they are although on a small scale caribou have preferences for certain areas, for example, where the tundra vegetation is especially healthy or green. On a large scale, caribou are found throughout the land and in many kinds of landscapes. Taking this view, there are predictable movements of caribou as they migrate northwards in the spring and southwards in the fall.

> They do not always go in one direction; they are all over the land around here and here. The land is full of caribou. They would walk in all directions. (May Algona, 1999)

> I do not know exactly what route they would take going north. When it is hot out, they would walk in any direction. They would go over the rough areas, too, heading north. Going south it was like they travelled without straying. . . It seemed like they would do anything heading north. It was hot outside, that is why. (Nellie Hikok, 1999)

> Even when they are walking slowly, they would reach their destination. I have seen them. Like they have always done, they walk wherever they want to walk. . . They would walk all over the land. There is no need to write it down. (John Akana, 1998)

> The caribou would travel in one direction, going south, towards the centre of the mainland. They would head south in the fall. When the weather gets warmer in the spring, they would head up from the south. They would come towards the ocean. That is the way the caribou travel. . . Their ways are not all the same (Archie Komak, 1998)

> Around the middle of June, we saw a big herd of caribou around Bay Chimo. The whole area was just white and you could see them for miles. Bathurst caribou. That was seven years ago. You could see caribou along the river walking all day. You could see, even after 12 hours, the caribou still moving. [It was] just like a waterfall going down a hill. You could see white all day. You could walk in between them and they would still be walking. There were wolves among them too. (George Panegyuk, 1997)

Map 4: Caribou Migrations ***(Please see "Project Maps" in seperate pdf)***

Year after year, millions of caribou hooves have trampled the tundra and gravel ridges and carved deep trails in their path. After the caribou have migrated, their presence continues to be felt along these trails, in the bits of fur that have settled on the land and rivers, or the caribou bones remaining from wolf kills. Broken branches that have been trampled or half-eaten and the piles of caribou pellets tossed about like spent bullets are also evidence of migrating caribou.[9]

> Even before the days that we were born, the caribou would take those same routes. That is how the land gets worn. The trails would get wide. They would make trails along the rivers, by the mouths of the rivers and the trails would get wide and deep over the years. (Moses Koihok, 1998)

> The trail gets thick sometimes on the land, when there are a lot of caribou on one trail. They would make a large trail. Their trail gets wide where there are a lot of caribou. (Charlie Keyok, 1999)

> You can tell where they have tread when there are so many of them. (Mabel Angulalik, 1998)

> The caribou would take the same routes because they have always travelled those routes. There are paths along the mouths of rivers. You can tell where the caribou have tread. There are trails because a lot of caribou would take the same route. . . There would be trails by the lakes, and along the mouth of the river. The trails look like they have been drawn in when you are flying over the lakes. There are a lot of trails that look like they have been drawn. (Moses Koihok, 1998)

> When the caribou are migrating, they would go in one direction. Going down that way or coming up, they travel any route. That is what the animals do. . . Their routes are not hard to spot. Whatever route they have taken the year before they use again. That is what they usually do. They usually go where they can find food. . . (Archie Komak 1998)

5.5.1 Migrations

A caribou calf is able to walk and join the other caribou within an hour of being born. Mother and calf move short distances around the calving area, eating and getting strong

[9] In slang, Qitirmiut call these caribou feces or pellets "'bou berries".

before the southward migration begins. In August, small herds of caribou consisting of cows and calves, yearlings, and a bull or two begin the trek. The bulls follow within the next few weeks. After the rut is over in late October, the *Ahiarmiut* caribou congregate into larger herds and continue the migration towards the treeline for the winter months. In the early spring, after several months foraging in the trees, the cows lead the herd northwards towards the calving grounds where the year begins again. In contrast, the *Kiilliniq* caribou have their calving grounds in the northern regions of *Kiilliniq* (Victoria Island) and migrate to the mainland for the winter months.

The caribou migration cycle begins with the spring migration northwards (*atiqtat*) to the summer grounds (*auqiviit*) or ocean, and continues with the fall migration southwards (*kilumuuqtut*) and inland to the winter grounds (*ukiiviit*). In the following sections, this cycle is divided by herd types.

Atiqtat *(Spring Migration)*

> When the caribou are heading north in the spring, the *kanngalat*, there is no beginning and no end. Even though they are quite a ways they would get close sometimes. (Nellie Hikok, 1999)

> Sometimes they would calve during their migration. (Moses Koihok 1998)

Ahiarmiut Caribou

> The cows with or without calves come [from the inland] first. The bulls come from the east in the spring following the cows ... The bulls and cows would head north in the summer then head south together. . . When they are calving, they head north. (John Akana, 1998)

> In March there were lots of caribou in *Iqallulialuq* [Island]. Going across that way [west]. Lots of caribou tracks in March. Barrenland caribou moving back north. We see caribou right up here [*Hanigakhik* (Brown Sound)] in the fall time. Cows and bulls, barrenland. . .Probably north. They come from Bay Chimo (*Umingmaktuuk*) to Brown Sound (*Hanigakhik*). They cross from the east ... Probably in April. (Doris Kingnektak, 1998)

Usually the cows come first and the bulls come later. . . There are more cows than what I have seen. Maybe the bulls take a different route. Take a detour. (Allen Kapolak, 1998)

Here at Pellatt Lake, I see lots of caribou going through there during the spring and fall. Just passing through. Maybe a couple of days, not very long though. Sometimes there are millions. When you go to sleep there are millions behind the cabin and next day, when you wake up, there is nothing. It depends on what they want to eat. (Anonymous C, 1998)

[When they are migrating through *Kingauk*/Bathurst Inlet], caribou take a month to pass, maybe, or something like that. May and June. (Martha Akoluk, 1998)

Every spring, what they call *utiqtun,* they would come down to the ocean. They probably came from the wooded areas from far ... (Nellie Hikok, 1999)

Kiilliniq Caribou

During the spring, [caribou] would cross [from Arctic Sound and Rideout Island towards Elu Inlet then across to Cambridge Bay], heading up to Victoria Island . . The migration routes, they have not changed. Before spring they would head up here passing through Elu Inlet. (Archie Komak, 1998)

[The *Kiilliniq* caribou] leave the Brown Sound area in April. There are hardly any more caribou. They go back north. They come, stay there all winter and head north again. Barrenland caribou, they come here too. (Doris Kingnektak, 1998)

Last spring we saw quite a few in April. In April 1997 we were camping and we saw lots of caribou migrating ... Anywhere from on the mainland. . . They sort of make a bee-line straight northwards. . . I think in the early 1980s we used to have to go about 30 miles west of *Ikaluktuuttiak* to get caribou in the fall and in the spring, and then as the 80's started to close off, the caribou seemed to come closer towards town . . .When you think about it, they go along at a certain length of an area on the way up and the next year they will move over a little bit. . . (Naikak Hakongak, 1998)

The cows can be seen in April or May, coming across from the mainland ... During the month of May, the *Kiilliniq caribou* usually head to the calving grounds. (Frank Analok, 1998)

Kilumuuqtut *(Fall Migration)*

Ahiarmiut Caribou

> When the antlers have grown on the bulls, they would gather in one place. . . Near the end of October, around mid-October, they would get together. The bulls and cows would head south together. They would go right to the lakes, the bulls and cows, heading south. (Archie Komak, 1998)

> The yearlings and the young ones get fat so they could go further down inland. They feed when the rest of them are mating, the young ones, and the yearlings. (Annie Komak, 1998)

> Before August, after they have calved, they walk inland this way [inland to the south]. . . Some of them go this way [southeast or southwest] and others go inland. (John Akana, 1998)

> We first see the caribou coming north in March or April. . . March or April when they pass through Contwoyto Lake. That is where they used to live too. I have never seen any up here in Arctic Sound. I never go way up there. I might get lost! Too many hills! (Doris Kingnektak, 1998)

Kiilliniq Caribou

> In the fall time they head inland. When it starts to get cold, during freeze up, the *Kiilliniq caribou* will travel inland. During the spring thaw, they would come across from the mainland to calve and spend the summer close by the ocean ... When the caribou are migrating and get close to Cambridge Bay, (*Iqaluktuutiaq*) in the fall... When the caribou are close by during their migration from the west in the fall. From here near Prince Albert Sound (*Kangigyuk*) down from the west side going east, heading inland in the fall. They would travel by Cambridge Bay (*Ikaluktuuttiak*). (Frank Analok, 1998)

> In the fall they head inland, they would roam on the land during the winter. When the ocean is frozen they would cross from the mainland going back and forth ... Yes, the caribou never stay in one area, they roam, around. They are never in one area for long periods. They would travel their route. Sometimes it seems like there are no caribou at all, because they are constantly moving ... (Mabel Angulalik, 1998)

> This whole place [around *Hanigakhik* (Brown Sound)] had caribou all winter.. . . There is hardly any more caribou. They go back north. They come [to *Hanigakhik*], stay there all winter and head north again. *Kiilliniq* caribou, they come here. . . Heading north probably in April. Coming November 15th. I never go caribou hunting east of *Umingmaktuuk* (Bay Chimo). Only see caribou there, coming and going. (Doris Kingnektak, 1998)

5.5.2 Why Caribou Change their Movements and Migrations

There are many factors that are usually working together to influence the migration patterns of caribou. Some of these include the weather, wind, ice and snow conditions, the time of season, insects, and human activity. Caribou have a natural instinct driving them to migrate that is triggered by seasonal clues, like the length or heat of the day, or the thickness of the sea ice. Caribou must adapt their migrations to many changes in the climate and the terrain.

> [Migrations] change a lot, because they used to come right through here. West and more east now. They used to come right through Bathurst Inlet (*Kingauk*). (Martha Akoluk, 1998)

> He said that there used to be thousands and thousands of caribou at Elliot Point. Maybe for the whole day, just passing through. But this time, he said there are none. . .Not thousands. Behind the cabin on Elliot Point, he said that this year they are not coming through there. They were not really coming through there last year also. I guess they change their route, which depends on which way they want to go. We cannot tell them where to go! (Anonymous C, 1998)

> Sometimes there are no caribou around because they are always moving. . . They never stay in one area. They are constantly walking . . . (Paul Omilgoitok, 1998)

> During the winter, sometimes caribou would not come this far up so we would stay at Beechey Lake (*Hanningayuk*). Sometimes they would catch a lot of caribou for the winter when there was plenty to catch during freeze-up. When the caribou were inland during the winter, there would be none around. That is how it used to be in the past. (Mary Kaniak, 1998)

> I remember during the winter there would never be any caribou at all. Now they are always around. (Mary Kaniak, 1998)

Whether or not locals said that caribou change their migration routes partly depended on what "change" meant to them. That is, everybody has a different understanding of how change is defined. Some elders said that the migration routes have always been the same. Thus, their concept of change may be from a more general or larger scale perspective.

> The travel routes have not changed. It has been mentioned in the past that they would take one route coming from the south. They would head inland in the fall. They would walk south. They gather together inland. (Annie Kaosoni, 1999)

In contrast, other Qitirmiut said that the migration routes are always changing so perhaps they look at the world on a smaller scale, as if through a magnifying glass. As a result, their perception of change is very different from that of somebody who views the world as if looking down from outer space. Changing migration routes must be considered in the context of questions of scale and peoples perceptions.

Weather, Snow and Ice Conditions

> They used to always come this way [through *Kingauk* (Bathurst Inlet)]. . . I think it might be the soft snow. If there is too much soft snow, they go the other way where there is less snow. Sometimes they have to go the other way. When the ice is breaking up too, they have to go a different route. (Martha Akoluk, 1998)

> Sometimes they would use the trails in the soft snow. Some would avoid the snow and walk on the ground. (Paul Omilgoitok, 1998)

> One year we had freezing rain around Bathurst and they changed their migration because of freezing rain. In the spring, it gets really slippery and dangerous. I do not know if that changes the migration route. They just might have changed their migration. (George Kapolak Haniliak, 1998).

Insects

The wind direction changes caribou movement on hot days. Too many mosquitoes! They would face the wind direction to keep cold and keep the mosquitoes away. [Otherwise, it is] too hot! (Lena Kamoayok, 1998)

They would go towards the wind when there are too many mosquitoes. . . During the hot summer months, June and July, wherever the wind is coming from they would go towards that direction. That is what they normally do, even in the winter. (Moses Koihok, 1998)

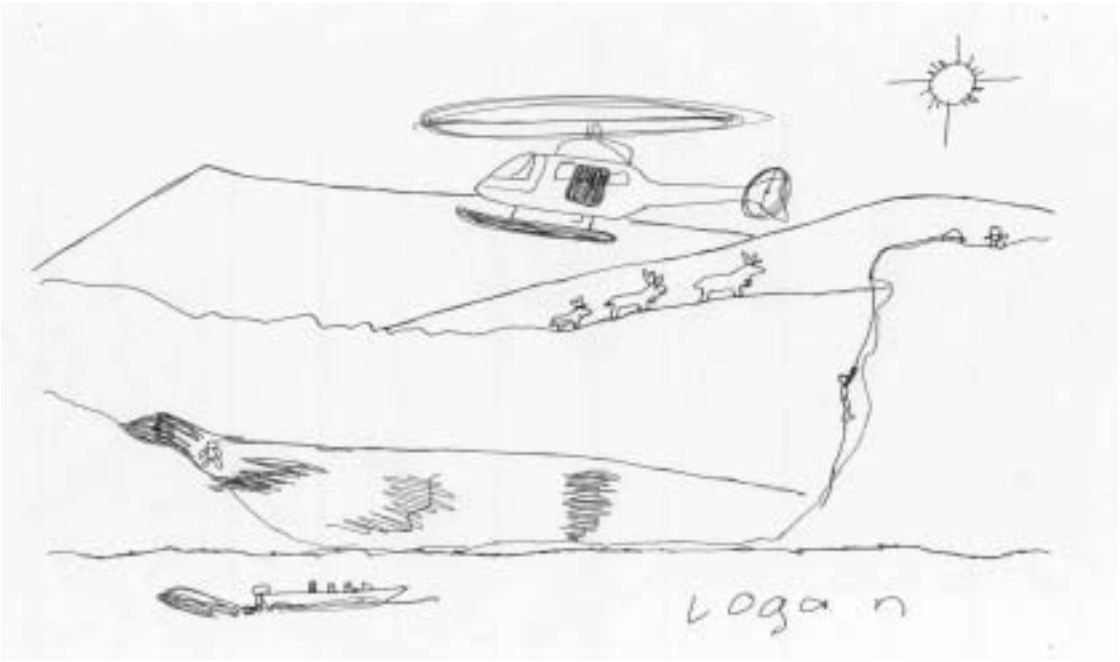
Holding his breath, Joseph Tikhak Jr. shows his cap which is covered in hundreds of mosquitoes.

Mining and Shipping

I am worried that if there is too much mining going on up here in the north, caribou might just change their route and not come around completely. Not come around their normal migration routes and people are going to have to move further and further for caribou. It is going to be harder for everyone up north to go hunting. (Anonymous C, 1998)

Those mining companies. . .do not bother the caribou so I do not mind them. . . When the caribou are not being bothered; they do not run away. The caribou usually stand outside the building of the mines. (May Algona, 1999)

I think caribou calving grounds, during caribou migrations, when there is exploration going on around here, might be good to leave the area alone. Leave there or until they get through or have their calves. [A good distance before the mines would have to shut down] would be 13-16 kilometres. If there is not too much noise, I think it would not bother them too much. (Allen Kapolak, 1998).



Logan Hakungak, Umingmaktuuk, 1999.

The [mining companies] should shut down when the caribou are coming through. About 16 kilometres [from the caribou]. They have got pretty good ears and eyes. You know it really bothers the caribou. . . They get more sensitive when they are calving. (George Kapolak Haniliak, 1998)

The ships can run during the summer months (June, July, August and September). If they can stop production in September, October, and November . . .Shipping should be stopped in October and November in order for the caribou to migrate . . .What we would like to see is the ships put to a stop during the caribou migration south in October and November. That is the time the caribou cross to the mainland. . . Since there will be a lot of work going on and the caribou usually head back to Victoria Island in April and May, production should be stopped for those two months as well. (Moses Koihok, 1998)

Disturbance

[The caribou] probably get tired of hearing helicopters like I do. (George Kuptana, 1997)

I think they fly too low and the caribou start running. [I have] seen a lot of that. When choppers start flying around, they fly too low and get the caribou running. (Allen Kapolak, 1998)

[Caribou] would run away when they hear helicopters. That is how they are right now. . . Some caribou do not mind the mining going on and helicopters flying around in the summer and spring. . . [The caribou] run away, sometimes they just stand there. (Charlie Keyok, 1998)

If they could not allow mining companies to explore and use explosives on calving grounds. The caribou get afraid. (Archie Komak, 1998)

I do not think it would be okay to put a road near Bathurst Inlet (*Kingauk*). It is okay to put a road where they say it would be all right, but not in this area. If there is too much traffic, there would be fewer caribou...There are always a lot of caribou and it will not be a problem for the vehicles, but it will be hard when there are fewer caribou...There would be fewer caribou around here if there is too much traffic...[If there was a road], they should stop [traffic] in June and August. (Paul Omilgoitok, 1998)

This land [near Bathurst Inlet] should not be mined at all. This is where the caribou always walk. If there were anything placed here, there would be nothing for the caribou to eat. That would not be too good because caribou are all the people eat. There should be no mining at all here at the calving grounds. . . The land should not be broken anywhere. . . It is our land and our traditional camping grounds, there should be no mining there. . . The land should not be spoiled at all. (May Algona, 1999)

Quality of Tundra Vegetation

Nowadays there are not many caribou going there. They go here instead. There must be a shortage of food for them there. (Jack Omilgoitok, 1998)

The caribou from Victoria Island are heading to the mainland where food is more abundant. Victoria Island has no willows and there is hardly any wood. . . There is no moss and lichen here on Victoria Island. . . That is where the caribou would go to spend the winter, where there is more for them to eat. (Moses Koihok, 1998)

5.5.3 Behaviour

Traditionally, the Qitirmiut watched caribou and paid close attention to behaviour.

Caribou tend to move at varying speeds, at certain times of day, and in a particular order.

Pace

> When the caribou start moving together, we can hear them when they are running. We could hear them running just like horses. . . Just like thunder. When they are running lots of noise and you could hear their antlers banging together. (Annie Komak, 1998)

> They seem to be moving faster in the spring than in the fall. In the summer there was some too, always some running around. (Anonymous C, 1998)

> That was during the middle of April, late April or early May, near Burnside [River]. All along the hills, could see [caribou] all over. They were moving fast to the east. In the fall they move a lot faster I think. (Allen Kapolak, 1998)

> When the snow is melting, they would tire out easily when they are waking on soft snow. That is what we have seen. During the winter though, when it is hard enough to walk on, they get around faster. (Annie Kaosoni, 1998)

> When it gets warmer, they probably speed up to get to their calving grounds. When it is cool, they just take their time, but if it gets warmer, they have to speed up so that they can get to their calving grounds. They must have internal clocks maybe that is just what ticks. The alarm starts to go! If it is too cold then they try to stay put in an area until it warms up and then they can keep going. You never really see any caribou moving when it is stormy. They are always lying down conserving their energy. Whenever I used to go out that is been my observation in the years that I have been travelling, when the weather is stormy, they find an area where they can lie down easily for their food. And they stay around there until the weather gets a little bit better for travelling and then they keep moving unless you disturb them. (Naikak Hakongak, 1998)

> When they are migrating, it is a great big rush to be on the move. Really rushing, they are really going, running, running constantly all the time. . . Really rocky, rough and... little calves gets their feet caught on the rocks and they never get up again. They stumble and they never get up again.

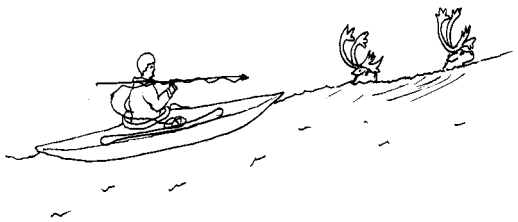
They just get stomped on almost to a powder. Whole bones, bones and everything, churned right up from all the feet, nothing left of the baby calf. In the river crossing, they are crossing, there is just no room to move. There is a great big herd swimming across and some of those little baby calves they accidentally get caught under the herd and they never get out again until the herd pass through. And they come floating up in the water after the herd comes. Found five of them one year like that. Five baby calves. Once they get the urge to move, they do not stop until they have to or get to the place where they are going. (Bobby Algona, 1999)

Crossings

When [caribou] are crossing rivers, spring time, they are sort of taking it easy going north. It is not as dangerous for them to go across the lake. They just take their time. Rivers river crossings, they just take their time, no rush to get across, no danger to other members of the herd. But once they turn around in July, they want to head south. I do not know why that is, they just want to go all at once, get it over and done with, and just going constantly, running mostly. . . It is a big rush to get across lakes, once one gets across everybody else wants to keep up so as soon as they get off that water just want to catch up to the rest of the herd. They usually run out of the water and run. (Bobby Algona, 1999)

Crossings? Anywhere where they could find a good spot to cross. Some ice, flowing water. Some do not make it. I have seen a couple lying on the shore. I take a look and leave them. (George Kapolak Haniliak, 1998)

Caribou, just head and antlers and a back, swimming across a lake. They can swim a maximum of 2 miles. 5 miles would be a bit of a stretch. (Naikak Hakongak, 1998)



Sandra Eyegetok, Ikaluktuuttiak, 2000.

Leadership

One summer when the caribou were migrating south again, caribou were moving too fast for us to start to shoot . . so we just shot the leader, the lead cow. Every other caribou just started standing around, did not know where to go, that is when we started choosing caribou we wanted. Still moving too fast, we have seen one and did not know which one to shoot and so we just shot the lead cow and all the rest just scattered. (Bobby Algona, 1999)

I went out hunting with a few of the elders before, when I just started going out. That time we used to have to go 90 miles to get a caribou and my uncle used to shoot the leader first and then shoot the rest when there is not too many. Because the caribou follow the leader and when the caribou leader stops, the rest of them stop. (George Kavanna, 1999)

They always have a female leader, a cow without calf. They change every year ... The caribou take turns leading when they are walking. (Mary Kaniak, 1998)

Cows lead the calves ... They change. (Annie Kaosoni, 1998)

The cows would lead when they are heading inland in the fall. During the fall, I have seen that when it starts to cool off. (Mackie Kaosoni, 1999)

They walk around, feed and stay together. Sometimes there is a long line of them. . . The young ones follow adults after the rut. . . The young caribou would herd together. They would race and follow alongside not far from the herd that is rutting. (Mary Kaniak, 1998)

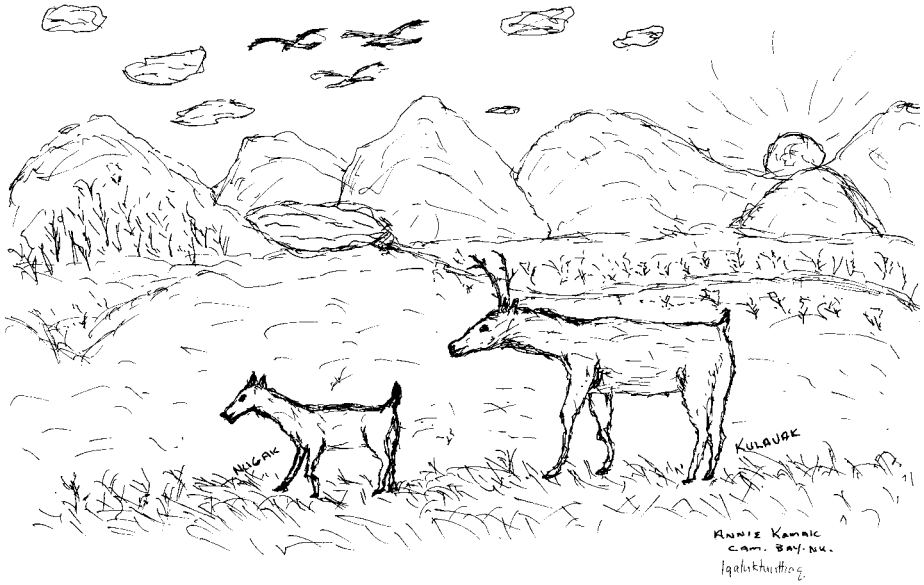
Movements and Migrations

[Caribou from] morning until night. Some the next day. For maybe five days to a week. I cannot remember about in the spring, but I know in the fall the bulls take a long time to pass through. Some hang around. Some do not leave. I guess others leave. Depends on when they want to come and go. (Anonymous C, 1998)

In the summer, in the evening, when it starts getting dark, they would walk along the shore and graze. They would walk on lakeshores and graze. (Frank Analok, 1998)

During the day, they would graze and crouch on the ground. During the night, they would lie on the ground. (Frank Analok, 1998)

When they come through my place . . . all the vegetation and everything is really green. Nothing touched the vegetation. Green, totally green, the whole tundra is green. And when the caribou comes through, and they finish with it, it is all totally brown, everything's all eaten up and just stomped to the ground. And when they come through, once they pass in the year, the caribou, and the smell would be there for weeks, the whole land is stenched with urine. (Bobby Algona, 1999)



Annie Komak, 2000, Ikaluktuuttiak.

5.6 Caribou Predators

There has always been a natural balance between caribou and other animals. One year there may be more caribou and another year there may be fewer. The weather and how it influences the land and wildlife is most important in this balance, yet the impacts of predators on caribou are key too.

5.6.1 Wildlife that Feed on Caribou

Besides people, wolves kill the most caribou. Once a caribou is killed, grizzlies, foxes, hares, wolverines, and birds feed on the remains.

> Caribou get eaten fast. No matter what, caribou get eaten alive. A whole pack of wolves can finish one big caribou in half the night. I've come across caribou carcasses that have just been recently eaten, you can usually tell when it is been eaten or when it is been caught or how long it was there by fresh blood. On the ground, no blood on the ground, few days old. Wolf is usually the one [to kill caribou], but I witnessed a bear tackle caribou. I witnessed wolf tackle caribou, I witnessed wolverine tackle caribou, even a fox try to tackle a caribou. Everything likes caribou meat. It is pretty much similar the way they hunt caribou. Stalk and, stalk and kill, stalk and kill, stalk and kill. (Bobby Algona, 1999)

There are several ways that caribou try to protect themselves from danger.

> I see some cows they try protect their caribou, like charging at wolves or people, but mostly the wolves I think and foxes, I have seen caribou charging at other animals trying to keep their young ones safe from other animals. (George Kavanna, 1998)

Despite their best efforts, caribou do not usually escape a hungry predator. Wolves are the most skilled predators apart from humans.

*People (*Inuit*)*

Qitirmiut are important caribou predators. Although most Qitirmiut do not have to hunt for subsistence, they take what they need for their immediate and extended family. For some hunters, this can mean up to five caribou per year. For others, the number can be closer to seventy.

> I get quite a bit of caribou in the fall time . . . I try to get lots of caribou during the fall time so my family, relatives and the elders could have caribou through the cold winter. In the springtime, I get enough caribou to make dry meat. I would say about between 30 to 50 caribou per year, to last through the winter and the cold months of the winter. (George Kavanna, 1998)

*Wolves (*Amaqqut*)*

Wolves (*amaqqut*) are smart and skilled hunters of healthy caribou as well as the sick, injured, weak and young caribou, especially near the calving grounds in May. *Amaqqut* have an important influence on the caribou population levels. When there are no caribou, there will be no wolves and when there are lots of caribou, there will be lots of wolves.

Wolves are capable predators because they are fast runners, with the females being the quickest. Wolves are experts at chasing and killing caribou as a pack. Perhaps because they are such good hunters, there are more wolves compared with other predators and so wolves have a competitive advantage. *Amaqqut* depend heavily on caribou. When there are no caribou, wolf pups often die.

> The wolves must get more [caribou] because they are fast. There must be more of them. I have heard that the female wolves would lead a pack. . . That is what we have seen. We have heard of it as well. The females are faster. They would attack the [caribou] behind. (Mackie Kaosoni, 1998)
> Yes, because [the females] are lighter. (Annie Kaosoni, 1998)

> For wolf, it is the female that does the catching. Very fast that female wolf. They run up to sixty kilometres an hour and seventy kilometres an hour. And female wolf is the one that drags the caribou down, bites it on

> the tail, the feet, anywhere, just slow him down, and from behind the male wolf finally catches up and grabs it by the throat. The female would let go and take a rest. (Bobby Algona, 1999)

> When there are plenty of wolves, they probably kill a lot of caribou. When there are only two wolves, they get one caribou…I have seen caribou being chased by wolves on the mainland, but I have never seen a wolf actually take hold of a caribou. They would be in the distance and they disappear among the hills. They eventually catch up to the caribou when the caribou has lost strength. (Frank Analok, 1998)

> The wolves . . . kill more [caribou]. I have seen a wolf chase a caribou, but not kill it. As soon as the caribou sees a wolf, it goes straight for the water when they are trying to get away from the wolves. [I have] seen a wolf chasing one . . . As soon as the caribou hits the water, the wolf will not chase them. The wolf stops. (George Kapolak Haniliak, 1998)

> The wolves are always eating caribou. They eat calves and bulls too. . . Wolves catch more caribou because there are more wolves on the land. There are more [wolves] than wolverines and grizzlies. Because there are more [wolves], they catch more caribou. . . My son and I have seen wolves chasing caribou when we are ski-dooing. Sometimes it is hard to catch caribou . . . I have seen wolves attacking and killing a caribou. We have seen that quite a bit in *Umingmaktuuk* (Bay Chimo) . . . We have seen wolves catching caribou at *Hanningayuk* (Beechey Lake). . . There are a lot of wolves. (Charlie Keyok, 1998)

> This is where the caribou would cross . . . this area is full of wolf dens. . . [The wolves] know where the crossings are . . . (Buster Kailik, 1999)

> In the late 1980s, I remember the wolves were eating lots of bulls. All over the place, Bay Chimo, mainland. I remember travelling and seeing them not too far from the trail, wolf kills. Even talking to hunters, they would say they would see dead bulls. More dead bulls, because they were easier to catch because they are tired after the rut. They lose a lot of weight and strength. (Naikak Hakongak pers. comm. 2000)

Qitirmiut have learned about hunting caribou by watching the ways that *amaqqut* chase and kill caribou.

> My brother-in-law and I went for a day trip down to towards the Elu Inlet to go wolf hunting. We caught up to some wolf tracks and we followed them in a very large circle probably about 52 miles. The wolf was following a small herd of caribou. On the way, we see that the wolf wove in and out of the caribou herd, chased them toward the west. Then the caribou turned north, and then they turned east, and they kept running. You could see the caribou or wolf tracks go in and out and then turn back south and it led us back to where we were. After about an hour, we see these little drops of blood along the trail. And then the drops of blood got bigger and then the drops of blood had caribou fur in them and then you could see the caribou fur. And we crested this hill and there was this caribou with it is haunches were just all torn up and around it is throat was just torn up too. And we caught up to that wolf maybe about 10 minutes later, and then it had been the one that attacked that caribou. It followed that caribou herd, just kept following until it found one and it said 'I could take this one down no problem', so it just kept following. May 1995. Start at Caribou Lake, 52 mile circle. Just west, north, east, south and back to where it basically began at the chase. That is the closest I have ever seen or come to seeing wolves actually catching caribou or killing caribou. Probably died just soon after we left it cause we looked at it and it was barely, barely even able to stand up and breathe. So we just left it alone and went looking for the caribou or looking for the wolf. (Naikak Hakongak, 1998)

When hunting caribou, it is not only important to think like a caribou, but also to sense like a successful predator. For example, in the days of hunting with markers and blinds, it was important for Qitirmiut to hunt as a group much like wolves hunt as a pack.

*Grizzly Bears (*Aghat*)*

Grizzly bears (*aghat*) are rarely fast enough to be superior caribou predators. *Aghat* mainly eat berries, fresh shoots, roots, and small mammals, but they also hunt caribou.

> I have seen a grizzly chasing a calf once. I caught sight of it as they were disappearing behind a hill. The grizzly probably ate it. This was when we spent the summer here [west of Bathurst Lake, near *Aniaghiugvik*). (Paul Omilgoitok, 1998)

> Grizzlies can quickly catch caribou. They would wait along the seashore. (Lena Kamoayok, 1998)

> There was nothing but caribou and [my friend] said that they saw grizzly bears with their cubs . . . There were thousands of caribou . . There were wolves following grizzly bears with cubs . . . They just followed [the caribou] along eskers. (Naikak Hakongak, 1998)

Logan Hakungak, Umingmaktuuk, 2000.

Although only a few Qitirmiut have actually seen *aghat* actively killing a caribou, many stories of *aghat* have been passed down. Hungry *aghat*, especially in the spring, can be dangerous and should be avoided.

Wolverines (*Qalviit*)

Wolverines tend to be scavengers of caribou meat. *Qalviit* steal foxes from peoples' traps, drag caribou meat away from campsites, and dig out caribou meat from rock caches during the fall and winter. In the past, when Qitirmiut relied on this cached meat, such a disturbance could be devastating.

> Even [though] the wolverine is small, it can still get a caribou. (Charlie Keyok, 1998)

> Wolverines eat caribou as well. (Annie Kaosoni, 1998)

Foxes (Tiriganniat, Kajuqtuq, Kiahirutilik)

Arctic fox (*tiriganniat*), red fox (*kajuqtuq*), and cross fox (*kiahirutilik*) feast upon lemmings, baby birds, and a variety of eggs found on the tundra as well as caribou meat from where a predator was successful. Foxes are known to co-operate with bears, helping them find injured or sick caribou. They do this by yelping when there is caribou activity, especially if the caribou is injured, sick or old.

> I would not know if foxes catch caribou. They do get calves though. They prey on calves because they are small. (Charlie Keyok, 1998)

> Foxes eat [caribou] as well. (Annie Kaosoni, 1998)

Birds (Tingmijjat)

Seagulls, ravens, ruddy turnstones, and hawks often feed themselves and their young on caribou remains, especially on the sea ice. From a far distance, one can see some birds flying in circles above a kill site. Ravens usually caw and point with their wings to an area where there is caribou commotion to make it easier for predators to find. Small birds such as snow buntings and longspurs scavenge maggots off caribou remains.

> All the seagulls always go for [the caribou guts]. The seagulls and the foxes and so nothing is wasted from a caribou. (Anonymous C, 1998)

Small Animals

Caribou antlers found everywhere on the land always have chew marks from ground squirrels (*hikhiit*), lemmings (*avin'ngat*), and other animals including wolves, wolverines, and foxes. Antlers are important for making strong the bones of these small animals.

Naikak Hakongak observes a hikhik *(ground squirrel) near Umingmaktuuk.*

5.6.2 Predation at Calving Grounds

During the calving period, it is easy for wolves, bears, and other predators to hunt new caribou mothers and calves because they are so weak. These predators are smart which is why they know to stalk an easy meal such as a calf. Caribou usually choose calving areas that are flat and open so as to make an easy escape once they spot or smell a predator.

> They are always on the flats, out in the open. They are always on flat land, in case there are wolves then they can escape into the water. Caribou can see from far. . . .Cows have really good eyesight. They usually calve on the flats, making it easier to escape from wolves. They are never in shaded areas. (Bessie Omilgoitok, 1998)

> [They calve] probably at a place that is relatively flat you know, not too many hills around, so that they can see whatever is coming for miles. . . Somewhere that they could see a long ways so that they can see . . . any danger that is coming towards them. (Naikak Hakongak, 1998)

> I have a picture in my mind about calving grounds . . . Probably a place that is relatively flat…not too many hills around so that they can see whatever is coming for miles…I think it might be a flat spot that they like to go to… Somewhere where they could see a long ways so they could see

anything, probably danger, any danger that is coming towards them. (Naikak Hakongak, 1998)

Better [calving] grounds have more food. No trees. It is all flat up there. Probably to get away from the wolves and so they could see further. Maybe to get away from the wolves. That is why they come north, so many wolves up south. (George Kapolak Haniliak, 1998)

The cows are smart, they know what to do. Sometimes it is like they can talk when they have calves. . . They would think of areas where there would be no wolves. They would go from one area to another, when there are many of them together. When there is a herd of them, they would go from one area to another, thinking of the safety of their calves, like taking care of them. Even if they are in one area, they would think of the wolves. That is why they are constantly moving. The cows would think of safety from wolves, but they can smell humans too . . .(Nellie Hikok, 1999)

[Wolves] have their pups the same time as the caribou are calving. The wolves do not roam as much. (Paul Omilgoitok, 1998)

[The land at calving grounds] is never too high [in elevation]. When they are calving they are never on high ground. (Paul Omilgoitok, 1998)

They are always on the flats, out in the open. They are always on flat land. In case there are wolves, they can escape into the water . . . Cows usually calve on the flats, making it easier to escape from wolves. They are never in shaded areas. (Bessie Omilgoitok, 1998)

[Calving habitat] is much flatter. Where they can run, outrun a wolf or bear. It is much flatter than the rocks. (Allen Kapolak, 1998)

I guess they like it there [at the calving grounds]. It might be much safer for them have their young ones there and more food there for them. (George Kuptana, 1997)

5.7 Caribou Country: Habitat and Forage

Caribou are clever enough to identify places where there is healthy food and escape from the elements, insects, predators, and difficult terrain. These places for feeding and refuge include islands, shorelines, snow patches, valleys, and spots that are either damp or shaded.

5.7.1 *Nuna* Chosen by Caribou

Caribou often group along the shores of lakes, rivers, and the ocean. Caribou are like people in that they seek out shorelines because high winds keep the insects away and the temperatures cooler. In addition, shorelines provide easy escape from predators and the heat when caribou can find relief in the cool water. Moist areas also support vegetation that is large and lush and good for both forage and shade.

Caribou often keep cool by lying on patches of snow in the spring. Snow that is deep or covered by a hard layer of ice is difficult to paw through for food, so caribou try to avoid these areas. They also look for migration routes that avoid difficult terrain. For example, locals said that caribou walk around rather than over mountains if they are too steep or rocky

Shorelines: Cool, Moist and Away from Insects and Predators

> In the summertime, in the evening, when it gets dark, they would walk along the shore and graze. Caribou like to eat on the lakeshores where the grass is plenty. When it is hot outside, the caribou would go on the shores of the ocean where it is cooler. (Mabel Angulalik, 1998)

> Caribou stay in the shaded areas . . .In the shade as well as by the lakes. By the lakeshores, as well as shaded areas where ever they can find what they like to eat. (Mabel Angulalik, 1998)

> When the weather is warm, the caribou would stay in shaded areas during the summer. People would look for caribou in the shades during warm days. It is easier for the hunters to get close to them. (Frank Analok, 1998)

> When it starts to get dark, they go to the lakes. . . During the night time caribou stay by lakeshores which makes it easier for them to escape from wolves. (Mackie Kaosoni, 1998)

> The caribou stay along shore in the summer in June and July. . . To stay away from the bugs and to keep cool [caribou] stay by the ocean and the Islands. (Moses Koihok, 1998)

Caribou are attracted to the forage along shorelines and in moist areas.

> In really marshy areas, or the bottom of the hills in the summer time, lots of vegetation on the bottom of those hills, [caribou] tend to stay in there. In the hollows, summer time, where it is cooler. . .Maybe less insects. . . Just for the coolness of being below I guess, in the summer time. (Bobby Algona, 1999)

> [Caribou go] along the shore of lakes and the ocean . . .[and] close to water where there is moisture. They would eat more where there is moisture in the summer. They would look for what they like to eat. They know what they like to eat. (Charlie Keyok, 1998)

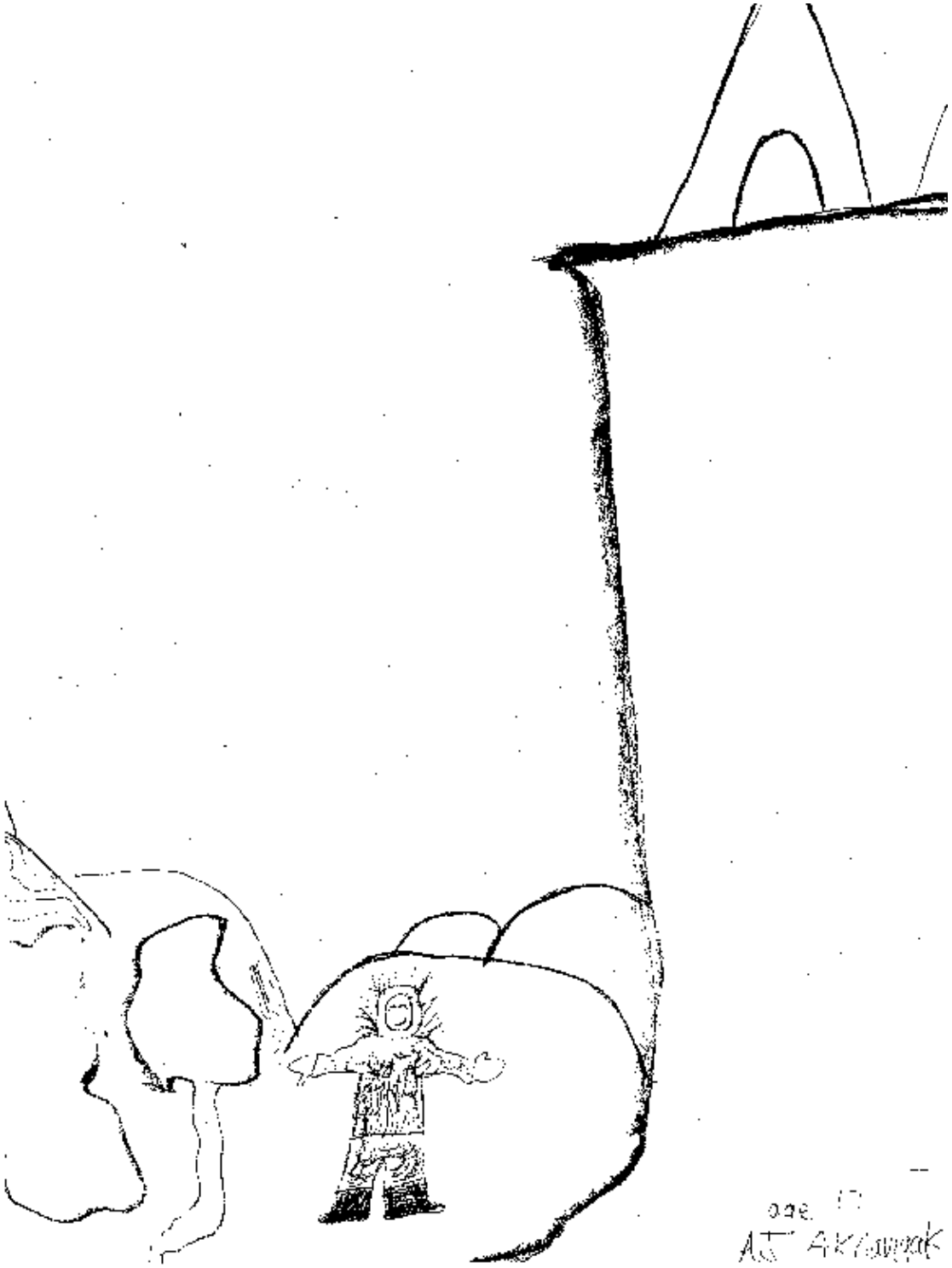
> They probably eat all sorts of vegetation. Whatever is sprouting on the land. They are constantly on the move and would often stop to eat as they are travelling . . . on lakeshores, whatever is sprouting. Moist vegetation like grass. Whatever is sprouting on the shores of lakes, riversides. Wherever there is moisture. (Frank Analok, 1998)

> Staying along the shore and standing in the water are ways to avoid insects.

> The caribou usually go to the ocean along the coast. They can also be seen swimming in the lakes staying away from mosquitoes. (Frank Analok, 1998)

> They are always along the coastline. When there are too many mosquitoes they would gather and go in circles to get rid of mosquitoes. (Moses Koihok, 1998)

Another reason why caribou spend time along the shores of the sea is so they can lick the salt from the rocks. It may be that caribou like the taste and need the sea-salt to keep healthy. Caribou sometimes eat seaweed.



AJ Aknavigak, Ikaluktuuttiak, 2000.

Youth worked with elders to learn about the various types of plants eaten by caribou, for example, lichen and dwarf birch.

Snow Patches, Away from Deep and Sleet Covered Snow

They would lie on the patches of remaining snow to keep cool. (Mabel Angulalik, 1998)

When the snow is not covered in sleet. The caribou and other animals like it best when the snow is not covered in sleet. (Charlie Keyok, 1998)

When the snow gets too hard, when it is really cold, they would stay where there is less snow. When there is too much water in the spring as well, when it rains too much, the number of squirrels would go down. That is how it is. When the land is covered in ice the caribou would get skinny. (Charlie Keyok, 1998)

When the land is not covered in sleet, the caribou would graze, uncovering patches of snow and eating as they go along. (Frank Analok, 1998)

Caribou graze in open patches without snow.

Easy Walking Trails

They like to follow eskers . . . they just go along eskers and they will go along eskers for so long on top of eskers. It is just like a road . . . and it is really nice on top cause you get a breeze . . .. (Naikak Hakongak, 1998)

> Sometimes there are caribou that pass there on big hills and through the valleys. But they pass through the high hills. They just go along the stretch of the high hill. They do not go around, but they go over sometimes. (Allen Kapolak, 1998)

> In the winter, they are mostly inland where they can get to the vegetation easily. And plus [this] area is a little bit rocky too so they go somewhere else instead. (Naikak Hakongak, 1998)

5.7.2 Tundra: Different Types of Caribou Food

Caribou eat many different kinds of plants, depending on how plentiful they are and the time of year. Caribou seem to know what types of vegetation are rich in nutrients and this enables calves to grow quickly and caribou to store backfat for the coming winter. One way to tell what a caribou has eaten is to examine the stomach contents. There are also signs on the land such as caribou pellets (feces), snagged fur caught on bushes, or a branch that has been browsed at places where caribou have been eating.

During an elder-youth camp (see Section 2.3.1), several elders showed the youth how to identify what caribou eat by opening up the stomachs and looking inside. Caribou like to eat dwarf birch, willows, and mountain avens. Elder Bessie Omilgoitok gave a personal demonstration on how caribou eat *avaalaqiaq* (dwarf birch) by stripping the leaves from the branches with her teeth like a caribou would do.

> People know what caribou eat from the contents of the stomach and from how the meat tastes. When you are butchering a caribou, you look in the stomach and you can recognise pieces of tundra plants that are partly digested. This is one way to tell what kinds of vegetation caribou like to eat. Another way is to notice the changes in how the meat tastes during the different seasons. Caribou taste like grass in the summer. (Allen Kapolak, 1998)

> I have seen little white plants in the stomach. You can see the buds from willows too. They eat the little white plants and buds off the willows and other plants. (Connie Nalvana, 1999)

> They eat a mixture of plants during the summer. Whatever sprouts, they will eat. In the fall, they will eat lichen. In the winter and fall, they eat

> lichen and grass. When the plants are dead, they look around for what they like to eat. (Mary Kaniak, 1998)

*Mushrooms (*Kaiptauyat*)*

Caribou are fond of mushrooms. Jack Alonak (1998) explained that mushrooms are like a caribou water bottle in that caribou eat and suck on mushrooms to keep their mouth moist on warm days. He compared mushrooms to caribou "snuff" that is chewed all day long.

> Caribou usually dig out [mushrooms] with their hooves in flat areas of the land. They would look and spot them, even when they are frozen. That is what they eat. They can smell it. That is what they eat. . .They smell it through the snow and dig for it. (Archie Komak, 1998)

> You can tell [that caribou have been eating mushrooms] when the mushrooms have been peeled. You can tell caribou have been eating there. (John Akana, 1998)

> They grow on the land. They have got fat in them. That is what they are called. The caribou eat those as well. Sometimes there would be a lot of those on the land, what they call mushrooms. That is one of the types of food that they like. (Charlie Keyok, 1998)

> Their stomachs would be filled with those that are white like fat. (Mackie Kaosoni, 1998) Like fat from the ground. (Annie Kaosoni, 1998) I hear that is what they get fat from. (Mackie Kaosoni, 1998)

> Around August they tend to start to find mushrooms in the stomach contents. . . There has got to be a half a dozen or so types of mushrooms, they grow on the tundra. Caribou eat two types. Maybe you have seen those ones with the really smooth top. Some of those that get really big, they feed on those and some of those little ones with red on top, red coloured on top and sort of mesh in the bottom, just like a cone on the bottom. They have those ones also. (Bobby Algona, 1999)

*Willow (*Uqpik*) and Birch (*Avaalaqiaq*)*

> In the spring, when the willows are moist and sprouting, they would loosen them with their snout. Then they would start gaining weight. (Mary Kaniak, 1998)

> When the vegetation starts to sprout, they will eat it. Whatever. Grass . . when they turn green . . . They eat off the land. Even willows. They even eat moist mud. (Bessie Omilgoitok, 1998)

> They look like little tongues. You can see all these plants in the stomach [dwarf birch, Labrador tea]. They eat these as well; you see these all the time [Labrador tea, dwarf birch, snow lichen]. . .These are buds, buds from willows. . .These are always in the stomachs. I do not recall seeing these [alder] in their stomachs. They probably get mixed in with other vegetation. They must eat them, but they get mixed in with others. Some of the willows, I do not know, but they eat the buds. (Connie Nalvana, 1999)

*Lichen (*Uqauyaq*), Moss (*Urjuk*), Grasses and Sedges (*Iviit*), and Pebbles (*Tuapaliat*)*

> Caribou mostly eat lichen in the spring. Their stomachs are always full of lichen. (Mary Kaniak, 1998)

> [Caribou eat] damp moss and willows. . . I have seen pebbles in the stomach of caribou with a mixture of moss and grass. (John Akana, 1998)

> Moss and grass are their food. They eat grass as well as moss, lichen. [Caribou] are usually down low, where there is vegetation. (Allen Kapolak, 1998)

> They eat grass as well . . . They eat grass and during the winter, they eat moss. They eat wood as well. (Paul Omilgoitok, 1998)

> They do not eat just anything. Only moss and grass. I have seen grass and moss in their stomachs. (Jessie Hagialok, 1998)

The availability and quality of vegetation are some of the reasons that drive caribou to migrate, calve, and forage in certain areas. Differences in the tundra vegetation affect where caribou go and how long they stay in one area. Some of the types of tundra vegetation that caribou select include lichen, willows, mushrooms, grass, birch, and moss. Basically, caribou go where the food is good; and good food means good habitat.

5.8 Calving

Caribou are like people in that they have a natural urge to produce young in order for their kind to continue. According to the living memory of elders, and stories told by those who have passed on, caribou have always followed a yearly cycle. This cycle includes mating and calving periods that occur during migrations from southern wintering grounds to northern calving grounds and back again. The rut begins in mid-October when the caribou are the healthiest, specifically, after a summer of grazing and hopefully storing backfat. The cows are pregnant during their fall migration to the southern wintering grounds, into the winter months, and throughout their return migration to the north in mid-April. Cows and bulls typically travel separately except for when they are rutting.

5.8.1 Rutting

Cows and bulls unite in the early fall to mate, or rut. The bulls make really loud snorting noises while they rut and sometimes they fight for a cow or a group of cows. One might hear the rut from a great distance, not only because of the snorting, but also because the antlers of the fighting bulls knock together “as loud as thunder”. While the older caribou are in rut, the calves, yearlings, and barren cows stay a short distance from the mating caribou.

It can be dangerous to be around caribou while they are in rut, especially the bulls. This and the fact that people today do not like the musky taste of bulls during the rut means that there is little point going out to hunt them during this time.

> [The cows and bulls] would usually get together in October to mate. There would be many when they get together in October. They probably stay together for a month. That is the only time they would be together, the bulls would go their own way in November. They usually gather in October. (Charlie Keyok, 1998)

> [During the rut], the yearlings and calves prefer to stay with the cows that are called cows without calves (*nurraittuq*). (John Akana, 1998)

> The yearlings and the young ones get fat for the fall time. So they could go further down inland. They feed when the rest of them are mating, like the young ones, yearlings. (Annie Komak, 1998)

> That is how they are after the rut ... they walk around, feed and stay together. Sometimes there is a long line of them. That is how they are. The new calves and yearlings usually stay together. (Mary Kaniak, 1998)

5.8.2 Before and During Calving

Before calving begins, the caribou have usually migrated from their southern wintering grounds. Starting in mid-April, pregnant cows along with yearlings lead the way to the calving grounds. Bulls follow the cows at a considerable distance. Hunters identify the pregnant cows by their large middle sections. Some hunters leave the pregnant cows if barren cows or bulls are readily available or if they do not like to eat the foetus. Qitirmiut today do not enjoy caribou foetus as much as in the traditional past although this varies within families and communities.

> In June, when it starts to melt, [they start to calve]. They are calving right now. They are having calves now, right now. (Frank Analok, 1999)

> It was just born and it was still wet. We were holding it and it kept following us . . . The mom was right beside us. (Martha Akoluk, 1998)

> I have seen caribou calving at the mainland; the calves would run around in a matter of minutes. I used to watch them. (Mackie Kaosoni, 1998)

> The caribou are born during the spring and it does not take them long to become adults, sometimes there are a lot of calves . . .They would return to the calving grounds, they would return to the calving grounds to calve themselves . . .Some cows would have their calves late. When calves are born when the weather is warm, they have a better chance of survival. (Archie Komak, 1998)

Cows normally give birth when the snow is melting and tundra plants are growing, usually between late-May and mid-June. Some cows have been known to calve in April during years when the melt came particularly early. At the calving grounds, the calves learn by watching the cows and experimenting on their own, how to feed on the rich and abundant tundra and, later, how to migrate southwards as the fall rut begins again.

> In the spring, the people know when they are about to calve, when the cow is about to have the calf. They are usually about two years old when they calf, when they are two years old. They have calves every year, once a year, every June. (Jimmy Maniyogina, 1999)

> When they calve for the first time they are three years old . . .I have never seen one before, but I have seen one about to give birth at the mainland. It was crouched on the ground, not afraid of my presence, because it was about to give birth. I just ignored it and left it as it was. (Frank Analok, 1999)

> I am not sure how old the cows are when they calve; they are not all the same . . .The young females calve. I am not sure how many years later, but they are the same as humans, like women do not have babies after they have reached a certain age, that is how it is with caribou as well. (Archie Komak, 1998)

> In the spring, usually you can tell from a back view [because pregnant caribou] are a little bit broader. They sort of look rounder. Usually you see caribou . . . from the back they look like triangles but some female caribou that are pregnant would be a little bit . . . fatter. And also, when it turns sideways, you can see a bit more of a tummy on it. (Naikak Hakongak, 1998)

Logan Hakungak, Umingmaktuuk, 2000.

Cows are very restless just before they lie down to give birth. They can go into labour while on the move and before reaching the more popular calving grounds. When this happens, the mother and calf take a short rest and then continue with the herd until they reach their destination at the calving grounds (see Map 5).

> Sometimes they would calve during their migration. (Moses Koihok, 1998)

> The caribou are constantly walking, calving and they never stop. (Jessie Hagialok, 1998)

Map 5: Calving Grounds for *Ahiarmiut* Caribou ***(Please see "Project Maps" in seperate pdf)***

Since Qitirmiut did not live at or near the calving grounds but rather set up camps along the migration routes of the caribou, most people have not actually seen a calving ground. Instead, people have seen calves shortly after they have been born while very few have been fortunate enough to see cows while they were giving birth. It is tradition to respect the calving period as a sacred time when the caribou should be left alone. Still, some say that the calving period is a good time to go hunting.

> When the caribou cannot go anymore or maybe when they are in pain, [they calve]. I heard from people, over in the Bathurst Inlet area, that that is when they go hunting. Only heard that one story. That is it. (George Kavanna, 1998)

5.8.3 After Calving

Although caribou start moving around shortly after calving, there are frequent rest breaks for the calves and the group moves slowly while feeding and looking for predators. Calves start to walk soon after they are born and quickly learn to find mothers' milk and tundra plants so as to gain weight, strength, and stamina. New calves are smart because they are able to migrate so soon after being born.

> They would go to the Bathurst Inlet area to calve. They would stop in one area in June, wait until the calves are strong enough, then they would go toward the wind when there are too many mosquitoes . . . (Moses Koihok, 1998)

> The calves get up and walk as soon as they are born. They will just wait a while then move on. (Nancy Haniliak, 1998)

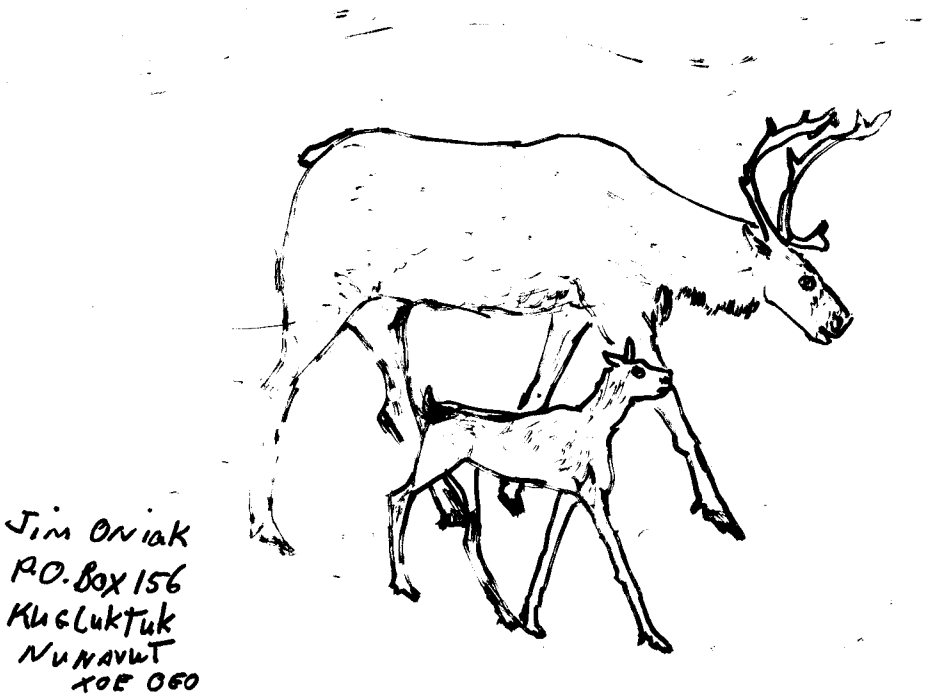
> When a calf is born, they will wait till the fur is dry enough and then they will move on. (Mary Kaniak, 1998)

> When they are heading north that is where they stop to calve. As they are walking and the calf is about to be born, that is where they are born. They can calve anywhere because they do not stop as they are walking. The calves usually start running as soon as they are born. (May Algona, 1999)

Lots of caribou, after they have calved, head inland. They probably do not walk as much after they have calved. They probably do not walk as much when they are calving. (John Akana, 1998)

When the caribou are finished at the calving grounds and they are heading south, they travel around. When the cows take a rest, the calves just go around and around their mother, playing around. (Paul Omilgoitok, 1998)

Newborn calves would walk side by side the yearlings. They would walk slowly with their calves. Yeah, the cows would crouch and rest while the calves would run around them. They are so full of energy! (Paul Omilgoitok, 1998)



Jim Oniak, Kugluktuk, 2000.

5.9 Calving Grounds

Qitirmiut think differently about how, why, and where cows choose their calving grounds. Some people shrugged their shoulders and did not want to hazard a guess. Other people suggested that the tundra was all the same and it depended on when they started moving northwards and how far the cows were physically able to travel before giving birth. This large-scale view differed from the smaller scale view of several people who explained that calving ground selection had to do with such basics as the *nuna*, *hila*, safety, human activity, and snow conditions of each year. Still others suggested that cows simply return to where they were born in order to calve. One thing that everybody agreed upon was that when a cow is ready, she will give birth then and there, regardless of the conditions.

Some Qitirmiut respect the calving period as a sensitive time for caribou and so choose to remain distant while others seek out the calving grounds to harvest calf skins for clothing. Some years, the calving grounds may be too far to visit given the deteriorating snow conditions. Sightings of calving grounds were more common during years when the cows calved close to communities. Generally, most Qitirmiut have not seen a calving ground before, so presenting ideas on what a calving ground might look like required a person to think like a caribou.

> I have never been to a calving ground. It would be nice to see . . . I can only assume that the place is basically . . . about the same sort of a terrain as here but lots of lakes. There are lots of lakes up there too . . .Probably for fresh water. (Naikak Hakongak, 1998)

In earlier days, caribou calved when the sea ice had started to melt so that Qitirmiut could hunt seal or fish so they were not so dependent on caribou for food. In addition, many caribou had already been harvested.

5.9.1 What Makes a "Good" Calving Ground

Based on a general understanding of caribou behaviour and respect for caribou instinct, Qitirmiut offered that cows know to choose calving grounds that are rich in food, free of most ice and snow, and far from predators (detailed in Section 9.2). These qualities are important to all caribou habitat, but are increasingly important during the calving period.

Rich Habitat

The tundra at a calving ground needs to be nutritious in order for the cows to feed their calves and the calves to gain strength to make their first migration south. In addition, the new mothers need to regain their strength after migrating, calving, and nursing.

> The cows usually go where there is food. They know where there is grass for their young ones. They have to find a right spot for their young ones. (Mary Kaniak, 1998)

> [Vegetation at a calving ground] is probably a little more rich . . .Maybe it is exposed earlier in the spring so that it has time to grow. Maybe that is what it is. They find a spot where the snow goes the soonest, the vegetation grows quicker maybe. That could be one of the places that they find that they go back to year after year cause they know it is going to be rich with food. . . I think the food would have to be a bit richer because the calves need to grow quickly cause they start walking soon after they are born, but they need to get all the nutrients in as fast as they can before the fall or winter set in. It is going to be a long winter so what they eat probably has to be a little bit richer than what they normally eat. (Naikak Hakongak, 1998)

> They calve when there is less snow, but there is still snow. Small patches, melting away. (Paul Omilgoitok, 1998)

During the elder-youth camp, a few elders observed that cottongrass is the first food eaten by calves, after milk. This suggests that calving grounds are often located in areas where this plant is plentiful.

Climate, Weather and Snow Conditions

Hila is a key factor for cows selecting where to calve. Areas that become snow-free first in the spring support tundra plants that have had more exposure to the sun and other growth factors. As such, the vegetation is typically rich with fresh shoots and new bark, both of which are preferred by caribou. To locate calving grounds, it may be that one must know which areas first become snow-free. At the same time, there can be small patches of snow nearby calving areas that provide relief from the heat.

Changes in *hila* have brought warmer temperatures and led cows near water sources or in moist areas in order to control their body temperature during calving. Calving grounds are rich in tundra vegetation not only as a food source, but also for shade to avoid warm summer temperatures.

5.9.2 Same or Different Calving Areas: A Question of Scale

It depends on what scale one talks about when considering whether cows return to the 'same' place to calve every year. On a large scale, *Ahiarmiut* cows return to the same northern calving grounds around Bathurst Inlet (Map 5) while *Kiilliniq* cows return to the unchanged northern regions of Victoria Island. In contrast, on a small scale, exactly where the calving grounds are located changes slightly every year, depending on the combination of factors discussed earlier in this chapter.

Large Scale Observations: Same Calving Areas

There are many explanations for why caribou return to the 'same' calving grounds each year. It might be that cows return to where they were born to calve or that they know where to go by sight and by their internal clocks. Perhaps caribou are like salmon in that they know how to return home to have their babies. Maybe caribou have used the same calving grounds for generations and return instinctively to these areas.

> Over in Ellice River (*Kuunayuk*), the caribou always go by same area all the time, by the river. They must calf somewhere up the river, because they always go same way every year. Sometimes they are late, sometimes they are early. (George Kavanna, 1999)

> Older caribou must be used to [calving grounds]. Recognize by sight. (George Kuptana, 1997)

> They return to their calving grounds like they always have. It is the same as birds, they return to their nesting grounds. The same holds true with all animals . . .Yeah, they return to the grounds they were born on. They go to the same area to calve, like they always have. (Frank Analok, 1999)

> I think [the cows] probably return to the same spot where they were born [to have their calves]. Maybe like the Arctic tern, they just go back. (Naikak Hakongak, 1998)

> That is where they always calved every year . . .Yeah, they always return to their birthplace to calve. Because it is their land . . .They would go to a spot where there are no caribou, on their own to calve. (Charlie Keyok, 1998)

Small Scale Observations: Different Calving Areas

It may be that cows decide where to calve depending on the type or condition of the tundra. Caribou herds can break apart to avoid land that is over-grazed and trampled and, in doing so, select very different calving areas every year. For the *Ahiarmiut* caribou, these areas are continuously shifting around the Bathurst Inlet.

> They do not always calve in the same area that they have calved previously at. (Moses Koihok, 1998)

> They would calve in different areas than the years before. That is how it is, that is how they are, it is the same as the environment always changing. (Moses Koihok, 1998)

> They probably scatter along the way and go to different places. The survival rate is higher . . .So there is got be some different areas along this side of the Bathurst Inlet, both sides of the Bathurst Inlet that they calve on. Cause you can see there is some areas that are fairly flat and maybe

> they go to different ones and even on the other side around the Arctic Sound areas as well . . . (Naikak Hakongak, 1998)

5.9.3 Specific Calving Grounds

The stories of the locations of calving grounds have been passed from one generation to the next. Some Qitirmiut have seen calving grounds with their own eyes, while others have been told the locations of traditional calving grounds. For the TNP, several elders and hunters marked out these traditional calving areas, as shown on Map 5. At least three factors contribute to why many calving areas remain unmarked. First, people were hesitant to mark areas when they were not entirely sure of the boundaries of the calving grounds. In other words, they preferred not to make any marks than to be inaccurate in presenting their knowledge.

> I am not too familiar with calving grounds, so I do not want to indicate any area that I do not know about. I do not want to mention anything that I do not know about. (John Akana, 1998)

Second, many elders do not feel comfortable reading maps or seeing them as a representation of reality. Third, it was unrealistic to interview everybody in all communities who knew calving ground locations. Unfortunately, many grounds were missed which means that this map is a sample of calving areas and should only be used as a general guide.

In general, calving grounds for the *Ahiarmiut* caribou are found either east, west or south of Bathurst Inlet. Traditional calving grounds were identified as being nearby the *Hiuqqitaaq* River, *Katimanik* (Hood River), *Hanningayuk* (Beechey Lake), *Tahikaffaluk*, and *Tahikyoak* (Contwoyto Lake), as well as near the community of *Kingauk* (Bathurst Inlet). The calving grounds for the *Kiilliniq* caribou are outside of the study area of the TNP.

> This is where we watched caribou calving [*Hanningayuk*]. We would watch. It was fun! They would calve all over this area. But this is where we watched them calve one spring. We watched quite a bit. . .They always

calve around here. This is where they would calve too, in June. They calve in June. But that is where we have seen most. Calves would be born here. (May Algona, 1999)

When I went caribou hunting at Melbourne Island (*Qitiqtaryuaq*), that is where I have seen calves, caribou calving [Bathurst caribou]. In June 1986. (Jimmy Maniyogina, 1999)

They must calve around here, around this area [east of *Hiukkitaak* River]. While they were walking in this area, [Henry] Kamoayok and I used to try catching them. Cannot grab. (Paul Omilgoitok, 1998)

Caribou calving grounds. That happens there every June. From June to August. 1945 maybe . . . At *Kuukkiviagyuk*. (Paul Omilgoitok, 1998)

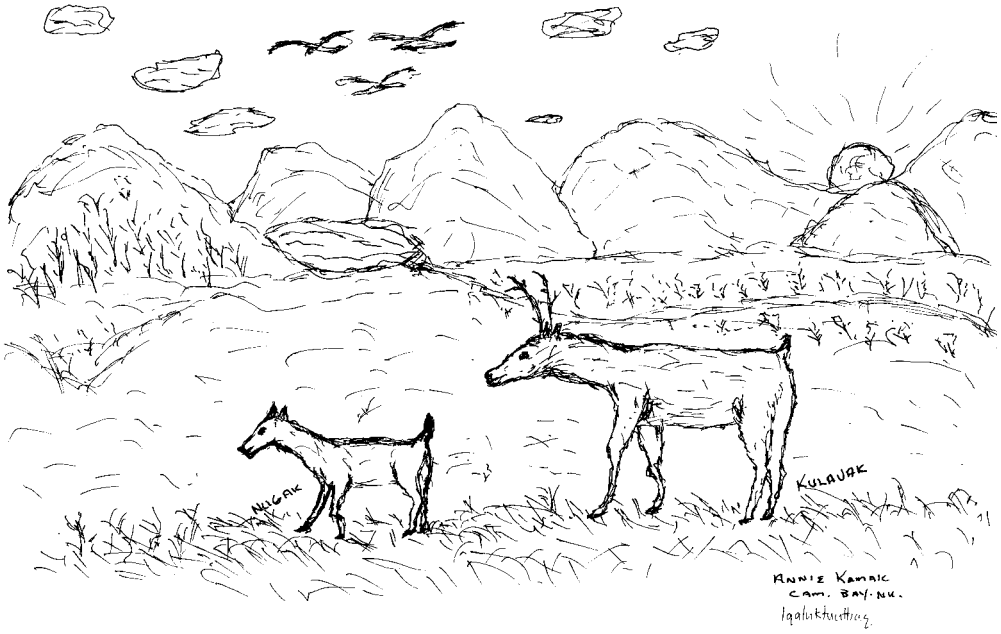
There are always a lot of calves there. It must be a calving ground . . . .It is further inland, on the other side. We spent one spring at Fishing Creek (*Aniarghiurvik*) and caribou were calving there. (Bessie Omilgoitok, 1998)

There around Contwoyto Lake (*Tahikyoak*), there are lots of caribou calving. (Paul Omilgoitok, 1998)

Last year, though, Angivrana saw a whole bunch calving by *Tikikvik* [west of Bathurst Inlet, along the Burnside River] when he went by helicopter. (Jessie Hagialok, 1998)

A couple years back, I have seen calves being born around Elliot Point or Fishing Creek (*Aniakhiurvik*). I have seen new-borns around there. Also at Beechey Lake (*Hanningayuk*). I had camps there during the summer and winters . . . There were many wolves around there too. (Jessie Hagialok, 1998)

I have never seen caribou calving anywhere else, just in the Bathurst Inlet area, Beechey Lake (*Hanningayuk*) and Contwoyto Lake (*Tahikyoak*). Here are the calving grounds. (Nellie Hikok, 1999)



Annie Komak, Ikaluktuuttiak, 2000.

[Here] are calving areas, just near Young Point, behind that point. . . About 10 years ago they were calving right in here around this area [near Bathurst Inlet community] in the spring till mid June, early June. I saw them just as they were born. Just come out. Maybe a couple of hours old. (Allen Kapolak, 1998)

I have seen one calf being born here. I was following them one spring, in April. I have seen only one giving birth there. It gave birth as it was running away. But I have seen three born here at Rocking Horse Lake (*Qaumaugaqtuq*). (Connie Nalvana, 1999)

It was around *Tahikaffaluk* and Contwoyto Lake (*Tahikyoak*). At these areas, I have seen calves being born. (George Kuptana, 1997)

5.9.4 Shifts in Calving Grounds

To acknowledge that nobody knows the ways of the caribou is an expression of respect as well as recognition that people do not know everything about the world or of caribou.

> I do not know if the [calving grounds] have changed, but we will see that when we do not see them as much . . . I am just wondering where they will calve next. We will find out soon. (George Kuptana, 1998)

From the 1970s to the mid-1990s, the *Ahiurmiut* caribou calved on the east side of Bathurst Inlet, but they shifted to the west side for the latter half of the 1990s. Locations of the calving grounds have generally shifted back and forth from the east to west side of Bathurst Inlet depending on human activity, the timing of the season, and the effects of *hila* on *nuna*.

> Last year we were flying in the helicopter and saw a lot of calves around the Hood River. Last few years I think they have been calving around the Hood. 1996, 1997 and 1995. They starting calving on the west side probably about 5 years ago now, 5 or 6 years ago. (Allen Kapolak, 1998)

> The caribou usually have their young on the other side [east side of Bathurst Inlet] and around Beechey Lake (*Hanningayuk*) from what I know. Around Beechey Lake, *Umingmaktuuk* and the Brown Sound () areas. (Doris Kingnektak, 1998)

> When they come late from the south, they go to calve there [west side of Bathurst Inlet]. They would stay on that side [west] if they come late in the spring. (Mary Kaniak, 1998)

> The ones that come late from the south have gone there [west side of Bathurst Inlet] for the past two years. (John Akana, 1998)

> They used to calve around here [east of Bathurst Inlet], but now they calve over here [west of Bathurst Inlet]. They used to calve on this side of *Tahikaffaaluk* Lake by Ellice River (*Kuunayuk*). They calve here by Ellice River (*Kuunayuk*); they used to calve around here. Right now they calve somewhere else. That is where they have always calved, since the past. They used to go close to Bathurst Inlet (*Kingauk*) . . .Around here was the first time I saw a caribou with a calf. A long time ago. . . maybe 1950. . .I

have heard in the recent years of a lot of caribou calving around here. Just a few years ago, a couple of years, I heard of caribou calving here. I must have been around 60 or 59 years old. Probably 1966, I have heard of caribou calving [west of Arctic Sound at *Tikigakyok*] . . .Yes, always the same place they go to calve. (John Akana, 1998)

I have heard of caribou calving on this side of Bathurst Inlet, in front of *Qitunnik*, last year and the year before. There has been the most caribou here in the last few years. (John Akana, 1998)

Alice Anablak, Kugluktuk, 2000.

5.10 Caribou and Our Warming Climate

For generations, Qitirmiut have linked *hila*, *nuna*, and caribou in ways that have enabled survival under difficult weather conditions. These linkages are changing, however, due to a combination of earlier spring melt and later fall freeze-up. Increasing temperatures have led to a longer period of summer-like conditions, particularly in the last five years. This window of warmer and longer days has influenced caribou migrations, body condition, and population levels.

5.10.1 Warmer Temperatures

There is a general change in weather patterns towards a warmer climate, most evident in the 1990s.

> Weather, it is hard to say but I find the weather from long ago, is getting hotter, getting hotter every year, I noticed the weather is getting warmer and hotter from long time ago. (George Kavanna, 1998)

> Everything is changing. It is not the same as before. Sometimes it does not snow as much as it used to. It never gets as cold as it used to. A long time ago, when the weather got bitterly cold, the fuels like heating oil, gasoline and naphtha used to freeze . . .It used to get real cold in the past, but nowadays it is not the same. (May Algona 1999)

> It was so much warmer the last few years, in the 1990s and the late 1980s (Bobby Algona, 1999).

> A long time ago, Cambridge Bay was usually cold. Nowadays . . . weather gets too hot sometimes (Archie Komak, 1998).

The warmer temperatures that were common in the 1990s affect the surrounding snow and ice environment. Safe and fruitful hunting, fishing, and sealing require careful observation of ice thickness, snow patchiness, melting rates and patterns, and changes both within and between the layers of snow and ice. These observations have always guided Qitirmiut to safe and expedient travel routes, for example, where the ice is thick enough to support a heavy sled. In the past, living off the land meant that Qitirmiut had to

watch carefully when and how the ice melted and froze. While Qitirmiut no longer live off the land in the same way as they did historically, such pastimes as hunting and fishing remain important and still require careful observations of ice and snow conditions during spring-melt and fall freeze-up.

5.10.2 Earlier Spring and Later Fall

Spring-melt of snow and ice seems to be coming earlier and fall freeze-up is much later than people remember from the days of their youth. Spring-melt occurred earlier throughout the 1990s than it did in the past.

> [T]he weather is warmer now...the snow seems to go earlier in the late spring. (Archie Komak, 1998)

> It was a long time ago, [when] the ice on the ocean used to go away late. (Frank Analok, 1998)

Some Qitirmiut thought that spring is actually coming later. These comments came from the eldest interviewees who do not spend a great amount of time on the land anymore.

> Right now [1997], it has not started to warm up yet. It seems to come later. (George Kuptana, 1997)

> The weather has changed too. It is not hard to tell. The usual time spring comes around seems to come later. . . Things have changed from a long time ago. . . Nowadays it is different. Even the land is different. That is what the people from Iqaluit were saying last year [1998]. (Frank Analok, 1999)

In addition to spring coming earlier these days, fall comes later. Before temperatures started to warm, it is common to have freeze-up begin in the late summer, during August or September. In the late 1990s, the ice started to freeze in October or November.

> Nowadays freeze-up occurs in November. Sometimes there would be no ice at all and other times it would go again after freezing up. It has changed. In the past, the ocean would be completely frozen over in November. (Frank Analok, 1999)

> It seems to be getting warmer. The ocean freezes over later than usual. (John Akana 1998)

> Sometimes in the late summer, years ago, it would freeze-up. Now it seems to freeze-up late and other times it would freeze-up earlier. Sometimes it would freeze-up late. That is how it is. . . This happened for many years. A long time ago the ice on the ocean used to go away late. Nowadays it goes earlier so waiting is not so bad anymore. (Archie Komak, 1998)

The combination of an earlier spring and a later fall has led to longer periods of summer-like conditions, according to local observations. These factors together influenced the environment and caribou. For example, leads opened earlier, vegetation was more rich and abundant, ice thinned, and water levels fell. There were also more extreme heat days, and sporadic freeze-thaw cycles developed. These impacts from a warming climate affect caribou movements and migrations, population levels, overall health, survival, and behaviour.

5.10.3 Changes in the Tundra and Caribou

Migration routes and locations of calving grounds have shifted on a local scale partially because of the impacts of a warming climate. Patches of water opened earlier in ice on the sea, rivers, and lakes and forced caribou to change their normal migration routes on a small scale. Another observed impact is that plants became taller, bushier, and more plentiful and, as a result, caribou shifted their migration routes towards these areas of rich vegetation.

Big and Bushy Vegetation

With warmer temperatures, there are changes in tundra plants that caribou either eat or use to escape the sun. Plants are larger and there are more of them, particularly shrubs, in certain traditional camping areas such as the *Hiukkitaak* River near Bathurst Inlet. The number of different types of tundra plants has also increased, especially on Victoria Island. Recently, there have been some types of lichens and flowering plants on Victoria Island that have never been seen there before.

> Nowadays I see more willows when I am walking around. Sometimes I would pick willows. I never used to see any willows when we first moved [to *Ikaluktuuttiak*]. I would pick some willows to cook with out on the land in the summer, when they have grown. (Bessie Omilgoitok, 1998)

> Today there is growth on the land. The land is changing that is why on this island there is more growth. . . There was no vegetation around here. There was only gravel and pebbles long ago. Nowadays it seems to be continuing to get more vegetation and because of the land is getting beautiful. . . It is the first time I have started to see them, now for about three years, they are growing. Just like mainland, there is more vegetation growing. . .Just like the mainland, the island is getting prettier when it grows. There seems to be more grass too. It used to be only sand, only mud. (Moses Koihok, 1998)

Shade, Plants and Migrations

During the elder-youth camp, many elders commented on how some plants near the shores of rivers have grown taller and more lush than they remembered seeing in the 1930s and 1940s. Willows and alders throughout the Bathurst Inlet region are growing taller, have thicker stems, and produce more branches than they remembered during years that they travelled with their parents and as young adults.

> There was no vegetation around [*Ikaluktuuttiak*]. . . There is more vegetation growing now along the shoreline. (Moses Koihok, 1998)

Given that vegetation has grown larger, especially near the shoreline, and that caribou are often found in shaded places, it is possible that caribou shifted their migration routes to seek out these areas. This may be true at least on a small scale.

5.10.4 Changes in Water, Ice, and Snow

The warming climate in the 1990s and the resulting changes in water, ice, and snow caused caribou to shift their migration routes. There were differences in the timing and manner that ice melted, and in the water levels in water bodies that caribou had to cross.

Leads

Warmer spring temperatures combined with currents cause the ice to melt earlier, creating patches of open water known as "leads". These leads influence caribou by altering their spring and fall migrations across sea ice. For example, if a lead is too wide to swim across, caribou may turn around and go back to shore or follow the lead until they find an area where the ice is thick enough to continue on their path. Sometimes caribou swim across leads if the open water stretches from the ice edge to the shore. Otherwise, caribou rarely swim across leads because it is difficult for them to get back out of the water and on to the ice. When leads are especially wide, caribou have to change their migration routes.

> [The caribou] mainly come through there [across from Elliot Point in southern Bathurst Inlet] when they are calving on the east side. For some caribou, it is still the same. . . The caribou…come around through from Portage Bay off *Kuadjuk* Island. . . They come south then go around again. They cannot hit that open water down there...That open water has always been the same . . . [but] it opens earlier and way bigger [nowadays]. (Allen Kapolak 1998)

When rivers melt earlier than usual, they can flow with such speed and force that it is difficult for caribou to cross. In addition, floating ice downstream can be dangerous.

> Generally, [the caribou] have been staying to the west. Only a few coming through last few years, mostly staying around the west. Maybe it is because the Hood and Bathurst Rivers started to go earlier and they have a hard time getting across. All the rivers. Warmer weather these past few years. (George Kapolak Haniliak 1998)

Qitirmiut are experts in noticing which leads open up and rivers melt first and how these leads can change location throughout the melting period from one year to the next. For example, certain places in Elu Inlet and Bathurst Inlet are known to be extremely dangerous during the spring, fall, and winter because of ocean currents that make it difficult to judge the ice thickness and open water that is found year round.

Thinner Ice

In the 1990s, warmer temperatures, a longer ice-free period and shorter winters meant that ice on lakes, rivers, and the sea did not have as much time to become as thick as it was in the past.

> Nowadays it freezes up later than usual. It does not get thick as it used to. (Buster Kailik, 1998)

> It does not get as cold as it used to. A long time ago it would be bitter cold and the ice would be thicker. . . The water gets warm now and takes longer to freeze. . . The ice does not get as thick as it used to, maybe because the water is warmer than it used to be . . .[My] brother was sealing one day and said 'Sis, come and see this. The ice is thinning. It is not even spring yet and it is thin.' . . . The ice does not get as thick as it used to...Some of the younger people have mentioned that as well. (Connie Nalvana, 1998)

Thinner ice can cause problems for caribou since they need a certain ice thickness to travel across frozen water bodies, especially in the southern Bathurst Inlet area. While the sun, length of daylight and timing of the season may trigger caribou to cross over a frozen lake, river or ocean, the ice may not be thick enough to support their weight. During the fall, the ice must be thick enough for caribou to cross during their migration southwards towards their wintering grounds. Similarly, in the spring, the ice must be thick enough for caribou to cross during the migrations northwards towards their calving

grounds. If the ice is thin or there is open water, caribou will usually change their migration routes by walking alongside the lead for several kilometres, thereby wasting valuable energy. Sometimes caribou will cross over the thin ice, fall through, and die of hypothermia.

> Last year I noticed the ice close fairly late from the years before. That is when a few caribou were trying to cross from Cape Peel, in Victoria Island (*Kiilliniq*). I heard from the guys that were working from the North Warning System, that some caribou drowned near Cape Peel, about 70 miles west from Cambridge Bay (*Ikaluktuuttiak*). They were trying to migrate across towards Surrey Lake and Wellington Bay (*Iqaluktuuq*), come towards Cambridge Bay (*Ikaluktuuttiak*) area. I heard not lots drowned but not hundred, but less than a hundred, I think. (George Kavanna, 1998)

Several Qitirmiut observed an increase in the number of caribou drowning because of thinner ice in the 1990s. While travelling by snowmobile in 1996, two community members found themselves amid hundreds of antlers that were frozen and sticking out of the ice like an antler forest.

Water Levels and Shorelines

Water levels around Bathurst Inlet seem to have dropped. At the same time, the shoreline provides important habitat for caribou.

> The water level seems to be getting lower. . . In the past, the water levels were higher. Some of the rivers have gone. . . During the summer, in August, people travelling by boat have noticed that the water level has dropped compared to the past. People liked the water levels of the rivers and ocean then. The Islands on the ocean seem to be getting bigger than they used to be. Kanuyauyaq, an elder, used to say the rocks barely showed back then. Now the Island seems longer, higher and bigger. (John Akana, 1998)

> The water level seems to have gone down in the lakes and the rivers do not flow as strong as they used to. The lakes seem to dry out too. . . I wonder why that is happening. Does anybody know why that is

> happening? That was starting to happen at Contwoyto Lake when we moved. (May Algona, 1999)

> It seems that the weather has changed . . .The water level seems to have dropped. It seems like there is less water. The lakes seem to be smaller and dry out. That is what we have noticed. (Annie Kaosoni, 1998)

> The shoreline is now lower than it used to be. It is changed. Even the ocean. Maybe the land is getting higher. The shorelines used to be a lot higher. . . The shorelines have changed, continue to change. . . The shoreline today is lower than when I was a boy, unless the land has got higher. (Moses Koihok, 1998)

While water levels have dropped, there has been more snow in some places. Since the weather is so warm in the summer, the water is drying up into the sky, as evidenced by more thunderstorms and lightening.

> It seems to snow more now in the spring. When the snow is melting, the water, it gets higher. Sometimes there is a lot of water when the weather gets warm. When it has snowed a lot during the year. (Paul Omilgoitok, 1999)

Harassment by Insects

A fourth way that warmer temperatures and a longer period of summer-like conditions influence caribou is that there are so many bugs. Recently, there have been "hot hot" and "humid summers" which have made the land "drier" (Bobby Algona, 1999), and brought more bugs, especially mosquitoes.

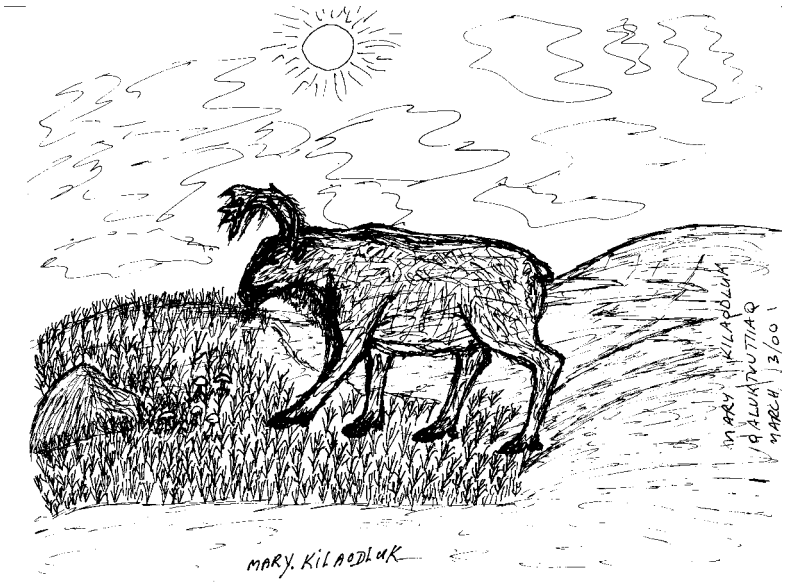
> There were not many mosquitoes back then [in the 1970s]. They would only be around for a short time. (Frank Analok, 1998)

As the temperature increases, so does the number of mosquitoes but at some point it is too hot for mosquitoes to survive. During the 1998 summer, temperatures rose so high that the mosquitoes were a problem for only one week. Usually the bugs are bad for two weeks starting in late June or early July.

> When there are too many mosquitoes, [caribou] would gather and go in circles to get rid of the mosquitoes. Sometimes when they shook the flies off, it would make the sound like thunder. There would be so many mosquitoes that they would look like snowflakes. You can see even from a distance. Even from a distance you can hear the noise they make when they shake the mosquitoes off. That is what has been told . . . After they have calved, there are too many mosquitoes. (Moses Koihok, 1998)

Caribou can overheat and lose weight on hot and windless days while running around to escape excessive swarms of mosquitoes and avoiding eating. Caribou may not survive the winter if they lose too much fat.

> Sometimes [caribou] would freeze when they are skinny. The female and calf would freeze while they are swimming to another location . . . on their route. (George Kuptana, 1997)



Mary Kilaodluk, Ikaluktuuttiak, 2000.

5.11 Changing Weather

In addition to the warmer temperatures in the 1990s, Qitirmiut find it more difficult to plan for the weather because it has become so unpredictable and variable. Today, people understand weather less as they are not outside and living in it as much. Still, weather events seem to be beyond the realm of expectation or what people consider normal. Nowadays there are more cases of freezing rain and sporadic freeze-thaw cycles that lock vegetation in frozen sleet and make it impossible for caribou to eat. This can cause caribou to starve to death. Days of extreme heat were also more common in the 1990s, which is why many caribou become overheated, exhausted, and skinny. Combined, these events could lead to lower caribou population levels.

5.11.1 Unpredictable and Variable Weather

> Back in the 1960s I could almost say that I could predict the weather any day whereas nowadays you might think it is going to rain . . . or snow back then, but today there is nothing. Turn back and no [snow] dump. . . That is the big difference from the 1960s and today. (Bobby Algona 1999)

> Everybody that I talked to said that they could predict the weather in the 1960s. It is more predictable and stable, whereas nowadays it is unstable. . . [There is] any kind of weather on any day. You can have rain in February sometimes nowadays. Or snow in August. Hail in August. Hail or even snow in July! I can remember . . . six or seven years ago, we had a snow bank outside my door in August. That one night it really snowed and froze and big snow piled outside my tent in August. About seven years ago, I think it was . . . and next day it was all gone again. (Bobby Algona 1999)

> They calve this time of the year. Sometimes they would freeze to death in the storm. I have seen it happen once at *Hiukkitaak* River. Could be more caribou, but you never know the weather. Sometimes we would have cold spells in the spring and calves and ducks would freeze. I have heard of ducks freezing in the spring. Sometimes it would freeze-up again in the spring. (George Kuptana, 1998)

> You never know the weather. . . It is a fact that the weather is never the same. . . Every year is always different. . . Everything is always changing. Right now it seems to be getting worse. That I have noticed in my lifetime. It used to get real nice outside when I was younger, right after a storm.

> Right now when the weather gets bad, it seems consistent. We do not know the weather. It has a caretaker of its own. (Frank Analok 1997)

> When we moved here [*Ikaluktuuttiak*] in 1964, it would always be cold and foggy in the spring. It would never clear up. Nowadays it gets warm and does not get foggy as much. (Bessie Omilgoitok, 1998)

The general trend of recent warmer temperatures has some people concerned because changes in the weather, environment, and wildlife populations seem to be happening too quickly for both people and the environment. This has resulted in extreme events or happenings that are beyond what is considered normal.

5.11.2 Impacts on Caribou

There has been an increase in unpredictable weather in that there are more climatic events that occur beyond the limits of what people typically expect. Caribou are affected adversely by this unpredictable and variable weather, particularly by freeze-thaw cycles, hot days, more bugs, and smoky skies.

Freeze-Thaw Cycles

In the 1990s, there were more short-term changes in temperature. At times, these fluctuations caused variable freeze-thaw cycles that happened when a few days of warm weather started to melt the ice and snow and then a sudden cold period followed. This warming then cooling trend caused the melt-water to freeze and form an icy layer on top of the snow or directly atop the tundra. These freeze-thaw cycles can happen in both the spring and fall, particularly during the times of break-up and freeze-up. Alternatively, a spring blizzard can cover the ground with heavy snow.

> It is been melting sooner than usual, [and] then freezing again . . . it has been melting and freezing. (Anonymous C, 1998)

Caribou numbers decrease during the years when there are many freeze-thaw cycles. These events trap lichen and other tundra plants into the ice, and make them unavailable

as forage. Thus, warmer temperatures and variable weather conditions may cause a decrease in caribou population levels because of caribou starvation.

> The snow was covered in ice. It had rained after a big snowfall. That is when some of the caribou starved to death, but in another area of land, where it is not so rough, they were fine. . . Some areas were fine where it did not rain. . . The land was covered in sleet and ice and some caribou and musk-ox froze to death. When the land is covered in ice, where it is not so rough, some caribou would freeze to death. (Archie Komak, 1998)

> One spring, a lot of caribou died because of freezing rain and sleet. There were no areas for them to feed around . . .They had starved to death because of sleet. They had nowhere to eat. The ice was too thick. . . They could not dig through it. (Moses Koihok 1998)

Hot Days

There were more hot days and days of record temperatures (over thirty degrees Celsius) in the 1990s than in previous decades. Temperatures were hot enough to melt the ice and snow in just a few short days, both in communities and out on the land.

> Few years ago, two years ago [1996], it was so hot in July . . .40 degrees above. (Doris Kingnektak, 1998)

High temperatures can cause caribou to overheat and die of exhaustion. Sometimes caribou can get so hot that they overheat and fall unconscious. This can later lead to death.

> Caribou would die from the heat of the sun. When the weather gets too hot, a lot of them would suffocate side by side. My wife and I have seen that at *Tahiluk*. They suffocated from the heat of the sun. (Mackie Kaosoni, 1998)

> When it gets too hot, the caribou would suffocate. When it gets too hot in the summer, because they are used to the bitter cold. Those that have suffocated would look like they have been shot down. (Annie Kaosoni 1998)

> We saw dead caribou; they had died of exhaustion. We saw this in the recent past. (Archie Komak 1998)

When caribou are exposed to extreme heat, people noticed changes in their health and body condition. For example, caribou became skinnier and weaker. Caribou die when they get too skinny. In general, days of extreme heat, more common nowadays, are connected to decreases in caribou numbers. Hot temperatures alone can kill caribou and the associated increase in mosquitoes that harass caribou can also cause caribou to overheat and become exhausted from running around, and eventually die.

> When there are too many mosquitoes [the caribou] would gather and go in circles to get rid of the mosquitoes. Sometimes when they shook the flies off it would make the sound like thunder. There would be so many mosquitoes that they would look like snowflakes. You can see, even from a distance. (Moses Koihok, 1998)

> When the weather gets too hot, many caribou would suffocate. Then you notice there are fewer caribou. Some summers can get very hot . . . Really, very hot. July, June, the weather get hot . . . In August, there is more meat on [caribou] after the weather cools down. (Paul Omilgoitok, 1998)

> During the summer when there are a lot of mosquitoes in the warm weather they would die of exhaustion . . . when the weather is too hot for them. (Bessie Angulalik, 1998)

> In the summer, sometimes the caribou get weak. They get really hot. Sometimes their meat goes green, especially around the haunches. You get some of the green meat from where they get too hot in the summer, so that you know not to eat that caribou . . . And it gets too hot so that their meat goes strange and then in turns green (Naikak Hakongak, 1998)

Forest Fires and Smoky Skies

Hot temperatures increase the number of forest fires and make the skies hazy, further contributing to caribou fatalities or breathing difficulties.

> From the smog, there were a lot of dead bulls on the land. It was really hot that time and some caribou had died. (Charlie Keyok, 1998)

> There is always smoke. When there is a forest fires down south, it really gets smoky up here and if it is foggy you could smell the smoke. Last year (1997) it was really smoggy. You could smell forest fires, maybe for at least 5 days, 4 or 5 days anyway. Somewhere there was a big forest fire and it was a dry year for the Yellowknife area. (Anonymous C, 1998)

> Probably [caribou were sensitive to smoke]. We were. We would go out and say, "So stink! Cover your nose and mouth!" (Anonymous C, 1998)

5.11.3 Ways that Caribou Adapt to Warmer Temperatures

During hot days, caribou have to try to keep cool otherwise they can overheat. It is likely that as climate generally warms and days of extreme heat and forest fires become more frequent, ways to prevent dehydration and overheating become more important for caribou. Caribou adapt to the heat by staying near the shorelines, lying on patches of snow, drinking water, wading and swimming in the water, eating moist plants, and sucking on mushrooms.

> When it is hot outside the caribou would go on the shores of the ocean where it is cooler. They stay in the shaded areas as well. They would lie on the patches of the remaining snow as well to keep cool. (Mabel Angulalik, 1998)

> When the weather is hot during the summer the caribou would have those [mushrooms] when they are thirsty. (Bessie Omilgoitok 1998)

> [Mushrooms] are what the caribou use to keep their mouths moist when they walk. They need water and that is what they use when they are thirsty…they would keep these mushrooms in their mouths because they are moist inside. Wet, really wet. . . When caribou are walking around, they could smell [mushrooms] right away and they go after them. . . [They] last a long time. The caribou would keep them in their mouths at the back of their cheeks. . . Just like whale blubber . . . just like snuff. (Jack Alonak, 1998)

6.0 Conclusion

Through the *Tuktu* and *Nogak* Project, Qitirmiut elders and hunters shared their experiences, observations, explanations and relationships relating to caribou in the Bathurst Inlet area. In doing so, they have contributed *Inuit Qaujimajatuqangit* (IQ) to help fill many of the missing pieces of the caribou puzzle. Through their efforts, a new understanding of caribou can help to guide current and future generations.

> People listened to traditional knowledge. That is how they know everything. (Jimmy Maniyogina, 1998)

> I do not want to be the only person telling stories. . .There are other elders that can talk about [caribou] as well. They can talk about what I have just mentioned or anything else they have in mind. (Frank Analok, 1999)

> People should help each other and feel free to voice their opinions. People should do all they can to protect our traditional land and water. (Moses Koihok, 1998)

This compilation should be used together with the many accompanying maps and detailed transcripts stored in the database in order to appreciate the depth of *Inuit Qaujimajatuqangit* of caribou. Still, this work is only the beginning of what could be documented, for example, about other animals or regions.

Written materials are only one means to learn from Qitirmiut, and as elders are quick to point out, one should learn by seeing, listening, experiencing, participating, and inquiring. Through this chronicle, Qitirmiut elders and hunters have presented insight into what is understood about caribou. Hopefully, future works will continue to contribute to this understanding.

> I cannot think of anything else. I do not want to tell any lies. (Nellie Hikok,1999)

Children and youth were included in every way possible including through the Hiukkittaak Elder-Youth Camp and everyday activities. In this way, elders shared their knowledge of caribou with current and future generations.

7.0 Links with Parallel Studies

The TNP continued to collaborate with several other research efforts in the region. Links continued to be made with the Naonayaotit Traditional Knowledge Study, WKSS calving ground study, and the Kitikmeot Heritage Society. .

7.1 Naonayaotit Traditional Knowledge Study (NTKS)

Consultation with study leaders of the NTKS has been ongoing since the inception of the TNP to facilitate cohesion and compatibility between the two projects, identify information gaps, and avoid any duplication that may occur. Cooperation and collaboration has led to both projects sharing the same textual and spatial database operating systems (AskSam and ArcView, respectively). Collaboration

This year, collaboration occurred significantly in the area of identifying the traditional place names known to Qitirmiut. This will facilitate future heritage efforts in the region.

7.2 Kitikmeot Heritage Society

In the Kitikmeot region, many elders are working to document local history through the Kitikmeot Heritage Society (KHS) in Ikaluktuuttiak. A new heritage building in Ikaluktuuttiak is scheduled to open in July, 2001, and this will serve as the main storage and access centre for all historical resources including TNP materials. We hope to raise funding to have a permanent display of the TNP in the centre.

Many people involved with the KHS are also key players in the TNP which has made the connection between the KHS and TNP easier. Over the years, communication between the KHS and TNP has meant that information about caribou can be better shared and that the use and storage of the project results will be easily co-ordinated. For example, the Society has shared old transcripts of interviews with local elders that contain information

about caribou and calving areas. These are valuable, especially since some of the interviewees have already passed on.

7.3 Other WKSS Studies

Links with other WKSS studies have been primarily informal. However, close dialogue with other traditional knowledge researchers has been important. Further, the link between WKSS caribou studies and the Bathurst Caribou Management Committee planning have been made easier through these informal discussions.

Communication is the key to working together.

8.0 Training Activities and Results

Training activities this year revolved around writing, revising, and editing the final report. Naikak Hakongak and Sandra Eyegetok continued to contribute significantly towards the realization of this final report. Margo Kadlun-Jones was unable to continue with the TNP on a full-time basis but contributed wherever possible.

It is hoped that funding can be raised for future training sessions for community members on how to use the textual and spatial database. Such sessions are also needed for TNP researchers.

Researchers give a presentation on lessons learned through the TNP and how to conduct IQ work to the Government of Nunavut in Ikaluktuuttiak.

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Appendix A: Researchers' Reflections on Methods

Strengths and Successes

One of the great strengths of the TNP was making communication and consultation with community members our priority. Each researcher was well known to elders, youth, and others through public meetings, posters, newspaper, radio, and television announcements. In addition, informal personal visits with elders and hunters helped nurture the strong community support, faith, and relationships that we experienced.

Making communication and consultation our main concerns benefited our research in that we were able to adapt the process according to input from community members and thereby ensure that locals drove the research direction. For example, sometimes during these visits, elders and hunters who were interviewed made suggestions on how to change the interview process, weeks after they had been interviewed. On several occasions, elders spoke about events that helped form some of the questions we asked during later interviews. When community members guided us, we felt energised to continue, especially during some of the trying times.

While we felt close to community members, we did not keep in touch with supporting agencies as well as we might have. This was due to the constraints of time and personnel as well as the high rate of staff turnover in many of these northern agencies.

While our dedication to community-driven and bottom-up research contributed to our success from the point of view of locals, this commitment meant that the research process took longer and cost more than we expected. In hindsight, we might have followed better the advice of researchers who cautioned us of the enormous time and money required for IQ studies. For example, a typical local knowledge research project is reported to cost around $125,000/year for three years (Ryan, 1998). In the north, this amount can be as high as $150,000. Through the TNP, we hope that we have set one of several standards on how to conduct community-driven IQ research so that researchers and sponsors alike can benefit from knowing the costs of such endeavours.

As a WKSS project, a large portion of our success is owed to the support received from numerous northern agencies including the Kitikmeot Inuit Association, Nunavut Arctic College, Nunavut co-management boards, Nunavut Tunngavik Incorporated, federal and territorial governments, mining companies, and environmental organizations. Since we operated on a stretched budget and with few personnel, we could not have functioned without relying upon these agencies for temporary support in the way of transportation, office space, and other contributions-in-kind. It was an honour to receive the support of many members of these organizations who gave generously of their personal and professional time, food, accommodation, vehicles, and more.

One of our commitments to locals was to give copies of photos, videos, audiotapes, papers, or reports related to the TNP to individuals and central organizations in each community. Although this consumed money and time, it was a necessary and respectful approach. A part-time staff member whose sole responsibility was to code, organize, and distribute materials would have been ideal. Instead, time dedicated to these tasks slowed other parts of the research.

Locals commended the TNP researchers for spending quality time with community members although this had related disadvantages. When we spent ‘too long’ in one place, we became overwhelmed and burned out. Exactly what length of time was ‘too long’ varied over the years and often depended on the state of the researchers, especially in the sense of being away from family and friends. To improve upon this, we arranged for researchers to be joined by their children whenever possible.

Spending long periods in communities was, at once, both a burden and benefit to the research process. For example, meeting frequently with elders and hunters was positive in that it was easier for us to ask certain questions and participate in caribou-related expeditions. Frequent visits may have directed the research to include such happenings as a hunting expedition, cutting meat or preparing caribou stew that we might not have otherwise had access to. However, in participating in these happenings, we may have steered the process away from a more natural path. For example, people may have acted

differently while butchering a caribou in order to please the researchers or because they had an audience. IQ research requires that researchers spend meaningful time living or working in communities. It is important to reflect upon exactly how this level of involvement both positively and negatively influences the research process.

Significant Struggles

One of our greatest struggles surrounded staff illnesses and shortages, as well as our underestimate of the number of staff members required for this level of research. Ideally, at least three full time researchers would have operated from one northern office. At the start of the TNP, we failed to anticipate the workload necessary for such an IQ project and thus had only two full time researchers, one based half-time in the south. With more staff working from a professional office space, we may have finished the TNP more efficiently and with fewer effects of stress and repetitive strain on the staff.

Communication was sometimes difficult since most elders and board members spoke Inuinnaqtun while the researchers spoke mainly English and had some difficulties with Inuinnaqtun. At the same time, there were few professional translators. These few professionals are highly employed, overworked, and largely unavailable. As a result, sometimes the researchers had the difficult and uncomfortable task of translating. On the other hand, it was remarkable how much the researchers improved upon their reading, writing, and speaking Inuinnaqtun. This level of capacity building did not go unnoticed by members of the Board who congratulated several of the researchers, especially Sandra Eyegetok, on their improved language skills from the start to finish of the TNP.

Getting to know one another and understanding our cultural differences was another struggle that we faced. For example, sometimes Natasha, from a Western culture, expected things to be done too quickly. At other times, Eileen, Sandra and Naikak, all from an Inuit culture, felt uncomfortable expressing how they truly felt about a research question until much later in the research process. With time spent together, trust built,

and friendships made, we started to overcome these challenges. In fact, we learned how to take advantage of them.

One way in which we exploited our cultural differences was during the interviews when Natasha was present. In these cases, we found that elders and hunters talked at a more basic level so that she would clearly understand what they were explaining. This was an advantage because it meant that people took extra time to explain ideas and concepts more fully. Indeed, Natasha was almost like an Inuit youth given her short exposure to life in the Kitikmeot.

Another way to maximize on our different cultures occurred when Sandra and some of the other Inuit researchers were uncomfortable asking culturally specific questions to which they felt they *should* know the answers, as would all 'good' Inuit. When this happened, we could blame Natasha for wanting to know the answers so that Sandra and others would not lose respect.

One issue that was both a struggle and strength stemmed from the fact that we were mainly a team of women who had more ease connecting with women than with men. Not only do men and women have different views on caribou, but also, the ways in which they express their views often depend on the gender of the person asking the questions. As a mainly female team, we learned a lot from women through participating in "women's work": butchering and preparing the meat after the hunt or sewing with caribou skins. Casual discussions among women and researchers as we laboured over meat and skins, contributed a significant amount to our overall understanding of caribou. Likewise, men might have been more comfortable talking to other men about certain male traditions surrounding hunting, and male researchers might have been able to participate in different caribou related activities.

Despite the wonders of modern day communication tools such as email, there is no substitute for people working together, face-to-face. This is especially true in the cultural context of Nunavut. Although Natasha spent an average of six months per year living in

the communities over the course of the TNP, it was difficult for local researchers to operate effectively when she was not there because it left people to work alone on a daily basis. For many people, this workplace solitude results in loneliness and decreased productivity. In addition, the distance meant that issues that could have been resolved quickly in person, often took days to sort out because of email and phone difficulties. When a person from *Umingmaktuuk* (Bay Chimo) or *Kingauk* (Bathurst Inlet) had to be contacted, sometimes it took a week because these communities are serviced only by radio and a satellite phone that is not always turned on.

The fact that we included so many youth throughout the research was a strength in that many young people learned IQ from their elders as well as how to conduct oral history research. However, training and supervising youth was very time consuming and took away from other aspects of the research. During the summers, we had as many as ten youth employed at one time. It might have been more efficient to train fewer people, but more intensely. This being said, when working in small communities where employment opportunities are scarce, youth can benefit greatly from the experience and financial gain that an IQ project can offer.

On balance, the strengths and benefits of the TNP experience far outweigh the struggles along the way. This is especially true when these difficulties are appreciated as opportunities for improvement. It is hoped that the lessons learned will assist future IQ projects, as well as any endeavours by those involved in the *Tuktu* and *Nogak* Project.

Appendix B: List of Place Names of the Kitikmeot Region

Contributed to by Sandra Eyegetok, Naikak Hakongak, Margo Kadlun-Jones, Doug Stern, and TNP interviewees

Appendix B: Place Names of the Kitikmeot Region

Traditional Place Name	Other Traditional Spellings	New Spellings
Aagiak	Agiak	Agiaq
Aghagak		Aqhagaq
Agvilikyuak		Arvilikyuaq
Aimaukkattaak	Aimaukataak, Aimaukkattaak	Aimaukkattaaq
Akiakokyoak	Akiaokyoak	
Akullialuk		
Akunik	Akunik, Akunnik	Akunniq
Algaguhik		Alraruhiq, Alraruhiq
Algak		
Amaaktuagyuk	Amaaktuaryuk	Amaaqtuaryuk
Amaaktuk		Amaaqtuq
Amagoalgivik		Amarualrivik
Amaloktuok	Amaloktuok	
Angmaluktuagyuk		Angmaluqtuaryuk
Angmaluktuuk	Anmaluktuuk	Angmaluqtuuq
Aniaghiugvik	Aniarhiurvik, Aniaghiurvik	Aniaqhiurvik
Apaalik		
Arvilikyuaq		Arvilikyuaq
Aulativikyoak	Aulativikyoak	Aulattivikyuaq
Ayappappaktokvik		Ayapaqpaqturvik
Ekalivik		Iqallivik
Ekaluktuuk		Iqaluktuuq
Etibliakyok		Itipliaryuk
Hagvaktok		Harvaktuuq
Hanigaghiahugignik	Haniraghiahurirnik	Haniriagutiiq, Haniraghiahurirnik
Hanigayak	Hanirakhik	Hanirarhiq, Hanirayaq
Hanikgiagohik		
Hanikgiagohik		
Hanningayuk	Hanningayuq	Haningayuk,Hanningayuq
Haoniktok	Hauniktuuk	Hauniqtuuq
Hiiktinik	Hiiktinik	Hiqtiniq, Hiiqtiniq
Hingik	Hingik	Hingik
Hipliagyuk	Hipliaryuk	
Hitamiayakvik		Hitamaiyarviq
Hiukkittaak	Hiukitak	Hiuqqittaaq
Hivugakhik Kikiktakyuak		

Iglukyualik	Igloryoalik	Igluryualik
Ihhavik		
Ihuktok	Ehoktok	
Ihungak	Ehongak	Ihunngaq
Ikallialuk		
Ikallivik		Iqallivik
Ikaluakpalik		Iqaluaqpalik
Ikalughiugvik	Ikalughiugvik,Iqalughiurvik	Iqalukhiurvik
Ikaluit		Iqaluit
Ikaluktuuk		Iqaluktuuq
Ikaluktuuttiak	Ekaluktutiak, Ikaluktutiak, Ikalukutuuttiaq	Iqaluktuuttiaq
Ikalulialuk		Iqalulialuk
Ikalulik		Iqalulik
Ikigahak		
Iklukpalik	Iqlukpalik	Iqalukpilik, Iqluqpaliq
Iklukyoalik	Iklukyualik, Ikluqyualik	Iqlukyoalik, Igluryualik
Iklulik	Igloolik	
Ikpikyuak	Ikpikyoak	Ikpikyuaq
Iluilguyak	Iluilguyaq	
Imnaguak		Imnaruaq
Imnagyuat		Imnaryuat
Innaghakvik		
Inutkuaghaak		Inutquaghaaq
Itibliagyuk Lake	Itibliaryuk Lake	Itipliaryuk Lake
Kagitagnak		Qaritarnak
Kagitaknak		
Kagitangnak		Qaritangnak
Kaigayuktuk		Qairayuktuq
Kainniuktugvik		
Kainnuiktugvik		Qainniuqturvik
Kalgilik		Qalgilik
Kalgilikmi		Qalriliqmi
Kamaniguak		Qamaniryuaq
Kangakyuk		
Kangighinik		Kangirhiniq
Kangighuagyuk	Kangighuaryuk	Kangirhuaryuk, Kangighuaryuk
Kangigyuk	Kangiryuk	Kangakyuk
Kangikhoakyok	Kanikhuakyuk	Kangiqhuaryuk
Kangikhukyoak	Kangikhukyoak	Kangiqhukyuaq
Kangiklialuk		Kangillialuk
Kangikyuaktiak		
Kangilgiayok		
Kangilgiayok		

Kanikhuakyuk		Kangiqhuaryuk
Kannguyak	Kangoyak	Kannguyaq
Kannuyak		
Kanuyaokyak		
Kapihiliktuuk	Kapihiliktuk	Kapihiliktuuq
Katimanik		Katimannak
Kaumaugaktuk		Qaumaugaqtuq
Keeliakyuk		
Kemukton	Kimaktun, Kemukton, Kemakton	Kimaktuun
Kigalghuak		
Kiilinnguyak		Kiilin'nguyaq
Kiillik		Kiiliq
Kikiakaffaaluk		
Kikiktagyuak	Kikiktakyuak	Qikiqtaryuaq
Kikiktakafaaluk	Kikiktagaffaluk	Qikiqakaffaaluk
Kikiktakyuak		Qikiqtaryuaq
Kikiuktanayuk		Qikiuqtanayuq
Kikiviakyuk		Kuukkiviaryuk
Killinik		Kiilliniq
Kiluhiktuk		Kiluhiktuuq, Kiluhiktuq
Kingaagyuk	Kingakyuk, Kinngaaryuk	Kinngaaryuk
Kingalghuak	Kingalhuak	Qingalrhuaq
Kingauk		Qingauk
Kingautagyuak		Qingautaryuaq
Kitagingnaks		Kitaaginaak
Kitigak		Kitigaq
Kitunnik	Kitunnik	Qitunnik
Kiunnik		Qiunnik
Kivyaaktuk		Kivyaaktuq
Kugluktuagyuk		Qurluqtualuk
Kugluktualuk		
Kugluktuk		Qurluqtuq
Kugyutik		Qugyutik
Kuihikvik		Quihikvik
Kulgayuk		Kulgayuk
Kunayuk		Kuunayuk
Kungugjuak	Kungurjuaq	Kuururjuaq
Kunnguyak	Kun'nguyak	
Kupliguktuuk		Qupliruqtuuq
Kuugyuak	Kuukyuak	Kuukyuaq
Kuukkiviagyuk		Kuukkiviaryuq
Manikyak	Manikyak	
Mautagina		Mautarina

Mautak		Mautaq
Mayauttak	Mayauttak	
Mayuattuit	Mayuattuit	
Mayugvik		Mayurvik
Mittimatalik		Mittimatalik
Naarnak		Naarnaq
Nagyuktuuk	Nagyuktuuq	Nagyuktuuq
Nahaoyak	Nahaoyak	
Napaktulik	Napaaktulik, Napaktolik	Napaaqtulik
Naughigvik	Naughirvik, Naokhiurvik, Naughigvik	Nauqhirvik
Nauyaat	Nauyaat	Nauyaat
Niakingovik		
Niakkinnguvik		Niaqqinnguvik
Niakuknakyuak		Niaqurnaqyuaq
Nilaovik		
Nulahukyuk		Nulahukyuk
Nuvukhit		
Oihingak Point		
Okaliktok	Ukaliktuk, Ukaliktok	Ukaliqtuuq
Omanak	Umanak	Uummannaq
Omingmagiuk		Umingmakyuuk
Omingmalik		Umingmalik
Ongnak		
Ovayualuk		Uvayualuk
Paalik	Padliq, Palik	Paalliq
Paalikyuak	Paalikyuak, Padliryoak	Paalliryuaq
Pangnigtung	Pangnirtung	Pangniqtuuq
Paonngaktok	Paon'ngaktok	
Piginganik		
Piginganing	Piringaning	Piringaniq
Pitokik	Pitokik, Pitaqiq	Pituqqiq
Sanikiluak		Sanikiluaq
Tagiunnuak	Taryunuak	Tariunnuaq
Tahialilungnahik		Tahialilungnahiq
Tahialuk		Tahialuk
Tahikaffaluk	Tahigaffalik	Tahikaffaaluk, Tahikaffaluq
Tahikyoak	Tahikyuak	Tahikyuaq, Tahiryuaq, Tahikyuak
Tahipkapfalok		
Taliuyak		Taliuyaq
Taloyoak		Taluryuaq
Tikigaagyuk	Tikigaagyuk	Tikiraaryuk

Tikigaagyunnuak		Tikiraaryunnuaq
Tikigak		Tikiraq
Tikikgakyok	Tikiraaryuq	Tikiroaryuk
Tikikvik		
Tovyakvik		Tuvyarvik
Tunullik		
Tuulak		
Ughuktuuk		Urhuqtuuq
Ulukhaktuuk		Ulukhaqtuuq
Umanak	Umanaq	Uummannaq
Umiiviit		
Umingmaktuuk	Omingmaktok, Omingmaktuk	Umingmaktuuq
Umingmakyuuk		Umingmakyuuk
Ungahitak	Unahitak	Ungahitaq
Ungiivik		Ungiivik

Appendix C: Interview Questionnaire

Tuktu and Nogak Project: List of Guiding Questions

Questions to be used as a guide only.

Interviewee Biography

1. Where were you born?
2. What year were you born?
3. Who are your parents, spouse and children?

Background

4. What are the Inuinnaqtun names for different kinds of caribou (for example, cows, bulls, and calves, of different ages)?
5. How can you tell the age of a caribou?
6. What do caribou do during different seasons?
7. What do caribou do during the day and at night?
8. How do caribou communicate? When do they make sounds to one another?

Community Use

9. Why are caribou important to the Inuit?
10. Do people use caribou today in the same ways that they did long ago?
11. Did people use parts of caribou as medicine long ago?
12. Have you heard if people have different uses for caribou across Nunavut?

Local Caribou

13. Where do you see more Barrenland caribou (large and brown)?
14. How many kinds of Barrenland caribou do you see (Queen Maud and Bathurst herds?)
15. Do you see more Barrenland or Island caribou?
16. How can you tell the difference between these caribou?
17. Are there any other kinds of caribou that you see?
18. I've heard that some Barrenland caribou spend the winter near Bathurst Inlet and others go south. Have you seen or heard about this before?

Hunting

19. Where did you hunt caribou as a young child?
20. Where did you hunt caribou as a young adult?
21. Where do you hunt caribou as an adult?
22. Where is the very best place for hunting? Why? What time of year?
23. What kind of caribou is the best for hunting?
24. Can you tell me about different ways to hunt caribou?
25. Are there certain things that an Inuk is not allowed to do when hunting caribou? (For example, kill more than he can eat.)
26. What will happen if a hunter does not follow these rules?
27. What are some Inuit ways to make sure you come home with lots of caribou?
28. How many caribou do you hunt a year?
29. How many caribou does your community hunt a year?

30. Do you remember years when there was a shortage of caribou? What did you do?
31. Can you tell me about how you skin a caribou?
32. When do you know that you have enough caribou?
33. What do people do when you have unused caribou or parts of caribou? What did they do long ago?

Migration

34. What time of year and how do cows and bulls start looking for one another to have calves (rutting)?
35. How many days do the cows and bulls spend together during the time they are making calves?
36. What time of year do the cows and bulls come together again?
37. When do you first see cows in the spring? What about bulls?
38. Can you use the maps to show us where you see them and which direction they are moving?
39. Has this changed since long ago?
40. Where do you see caribou in the summer?
41. How are the antlers of a cow and bull different?
42. What time of year do caribou lose their antlers (bulls and cows)?
43. Have you seen areas on the land where there are lots of antlers?

BREAK TIME!!!

Calving Grounds

44. Where have you seen calving grounds?
45. Why do cows go to this area?
46. Do cows return to where they were born to have their calves?
47. Do cows calve all together in one place or in small groups in different places?
48. When does the first cow arrive at the calving grounds?
49. When does the last cow arrive at the calving grounds?
50. What happens when a calf is born before the cow reaches the calving grounds?
51. When people are hunting, how can they tell when a cow is pregnant?
52. How do people feel shooting a pregnant cow?
53. Are unborn calves important to the Inuit for eating?
54. How can people tell when an unborn calf is close to being born?
55. Have you ever seen a calf being born? Can you tell me about it?
56. How old is a cow when she has her first calf?
57. How often does a cow have a calf - every year or every few years or ?
58. How long do calves stay with the cows?
59. What do cows teach their calves?

Management Issues

60. What are your concerns about calving grounds and mining in this region?
61. What rules should there be about mining and caribou or calving grounds?
62. Are there areas that caribou use where you do not mind mining?
63. What can be done to protect calving grounds?

64. How many kilometres away are caribou when they first sense a small mining camp (50 people) on the land? What about for a large mining camp (200 people)?
65. What time of year are caribou most bothered by noise or disturbance?
66. How do caribou act when they are bothered?
67. What do you think should be done so that there are enough caribou for future generations?

Predators

68. Which animals kill caribou?
69. Which animal kills the most caribou?
70. Have you ever seen an animal killing a caribou? What was it like?
71. How do caribou protect themselves and their young from danger?

Health

72. Where have you seen dead or sick caribou?
73. How can you tell when a caribou is sick when you see it from a distance?
74. How can you tell when a caribou is sick when you are skinning it or taking out the insides?
75. Were there more sick caribou today or long ago?
76. How many sick caribou do you see in a year?
77. What are the Inuinnaqtun names to describe sick caribou?
78. Have you seen caribou with green meat? Why is it green?
79. Does caribou meat taste the same all year?
80. How does caribou meat taste from a cow, bull and calve? Which do you like best?

BREAK TIME!!!

Feeding

81. When you are hunting, how do you use the land to find caribou?
82. How do caribou make changes to the land when they are migrating or calving?
83. What do caribou eat?
84. Where do caribou spend the most time eating? (valleys, hillsides or ?)
85. In this region, where is the best food for caribou found?

Climate

86. How is the weather today compared to long ago?
87. Can you tell me about years when the weather was really cold?
88. What about years when the weather was really warm?
89. Can you tell me about times when the ice broke up early in the spring or formed late in the fall?
90. How does a change in weather influence caribou? Have you noticed differences in the land, water or snow because of changes in weather?
91. Do caribou like a certain type of snow for travelling?
92. How do caribou know when the snow is going to melt?

Closing

93. What is the most interesting thing you have learned about caribou?

94. Do you know of any old stories about caribou?
95. Is there anything else that you would like to share with us?
96. Is there anything we can do to make this interview better?

Appendix D: List of Interviewees

Appendix D: List of Interviewees

Interviewee	Community	Born	Gender
Akana, John	Umingmaktuuq	1934	M
Akoluk, Martha	Qinguak	1957	F
Algona, Bobby	Qurluqtuq	1956	M
Algona, May	Qurluqtuq	1934	F
Alonak, Jack	Qurluqtuq	1925	M
Analok, Frank	Iqaluktuuttiaq	1917	M
Angulalik, Bessie	Iqaluktuuttiaq	1936	F
Angulalik, Mabel	Iqaluktuuttiaq	1925	F
Hagialok,Jessie	Qinguak	1927	F
Hakongak, Naikak	Iqaluktuuttiaq	1963	M
Haniliak Kapolak, George	Qingauk	1973	M
Hikok, Nellie	Qurluqtuq	1911	F
Kailik, Buster	Qurluqtuq	1919	M
Kamoayok, Lena	Umingmaktuuq	1939	F
Kaniak, David	Iqaluktuuttiaq	1943	M
Kaniak, Mary	Umingmaktuuq	1932	F
Kaosoni, Annie	Iqaluktuuttiaq	1918	F
Kaosoni, Mackie	Iqaluktuuttiaq	1918	M
Kapolak, Allen	Qingauk	1964	M
Kavanna, George	Iqaluktuuttiaq	1957	M
Keyok, Charlie	Umingmaktuuq	1938	M
Keyok, Mona	Umingmaktuuq	na	F
Kingnektak, Alice	Haniraqhiq	1940	F
Kingnektak, Doris	Haniraqhiq	1967	F
Koihok, Moses	Iqaluktuuttiaq	1921	M
Komak, Annie	Iqaluktuuttiaq	1946	F
Komak, Archie	Iqaluktuuttiaq	1921	M
Kuptana, George	Umingmaktuuq	1916	M
Kuptana, Noah	Umingmaktuuq	1943	M
Maniyogina, Jimmy	Iqaluktuuttiaq	1927	M
Nalvana, Connie	Qurluqtuq	1921	F
Omilgoitok, Bessie	Iqaluktuuttiaq	1939	F
Omilgoitok, Paul	Iqaluktuuttiaq	1939	M
Panegyuk, Ella	Umingmaktuuq	1929	F
Anonymous C	Qingauk	1970	F
TOTAL	**35**		

Interviewees by Community

Summary	Total
Hanirarhiq	2
Iqaluktuuttiaq	14
Umingmaktuq	7
Qingauk	5
Qurluqtuq	6
TOTAL	**32**

Interviewees by Average Age and Gender

Average Age*	62
Women	17
Men	18

** At time of interview.*

Appendix E: Expenditures and Source of Funds

Appendix E: Schedule and Changes

There are no changes to report for the 2000 / 2001 year.