

Elder and Hunter Knowledge of Davis Strait Polar Bears, Climate Change, and Inuit Participation

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The views expressed herein are solely those of the author and do not necessarily reflect those of the Department of Environment, Nunavut or Government of Nunavut.

Executive Summary

Wildlife management in Nunavut has sometimes been a controversial endeavor. There has been a push to use more *Inuit qaujimajatuqangit* in the decision making process, but it has been slow, due to uncertainties about how it should be integrated into the process.

The *Nunavut Land Claims Agreement*, wildlife management and conservation are related to each other, but are not one and the same. Conservation is a subset of wildlife management, but wildlife management more broadly includes human dimensions in it. Government, being ultimately responsible for wildlife management, and the Nunavut Wildlife Management Board, being the primary instrument of wildlife management in Nunavut, have to consider human dimensions in their decision-making processes.

Despite efforts to be more representative of Nunavut society, particularly of Inuit society, through the incorporation of *Inuit qaujimajatuqangit*, tensions between Inuit and government persist in Nunavut's wildlife management. Polar bear management in particular, seems to have been the centre of the conflict (e.g. Clark et al., 2008, George, 2009).

Public opinion polls are useful in providing useful information from a large, hopefully representative segment of society. Nevertheless, social research has many other tools that can be utilized. Individual, in-depth interviews may be better suited for finding out finer details from informants.

Here, one-on-one interviews with 31 elders and hunters were conducted in Iqaluit, Kimmirut and Pangnirtung. Their perspective was solicited regarding polar bears, climate change and *Inuit qaujimajatuqangit*.

Regarding polar bear abundance, informants believed that polar bears are becoming more abundant and that there are problem polar bears.

Regarding climate change, informants indicated a variety of changes that they have observed. That sea ice does not form as well as it did in the past was the most common observation.

Regarding polar bears and climate change, some informants suggested that the decrease in ice has likely led to an increase in polar bears. Alternately, other informants indicated that polar bears do not live exclusively on ice.

Regarding Inuit participation, a small variety of negative comments were made about Inuit-Government relations and the effectiveness of Inuit participation. One suggested barrier to participation was language. There were not too many statements about Inuit participation and there was no dominant statement.

A number of possible methodological improvements and research areas have become apparent as a result of this work.

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Introduction

Tension and Inuit resistance to government wildlife management had been occurring in Nunavut prior to the Nunavut Land Claims Agreement (NLCA). Kulchyski and Tester (2007) examine some of the history of Inuit-Government relations involving wildlife management prior to the NLCA and Nunavut's creation. These tensions are one of the issues that led to the NLCA and why the NLCA includes an article devoted to Inuit harvesting rights and wildlife management in the Nunavut Settlement Area.

'Wildlife Management' and 'Conservation': Related, Not Synonymous

The Nunavut Land Claims Agreement provides a clear indication of the wildlife management system that will exist in Nunavut. For example, the objective of the NLCA is to create a wildlife management system that:

- is governed by, and implements, principles of conservation,
- fully acknowledges and reflects the primary role of Inuit in wildlife harvesting,
- serves and promotes the long-term economic, social and cultural interests of Inuit harvesters,
- as far as practical, integrates the management of all species of wildlife,
- invites public participation and promotes public confidence, particularly amongst Inuit, and
- enables and empowers the Nunavut Wildlife Management Board to make wildlife management decisions pertaining thereto.

Thus, through the NLCA, a number of human dimensions have been included in wildlife management. Public participation for example has to be invited. According to the British Columbia Office of the Auditor General (2008), governments engage in public participation when they "reach out to private or public organizations or directly to the public to seek their participation in the decision-making process". According to this report, public participation could take on a range of forms, such as, informing or educating, gathering information, discussing, engaging or partnering. Other human dimensions seem to be the need to promote public confidence and the need to serve economic, social and cultural interests.

The Nunavut Land Claims Agreement, also explicitly indicates that conservation is:

- the maintenance of the natural balance of ecological systems,
- the protection of wildlife habitat,
- the maintenance of vital, healthy, wildlife populations capable of sustaining harvesting needs, and
- the restoration and revitalization of depleted populations of wildlife and wildlife habitat.

From these, it becomes clear that conservation and wildlife management are not interchangeable, synonymous terms. In fact, conservation is a component, a subset, of wildlife management, but wildlife management more broadly contains human dimensions

as well. It seems that, although *Inuit qaujimajatuqangit* does not appear in the NLCA, it is accommodated in the NLCA through the need to consider human dimensions in wildlife management. Further, since the NLCA indicates that Government is ultimately responsible for wildlife management, and that the NWMB is the primary instrument of wildlife management, Government and the NWMB have to consider human dimensions in their decision-making.

The signing and ratification of the Nunavut Land Claims Agreement led to a major effort in its implementation. Following the creation of the Nunavut Territory, reviews and revisions of pre-existing legislation, regulations and policies and the creation of new ones has been taking place. In trying to adapt government practices, the government has been emphasizing that it shall be guided by Inuit societal values, through *Inuit qaujimajatuqangit*. For example, since the creation of Nunavut, a new *Wildlife Act* was passed by the legislative assembly that incorporates *Inuit qaujimajatuqangit* principles, and some, but not all, of the principles, objectives and procedures of the NLCA (e.g. Bell, 2003).

Despite efforts to be more representative of Nunavut society, particularly of Inuit society, through the incorporation of *Inuit qaujimajatuqangit*, tensions between Inuit and government persist in Nunavut's wildlife management. Polar bear management in particular, seems to have been the centre of the conflict (e.g. Clark et al., 2008, George, 2009).

From 2005 to 2007, a science-based polar bear population size estimation was conducted (Peacock, 2009). In order to be able to provide *Inuit qaujimajatuqangit* alongside the findings of the population size estimation, a public opinion poll was conducted on randomly selected householders in Iqaluit, Kimmirut and Pangnirtung (Kotierk, 2010). One of the findings of this poll was that most people felt that *Inuit qaujimajangit* may be better utilized by speaking with elders and Inuit.

Public opinion polls are useful in providing useful information from a large, hopefully representative segment of society. Nevertheless, social research has many other tools that can be utilized. Individual, in-depth interviews may be better suited for finding out finer details from informants (Bernard, 2002).

Study Goals and Objectives

Here, elders and hunters of Pangnirtung, Iqaluit and Kimmirut, communities that harvest from the Davis Strait polar bear population, are spoken with about their perspective on polar bears, climate change, and *Inuit qaujimajatuqangit*.

- Input is elicited about
 - polar bears,
 - climate change, and
 - governance.
- Discuss further research and improvements that can be made.

Materials and Methods

This project occurred from October 2007 to January 2008 in the communities of Pangnirtung, Iqaluit and Kimmirut, the Nunavut communities that harvest from the Davis Strait polar bear population.

Informant Selection and Interviews

The Hunters and Trappers Organization within each community was contacted and informed about the project. They were then asked to suggest possible informants that could be spoken with. When possible, Conservation Officers also suggested possible informants.

Potential informants were then contacted individually by telephone or in person and asked to be interviewed about polar bears, *Inuit qaujimajatuqangit*, and climate change. Those that were interviewed are presented in Table 1. Arrangements were made to meet at the informant's home, in hotel rooms, or other quiet locations. Consent forms were explained and used to familiarize the informants of the project.

Interviews were audio recorded with a Sony IC digital audio recorder under the control of the interviewee.

Interviews were conducted in Inuktitut, with open-ended discussions that revolved around the subjects of polar bears, *Inuit qaujimajatuqangit*, and climate change. Interviews were initiated by reiterating that this interview was to find out about polar bears, climate change and Inuit knowledge. Informants were then asked if they already had something they wished to say. In some cases informants did have opening statements and in other cases, informants wished to respond to questions.

A small honorarium was paid to each informant unless they were interviewed during their working hours.

Interview Analysis

Following the interview, the audio recordings were then transcribed using the Sony Digital Voice Editor 3 software to play the audio recordings. Documents were typed in roman orthography or Inuktitut Syllabics using the ProSyl font into Microsoft Word documents.

The transcripts were then examined and audio recordings listened to so that portions of the interviews could be identified as to which subject or subjects they pertained to.

These clips were then listened to again and relevant phrases identified. These phrases were then entered into an Excel spreadsheet. Subsequent clips were then listened to and scored in the same way. Efforts were made to score clips into pre-existing categories. Categories were then tallied as to how many informants made those statements.

Table 1: The informants spoken with.

Interviewee	Community
Eenoapik Sageatook	Iqaluit
Inookie Adamie	Iqaluit
Jetaloo Kakee	Iqaluit
Joshua Kango	Iqaluit
Moses Atagoyuk	Iqaluit
Pauloosie Kilabuk	Iqaluit
Sheeba Ishulutaq	Iqaluit
Eliyah Palluq	Kimmirut
Joannie Ikkidluak	Kimmirut
Joe Arlooktook	Kimmirut
Josephie Padluq	Kimmirut
Kenoayaok Pudlat	Kimmirut
Loolie Padluq	Kimmirut
Maliktu Lyta	Kimmirut
Sandy Akavak	Kimmirut
Simeonie Aqpik	Kimmirut
Adamie Veevee	Pangnirtung
Eliyah Kakee	Pangnirtung
Inusirq Nashalik	Pangnirtung
Joanasie Karpik	Pangnirtung
Jooeelee Papatsie	Pangnirtung
Lazaloosie Ishulutaq	Pangnirtung
Pauloosie Kakee	Pangnirtung
Pauloosie Veevee	Pangnirtung
Peteruusi Qarpik	Pangnirtung
Anonymous	

Results

Polar Bear Abundance

Informant had a number of messages regarding polar bear abundance (Table 2). The two main messages seemed to be that polar bears are becoming more abundant and that there are problem polar bears. They also indicated that in the past, there were few polar bears.

Other aspects were mentioned as well, such as polar bear habitat and the impact of habitat changes. Drivers of polar bear abundance were also spoken about.

Climate Change

There were a number of messages regarding climate change (Table 3). The main observation about climate change seemed to be that sea ice does not form as well as it did in the past. The land does not seem to be warmer was another common message.

A variety of other observations were also provided. Changes in wind and snow were observed for example. Some changes in wildlife were also mentioned. Respondents seemed to speak less about climate change than they did about polar bear abundance.

Polar Bears and Climate Change

Informants spoke about polar bears and climate change (Table 4). Some suggested that the decrease in ice has likely led to an increase in polar bears. Alternately, other informants indicated that polar bears do not live exclusively on ice. Another common statement was that they are not worried about the polar bear's future. Another theme seemed to be that with climate change, polar bears may pose more of a danger to people. Respondents seemed to speak less about the interaction of polar bears and climate change than they did about climate change.

Inuit Participation

The participation of Inuit was sometimes discussed by the informants (Table 5). A variety of negative comments were made about Inuit-Government relations and the effectiveness of Inuit participation. One suggested barrier to participation was language. There were not too many statements about Inuit participation and there was no dominant statement.

Table 2: Some statements identified regarding polar bear abundance.

What was said	Number of Respondents
Polar bear are becoming more abundant <ul style="list-style-type: none"> • More are going to people. • More are seen. • More are seen where they weren't seen before. 	24
There are problem polar bears now. You have to expect Polar bears at all times. <ul style="list-style-type: none"> • To sleep in tents is concerning. I won't sleep in tents any longer. • They are causing damage. • They are frightening. • They rifle through our property. • They are in or around communities. • Going for walks is not good any longer. • It's not possible to have meat caches due to Polar bears 	24
There were few, occasional polar bears or polar bear signs in the past.	20
Polar bears are abundant.	18
There were no or few polar bears near: <ul style="list-style-type: none"> • Pangnirtung • Arctic Bay • Iqaluit • Qivigtuu • Cape Dorset • Kimmirut • Iqaluli 	14
Polar bear were near: <ul style="list-style-type: none"> • Allen Island area • Touak Fiord area • Qikiqtarjuaq • Agu area • Pond Inlet • Qausuituq • Resolute Bay • Clyde River 	13
We hear from people, Qallunaat, Biologists, or Government that polar bears are becoming depleted	12
Polar bears had to be searched for in the past. <ul style="list-style-type: none"> • Had to go hunting to polar bear areas • Some hunts were unsuccessful. 	12
Polar bears are not becoming depleted.	11
Polar bears were not present in the 1940s, 1950s or 1960s.	11
Polar bears started becoming abundant in the 1960s, 1970s, 1980s, or 1990s	10
Polar bears or polar bear signs are seen everywhere.	8
There were no polar bear concerns, problem polar bears in the past. <ul style="list-style-type: none"> • Children could have sleepovers in tents adjacent to the main tent. • Dog team practicing could occur without concerns about polar bears. • They did not approach communities. 	6
Sometimes I think that perhaps it's because there is less ice that polar bears are more on the land. With less ice, polar bears will be more land bound.	6
Likely, if things do not change, we will have polar bears for a long time.	5
Polar bear harvest regulations have led to the increase in polar bear population size.	5
Abundance varies by year - some years there are many, some years there are few.	5
There are too many polar bears.	5
Polar bears have become abundant because polar bears in other areas have moved here.	4

Polar bear are following their food. When they leave to their food, there seem to be no polar bears; when they return, there seem to be polar bears.	4
There was an earlier time when polar bears were abundant	4
Provided that it's liveable, that polar bears don't cause too much damage, it is appropriate that they continue to exist.	4
Perhaps camps affected Polar bears movement in the Pangnirtung area. Now that camps have relocated, polar bears move into this area.	4
I don't want there to be less than a few polar bears.	3
There are fewer polar bears this winter than past.	3
Harvesting polar bears is less difficult now: <ul style="list-style-type: none"> • Quotas are filled quickly now. In the past, it would take a long time for quota's to be filled. • Even experienced harvester had never caught polar bears. Now it seems that if your transportation is sufficient, you can harvest a polar bear. 	3
It would be obvious if polar bears started to become depleted to those that come after us.	2
Throughout Nunavut communities are saying/can say that polar bears are abundant.	2
It's natural that overabundant wildlife, including polar bears, will die off.	2
We cannot guess when our polar bears will become extinct	1
There will be no apparent impact if polar bears are reduced by 500	1
I haven't heard recently about a polar bear in the vicinity of Iqaluit	1
It causes no wonder that they're not depleting, they produce offspring	1
Padloping Island had fewer polar bears than Qikiqtarjuaq	1
That they're depleted would become believable if they weren't observed for several years in a row.	1
Polar bears started breaking into meat caches when I was becoming an adult.	1
Polar bear and caribou populations fluctuations are not the same.	1
Polar bear movements are following the moon.	1
Polar bears are likely to become more abundant around Iqaluit	1
Whalers had free reign on harvesting and certainly harvested polar bears.	1
There have been the most sightings of polar bears this year.	1
It turns out that I was becoming aware during a time when polar bears were endangered.	1
My camera can take 600 photographs. If I wanted 600 polar bear photographs I can do that, that's how abundant they are now.	1
By the mid-90s, polar bears were abundant	1
By the mid-90s, it became challenging to camp out.	1
Wildlife are not controlled by humans. We cannot make decisions for them.	1
Ice still forms each year. There's still ice developing.	1
Perhaps polar bears were kept away by the greater use of dogs in the past	1
There are polar bears.	1
I don't want polar bears over abundant.	1
When you're going out looking for wildlife, it's really good that there are so many polar bears.	1
When quotas have been filled and polar bears start to destroy property, the polar bear abundance is inappropriate.	1

Table 3: Some statements identified regarding climate change.

What was said	Number of Respondents
Sea ice does not form as well. <ul style="list-style-type: none"> • Delayed freeze up. • More dangerous ice. • Ice that we use to travel over, we can't 	20
The land does not seem to be warmer. <ul style="list-style-type: none"> • Black berries need high temperatures to grow well and sometimes they don't get that. • Perhaps it's because we wore animal furs. Perhaps clothes were thicker. It even sometimes seems colder now. • It was warm back then. 	12
Sea ice seems to break up and disappear sooner.	11
The sun has changed. <ul style="list-style-type: none"> • Sun rises earlier now. • It rises and sets in a different spot now. • Peaks in a higher spot in the springtime than usual. 	8
There use to be long periods of calm weather. Today it's less stable with frequent weather changes.	8
Sea ice seems less thick.	8
There have been changes in our land from the past.	7
It's warmer now <ul style="list-style-type: none"> • In the past it use to be possible to cache seal meat sometimes for two summers and it would be okay. Now seal meat cached over a summer ages too much. • During springs, puddles use to frost over overnight, but that doesn't happen any longer. • Ice patches use to reach down to the sea. Some now have limits further up, away from the shore. • Snow and small ice patches that didn't melt, now melt. 	7
There is less old, thick ice.	7
Glaciers are melting and disappearing.	7
Weather predictors cannot be used to predict weather any longer.	7
The water tends to be warmer.	7
The different winds don't have the same characteristics they use to.	5
The sea ice seems like it's good this winter.	5
Changes in the wind help the sea ice break up.	4
Snow patches that didn't melt, melt now.	4
Winters are still cold.	4
Winds are stronger.	4
Wildlife have changed their distribution: <ul style="list-style-type: none"> • Touak Fiord did not have Canada Geese in the past. Now it's covered in Canada Geese feces. • Snow geese are migrating through an area they didn't. • There have been strange seagulls here in the water. • Some uncommon seals are becoming more common. 	4
The moon's path across the sky has changed.	3
The sun is hotter.	3
Winters seem warmer.	3

Snow seems to arrive later and stays soft for a long time, not freezing right away.	3
Melt occurs earlier.	3
The floe edge seems to be closer to the land.	3
Some seals are having changes in their pelt.	3
When the snow melts, they become dirty with fallen-like material.	2
There have been big social, cultural changes as well.	2
Sea ice seems to melt from the bottom without truly becoming overrun with water.	2
Weather changes from year to year.	2
Glaciers have been melting since I was a child.	1
The cold water seems to be at a lower depth than in the past.	1
Mild winter days occurred infrequently in the past. Recently they became an annual event.	1
Sea ice would form as soft sea ice.	1
Snow falls are rarer.	1
Stars have shifted position.	1
Tidal levels have not changed.	1
Sea ice breakup sometimes doesn't use its usual characteristics.	1
This area that didn't freeze over, freezes over now.	1
Lake ice seems to melt earlier.	1
Lake ice seems to be thinner than in the past.	1
Some currents have decreased.	1
Storms were better storms.	1
Ice cracks are already wide when they first appear now.	1
Melting hasn't changed too much.	1
Ice built up over the winter that use to persist, now melts in the summer.	1
Grounded icebergs melt quickly.	1
Past springs use to be hot, then they cooled down and now springs are getting hot again.	1
Snow falls occur more frequently.	1
Sea ice breakup hasn't changed much, varying between mid-June and early-August and mostly in early July.	1
The dusk sky is becoming paler than the past. In the past, it use to be blue.	1
There was a period when black berries had a flour-like dust on their bottom.	1
There is becoming less water.	1
Winds have shifted. <ul style="list-style-type: none"> • North comes from a different area. 	1
There have been few seals for about 5 years now.	1
The routes of jet airplanes have shifted.	1
There was an incident when there was an ash/soot storm.	1
Global warming doesn't seem like such a big deal.	1
Tidal levels have changed.	1
Seal nets now have frost forming on the line in the water. That didn't happen before.	1
The past winters the ice has been thin.	1
There seem to be more shooting stars.	1
Mist from these particular polynyas use to reach us but no longer do.	1
The south wind sometimes has a smoke-like smell.	1
Sea ice is likely disappearing.	1

The water does not seem to be warmer.	1
The sky use to be very blue and clear. Now it's rarely blue.	1
This past summer was not warm.	1
Snow seems to melt quickly when it starts to melt.	1
Fall cooling down does seem to be delayed.	1
Winters are shorter.	1
Most seals are adults now since ice may be breaking off when seals are still pups.	1
This winter route to a fishing spot is no longer passable.	1
Polynyas have become larger	1
Global warming does seem like a big deal.	1

Table 4: Some statements identified regarding polar bears and climate change.

What was said	Total
The decrease in ice has likely led to an increase in polar bears.	8
Polar bears do not live exclusively on ice.	8
I am not worried for polar bears. Polar bears will persist into the future.	7
The ice is truly the polar bears' habitat winter or summer. They are more capable hunters on the ice.	5
Polar bears can be on the land. <ul style="list-style-type: none"> • Can camouflage themselves with mud. • Can be deep inland. 	4
Polar bears are at home in the water.	4
Polar bear harvest in water <ul style="list-style-type: none"> • Ringed Seals • Walrus • Bearded Seals • Beluga 	3
It's hard to say what impact climate change will have on Polar bears.	2
Polar bears would become more land-bound.	2
Polar bears can harvest walrus at their haul outs	2
I don't completely agree when people say that we have many polar bears because of climate change.	2
Polar bears catch wildlife all over.	2
It would become more frightening if the ice continues to disappear. If they become hungry, and we try to keep the population size high, there will be more problem polar bears.	2
Polar bears would become hungrier.	2
Polar bears will continue to have habitat.	2
I hear that polar bears can get seals just in the water, but I don't believe they can get many or the larger animals like walrus, bearded seals, or Beluga.	2
If there is an impact of climate change on polar bears, we are not going to babysit them. We are not going to tell them to "move over here."	1
Polar bears will run out of places to go, as the world moves to its end.	1
Polar bears would not become depleted if the ice disappeared.	1
Polar bears would not starve if the ice disappeared.	1
Ice will not truly disappear. Harbors and fiords will still freeze up.	1
Polar bears are thinner now, probably because they have less food.	1
If the ice disappeared, polar bears would probably not increase in number.	1
Polar bears can eat while on the land.	1
Perhaps having dens will become difficult because their denning areas are disappearing.	1
I don't believe that most polar bears would become hungry because of decreased ice.	1
I have different thoughts about polar bear and climate change.	1
I think that polar bears would have difficulty during summers but their winters would be unchanged.	1

Table 5: Some of the identified statements regarding Inuit participation.

What was said	Total
Inuit have been too agreeable.	3
Inuit are trying to get more influence.	2
Government and Inuit are saying different things about polar bear population sizes.	2
Fear of Government laws makes us behave in ways we don't want to.	2
Inuit input cannot be readily responded to. <ul style="list-style-type: none"> • It takes meeting after meeting to get a quota increase. • Inuit input is unheard. • Research is stronger than <i>Inuit qaujimajatuqangit</i>. • Government does what it wants to, regardless of input. 	2
Polar bears are a higher priority than Inuit are.	2
Non-Inuit input has greater influence than does Inuit input. <ul style="list-style-type: none"> • People who have never even seen polar bears. • Wildlife protectionists. • Researchers. 	2
Inuit were so afraid of Qallunaat.	1
Government creates fear to intimidate Inuit into agreeing to research.	1
Language is a barrier to participation.	1
Qallunaat and Inuit have different treatment.	1
Consultations don't occur often.	1
I encourage better Inuit involvement so that we are better informed.	1
Inuit participation in field research is not trustworthy since it's a source of income for the Inuit involved.	1
Inuit would not hesitate to be involved in field research on polar bears that involves counting them and not immobilizing them.	1
I want the opportunity to express my disagreement with immobilization.	1

Discussion

Polar Bear Abundance

Informants indicated that polar bears are becoming abundant and are abundant (Table 2). At these abundance levels, informants indicated that polar bears are being problem polar bears. People also indicated that in the past, there were few polar bears.

Other things were said as well. For example, climate change may have a role in the changes being observed and sea ice may have a role.

The exact timing and the magnitude of abundance changes are, however, seem to be unclear. To explore this more clearly, it may be possible to systematically graph this sort of information using an ordinal scale for polar bear population levels and asking informants to indicate what the polar bear population levels were at different periods in time (Figure 1). Questions could be asked about the polar bear abundance level over the informant's lifetime (Period A), prior to the informant's lifetime (Period B), currently (Period C), and in the future (Period D). Questions could then be asked about why the polar bear population fluctuated as indicated.

This could help to understand the experience that informants have regarding polar bear abundance levels. For example, the polar bear abundance level observed over the informant's lifetime may be the context for why they feel that the polar bear abundance level is currently high or not. Informants could then be asked what the polar bear abundance level is compared to their preference and tolerance. The graph could also be used to facilitate queries into what the informants expect will occur to the polar bear abundance level over the foreseeable future and what the informants expect will be the factors determining future polar bear abundance fluctuations.

Climate Change

There were many observations regarding climate change. That sea ice does not form as well as it use to was one of the most common statements. Warming of the land was not often the stated mechanism for the change in sea ice. More commonly associated with this poor sea ice was an observation of warming water and changes in the wind.

Polar Bears and Climate Change

Statements about polar bears and climate change seemed to be equivocal. Some statements suggested that ice changes may already be having an impact, while others suggested that polar bears do not live exclusively in ice, or that they are not worried about the future of polar bears. A concern that was sometimes expressed was that management objectives would still try to maintain a high polar bear abundance level despite changes in the habitat, leading to increased problem and dangerous polar bears.

Inuit Participation

Compared to the other subjects that were explored, Inuit participation was not often spoken about. This could be because this was not initially going to be examined.

Increased familiarity with the need, due to the Nunavut Land Claims Agreement, for the wildlife management system to invite public participation, particularly of Inuit, led to this aspect being examined as well.

There may be a few reasons that it was not discussed by many informants. First off, discussions did not centre around the issue of Inuit participation, so it was not something the interviewer brought up regularly for discussion. Less likely, but possibly, it could be that Inuit participation is not a major issue for the informants.

As an example of an informant speaking about Inuit participation, Josephie Padluq of Kimmirut states:

We become displeased, and what we want used cannot be agreed to. That's how they are. "There are too many polar bears in our land. Add to our quota." It seems these cannot be heard. These, then, cause us to go through unhappiness, that we are treated in this way.

Akauksaqpanginnatta amalu atuliqujaraluavut angitaujunnaratik taimai suungungmata. nanuqaluaqtualuulirmat nunavut nanugialivut ilagialaurlit makua tusaqtaujuujarunangimmata. Tamajja tamakkua quvianangittuqsirutigiqataqtavut taimailiuqtaunivut.

Methodological Improvements

Transcribing and searching are very time consuming parts of this study. In the future, it would be possible to avoid transcriptions and searching by not having open-ended, semi-directed conversations, but having a survey instrument and framework of areas to be explored. This would make interviews more directed and constructive. As well, it would reveal what people who did not speak about these subjects think about these subjects.

Future Research

Using the Nunavut Land Claims Agreement as a foundation, other important areas of social research become apparent.

Principles of Conservation

- Trying to understand how Inuit interpret the concept of "natural balance", as identified in the conservation principles, and how Inuit think that the natural balance should be maintained.
- Trying to understand what wildlife habitat Inuit think has to be protected and how.
- Trying to understand which species and populations Inuit think are depleted and how do they think they should be restored and revitalized.

Economic, Social and Cultural Interests

- Trying to understand what the long-term economic, social and cultural interests of Inuit harvesters are.

- Trying to understand how economic, social and cultural interests of Inuit harvesters are prioritized and if there are particular interests that Inuit and the public feel are either over- or under-served or promoted.
- Trying to understand if Inuit harvesters feel that the management system is responsive to their interests.

Inuit Participation

- Trying to understand if Inuit feel that their participation is effective and how the wildlife management system can be changed in order to invite more Inuit participation.

Inuit Confidence

- Trying to understand how confident Inuit are in the wildlife management system.
- Trying to understand if different aspects of the wildlife management system have different Inuit confidence levels (e.g. Conservation Officers, researchers, NWMB, Minister, Hunters and Trappers Organizations, Regional Wildlife Organizations), and how the wildlife management system can be changed in order to promote more Inuit confidence.

Summary

In summary, interviews with elders and hunters conducted in Iqaluit, Kimmirut and Pangnirtung is reported on and discussed in this report. Their perspective was solicited regarding polar bears, climate change and *Inuit qaujimajatuqangit*.

Regarding polar bear abundance, informants believed that polar bears are becoming more abundant and that there are problem polar bears.

Regarding climate change, informants indicated a variety of changes that they have observed. That sea ice does not form as well as it did in the past was the most common observation.

Regarding polar bears and climate change, some informants suggested that the decrease in ice has likely led to an increase in polar bears. Alternately, other informants indicated that polar bears do not live exclusively on ice.

Regarding Inuit participation, a small variety of negative comments were made about Inuit-Government relations and the effectiveness of Inuit participation. One suggested barrier to participation was language. There were not too many statements about Inuit participation and there was no dominant statement.

A number of possible methodological improvements and research areas have become apparent as a result of this work.

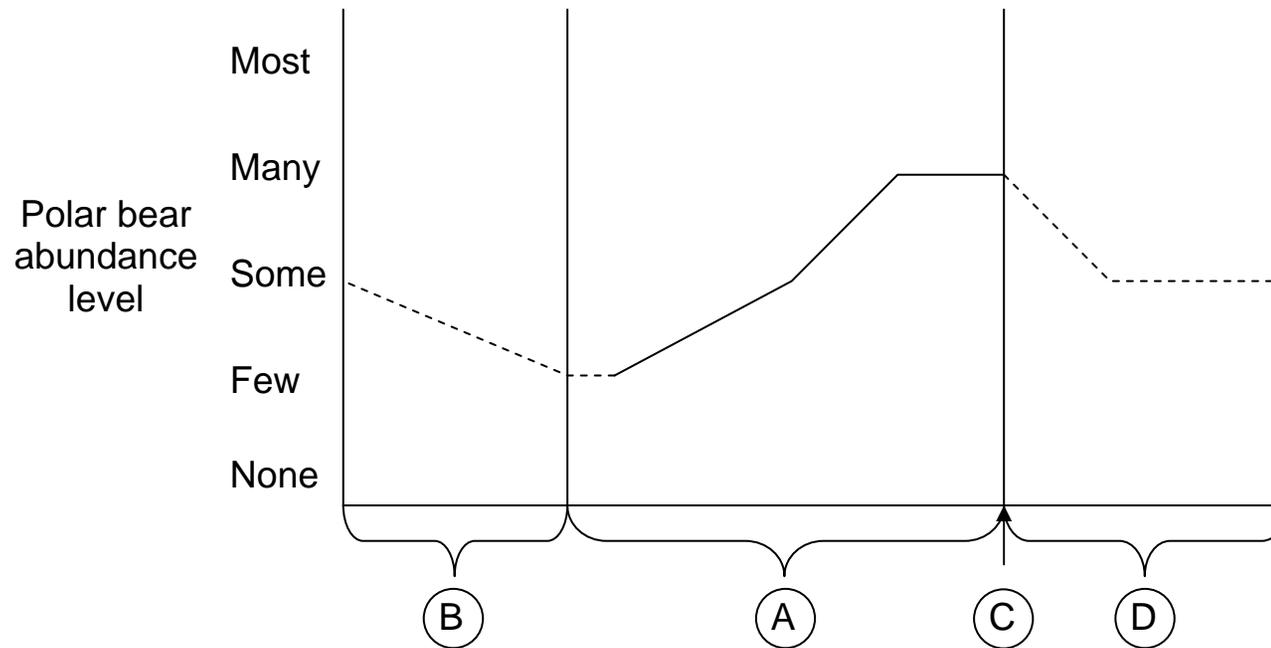


Figure 1: A hypothetical graph that may facilitate future research about polar bear abundance fluctuations. Informants could be asked to describe the polar bear abundance level over their lifetime (Period A), prior to their life (Period B), currently (Period C) and in the future (Period D). Subsequent questions could then be asked about why the fluctuations were observed, or are expected.

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