

Baffin Island Caribou Consultations

Fall 2011



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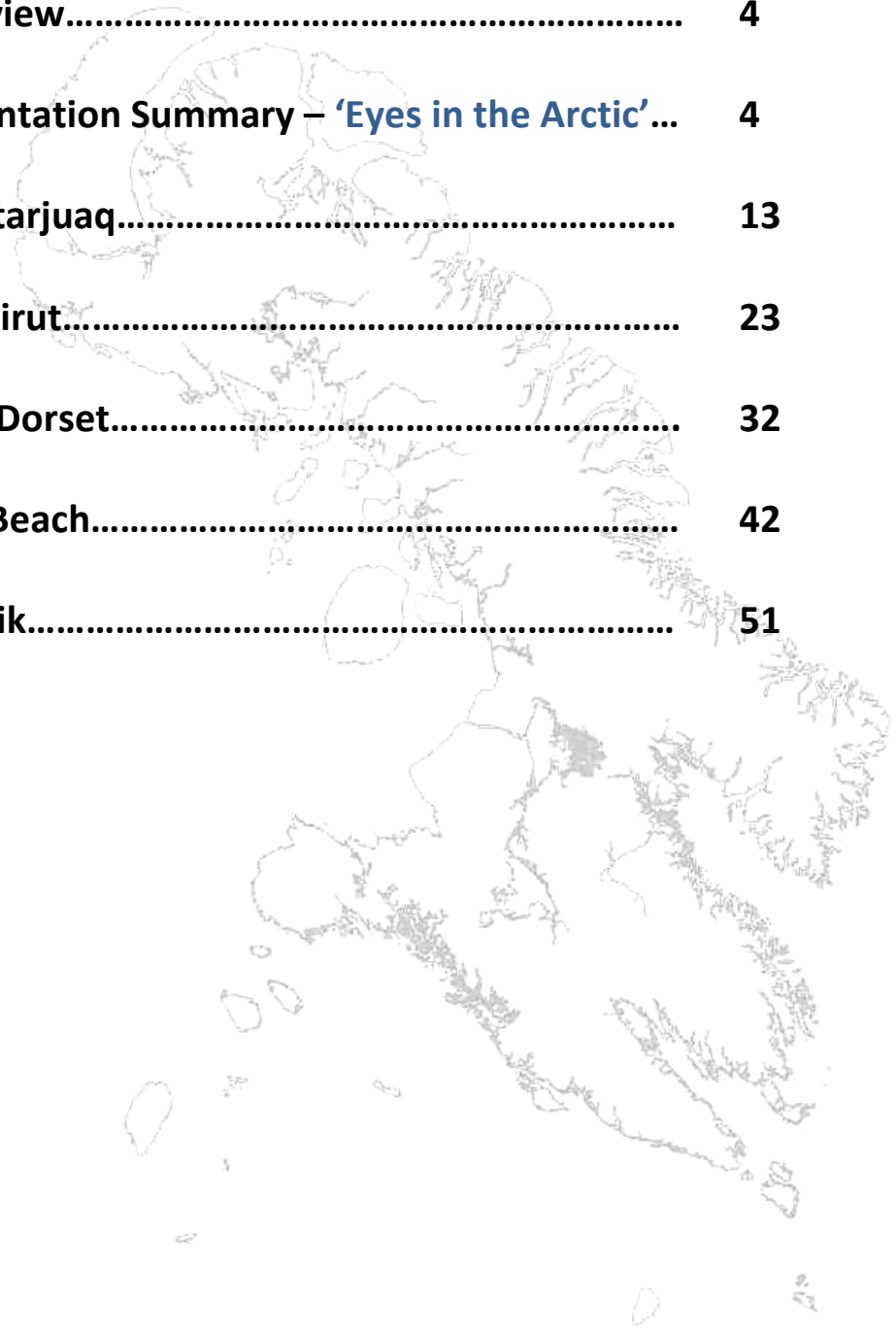
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Special thanks to Matthew and Eric, our pilots from Keewatin Air, for their enthusiasm, even while digging the plane out of the snow daily. And especially to Rebecca Jeppesen, from the Nunavut Wildlife Management Board, for joining us on the consultation tour and providing notes for this report.



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Overview

In 2011-12, community consultations occurred for a multiyear research project entitled 'Abundance and Distribution of Barren-ground Caribou on Baffin Island, Nunavut'. All communities that currently or traditionally harvested caribou within the study area (2012) were engaged, and constructive input on project design and execution was gained. At the same time, communities shared invaluable IQ which has been collected, documented and mapped here. A unique and valuable source of information, this report complements our scientific studies and informs the design, execution, and results of the Baffin Island Caribou Survey.

Presentation Summary

Eyes In The Arctic Debbie Jenkins

For the Regional Biologist, Debbie Jenkins, the theme 'Eyes in the Arctic' captures the vision of scientists and community members working together for the benefit of caribou. The meeting is structured to support this, providing everyone an opportunity to speak and share their knowledge.

An outline of the proposed research programs was provided, which included a multi-year caribou survey on Baffin Island (Project Title: Abundance and Distribution of Barren-ground Caribou on Baffin Island, Nunavut) and a community based caribou monitoring program (Project title: Caribou Health Monitoring Program). A summary of each follows:

Abundance and Distribution of Barren-ground Caribou on Baffin Island, Nunavut

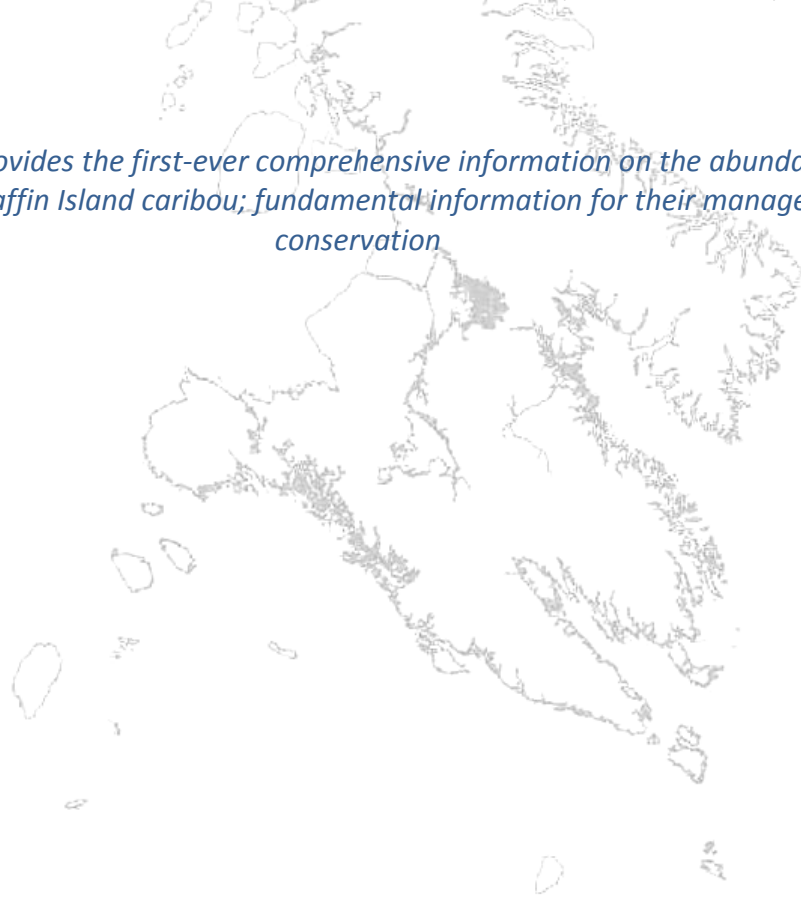
The Government of Nunavut currently recognizes 3 populations of Barren-ground caribou on Baffin Island. The status of these populations is unknown. No reliable current or historic estimates of population size exist for these caribou. Caribou are a critical component of the terrestrial ecosystem; they are culturally significant to Inuit and provide an important source of food. Subsistence harvesting is important; 8 of Nunavut's 28 communities occur on Baffin Island and represent almost half of the territories growing population. Additionally, development and exploration activities are increasing with likely impacts on caribou and their habitat.

The purpose of this investigation is to determine the abundance and distribution of caribou on Baffin Island. We propose to survey caribou during March-April-May 2012 (South and Central

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Baffin Island) and 2013 (North and Northeastern Baffin Island) following standard aerial survey techniques and distance sampling methods. Inuit knowledge and existing scientific information multi-year survey units. We will use a systematic transect design with a random starting location. Lines will be positioned 10 km apart, run east-west across the study area, and be stratified by ecoregion. Transects will cover the entire land base with the exception of extensive ice fields or glaciers. Transects will be flown using 2 Bell 206L helicopters and 4 dedicated observers in each unit (includes pilot). Aircraft will fly approximately 120 meters above ground level to detect animals. To maximize accurate detection, air speed will range from 90 to 130 km/h depending on patchiness of snow cover, topography and evidence of wildlife. Upon detection, all individuals and groups will be approached to record location, and identify sex, age and group size. Scat samples for genetic analysis, will be collected when available at fresh feeding site locations. The perpendicular distance of each caribou observation from the transect will be determined using GIS. Program Distance 5.0 (Thomas et al. 2005) will be used to model the detection function and estimate the density of caribou. The detection function models (key function/series expansion) recommended by Buckland et al. (2001) will be used to analyze the data and the most parsimonious model will be selected using Akaike's information criterion (AIC). Fecal samples will be sent to Wildlife Genetics International, British Columbia, Canada, for analysis.

This project provides the first-ever comprehensive information on the abundance and distribution of Baffin Island caribou; fundamental information for their management and conservation



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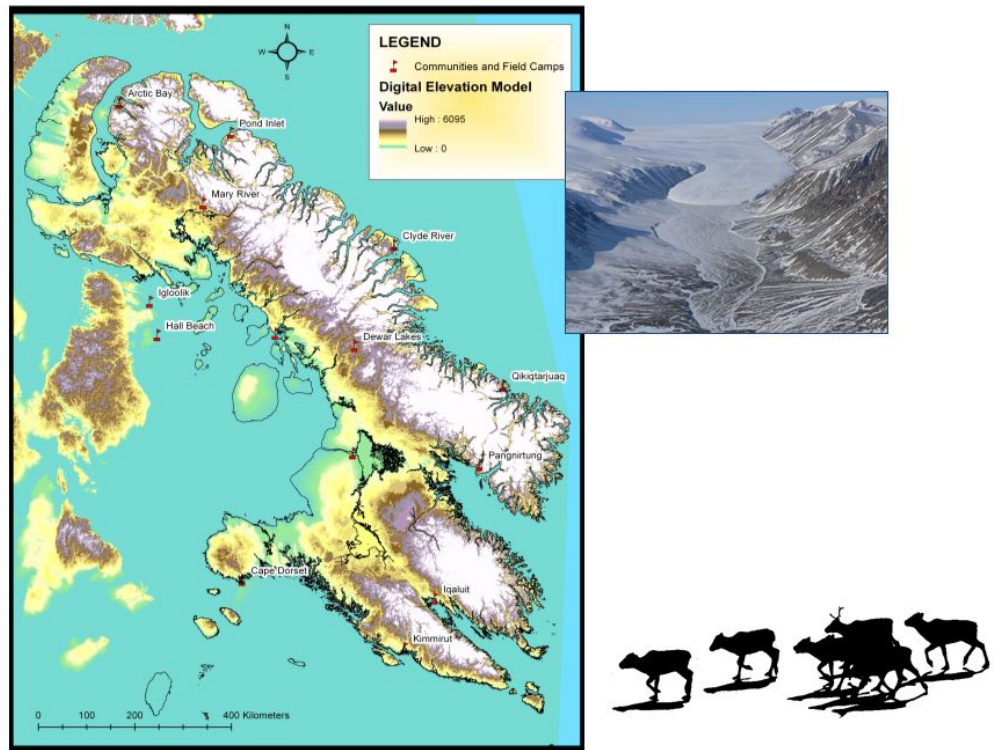
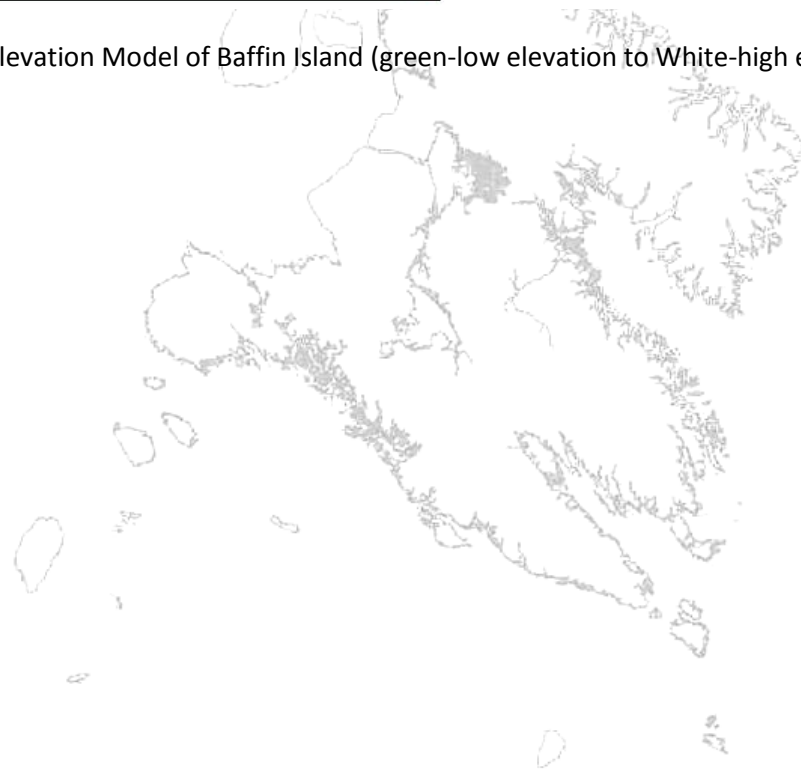


Figure 1. Digital Elevation Model of Baffin Island (green-low elevation to White-high elevation).



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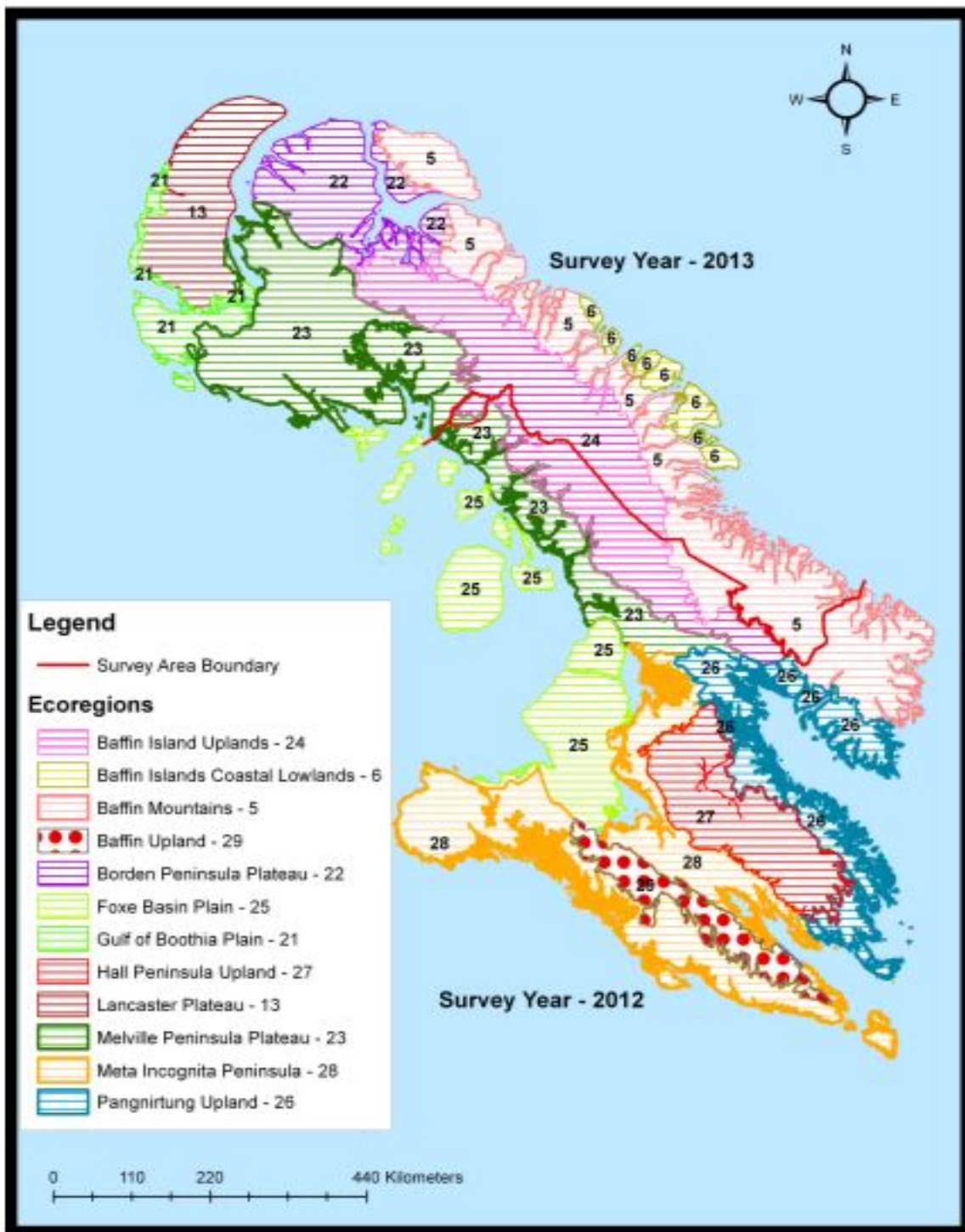
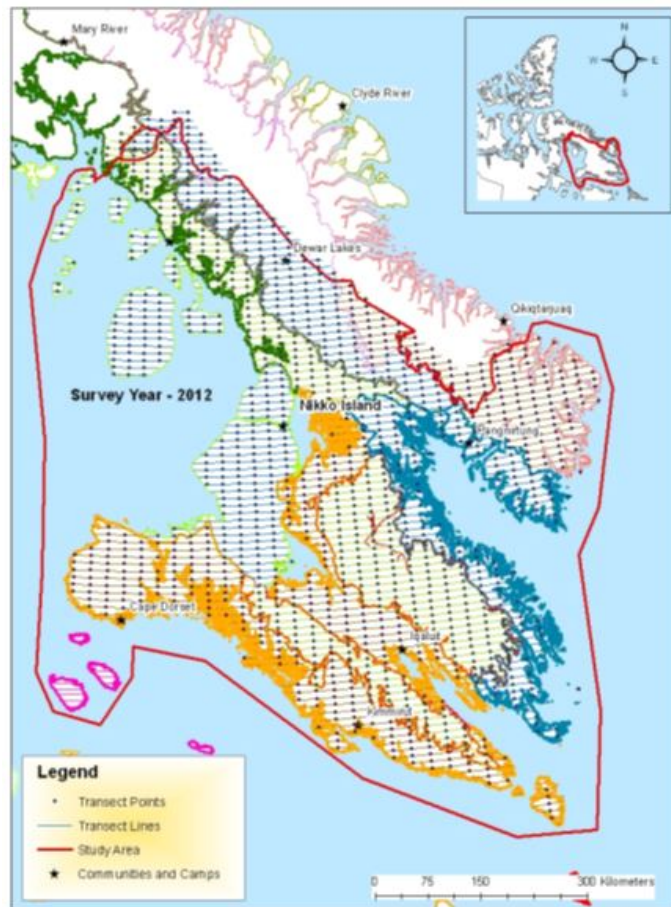
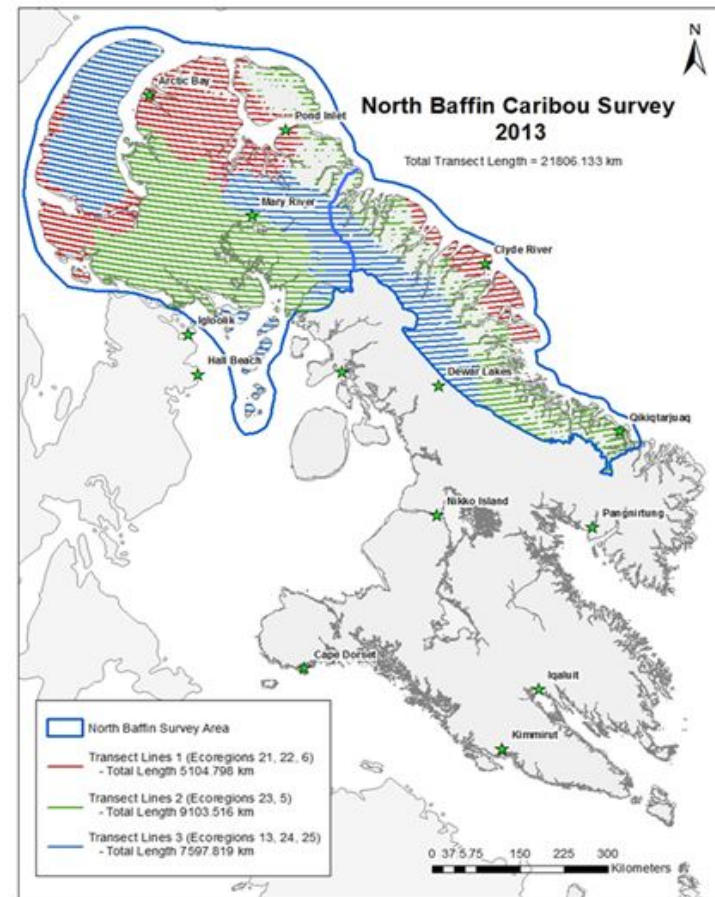


Figure 2. Ecoregions, based on biological and climatic factors, provide a coarse but informative approach to stratify the study area into habitat units that may be meaningful to caribou.

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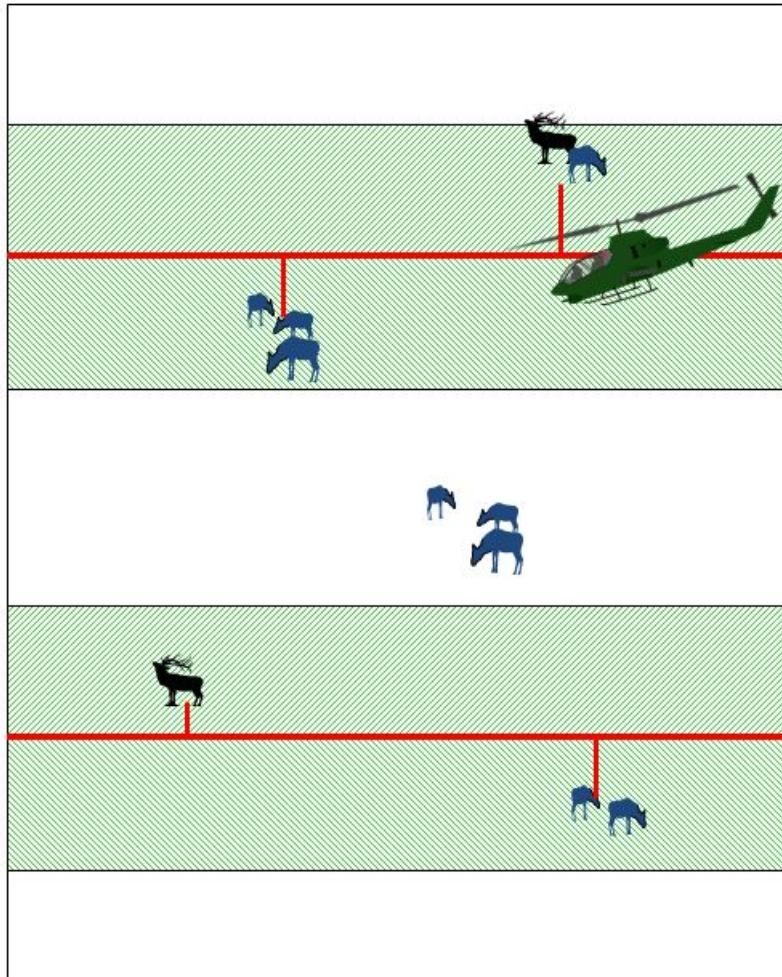
a)



b)

Figure 3. Using radio-location data from caribou collared in south Baffin (1984–1994) and north Baffin (2008–2011), in addition to IQ gathered from local communities, the overall study area was divided into two survey units, a) the South Baffin caribou range, and b) the North and Northeast caribou range, and then stratified by ecoregion.

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The survey design involves placing a number of lines, with a random start location, across the study area. Here, the survey lines are systematically spaced 10 km apart and run east west. Using Distance Sampling methods, the lines are then flown by helicopter with a 4-person team of wildlife spotters that record any caribou groups observed. The method assumes that all caribou on the transect line will be detected and that the probability of detection decreases with distance from the line. Thus, some animals will be missed.

By measuring the distance from the transect line to each of the caribou groups observed, the distribution of these distances can be used to estimate the proportion of animals that were detected. This allows us to then estimate animal density and abundance by accounting for the animals that were missed.

Figure 4. Distance sampling survey protocol.

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Figure 5. Increasing local involvement in research through the 1) collection of IQ and 2) participation in field operations and logistics, is an important first step in growing local capacity and providing a more comprehensive approach to wildlife research and management.

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Caribou Health Monitoring Program

The purpose of this project is to establish a hunter-based program of information and sample collection for caribou health monitoring and genetic analysis across Baffin Region, Nunavut. This research addresses key wildlife concerns of local HTOs and wildlife managers while providing an opportunity for hunters and scientists to combine their knowledge and resources for the benefit of caribou.

Local harvesters have on-going contact with caribou and can provide important information on this species. A Caribou Health Monitoring Program makes use of this opportunity by training Inuit hunters to collect both samples and data from animals that they already harvest. The goals of this program include the establishment of baseline values for health parameters and genetic variation, with the potential for long-term monitoring to detect future change. Increasing the capacity in communities and the participation of youth in research is a priority.



Figure 6. Some examples of caribou samples collected by local hunters.

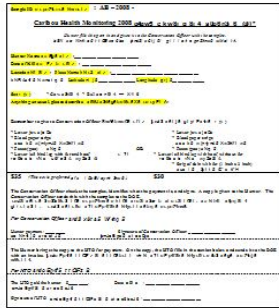
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Sample kits are pre-made and contain a data sheet plus materials for the collection of 1) a back-fat measurement, 2) a fecal sample, 3) a blood sample, and 4) a skin sample. These basic samples provide meaningful information on body condition, disease, diet, space use, and genetics.


TYPICAL SAMPLE KIT

\$60


Data Sheet




Back Fat




Fecal Sample



Blood



Skin Sample



BONUS SAMPLES

The lower jaw and the lower left hind leg (with hoof) are not part of the Typical Sample Kit but considered as bonus samples to provide additional information on age, bone growth, body condition, and disease. These samples are valuable to hunters and an additional \$40 is provided when they are included.



All communities that hunt on Baffin Island are invited to participate; however, only one community needs to engage for this program to start successfully building fundamental baseline data.



**Qikiqtarjuaq
November 28th, 2011**

Participants

Debbie Jenkins, Wildlife Research Biologist (Baffin Region), DoE, GN

Jaylene Goorts, Wildlife Technician (Baffin Region), DoE, GN

Jimmy Noble Jr., Operations Manager (South Baffin), DoE, GN

Rebecca Jeppesen, Wildlife Management Biologist, NWMB

Levi Nutaralaq – HTO Vice Chairman

Phillip Sanguya – HTO Secretary Treasurer

Jaypootie Moesesie – HTO Director

Toomasie Newkingnak – HTO Director

Yukipa Audlakiak – HTO Director

Imona Kokseak – HTO Director

Harry Alookie – HTO Manager

Joanasie Kooneeliusie – Elder

Baffin Island Caribou Research: Questions and Comments

Phillip: Regarding the helicopter - once you're doing the full-blown survey what altitude would the helicopter fly at?

Debbie: The best visibility for caribou and muskoxen is at 400 feet. This is pretty much standard now across Nunavut.

Phillip: When you're flying at that altitude, do the caribou tend to get scared? Do they try to run as fast as they could? Are they stable?

Debbie: When we're flying along the transect line, those on the sides tend to stop and look up. They don't normally run away. We try to do composition and get the location. We go off the line to go over them very quickly to get a GPS location and count them, then sometimes they will run, but then we go back on the line.

Phillip: If I understood correctly, between 1987 and 1994, was GN putting collars on the caribou?

Debbie: Yes, it was a study done by Mike Ferguson.

Phillip: During that time, was there any feedback on whether the caribou were having problems during his survey?

Debbie: My understanding was that he was putting collars on near Nettilling Lake. I think he found that they were in good condition at that time. There was some work at the same time to look at the blood in caribou, and they did find some brucellosis on Baffin Island, but it was more prevalent in the north than in the south.

Phillip: During the collaring project, were there any indicators that the collared animals were eating the food they would normally eat, feeding the way they normally would? Did the collar affect the caribou?

Debbie: At that time, I don't know. The recent collaring work in North Baffin indicated that they were using their range the way they normally would. We went back and checked their condition visually and found that the animals looked good, and that many of the females were accompanied by calves. In general, if females have less than about 6% body fat, they won't produce calves. The animals we saw were doing well.

Levi: Which part of Baffin are the ones that are collared now on?

Debbie: There are no caribou collared on Baffin Island right now. Because of Baffinland Iron Mines, we collared caribou in North Baffin in 2008 and 2009 but the collars fell off those animals this year. The old VHF collars were a lot bigger and didn't always have automatic releases on them. In North Baffin we used the smallest GPS collars available, and we could set the collar to release on a certain day and then go pick it up.

Qikiqtarjuaq, November 2011

Jaypootie: In 2008-2009 what was the number of animals collared?

Debbie: We had 30 GPS collars in total. In 2008 we only put out 4 because we could only find 47 caribou. We only put one collar on one female in each group. In 2009, we only located 119 caribou and we put out all of the remaining collars. Because caribou in North Baffin appear to inhabit areas that might be developed or impacted by mining, we really need to obtain as much data as possible to understand what kind of threat the development might be to caribou and their habitat. The number of caribou we found was surprisingly low. The hunters are telling us they are low too. It emphasizes the importance of doing this survey.

Jaypootie: Could GN do any biopsy on caribou? In previous year, tranquilizing the polar bear affected the meat. Is this the same with caribou?

Debbie: At this time, the GN does not use drugs on caribou when collaring. This is partly because hunters don't want to have any chemicals in the meat, but also, some studies found that caribou had a better survival rate when drugs were not used. Thus, we use net gunning today. So that it's very clear, this survey will not include putting collars on caribou; the survey is just to locate and count them across the island. The polar bear research team is using biopsy darting as a different method of counting polar bears. The darts collect a piece of skin and they use genetics to identify individuals. For the caribou, we don't need to do this; the survey method is adequate for a population estimate. For polar bears, they have tested surveying and in some areas it works well but along these coasts (points to map) because of the snow, ice, and fog, it was difficult.

Jaypootie: So how will the harvester be able to collect the data? For example, how many samples would one harvester be able to bring?

Debbie: That's up to the HTO to decide. We can supply sample kits to the HTO, and then you can decide how to give them out, 2 per harvester or 5. In some communities only one person collects the data if other harvesters aren't interested. For us, it doesn't matter how the kits are distributed; it's up to the HTO.



Jaypootie: Out of the one group of caribou we catch, can we use all the bags for one group?

Debbie: Yes. One sample bag is allocated to one caribou. It doesn't matter how many kits are used for a particular group, although samples from different groups would be ideal. We know how hard it is to locate animals though. Again we'll leave it with the HTO to distribute the kits.

Debbie: I realize that you will have to talk about this as a group, but overall do you think the HTO would support this type of survey and want to participate?

Phillip: Have you heard if there are any ideas of raising caribou, to augment them? Similar to semi-domesticated reindeer like in Norway and Sweden.

Qikiqtarjuaq, November 2011

Debbie: It's been talked about, but there's a big commitment for people and animals to move around. It requires a nomadic lifestyle, which isn't practical for a lot of people.

Imona: When you start observing, will there be Inuit involved?

Debbie: Yes, they will be highly skilled observers.

Jaypootie: At some times of the year, caribou will be either fat or skinny. On the bags, is date included?

Debbie: Yes, date will be included on the data sheet. That's why we need all these details (pointing at data sheet) because they are important when interpreting the data that is generated.



Jaypootie: In terms of bone marrow, on a healthy caribou the bone marrow plays a big role especially in terms of changes. It's also affected by seasonal changes. Are they good indicators of whether that year was a good food source? What kind of indicators would it give you on these seasonal changes?

Debbie: As you know, the bone marrow will change in color if the body condition gets worse or better, the thickness and density also changes. Jaylene weighs how much bone marrow there is so we can compare between caribou in different seasons; thus, we can get an indication of this. We will gather the data, then we'll bring it back to you to help us understand why we see the results we do. Just because we start a project together, it doesn't end there – we have to continue to work together for the duration.

Joanasie: To make a point, an elder that has gone out caribou hunting for many years. In terms of bone marrow types, it plays a big role in each season. In March, a yearling, juvenile bull, or bull might have slightly changed bone marrow. By May, yearling bulls and females normally start being healthy again. A young bull, female, female with calf, normally start having good bone marrow in September. It's an indication that the caribou is healthy. If you categorize the health of caribou in March-May it won't show a very pleasant bone marrow, it might be watery. By September it has improved. It thins out in spring, and as fall progresses it thickens up again.

Phillip: Earlier in the meeting, you asked if the Board supports this survey. I do fully support it.

Levi: *[Vice Chair takes it to a vote – the whole Board supports the survey (all hands raised)].*

Phillip: During your survey in the community, there would be a need for an administration here at the HTO. If the Board fully supports to the survey, and the HTO is advised that there is a need for data entry. If the HTO decides to hire someone to do the data entry on your behalf, would you be able to set aside some funds to help with the data clerk, or should the HTO supply for certain funding to support the survey? Or field staff?

Debbie: For the survey, the HTO doesn't have to worry about data entry. It will happen in the field, collected on GPS units, and in field books and entered later into appropriate software. In the communities will be hiring observers, and they will be paid either as a casual through the GN, in

Qikiqtarjuaq, November 2011

which case we need to know in advance, or by the HTO and get reimbursed by GN. For the sample collection work, the HTO has to keep track of who brought samples in, and who was paid, there is a place for this on the Data Sheet. This is why the HTO can charge GN 15% extra on their invoices as an administration fee.

Jaypootie: Clarifies: The HTO has cash flow issues. It would be nice to advance some funds to help keep it flowing.

Debbie: We can make a contribution agreement so that we can make an advance to the HTO so that they can pay the hunters for sample collection.

Phillip: HTO has been in a difficult position for the past few years; it hasn't been audited for three years and there is money being held by MIWS to try and pay for their bills (phone and casual hires). If it's a GN or federal program, if there is work required in the community the money hasn't always been paid up front. HTO members have to pay expenses up front, and getting reimbursed taken 60 days, sometimes a year. There is an agreement with NIWS – the books haven't been completed in three years and this has caused a problem in administration.



Debbie: Good information to have because the government payment system can be slow. We can use this to find a way to pay in advance or pay the observer on salary. Also, if you're interested in the sampling, we could probably make arrangements to have someone from the community come to Pond Inlet to work in the lab for a few days too to see the next step in the process and keep working together.

Toomasie: In regards to the sampling, would this happen during the survey?

Debbie: They can take samples any time of year - it's not linked directly to the survey though. It could be continued for any number of years as long as the harvesters want to continue.

Levi: On behalf of the membership and the Board, we are asking that Joannasie, our elder be paid for his involvement. HTO would issue a cheque and invoice GN.

Debbie: Yes, absolutely.

Jaypootie: When would the sample bags be ready for distribution in the community?



Debbie: We can send them almost immediately. How many would you want? When?

General: [Estimate between 50 and 70 bags for the year. The first hunt usually has lots of caribou.]

Debbie: We will send them as soon as we return, likely about 10-20 kits.

Caribou on Baffin Island: Sharing Local Knowledge

Joanasie (as translated by Harry Alookie): Want to point out some observations about these very important issues that were discussed, would like to point some things out according to my knowledge. **I became a resident of Qikiqtarjuaq in 1967. During that time, I observed caribou in each region specifically I started to understand where the caribou were traveling in the 1970s. During one season, I spent one month in the middle of Baffin Island where no one currently resides. At that time, in 1970, I started being aware of the caribou range around Qikiqtarjuaq. (Pointing from south of glacier on plateau to north of Nettling Lake) Traveling around the middle of Baffin Island about that time and noticed where the caribou ranges were. Along Longstaff Bluff area, Nettling Lake, Dewer Lake area. In 1970 when I first set foot on the mainland on Baffin Island, there were dense caribou in that region. When I first moved here in 1967, I normally go caribou hunting in that region and see where they are abundant. Since then until 2011 I have traveled and gone caribou hunting in that range, on that part of Baffin. During the winter of 1998 on the range that I normally hunt, I noticed that there were a lot of dead caribou. In the following year and 2000, I also noticed a number of dead caribou (more than the ones he saw in 1998).**

Debbie: How many? 10 or 100?

Joanasie: **We didn't count the dead caribou, but as they were traveling on their route to the hunting ground we found dead caribou along the way. At the time I noticed that they weren't being killed by wolves or some other predator.**

Debbie: Do you think weather? Icing event?



Qikiqtarjuaq, November 2011

Joanasie: During that fall, I noticed the reason why these caribou died – the land had two layers of ice. The first layer was not a very thick layer but it was ice. There was another layer – more than the first layer – it was also ice. Most of the dead caribou were females with a yearling. The females were the most affected. The yearlings were still there but they were skinny. On the second time I noticed lots of dead caribou, it was either because of the weather because there was so much ice. There were also caribou traveling on the ice caps, and they fell through the crevice.

Debbie: Do the caribou near here typically go on the ice caps, or only when there is ice and they are looking for other areas to feed?

Joanasie: It was more because of the ice build up – ice rain, ice fog, ice accumulation. After the end of autumn in a good year it doesn't snow. In a bad autumn there is ice on the snow and on the food sources for the caribou. I recall there was a caribou meeting held in Rankin Inlet (not sure of the date). During that meeting the majority of Baffin HTOs were seeking to have a Baffin caribou survey at that time. When I was a young lad in 1945, caribou herds in this region were declining at that time. The harvesters and the young people were told not to harvest caribou and they didn't for three years because of the decline in this region. My observations since when I first moved here in 1967, there was an abundance of caribou – the population was healthy at that time. In the last three years, 2008, 2009, 2010, they have declined in the area where he usually goes caribou hunting. For the past three years, I have been traveling like in the previous years, but these past three years have been the most noticeable for caribou declining. I have to travel farther, and I've had to go to Longstaff Bluff. They are further than they have been. I also want to point out that climate change is playing a big role based on my observations. Animals and the marine mammals are also adapting to climate change. Many people might not blame global warming, but am starting to see changes and declines because of this climate change.

Debbie: What kinds of changes are you seeing? More icing events, more snow?

Joanasie: For the past three years, I have really noticed our winters, during freeze up, it rains so much and gets cold much faster on the mainland. I blame the ice on the ground where the caribou normally have a food source, but can't get to the food source because of the ice. They are starving. He has seen caribou eating the little red/black plants [lichen] that grow on top of the rock because the main food plants are under the ice. If you have seen a boulder where there are these plants, they grow underneath the rocks, so caribou can access them. It's the only way they could access them. It's really been notable since 1970 up to this year. I have been traveling to the normal caribou hunting area, these three years were the most difficult years, I have had to travel to Longstaff Bluff. I noticed when the slide show presentation was up, I noticed that there was a leg that might be useful for sampling. You mentioned that there were some diseases in northern Quebec. I don't blame the disease, they might hit a rock or get injured, they always travel, and they might get chased by a wolf, and might get sick from the injury, even if it is only a scratch it can cause sickness in the long term. I was selected as one of the participants for the caribou working group that took place in Iqaluit. Which organization was looking after this?

Qikiqtarjuaq, November 2011

Debbie: It sounds like something that the GN might have been doing. We want to have local experts (elders), provide input and knowledge on caribou in Nunavut. Large initiatives include the Caribou Strategy, but also the Wildlife Symposium; both were wide reaching and important exercises.

Joanasie: I am grateful that the caribou consultations are taking place in Qikiqtarjuaq. It's a start and I'm excited to be involved if the caribou survey takes place in this region. I am concerned about why we're not concentrating on southern Baffin, a lot of it is always focused in north Baffin.

Debbie: This winter (March-May 2012), we will focus on Qikiqtarjuaq, down to Pangnirtung, and then in south Baffin. The following year we will look at north and northeastern Baffin.

Joanasie: Part of our tradition, is that people used to live in the Cape Dire area on the coastline. There used to be some camps in the 1930's and 1940's. A small group of Inuit lived there, and they annually had an abundance of caribou. Those were the early years. Today, there have been some small herds in that area but we are not too sure exactly where they are. The majority of time in 1920's and 1930's they had different regions to go caribou hunting each season of the year. Some of these areas are very mountainous, but for the caribou they are nothing. We aren't able to go there but they can. These are typical altitudes on the caribou range. It would be beneficial if the survey could go that far.

Debbie: [Indicated on the map the areas that will be covered in 2012].

Joanasie: There used to be very healthy and abundant caribou herds in that area, but they are declining in that general area [marked on map].

Levi: In 1920's and 1930's, according to traditional knowledge there used to be lots of little white dots on the land because of the abundance of caribou (near Hoare Bay). If you were to walk along the coast, the elders would say there were caribou there. There are not very many today. The elders say the caribou used to be around this area, so in the future years they will come back and repopulate the area.

Debbie: The information will be collected and put in a report, and possibly in a DVD, so we can get this information to the decision makers. We'll give the report and DVDs to you so you can make copies.

Joanasie: So that you know, during March and April survey near Qikitarjuaq there are a number of shelter cabins owned by the HTA and other harvesters in the community. For your information, there are at least two cabins in the area and we can mark them for you to use as bench marks. The cabin that is marked on the map belonged to my older brother—he died last year (northern cabin). He built the cabin there because there was an abundance of caribou there. Another location was marked (further south) there is a lot of old burials and good shelter there, sheltered from wind.

Yukipa: I grew up in the Pady area. When I was growing up, they used to catch caribou there. I'm glad to see they will be surveying this area. You can see old herd tracks in that area even today.

Map Summary

See Figure 7.

The large area covering the central Baffin region, described as a caribou and hunting area, was identified by Joannasie. Starting in the 1970's Joannasie has used that area for hunting. He also described old Inuit camps from the 30s'-40s' in the Cape Dire Area on the coast line (outlined in green). These, he said, had an annual abundance of caribou, and today there may be small herds in the area. Joannasie and Levi also stated that there used to be lots of caribou along the coastline in the 20's and 30's, but that there aren't that many there today (outlined in purple). Yupika described growing up in the Pady Area ('Historical Area' on map) and catching caribou in that area.



Qikiqtarjuaq, November 2011

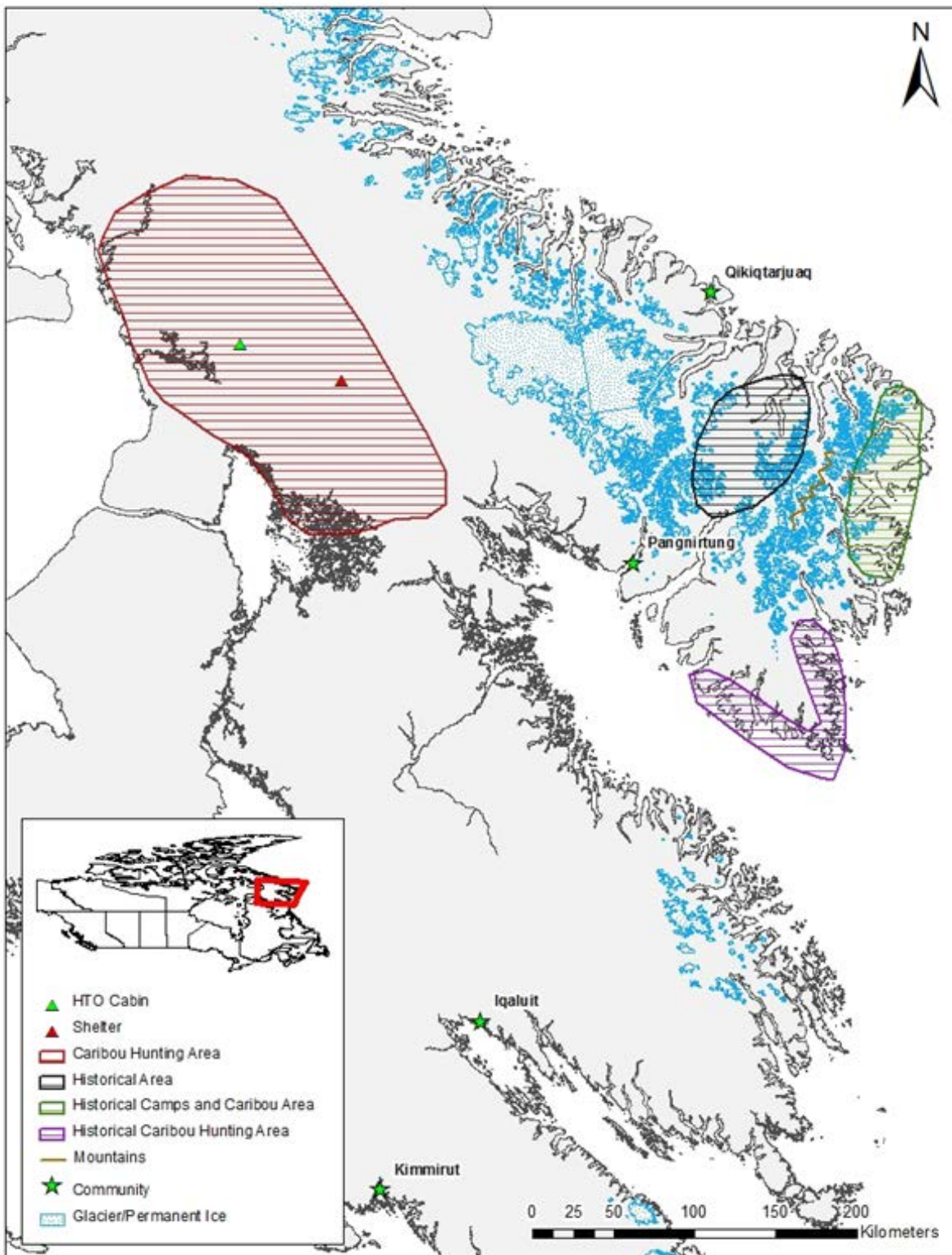


Figure 7. Digitized summary of information provided by the Qikiqtarjuaq HTO and meeting participants, November 2011.

Kimmirut, December 2011



Kimmirut December 1st, 2011

Participants

Debbie Jenkins, Wildlife Research Biologist (Baffin Region), DoE, GN

Jaylene Goorts, Wildlife Technician (Baffin Region), DoE, GN

Chris Wex, Conservation Officer (Kimmirut), DoE, GN

Rebecca Jeppesen, Wildlife Management Biologist, NWMB

Sandy Akavak, HTO Vice-Chair

Kip Aklootoo, HTO Board Member

Kolola Pitsiulak, Secretary Treasurer

Akeego Ikkidluak, Translator

Baffin Island Caribou Research: Questions and Comments

***During the presentation, it was established that people from Kimmirut do not normally go as far north as Nettilling Lake, or as far southeast as Resolution Island to harvest caribou.

Sandy: About when would Kimmirut be involved when you start surveying?

Debbie: March/April.

Kolola: Would you do the southern tip of Baffin Island?

Debbie: Yes, everything inside the red line (pointing to map).

Sandy: And the islands? Resolution Island?

Debbie: Yes, are there caribou there?

Sandy: We've never gone down that far.

Debbie: Tonight I would really like to hear from you; if you would like to participate in the survey, when, and for what areas. Notably, the study area is about 250,000 km sq.

Chris: How many hours is that.

Debbie: It will be about 55 days. This is certainly a very expensive project, however, most of the populations on the mainland are surveyed every two to five years. And the populations on Baffin Island have never been surveyed in full, so it's time.

Sandy: Would that be done by the hunter? [referring to collecting blood on the filter paper for the sample kits].

Debbie: Yes.

Chris: The skin, it can be from anywhere? [referring to the skin sample as part of the sample kit.]

Debbie: Yes. Often when the hunter skins the caribou he just takes a little piece from the edge.

Kolola: Is it only the left hind leg? [referring to the leg collection in the hunter sample kit].

Debbie: Yes, it's standardized across the north, so that way we can compare with other caribou, such as caribou in Greenland.

Akeego: Besnoitia, what does that mean?

Kimmirut, December 2011

Debbie: It's a disease caused by a parasite that forms small cysts that looks like grains of sand under the skin or around the eyes. Have you ever noticed a change in caribou, a decline?

All: Yes, they have declined.

Debbie: Joannasie (from Qikiqtarjuaq) has seen a lot of ice in the past few years. He thinks the caribou are starving because they can't get their food. If we do the survey, we were thinking of starting it in March, but I'm used to working further north. I need to hear from you if it is a good time for weather, if it's too foggy...

Sandy: Usually it's good, but in the month of May it's foggy. March and April would be the best times.

Kolola: It's -15 deg C. or -20 deg C. in the day in March. It would probably be the best time.

Debbie: That's good to know because further north, it's still -30 deg C. and we can't fly the helicopters. So if we started here in March, we could expect good weather in March and April?

Sandy: There will be some snow in March, but there are some good days.

Debbie: My plan is to start here, then move north, so that if you start getting open water and fog we will already be further north.

Sandy/Kolola: Fog doesn't usually start until late April or early May.

Debbie: When does your ice break up?

Kolola: As in open?

Debbie: Big cracks that can create foggy condition.

Sandy/Kolola: April and May. Not complete break-up, but it will start then in the floe-edge. The ice stops forming in the end of March, April – we don't see it forming anymore because of the warmer days.

Debbie: How far out is the ice?

Kolola: Very close to the land, not that far out.

Debbie: I know you have to talk to your Board, but do you think this survey might be something that they'd be interested in?

Sandy: Yes, I will be able to talk to them and able to inform you. If they don't like the idea, we will inform you. When would be the best time for you to start surveying?

Kimmirut, December 2011

Debbie: I'm hoping to start in March 2012. I was at the QWB meeting, and I think mostly people were excited about the survey. One of things that came up was, "What will happen if we see very low number so caribou?"



Sandy: They've been worried about that, they feel that there's a lot less caribou.

Kolola: Is it just going to be an aerial survey, or are you going to put tags on the caribou?

Debbie: This is just a survey to count them and locate them, to put the locations on a map. This is important because when we get applications from developers, if we have locations that are important to caribou, we can try to save that habitat so that there's not a disruption by industry.

Kolola: My thinking was, if there is an area with a large population, it would be interesting to put tags in a few to see where they migrate. Then if I catch a caribou with a tag in another area, we'd know that.

Debbie: This study won't use tags, but we should definitely work together on other projects to answer questions like this – about where they move.

Debbie: It seems like your community might want to focus your effort on the survey in this area (indicated on map the area around Kimmirut and the Meta Incognita Peninsula)?

Sandy: I would like to see this area, and I feel that other HTO members would feel that to. I believe that they would like to know the numbers too, so I believe they would like it done.



Debbie: I understand that you have to talk to the Board still.

Sandy: Yes, we'll discuss it.

Kolola: We'd like to have the numbers at the end too, a population estimate, so that the HTO can discuss them for conservation.

Sandy: Even back then, when I was just a child, the ancestors and the elders used to say a man with a family was allowed to have 5 caribou but a single man would be allowed one.



Kimmirut, December 2011

Debbie: You have your own traditional conservation measures that would still apply today?

Sandy: Yes, I've been thinking that too. We don't want to waste food – we should only take what we need.

Debbie: I'm so happy to hear that you're already thinking about your own plans.

Sandy: I've been thinking about this too – about the government maybe implementing these measures.

Debbie: I'd rather have the HTO and the community come up with your own system for conservation, than use the government system. Maybe at the end of the survey, we can bring all the HTO's together for a big caribou workshop. Then, you can present your ideas to the other communities; all the communities can learn from each other. After we finish our consultations, we're going to put together a report and maybe a CD of pictures. I'll send you a draft to look over and make sure we've captured it properly. Then we'd like to make it into a document that we can share with everybody. After the survey, we can meet all together and I'll give you the results (General nodding and agreement throughout this section).

Debbie: *Debbie showed a map of a previous survey in the high arctic that took eight years; shows where caribou were found and what areas were very important.* This information is useful now because they want to do coal mining in the area. It's the same kind of map that we could make from our survey of Baffin Island. I also wanted to ask, before we leave, that you could discuss the caribou sampling program with your HTO. In Qikiqtarjuaq, their whole HTO was there. They decided to support the survey and wanted to start monitoring right away in the next two weeks, for which I'll need a permit. If you want to discuss it soon with the HTO and let me know, I can do all the paper work for the permits.



Sandy: We'll be talking with the other HTO members to discuss this topic. Thank you for coming... **we have been worried about our caribou.**

Debbie: I appreciate this relationship; I hope we can work closely together. Thank you for this.

Debbie: Today we've discussed only a couple of research ideas. Importantly, you can design your own research, but we can also work together to design more research to look at other questions, like movement, that are important.

Caribou on Baffin Island: Sharing Local Knowledge

Kolola: Marked on the map where he caught one caribou this past summer (identified as 'summer caribou area' green). See Figure 2.

Sandy: Marked on the map where he got some caribou this past summer (green); 4 areas.

Kolola: These areas are best for summer, use different areas in the winter.

Debbie: [Labelled map with the seasons.]

Sandy: [Added area where he found tracks, and another area where there may be some caribou.]

Kolola: The summer areas tend to be close to the coast.

Sandy: [Added some more winter areas.]

Debbie: In the past, were these the same typical areas to find caribou?

Sandy: In 1989-1990s, there were lots of caribou passing through. There are a lot fewer now, there are hardly any. We noticed that caribou were dying.



Debbie: Do you think it's because of icing, weather?

Sandy: Not only weather, maybe disease too. We were worried when Mike Ferguson was still working – it seemed that they weren't worried about this situation. On one big lake, there were 7-10 dead caribou. Some looked like they fell off the cliff. We believe it's from the disease. We were worried that we might be eating diseased caribou, but it seemed that nobody was concerned about that.

Debbie: This is good information. It might help explain why there's been such a big decline on the island.

Sandy: Mainly one year, I forget which year, but there were lots of dead caribou (around 1994-1996).

Kimmirut, December 2011

Debbie: Joannasie, in Qikiqtarjuaq, also noticed a big decline. He now travels all the way to Longstaff Bluff.

Sandy: Yes, I know Joannasie. They have to go very far.

Sandy: To our knowledge and what we have heard from our fathers and grandfathers, there will be lots of caribou and then they seem to decline for some time, then come back on as many caribou. It has been on-going. When I was growing up, as a young child, I never saw caribou. My father and the rest went out hunting a long way to catch caribou – sometimes they didn't catch any. It took them quite a few days to catch a caribou or come back empty handed. It was like that for quite some time. In 1965, when I had a child, we started seeing caribou here and there. From then on, it seemed like there were more and more. Right up until about two years ago, they have declined a lot.

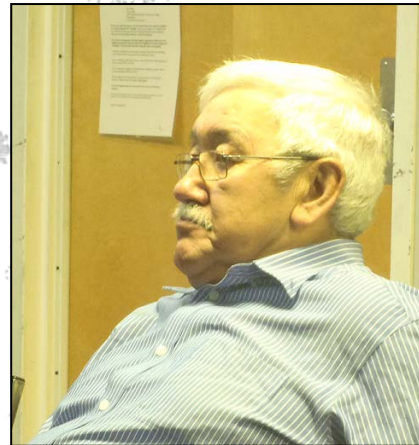
Kolola: Since 1995-1996 when there were lots of caribou here, we started seeing a decline.

Sandy: My father and the older ones used to say that the only spots where they usually had good caribou were the ones that always had caribou. **Our fathers used to say that sometimes when the herd is declining the caribou stopped migrating, they stay in one spot.** It's from the ancestors and my father. I have noticed in the last couple of years, in one area there's nothing but in other areas where there is always caribou, they are still there – it's the only spot and they stopped migrating (when the numbers are higher they migrate more).

Kolola: When they decline, they seem to stop migrating. They seem to stay near the calving grounds then.

Sandy: The calving grounds are in the higher grounds (showed where on the map). The higher mountains tend to be calving areas. I'd like to say too, even if you're kind of close to the caribou they don't usually run around so you may miss some if they're standing still.

Debbie: In North Baffin, they say that the calving areas are more spread out that they used to be.



Sandy: The more caribou there is, they'll finish their food in one area faster so they move further. If there are fewer caribou they'll have more food in one spot so they'll move around less.

Debbie: Did your father hunt in the same areas that you hunt today?

Sandy: My father used to walk, I don't, to Mingo Lake area, my father used to walk up that way. Kimmirut, Iqaluit, Cape Dorset used to meet up in that when they hunted the caribou. They used to meet without planning it, because there was no communication then.

Debbie: In the summer time?

Kimmirut, December 2011

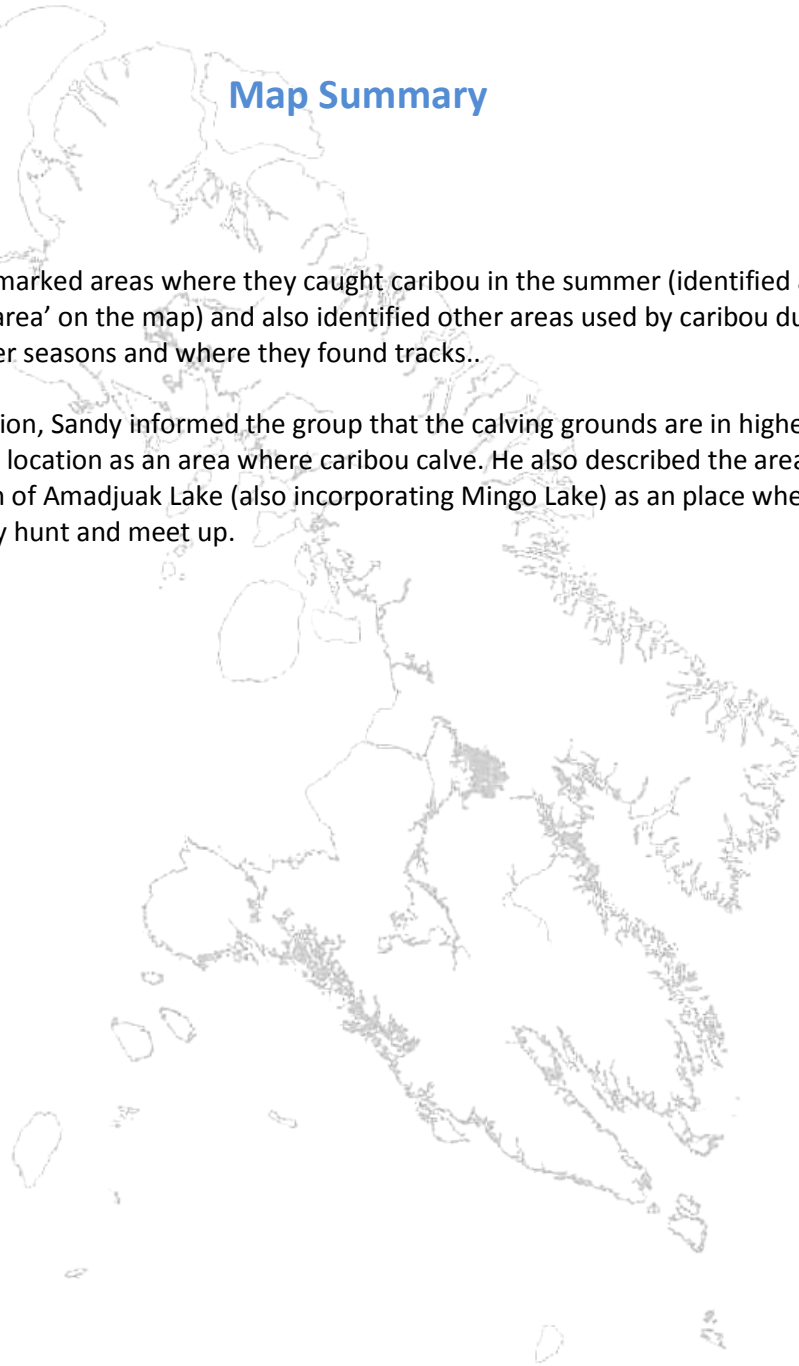
Sandy: Yes, the best clothing is summer caribou because they don't lose as much hair as winter pelts and the skin is firmer. Even way up there, when they met from another community, a man came from Cape Dorset and a woman from somewhere else used to get married up there.

Map Summary

See Figure 8.

Sandy and Kolola marked areas where they caught caribou in the summer (identified as 'summer caribou area' on the map) and also identified other areas used by caribou during the summer and winter seasons and where they found tracks..

During the discussion, Sandy informed the group that the calving grounds are in higher grounds and identified one location as an area where caribou calve. He also described the area immediately south of Amadjuak Lake (also incorporating Mingo Lake) as a place where people would traditionally hunt and meet up.



Kimmirut, December 2011

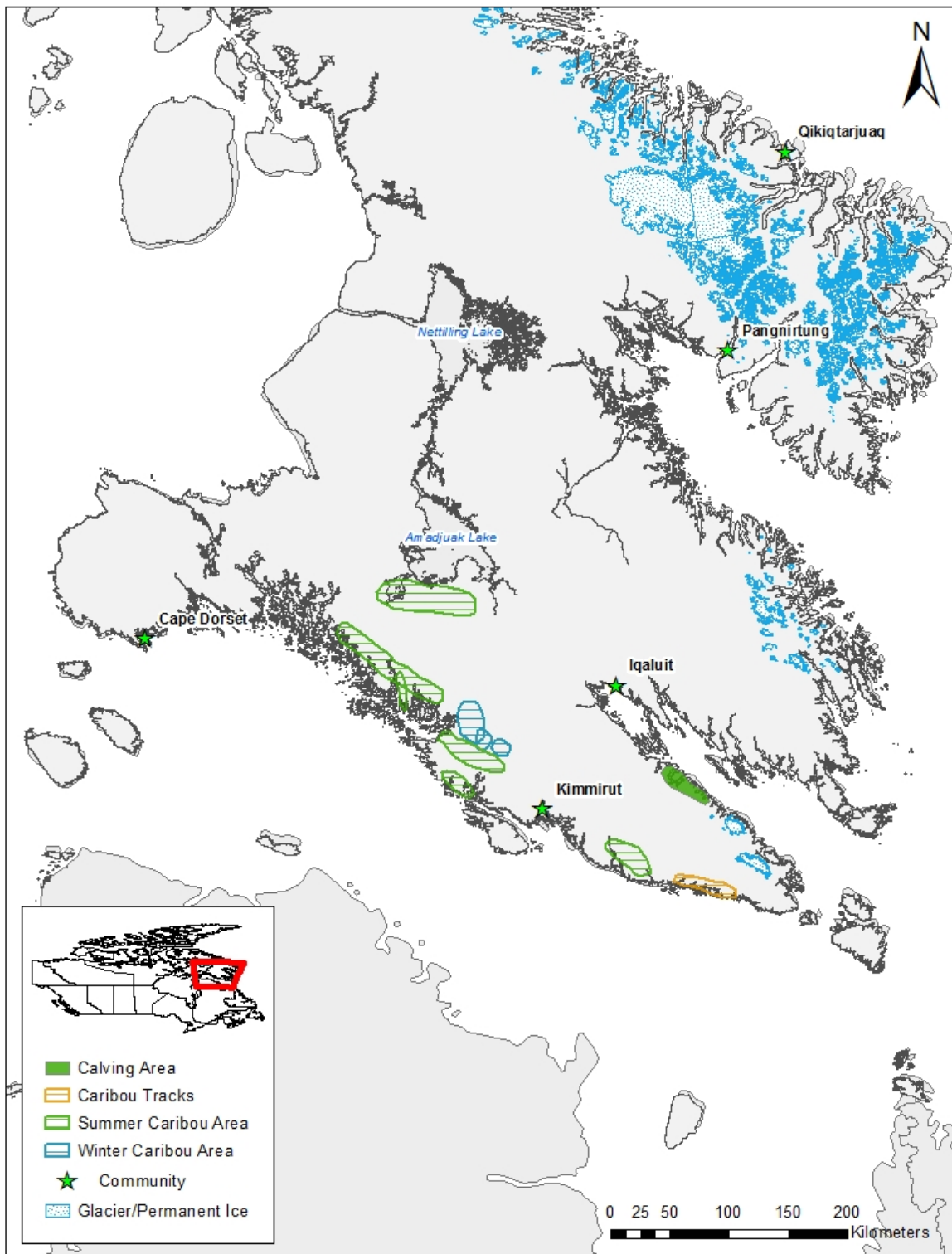


Figure 8. Digitized summary of information provided by the Kimmirut HTO and meeting participants, December 2011.

Cape Dorset, December 2011



Cape Dorset December 2st, 2011

Participants

Debbie Jenkins, Wildlife Research Biologist (Baffin Region), DoE, GN

Jaylene Goorts, Wildlife Technician (Baffin Region), DoE, GN

Tiivi Qiatsuk, Conservation Officer (Cape Dorset), DoE, GN

Rebecca Jeppesen, Wildlife Management Biologist, NWMB

Aningmiuq Samayualie - HTO Vice Chair / Interpreter

Quvianaqtuliaq Tapaungai - HTO Chair

Adamie Nuna - HTO Secretary / Treasurer

Adamie Samayualie - HTO Board Member

Qimiata Nungusuituk - HTO Board Member

Ejesiak Ejesiak - HTO Board Member

Oqituk Ashoona - HTO Board Member

Simiga Suvega – HTO Board Member

Baffin Island Caribou Research: Questions and Comments

Oqituk: Before we get into anything on the map, are you guys going to check on the islands south of here? We don't know if there are caribou there or not.

Debbie: We plan on doing all of the islands that are near Baffin Island.

Aningmiuq: We'd like to see if our caribou are there.

Debbie: It would be good to see what kind of vegetation is there, if it could support caribou year round.

Oqituk: We probably would know by now, a few years ago they surveyed islands but every time they tried to go they were fogged out. They never got there.

Debbie: What time of year did they do the survey?

Oqituk: That was when I was going with the polar bear survey, maybe 2 years ago. We did south Baffin Island and Foxe Basin Island. We didn't reach those islands.

Debbie: It was in August? September? The water was open? (agreement). What do you think about surveying in March, April, May... Is that a good time?

Adamie N.: I was with the Ferguson crew before, March should be okay.

Debbie: In north Baffin, April is the best time – its clear skies and maybe -20 deg C. But it probably gets warmer here earlier, in March?

Quvianuktuliaq: It might still be a bit colder in March.

Debbie: For the helicopter, it has to be above -30 deg C. We want to start early because, if we get good weather, the survey will take about 37 days. But it might take 50+ days because we often run into bad weather and there are delays. Do we want to start talking about the map?

(General conversation about youth around table)

Debbie: Do you find here, as in some communities, that some young people haven't learned the hunting skills that their fathers and elders had?

Aningmiuq: Yes, I do myself.

Qimiata: The young guys here, if they can get transportation they want to go out – they're still interested. The teenagers would rather be out there, not all of them though – some want to go out hunting, some want to hang around town.

Cape Dorset, December 2011

Debbie: One of the reasons I ask, is that we are trying to get funding to hold workshops in some communities to have the elders get together with the younger hunters and pass on some of their skills and knowledge.

Aningmiuq: That's what I was dreaming not too long ago.

Quvianaqtuliaq: For sure, that would probably help. Especially if there was offer involved for a little bit of income it would really encourage participation. The sampling program would also help get some interest from the younger hunters if there's an opportunity for income.



Debbie: I'd like to maybe be able to make some money available for some of the elder hunters to take some of the younger ones out with them.

Qimiata: There are lots of ways to teach teens about caribou. Without taking the back bone, the rear hind quarters –just by cutting the lower legs off they can squish them inside the stomach area with the backbone on. We used to do this instead of cutting them up. We had so many that we had to put them in rows like this, to compact it. The slid the stomach open, and put the hind quarters in there – there's bone in there that you can hook it up to. There's all kinds of stuff we can teach our teens. We used to use everything but the gall bladder – everything was taken. The rear leg parts, when they took the muscle out we did it carefully – it was extra thread. These are just some examples of what can be taught to teens.

Debbie: I think it would great. I did a workshop in Pond Inlet to test it – I did some presentations on science, and some elders taught some of their knowledge [in general, more examples of what could be taught, general discussions not all translated.]

Qimiata: Is this program for Pond, or is it for other communities?

Debbie: I just tested it in Pond, but I could try to get it here if you wanted it to be (showed some pictures of the program). If you want to do a workshop, we can discuss what you want to teach, and then work on that and get the money together.

Qimiata: Looking at one caribou for instance, inside one year, in winter time – it's got a really big fur, by spring time the fur starts to fall off, in early summer it's really thin – the skin is – and by early fall it's thick enough to use as a garment – that's when we start going for garments - before it gets too thick for garments in late fall. The way you butcher the skin is different between winter and summer too. If you are going to use it for eating, there's a certain way of cutting the hide; a different way if you are making kammiks/garments.

Debbie: Are there women in town that could show some of the students how to prepare the skin for clothing at a workshop?

Cape Dorset, December 2011

General: Yes , there are some, but some have passed away too.

Debbie: Before we leave, we brought some letters. If you think you support or don't support the survey, or maybe you need some time to talk about it? Because if it's a go, I have to find \$1,000,000 by January so I have to start writing to everybody to start looking for money and they always want to know if the communities support the project. So the sooner I know, the sooner I can either cancel the project or start looking for money.

Qimiata: Are you going to do community consultations?

Debbie: I'm doing consultations with the HTOs in all of the communities, but not open to the public. I'm hoping maybe the HTOs will talk to the communities. This is the consultation that we're doing –this right now.

Quvianaqtuliaq: As Chair, I can clarify that I heard about this. I think that other communities may support this program, have they?



Debbie: We've been to Qikiqtarjuaq, Kimmirut, and here [explained consultation progress and plans for the rest.]

Qimiataq: The reason why we ask is because we were notified that it was a community consultation with other members because we'd need to get a translator ahead of time.

Aningmiuq: (clarifies) it was on the radio that it would be with the public in the community.

Debbie: It was probably a misinterpretation. To me, it means that we come to the community, and talk to the experts, yourselves who are in contact with your community members regularly. I'm sorry if there was a misinterpretation, I meant just coming here to the HTO.

Qimiata: I am in support of the survey, and the program.

Debbie: Yes. Just so you know, its about \$1,000,000 for 2012 and another \$1,000,000 in 2013, so I have a lot of work to do in a short amount of time.

Quvianaqtuliaq: The majority of us are in support of your survey. Now a day it's hard to have an idea about the animals around us on the land and the sea. We need information too just like you guys.

Debbie: We have some draft letters here. We can give you copies or you can sign them tonight. Can you read them out Jaylene?

Cape Dorset, December 2011

Jaylene: Yes, there are two, one for the survey and one for the samples (reads the one for surveys; both are translated by the interpreter)

* Letter for survey support is signed and dated.

Debbie: The other one is for the samples, if you want to start right away we have some money for it and we can, but you don't have to start right away if you're not ready.

Debbie: I can write a permit for the sampling, and send some sample kits to Tiivi (Conservation Officer). That way, they're in town and you can pick them up from Tiivi.

Qimiata: When we get the sample kits, we can notify the harvesters and the public that they can come pick up the kits.

Tiivi: I'll be away until January – it would be more direct to send them direct to the HTO.

Debbie: It would be great. You can show them how to collect the samples, go through the kits with them. We could make posters too.

Adamie N.: Did Mike Ferguson retire?

Debbie: He moved to Norway and is teaching at a college.

Oqituk: Make sure to check the larger islands off the northwest coast of Baffin Island, see if there are caribou there and keep us updated.

Debbie: I'd like to thank the translator – excellent job; Tiivi for being so helpful; and Jaylene and Becky in the back for taking notes so that we can give you a report after our consultations). **Thank you all very much for your input.**



Caribou on Baffin Island: Sharing Local Knowledge

Quvianaqtuliaq (translated by Tiivi): In 1950 the caribou started coming from Iqaluit across to Meta Incognita (south).

Debbie: Were there always caribou in the south [Meta Incognita Peninsula]?

Quvianaqtuliaq: He always noticed that there were caribou in the south area and they started migrating towards Cape Dorset. They would meet by Amadjuak Lake by walking.

Debbie: Sandy (from Kimmirut) said it was a meeting place and some people got married there.

Quvianaqtuliaq: He is not aware of marriages happening because they were just hunting. Only when the priest started coming in.

Debbie: What year?

Quvianaqtuliaq: He wasn't paying attention to the years that they started coming over here.



Qimiata: I don't do much harvesting now a day, but if you are thinking of doing a survey this year you might have some problems finding some animals because there's not many close by right now.

Debbie: I appreciate that. That's why we want to do the whole island, because some hunters think the caribou may have moved and we want to map where they are now.

Qimiata: Inuit knowledge and our own knowledge and what we've heard, know that caribou move to some areas following what they're eating. There are some, but there's not enough (food) where they are, then they'll move to another area where there is. It's always been like that, that cycle; it's been passed down generation to generation. The stuff that they eat, it takes years for them to re-grow. Inuit know that, and they're finally ready years later.

Debbie: So they move away until it re-vegetates and then they move back. Is that right?
[everyone agrees].

Qimiata: From my own knowledge, as a kid there were very few back then in the area where we were. In the 60s they started appearing – a few here and there. In the late 1960's and into the 70s they started getting to be quite a few caribou. Now, they started drifting away due to the stuff that they're eating disappearing.

Cape Dorset, December 2011

Debbie: Do you know what direction they started moving? To the north? To the east?

Qimiata: According to what I hear, they're probably traveling east and north towards Kimmirut and Iqaluit area. Across Pangnirtung area and across Cumberland Sound.

Quvianaqtuliaq: [Shows on the map where they traveled. Debbie marked the circular route on the map in green, Ejesiak takes over the marking and gets input from the group]

Aningmiuq: This lake [Amadjuak Lake] doesn't have any caribou right now. This area [marked in red, see Figure 3] had lots last year, but there are none this year. This green line [the circular route] shows where they go, and have gone, over many years. It takes them over 20 years for sure.



Quvianaqtuliaq: Since 1950 until mid-late 1960s they started coming around again. It took them a long, long time before they came back. Now, according to Inuit Knowledge, they know they go in a cycle. It might be over 20 years, maybe 30 is what we think now. For example, my oldest sister was born in 1926 when this area didn't have any caribou. For example, I used to have a brother-in-law who didn't know how to butcher a caribou – he was born in 1915, there were no caribou.

Qimiata: Me and another guy, who's an elder now, our parents in the 1940s and 50s used to go up there (black two-part circle in the north part of Nettling Lake, see figure 3) to get caribou hides. We used to get their by dog team or by single engine boat.

Quvianaqtuliaq: We used to walk up north to that area [near Nettling Lake; irregular shape].

Qimiata: We used to go to Peter Head to that area by dog team; we were stuck there for a while. People would walk up during summer, fall. During winter time start traveling around by dog team looking for caribou because there were none down further.

Jaylene: From here (east end of movement cycle), do you know where they go?

Cape Dorset, December 2011

Aningmiuq: You might be better off asking people from further north, we didn't always go that far [some general discussion about them coming back south on the west coast by Nettling Lake and Amadjuak lake.]

Qimiata: Back in 1962, two teams of dog teams traveled up here, they tried going up past Amadjuak Lake to look for caribou hides, but it was too late in the season and they had to stop around here (Squiggly line on west coast, west of Amadjuak) because it was Spring time. Between here and (the next green circle on the map), there isn't any living thing there so they had to stop. Where they stopped there were some caribou in the area. In 1961, there was family a living here... they saw caribou here. They moved back further south, east of what is now Cape Dorset and that's when they were moved to residential school in Cape Dorset.

Quvianaqtuliaq: In 1947, before single engine pistons started, we were traveling back and forth by sail. The English started coming after the 1940s.

Qimiata: I was born in 1948.

Oqituq: My grandfather died in Nettling Lake, in an igloo.

Debbie: Are there some areas that are really important for caribou calving?

Qimiata: Usually anywhere, everywhere, ever since we've heard or known about it. They usually don't stay in one place, but usually in high ground.

Debbie: In north Baffin, according to Inuit knowledge they used to calve around Mary's River, but our collaring work showed that they have moved to high areas to calve, and they spread out, probably because they are at such low densities. Do you think that's maybe possible here, because they're at such low numbers?

Qimiata: In this area (large green caribou movement route) they don't have a particular area that has caribou, they're back and forth to calve, they've always spread out. The people that went north, they traveled even further north when they were really going for it. We don't travel as far now.

Debbie: It sounds like in the past people travel a lot for caribou hides for clothing. Are the hides used for clothing here as well?

Qimiata: Not as much as before.

Debbie: Do people here make kammiks from the legs here still? Or are they mostly made of seal, as in Pond Inlet?



Cape Dorset, December 2011

Qimiata: There are maybe a few ladies that will use caribou, there are not many left. Down here, the bottom sole is usually from a bearded seal but maybe up there they use regular seal. Ring seal have a different grade, the bearded seal is better.

Debbie: So today, the caribou is mainly for meat?

Qimiata: Now a day, a few do but they still use them for their beds in the camps and on the qamutik; for under the bedding. Also the legs are good for mitts.

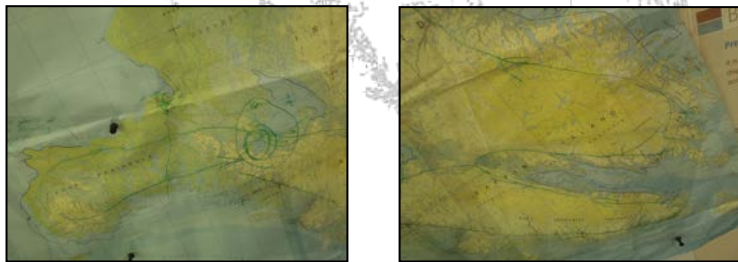
Quvianaqtuliaq: Back then, we had a strict rule about going after caribou – when we were approaching it, we had to be really careful – we didn't want to miss that chance, it took so many days. We took our time and then finally went in for the kill. Back then, everyone knew what they were doing around caribou.

Map Summary

See Figure 9.

The caribou movement cycle (green) was first described by Qimiataq and confirmed by the rest of the group when outlined on the map. Aningmiuq and Ouvianuktuliaq described this cycle as taking over 20 years to complete, maybe even 30 years. The caribou area south of Amadjuak Lake (outlined in red) used to have caribou last year (2010-11) and people from Iqaluit were hunting caribou there. However, according to the HTO members there are no caribou there presently.

In the 1940's and 1950's Qimiataq's parents used to travel to the areas northwest of Nettilling Lake by dog-team or single engine boat to get caribou hides.



Cape Dorset, December 2011

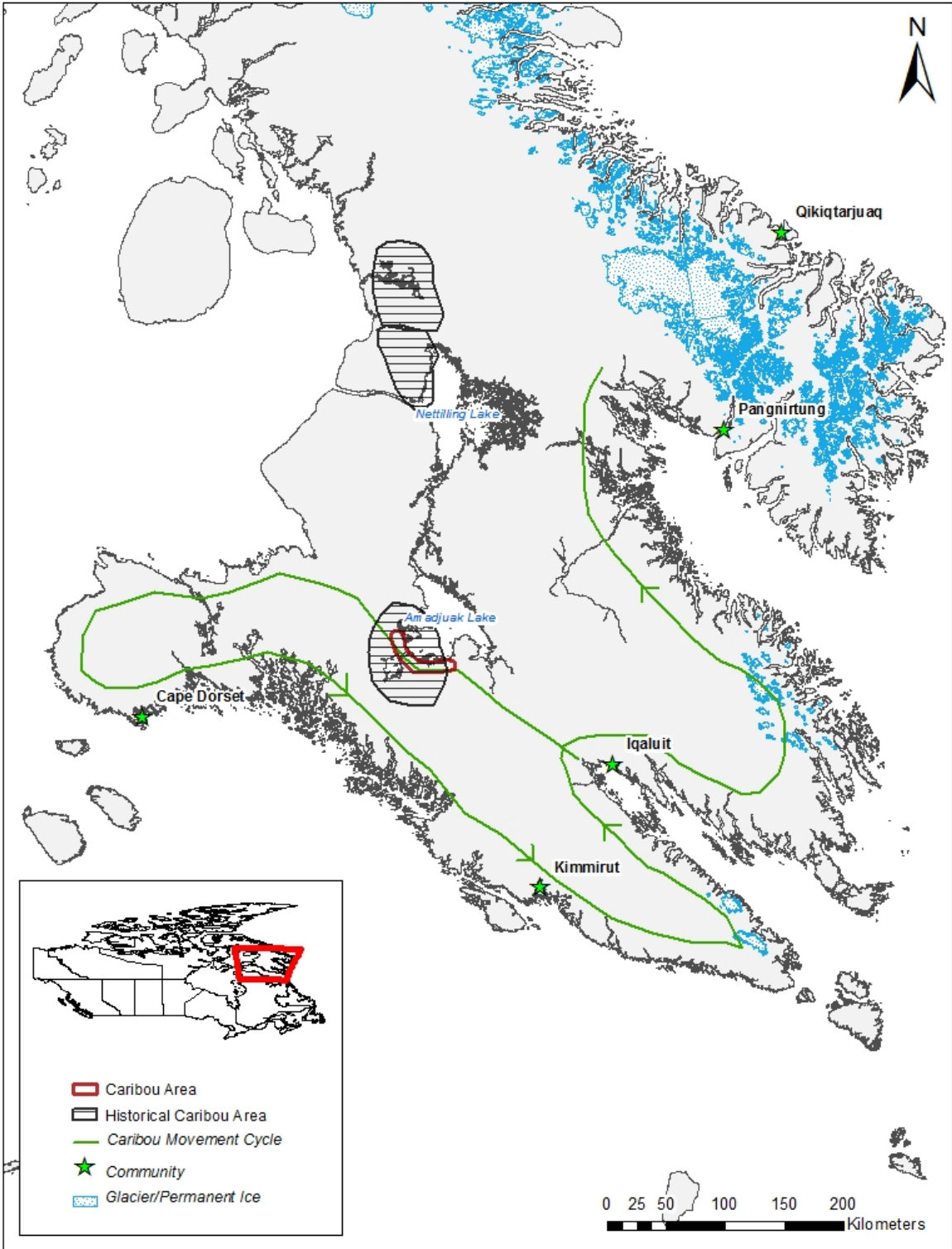


Figure 9. Digitized summary of information provided by the Cape Dorset HTO and meeting participants, December 2011.

Hall Beach, December 2011



Hall Beach December 2st, 2011

Participants

Debbie Jenkins, Wildlife Research Biologist (Baffin Region), DoE, GN

Jaylene Goorts, Wildlife Technician (Baffin Region), DoE, GN

Theo Ikummaq, Conservation Officer (Igloolik), DoE, GN

Rebecca Jeppesen, Wildlife Management Biologist, NWMB

Enoki Irgittuq – HTO Chair

Eunice Allianaq – HTO Board Member

Luba Nangmalik – HTO Manager

Lily Arnaqjuaq – HTO Staff

Sam Arnardjuak – HTO Board Member

Paul Nagmalik – HTO Board Member

Abe Qamaniq – HTO Board Member / Translator

Peter Siakuluk – HTO Board Member

Baffin Island Caribou Research: Questions and Comments

Abe: (noted earlier in the day that he caught a caribou with a large cyst in the muscle of the hind leg. He will submit the diseased portion to the GN-DoE for identification of the condition. This conversation was referenced during the presentation of the slides on hunter-based sampling work.

Abe: What is brucellosis?

Debbie: It's a bacterial disease. It occurs naturally in caribou, and on Southampton Island it is present in some caribou now. The population there is now declining - in part because it makes males sterile and females aren't reproducing.

Luba: The skin it is very helpful for us, for making kammiks and mitts. (Referring to the skin collection in the sample kit.)

Debbie: For the sample, you don't have to take a big piece of skin, just a little piece. For example along the edge of the hide, maybe 1 cm wide and 3 cm long.

Theo: Does the aerial survey go through the Melville Peninsula or part thereof?



Debbie: No it doesn't, but it potentially can be included. We're interested in hearing what you think. Do you think we should include the Melville Peninsula?

Debbie: Do you think you would support a survey on Baffin Island?

Enoki: Baffin, if they don't oppose it, then yes.

Debbie: You think it is up to the Baffin Island communities then?

Enoki: Yes. Right now I don't know where the caribou herd is. They probably moved somewhere else at this point. Arctic Bay, Pond Inlet, they [the caribou] swing by but don't know where they are now. They [Arctic Bay and Pond Inlet] used to have caribou but now they don't. Where did they go? And Iqaluit - not too long ago there were caribou there too. Right now they are somewhere on Baffin Island - just got to find them.

Debbie: Do you think the estimate of about 200,000 sounds right? Back in the 80's.

Enoki: We can never answer those kinds of questions. Sometimes when there is caribou you can travel all day and see caribou along the way. And if I was a caribou biologist I would follow caribou overland all the time.

Hall Beach, December 2011

Sam: They move somewhere else, then they moved North (pointing at map to Amadjuak Lake). Right now they moved somewhere else.

Enoki: They are somewhere on Baffin Island. They haven't completely surveyed Baffin Island.

Debbie: So we really need to do the survey?

Enoki: And tell us when you find them.

Debbie: Do you think that even if the survey isn't that important to you (letting Baffin Island communities decide) - would the hunters still like to do the sample collection here?

Enoki: Yes, definitely. In our region there are caribou here. Some of them are just visitors to this region. There are caribou that hang around and stay all year. Then there are migrating herds that come and go.

Debbie: So there is a local herd and migrating herd?

Enoki: Throughout the year there are caribou. October - November they head to Repulse Bay - the migrating ones.

Debbie: So if we did samples you could get samples from the local herd and the migratory herd. We could start by sending over 20 sample kits and the HTO could give them out how they like or go on radio and hunters pick them up as they like.

Enoki: 20 might not be enough. From December the workers are on holidays and they will be going out for hunts.

Debbie: Qikiqtarjuaq wanted samples as soon as we get back because they will be harvesting in December.

Enoki: Earlier this spring, towards Spence Bay there are migrating caribou. When they migrate they leave the area, if you travel long ways you won't see signs of caribou for long distances. Right now they have probably moved out.

Theo: Igloodik hunts on the peninsula here too, and even people from Pond Inlet..

Debbie: It's hard because you have to have a lot of money to come here [from Pond] to get caribou. If you want to do the hunter samples, I have to apply for a permit. I've started writing them for Qikiqtarjuaq and Cape Dorset. I can do one for Hall Beach if you like, but I need to get a letter of support from HTO. We brought letters, and then when I am travelling I can send in the permit.



Caribou on Baffin Island: Sharing Local Knowledge

Sam: (Translated by Abe) I feel that caribou on our peninsula are just visitors, they migrate, but not necessarily all of the caribou migrate.

Theo: That's the part that people in Repulse Bay tend to say, that the caribou are migrating north.

Abe: That's the part of the major migration from Kivalliq.

Debbie: The caribou in the Kivalliq are typically surveyed by Mitch Campbell. They migrate part way up the Melville Peninsula. But we have heard from some people that maybe caribou from north Baffin may have come across from Baffin to the north part of the peninsula. What do you think about that?

Enoki: It's possible.

Theo: Some caribou were dying off in between (Fury and Hecla Strait), they were actively moving - going to the floe edge - in 88-89. (marked on map). It was during the time of the explosion at Chernobyl. The caribou weren't as active as they had been. Some were actively going onto moving ice, and some dying in between Baffin Island and Melville. But the majority made it across from Baffin to Melville just during those two years. We haven't noticed it during any other times though.

Debbie: The collaring data we have shows that caribou in north Baffin stay in that area, and at least right now they are not migrating to other areas. Based on this we were just going to (survey) Baffin Island and the small islands along the coast. Do people here mostly harvest from Melville Peninsula then?

Sam: A few caribou, yes. Not abundant though.

Enoki: The lack of snow right now makes it difficult to check if there are caribou in places right now.

Abe: Do you want to know where the caribou are?

Debbie: Yes.

Enoki: Right now rain is a factor this season - caribou are up higher. It's been happening more each year. Later in the season it rains and turns to a sheet of ice, but in higher elevation its stays as snow, it doesn't rain.



Hall Beach, December 2011

Debbie: Have you noticed if caribou have starved?

Enoki: It doesn't happen often on the peninsula. They have a choice - to go to higher elevations where the rain didn't occur. There are always caribou, not abundant but always somewhere on the peninsula - never run out of caribou. They may be few and scattered, but any time of year there are caribou. But when you are *looking* for caribou it looks like there are no caribou.

Debbie: It would be interesting to get samples from Melville Peninsula and compare these caribou to Baffin Island caribou, and also compare them to the big caribou herds in the south, and see where they are most related.

Enoki: And when there was caribou on Baffin Island, we were going to get caribou on Baffin back then, they were different then caribou on the peninsula back then. The size difference was apparent when catching caribou on Baffin Island, they were smaller. It was in the 80's, we had caribou back then but they were more abundant and healthier, and tastier.

Eunice: Even for herself they are different then Baffin. Bigger on the Peninsula and smaller on Baffin Island, and whiter.

Enoki: The characteristics are different - the caribou don't run away as much compared to on the peninsula.

Debbie: So it was in the 80's that you were hunting on Baffin mostly?



Theo: Exploration started happening in Steensby and then the numbers started dwindling down. In the late 90's early 2000, exploration was going full bloom, with helicopters going eight at a time. Many think that affected the caribou migrating.

Debbie: That corresponded with when people started staying on the peninsula?

Theo: Pretty much.

Enoki: On the peninsula there is always caribou somewhere. Not in great numbers.

Debbie: I am never sure when we are doing research on Baffin Island if it is something that this community is interested in because you are kind of in the middle. I can understand that if you are not hunting there now maybe it's not a big interest. At the same time there is a possibility that the caribou on the Melville Peninsula and Baffin Island might be related, then this survey might be helpful or at least with the hunter sampling program.

Enoki: No, as soon as Baffin Island gets caribou we will be going at it again. He is interested in checking Prince Charles Island out. (There are caribou on the smaller, surrounding islands - Bray, Koch, Rowley).

Hall Beach, December 2011

Debbie: You harvest on the small islands?

Enoki: He's been everywhere. There is caribou on the small island too (East of Prince Charles Island)

Debbie: Those islands will be included in the survey.

Enoki: In spring the caribou will come out to the Peninsula. They will be more abundant. This summer they will be closer to coast. In fall they move inland again.

Debbie: Can you show us on the map where the caribou are.



Theo: These caribou mostly go from the coast to inland - different from inland caribou migrations. During the fall they start to move inland.

Abe: Enoki says there are caribou all in this area (all of Melville peninsula) in the higher elevations in the winter

Debbie: Less snow up there?

Theo: Yes less snow and less ice. Along the coast it seems to rain more.

Abe: We get rain every year. Happens almost every year.

Theo: Way more than a couple years ago.

Debbie: Joa nasie in Qikiqtarjuaq said that he used to harvest in certain areas (closer to Qikiqtarjuaq) and the caribou started moving inland and now they have to travel to Longstaff Bluff to get caribou. He mentioned freezing rain a number of times.

Debbie: Do you know where caribou calve? Is there a calving area or do they spread out to calve?

Sam: Yes he saw a calf here once (marked on map).

Abe: I've seen them just like cows. In the summer there were calves and female caribou just like cows (all grouped together like cattle).

Debbie: In north Baffin people say that the Mary River area is important for calving. But today they are at very low density and instead of aggregating here they seem to spread out for calving. Maybe it's because there are so few, or maybe because of the explorations?

Sam: When he was travelling around he saw caribou close to Longstaff Bluff. He saw tracks of caribou. There was hardly any caribou back then.

Debbie: What year?

Hall Beach, December 2011

Sam: Three years ago.

Debbie: (Marks 2005-2008 on map). You were traveling from Iqaluit to that area?

Sam: There was nothing in this space (marked on map). There was no major movement of caribou in specified areas, they were not moving much.

Debbie: Do caribou usually move from here?

Sam: They go from Nettilling Lake towards the west. On migration routes you can see trails in the summer time. And there are signs of caribou migration routes in that area. Longstaff Bluff area, just past that there are areas that caribou don't move around much.

Debbie: Do you go to Longstaff to harvest much?

Sam: It's not that far when you are traveling.

Enoki: He went to Spence Bay, took two days - overnight in Repulse - just went through.

Sam: Barnes Ice Cap – there are dead caribou. There were some dead caribou on the edge of the ice cap, but don't know exactly what happened to them. Maybe because of melting more than usual.

Debbie: When was this?

Sam: A few years ago.

Theo: 3-4 years ago.

Debbie: Was it a lot of caribou?

Sam: Not sure - heard that from somewhere else.

Enoki: Our caribou aren't completely run out, there may be few but they don't completely leave the area.

Theo: The caribou are the main users of the land here. There aren't black bears or other herbivores that are using the land here. The vegetation growth is a little different here than other places.

Debbie: This is why the fecal samples would be interesting, we can look at caribou diet and compare to other caribou. So we can keep you informed about the Baffin Island survey - particularly if you would like the island communities to make the decisions. But we will include the discussion tonight in the report, so that everyone will have all of the discussions from each of the communities. Thank you so much.

Enoki: We are out of words.



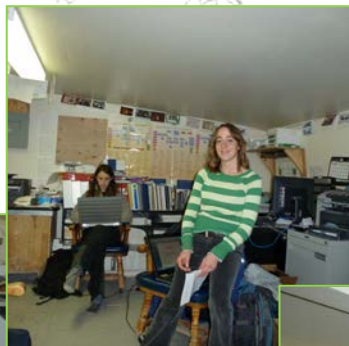
Map Summary

See Figure 10.

1. and 2. Sam described a trip when he went out hunting. At points 1 and 2 he saw caribou but along the route between points he saw no caribou.

3. Theo described a time when caribou in this area crossed the Melville Peninsula (88-89'). This corresponded in timing with the explosion at Chernobyl. There were caribou moving out onto the ice and some had died in between Baffin Island and Melville Peninsula.

The areas of high elevation and low elevations on the Melville Peninsula were marked on the map after a discussion about rain occurring more and more during the winters. Caribou will move into the higher elevations in the winter because there is less snow and ice. Rain occurs more frequently in the lower elevation making conditions icy and harder for caribou to access forage.



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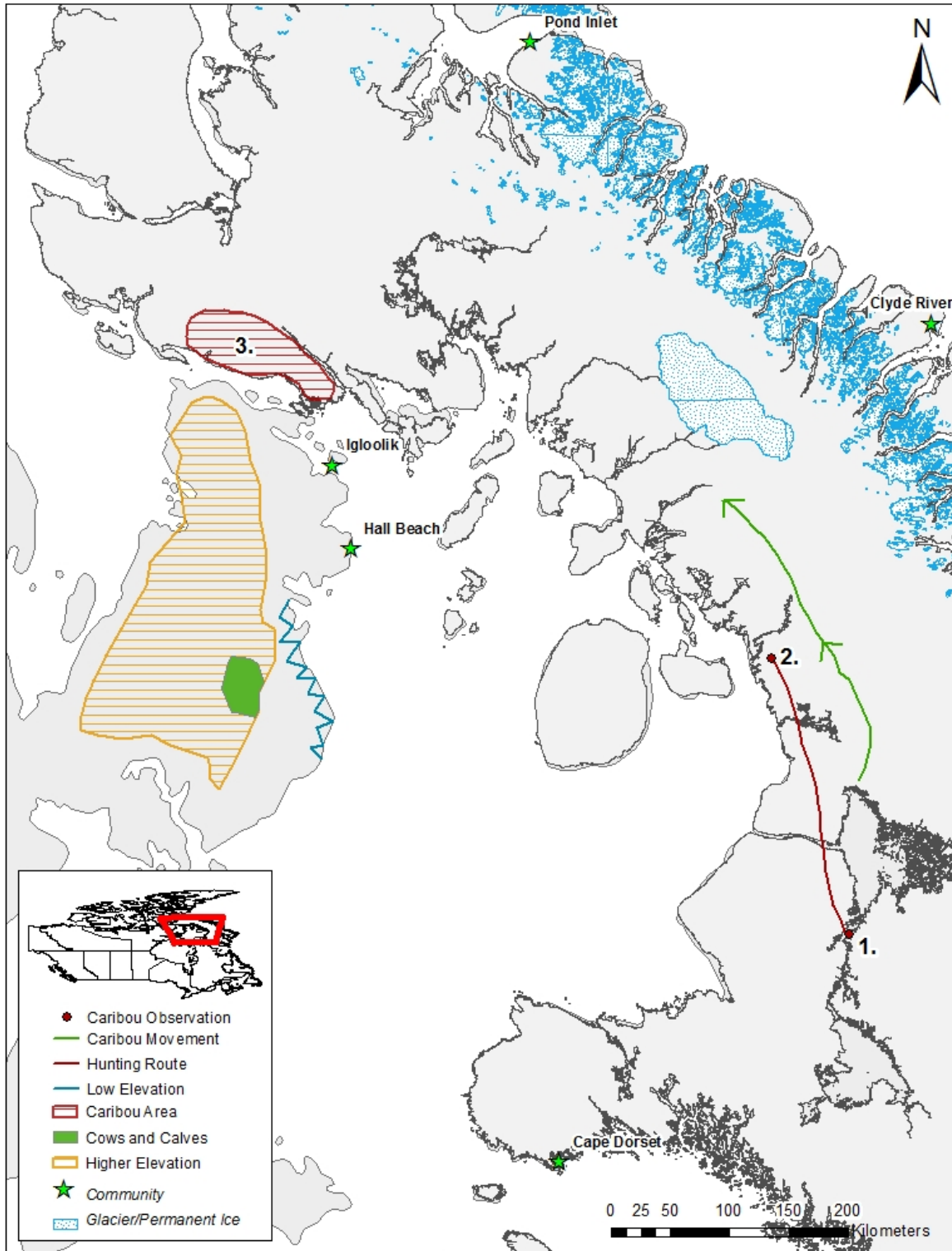


Figure 10. Digitized summary of information provided by the Hall Beach HTO and meeting participants, December 2011



Igloolik December 5st, 2011

Participants

Debbie Jenkins, Wildlife Research Biologist (Baffin Region), DoE, GN

Jaylene Goorts, Wildlife Technician (Baffin Region), DoE, GN

Theo Ikummaq, Conservation Officer (Igloolik), DoE, GN

Peter Hale, Manager of Wildlife Research, DoE, GN

Rebecca Jeppesen, Wildlife Management Biologist, NWMB

David Irgant – HTO Chair

Gideon Tagaogak – HTO Vice-Chair

Solomon Allurut – HTO Board Member

Rebecca Mikki – HTO Manager

Tony Kunuk – HTO Staff

Natalino Piuggattuk – Secretary Treasurer

David Aqqiaruq – HTO Director

Daniel Qattalik – HTO Director

Solomon Mikki – HTO Director

Micah Arreak - Translator

Baffin Island Caribou Research: Questions and Comments

Daniel: You are the caribou biologist?

Debbie: Yes.

Daniel: Where do you mainly do your research?

Debbie: I have been here for five years. Baffin Region is very large. I have been focusing on Peary caribou in the High Arctic but also in the North Baffin because of the big exploration project and mine proposed there. One of my posters is on your door for the North Baffin collaring program. I was here to talk to the board about that and have been sending over information. Recently we sent over the report on the North Baffin collaring program. Today I brought the hard copy of that report for you. If we have time later tonight, I have a small presentation on the North Baffin caribou - so I can do that later if we have time. I will leave the report with the manager.

Daniel: I am not as nomadic as before when I was younger. Not as active a hunter today. But I can give you my own knowledge with my traditional Inuit knowledge. I assume that is what we are doing using the map. I have been dealing with caribou since I was a little child - many many years. I will share that knowledge but I will give the young guys a chance to ask questions now.

David A.: Two years ago I met you in Iqaluit when we had the workshop. That year I raised a question regarding Baffin caribou. You made a presentation initially regarding the 2nd phase of the project. Is that presentation related to the current proposed project?

Gideon: There is a caribou biologist in Pond Inlet.

Debbie: I am the caribou biologist in Pond Inlet.

Gideon: So when you start collecting research, the end results, you will be sharing the conclusions with the Iron Ore Project people.

Debbie: Does David want me to answer the questions now or later.

David: You can answer them now.

Debbie: (To David). You are so right. I have been proposing to do the Baffin Survey since 2007. At the Caribou Strategy meeting in 2008 where I saw you, I showed that as a priority for the region. This research costs a lot of money. The government has to balance this critical work with other programs across Nunavut. The government knows how important this is and how many communities depend on the caribou. We hope we can raise enough



money with your support to do the program in 2012 and 2013. This has been identified as a priority for a long time. I do have a small presentation on the North Baffin collaring program. I have sent over info in posters and in reports. I brought the report because I know it is hard to get them printed out. We can show it to the group and discuss it tonight. With all of my research I do consultations at the beginning. If we get support we complete the work. Then we come back to do consultations with the communities on our results. I always give out information along the way, and at the end, (generally sent to the HTO manager) and will do the same with this project as well.

Theo: Could you verify with the board the sample collections and what is included and what isn't. Is Melville included or just Baffin Island.

Debbie: Yes. Both areas are acceptable. We want to compare caribou across the region. This will help us understand how related caribou are from different areas.

Solomon M: Regarding Greenland caribou - the population and health - the Greenland wildlife are usually the firsts hit and we are the 2nd hit for diseases. And also the Iron Ore Project, if I it goes ahead, **I feel we need to survey the caribou population as soon as possible or before the Iron Ore starts up. If we could conclude the research before the Iron Ore opens up and finish the survey before then it would be more ideal.**



Solomon A: It's ten communities that rely on Baffin Island caribou. Not eight communities.

Debbie: Yes, to clarify eight on the island plus Igloolik and Hall Beach.

Solomon A: Caribou were at their peak in the 1980's (growing in the 1970's). Do you know that? Why only a two year survey? Why not have an ongoing survey? Why not *us* give out more information to *you*, not from your level to us but from *communities* to *your* study? How come the United States is not participating in the project with all other circumpolar polar regions participating in research projects? Can you only do the survey with out physically contacting the caribou? There has been uproar with the pictures we saw before with caribou all screwed up in the neck (from the collars). We don't like caribou contacted in the survey. What's the actual method of your survey? We don't like human contact with our meat source.

Debbie: About Inuit knowledge and including it in this project - I would like to highlight that that is what we are here to do today, and what we are trying to do with the hunter harvest program - to build the relationship with the hunters and HTO, and build a relationship to collect your knowledge and share it back and forth. You have an intimate relationship with caribou that as a scientist I don't have. You can suggest other ways for us to work together and this is really just a starting place. As we go from community to community the elders are sharing what has happened in their communities. We are seeing differences in Cape Dorset and Qikiqtarjauq and the information that you are sharing. In

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Qikiqtarjuaq, it was only in the last few years that they saw a decline. They noticed a relationship with freezing rain and that made the caribou move away, but also they found dead caribou that may have starved to death. It's a very large area, the conditions can be different across space. It's why we're trying to go to all of the communities. We are collecting your information so that we can include it in the consultation report. Regarding the US, the work we are doing in Nunavut is supported by the Nunavut Government, the NWMB, and other organizations. We are not getting funding from Greenland or NWT but we are coming together at meetings, like in Iqaluit, to talk about caribou around the Circum-polar Arctic. Those regions are concerned about their caribou and have different programs going on, some that are similar, so we can communicate between organizations because in many places the caribou are declining. This is not unique to Nunavut. By communicating between countries we are hoping to collect more knowledge and make a plan to conserve caribou into the future. With regards to the aerial survey and contact with caribou -In the aerial survey we do not contact caribou. We observe them in the helicopter and set down and collect a poop sample if we find a feeding site or fresh tracks. The only time we would contact them is if we were collaring, and this program is simply an aerial survey, not a collaring program. So there is no direct contact with caribou (describes method of the survey). We can build maps of where the caribou are and help us understand what areas are important for caribou. With regards to why we are not doing it on an ongoing basis, we will have to start thinking about a monitoring program for these caribou. I can't promise that we can do this frequently. We need to do the first survey though as it's never been done and, of course it is expensive, around \$2 million for the entire island. At this moment we can't commit to doing this again in 3 or 5 years. But the results and your input will help us develop a management and monitoring plan so in the future we can try to do this more regularly.



Solomon A.: The last survey that you did in 2004, you say what was that method? - or the collaring method - why is it so controversial?

Debbie: In 2008 and 2009 we did a reconnaissance survey to locate caribou and then deploy collars. The collaring created some questions because it is not something that occurred ever before in North Baffin. But collaring has been used as a monitoring tool on the mainland for over 30 years. In North Baffin it was important to put the collars on in order to collect a lot of information in a short time, primarily because of the Baffinland project and the progress they have been making in exploration. They have proposed a railway, a port, multiple camps that will be bigger than most communities in North Baffin. With the collars, we can use the data and evaluate how caribou use the space in North Baffin and whether the project is likely to have an impact on caribou movement, for example. Important because we simply didn't have that information before. That project was different than an aerial survey because the objective was to collar and collect movement information on caribou and how they use space. The objective of this project is to count

caribou in order to derive an abundance estimate, that is, estimate how many caribou there are.

Solomon M: You mentioned the Koukdjuak River, and you mentioned Prince Charles Island, and further north. I was wondering if you have done any surveys for caribou in the north up there.

Debbie: To date we haven't done any surveys in that area, but those islands are included in the proposed survey. People have said that they sometimes move out to the small islands so we will include them to make sure we don't miss any of the caribou.

Solomon M: The caribou on that island (Bray Island) - all the caribou were all taken by local hunters. You will have to take that island as a priority to do that first. (Bray Island - marked on map). That should be a priority.

Gideon: Are you promising you will not disturb the caribou physically? We oppose the collars and physically touching caribou.

Debbie: This project does not involve any collaring or capture or touching of caribou. This is simply an aerial survey. We will see the caribou, we will fly over top, and we will try to sex and age them, but we will never touch the caribou. We don't have to because we are not collaring, this particular project is an aerial survey that will allow us to count them.

Gideon: Diseases, you mentioned and fluctuation of population, how will you determine those conclusions. You want to find out the health and fluctuation of populations but Inuit know when there is too much caribou they become diseased. This is nature's way of handling the caribou health. By diseasing them it kills the weaker caribou. When there is enough food they don't move much. When not enough food that is when they become active and roam everywhere. We are not concerned about the caribou population at all. I prefer no survey because we don't want them disturbed. Caribou will always fluctuate no matter what. If you are influenced by the iron ore mining company just to do the survey, it will not affect the circumstance of the caribou population. If your reasoning is not supported for the survey will the sampling go ahead?

Debbie: I understand that caribou fluctuate naturally. I know this is IQ. We agree. What I was trying to highlight is that unlike in the past there are new activities on the land and we don't always understand how these will impact caribou. We know that the certain habitat is important for caribou and their survival. So these changes on the land may affect them differently than in the past. I agree with your knowledge about caribou but I see lots of changes that aren't natural. So the company is not pressuring me to do the survey. It is my job to make sure that you have caribou in the future, so I see it as a priority to know how many there are and where they are today because these activities could impact caribou. I know you can comment on environmental assessments, I do that as well. So if we have an understanding that an area is important for caribou, we can use that information to influence development. That is why collecting this information is important, not because we don't believe the natural fluctuation. We do. We want to be prepared for all the unnatural changes as well. If you don't support the project will the sampling go ahead? They are two proposals that are separate. You can support or not

Igloolik, December 2011

support either one. They are independent of each other. I hope that I can highlight how important I think the survey is. In a lot of places they survey every couple of years to understand what the population is doing. This can help us highlight where populations are declining (for example, Southampton Island), and then do something to assist.

Daniel: You mentioned three areas. You said you need to find out the three questions in your surveys. You mentioned three versions of caribou on Baffin Island?

Debbie: What we know is that on Baffin Island there are Barren-ground caribou, but that caribou behave differently in some areas. In North Baffin the information we got from collaring is that those are local groups that don't migrate. Instead they stay in North Baffin all year long. In South Baffin, our data shows that some caribou stay on the Foxe Peninsula or Cumberland Peninsula, but others migrate along the coast to Longstaff Bluff/Dewar Lake area and calve there. But for the most, these caribou do not interact with North Baffin caribou. They appear to be separate. We think they are a different population or subpopulations. However, we need to collect more information to confirm that. Right now the collaring information suggests that's true, but if we get samples we can determine how related these caribou are. On the east coast we have very little information on caribou. There is local knowledge, but nothing in reports. We have no information to provide for environmental assessments, for example, so it's important to collect this information to provide to other groups. When we get environmental assessments we would love to call you to get information. But sometimes we only have an afternoon to respond – not enough time to get a hold of you and get a response. So this information will help.

Daniel: We are aware of the different species of caribou. In the spring they usually migrate to southern Baffin. You mentioned that they do migrate but we know they migrate to the Iqaluit area during the spring, and by fall they migrate back. I've never lived in Pangnirtung to confirm that but as far as we are aware with our IQ they return there in summer and come back in fall. You say they don't migrate but they are never still. In winter they migrate around but they always return.

Solomon M: Are you aware where the caribou go on Baffin Island?

Daniel: When you do the survey, when there is no caribou sighted, that doesn't mean that there won't be no caribou everywhere.

Debbie: This would be a good time to sit around the map so you can give us your information. We can put this information into a map on the computer and send it back to you. This way we can start collecting your knowledge.

David A: If the survey is going ahead and estimates the population, you are going to do a final report and sent it to the Federal Government? But if your survey doesn't see enough caribou the Federal Government will say that the caribou population is weak and impose no caribou hunting in our communities, so aren't you concerned that your survey can be used against us?

Debbie: I work for the Nunavut Government. This survey will go into a report and the information will go to our co-management partners and we will decide about the caribou. That is the 1st step. This is for Nunavumiut. The Federal Government doesn't get involved, at least not initially. That is the whole reason we created Nunavut, so that you would have the opportunity to address your own issues. You have a co-management system where you have a strong voice with your government. We hope you will use this information to say, "The caribou are in good shape and we don't need to manage right now", or "The caribou are in low numbers," and then together we can decide what to do. In Kimmirut, Sandy with the HTO said he was already thinking about what they would do in Kimmirut because they are afraid that their population is really low. There are Inuit laws that they might apply. I would rather you take control over your populations and how you manage them, or come up with them together. So we can speculate; most people think there won't be very many caribou observed, but until we do the survey we don't know for sure. To start - we get the information and then make a plan. The plan might be that the caribou are fine and we can carry-on as is, doing monitoring to make sure the population is okay. Or the data may show that a management plan is immediately necessary – and we make a plan together. But without the initial data we can't go forward.

David A: I think two years ago in Iqaluit, when we had a co-management meeting, you mentioned that they would send all the conclusions to our communities. That was the promise. But we haven't seen any conclusions from the surveys in the past. Are they not completed? We see the proposals but not the end results.

Debbie: As we develop the proposals and results we send the information over. The report [from the North Baffin collaring project] was finished in October of this year. We sent it by email, and then sent again a month later. Maybe you have email problems or can't print it. So we brought the hard copy over. We also sent the posters and they showed the survey area and results as we were working on the project. But the collars just came off at the end of July. So we put the data into the report right away and sent it over in October. We try to send the information as the programs goes along so that we can keep you updated.

Rebecca: Maybe you sent it when my computer crashed.

Debbie: Maybe. We don't know what is happening with your computers so we send it multiples times.

Peter: In the future, if you have a report that is ready, you can send it to my office and I will send it to Rebecca.

Debbie: Yes, we can do that.

Gideon: You mentioned that you want Inuit to have a voice. I appreciate that. You may be the only persons to express that but the Federal Government may take advantage if the conclusions are negative. They will take that information and turn it against us. Coca Cola for example, we don't have a voice with regard to polar bears. They won't come to us for information. They don't come to us as experts for that voice. Salomon made a mistake.

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When he was a little boy he was taught to look for seal holes. That is how he got that knowledge. It doesn't have to be a shaman to know these things nowadays.

Debbie: I can appreciate your frustration around polar bears. I know the research department with the Government of Nunavut is doing all they can to address those concerns and the polar bears in Nunavut. Recently, the methods to study polar bears have changed because people voiced concerns about the handling. In the Foxe Basin, in the last couple years, they did aerial surveys of polar bears so that they didn't have to handle the bears. This came out of HTO comments and participation in workshops and the symposium in 2009. The Nunavut Government, your co-management partner, is trying to address the issue with polar bears. Coca Cola is working with another organization but that doesn't mean that our work isn't the critical work on polar bears **because it is**. I believe that the polar bear management system in Nunavut is considered one of the best in the world. People consider our system as a model. So you can be proud of the work you are doing because the rest of the world uses it as a model. The coke thing raises money for people to do research. People do research all over the world. As long as we maintain that we do excellent research in Nunavut then that will stand.

Solomon M: Back to Mary River, was there a caribou biologist there in September?

Debbie: Baffinland hired a consultant, Mike Settingington, to work on caribou

Salomon M: Because they have a consultant that they hired themselves, they need to communicate with you with their data and conclusions. They need their project proposals approved and we need to be notified because the contractors they hire will not be approaching us for approval. They need to inform Igloolik, Pond, and Arctic Bay. The reason was for the railway.

Debbie: When any company does research, like Baffinland, they have to put in a proposal and a permit that comes to our section (just like I do). That permit application comes to the HTO, so you will have an opportunity to review the permit and approve or not approve, just like with mine. Sometimes the research section doesn't hear back. They might not hear back from you, but I know when he [Matt Fredlund] gets a permit he sends it to all the HTO's that will be interested. I will tell him that you are interested in all the ones that come from Mary River. I am sure he does but that will be a good update for him.

Solomon M: There were research people by ship hired by Mary River, and we didn't get any information from him because he was hired by Mary River.

Debbie: I will follow up on that and get back to you.

Peter: It's Matt Fredlund that issues the permits. He and I have been to your meetings before to present, for example, a change to a research permit in Steensby to study the snowy owl. Matt does come to meetings when invited or to seek your advice on permits, and I know he brings them to Rebecca as well. If you have any questions about permits come to our office or come here. (HTO says go to them).

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Solomon A: Any research that has been done for Baffinland, no one had approached us until they were doing their final report. They don't come here and your office doesn't tell us who is going out to do research. I am frustrated because you say you send it out all the time. There must be a break somewhere because I don't see them. How come we don't see the reports?

Rebecca: Because they don't send them.

Peter: I was in the room with you to give you the information about the snowy owl.

Solomon M: Snowy owl and that's it, what research are we missing from Mary River?

Peter: I can bring you a list tomorrow and you will have all the details for those research permits.

Solomon M: We are supposed to get those reports when they are done.

Peter: You should have it, but I can bring it for your records.

Solomon M: Where is the Mary River people telling us, "I would like to search this and that area." It's hard to communicate with Mary River.

Debbie: I can give you the contact information for the director of sustainable development for the Baffinland Project. Because I was at the recent technical meeting I met him, Oliver. I presented our research about how the North Baffin area is important for caribou. I can send you his information so you can contact them directly if you have questions.

Peter: Baffinland was in Igloolik recently to hear the concerns of the communities. I was there. They were in Pond as well.

Salomon M: We like to be approached before any research is done.

Peter: I appreciate that, I assumed they had contacted you before their consultations.

Solomon A: We like to be approached before research is done.

Peter: I appreciate your concern and hope that Baffinland should have approached you before the meetings.

Debbie: We can't speak for Baffinland. We can give you the permit information.

Solomon M: Before going to QIA firsts, come to us first because on January 4th and 5th we are going to talk about marine animals. A third hearing. You should be here.

David I: When we are informed of the permits we usually try to get someone from here to go to the meeting. If we don't know then we can't get someone to attend.

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Solomon A: When we're dealing with the water, they have invited the HTO members. But we're dealing with caribou at this moment, let's not go astray.

David: I would like to encourage Baffinland to inform us when they receive permits on any wildlife that we consume. Because if they consume any wildlife that we consume in our area we would like to be aware because that would effect us.

David A: I am sure your survey will start soon. You mentioned in your presentation the aerial surveys and then the second part is also the sampling. But can you clarify if it is related to the collaring? Explain more?

Debbie: Between 2008-11 we had a collaring program on the North Baffin caribou and all of those collars have come off the caribou. So that program is finished. The collar data is in this report [hard copy of the North Baffin Caribou Space Use report]. This is the first collection of the data compiled and mapped. Importantly, all of the location data, across 3 years, shows up in the map. What I am proposing tonight is two new projects, the Baffin Island Survey is multi-year, and would start next year in mid-March to the end of May. And then the North Baffin part of island in 2013, so that would complete the whole island and I would compile the data and bring it back to share with you. The sample program is another program. I hope we can do that every year. I have \$30,000 to start it whenever you like. Qikiqtarjuaq wants to start it in December. Some communities are not interested and they certainly don't have to do it. We can assess every year whether you want to continue or not. You can try it and if you wanted to start tonight we could get you to sign the letter of support or vote on it and sign it. If you supported it, then we can give the letter to Peter tonight. Or we could wait. It's entirely up to you.

David I: We have two information items. If you are for or against the proposal I would like to get your views on this [to the board members]. I am in support of the research personally.

Solomon A: I prefer to wait till the meeting in two days. Can we respond then or will it be too late:

Debbie: It's up to you. I don't want you to feel rushed. We can leave the letters with you and you can discuss it yourselves. The only rush for me is that the survey will take considerable funding ca. \$1 mil., and I have to find much of the money still. I have a short time. If I have the support I need to know soon so I can address funding. If you want the survey there is a lot of work to do to make it happen. For the sampling, I have money now. If you want to take advantage of it you can send your approval next week or next year. It's up to you.

David: We have a meeting in two days so we will give you the answer then.

Debbie: That would be helpful before Christmas because I have to bring our proposals to other organizations, like the NWMB.

David A: We agreed when we met in Iqaluit, whenever there is going to be a survey, the community closest to where the survey is done needs to be informed and included. And if the survey went ahead will you be hiring local people?

Debbie: If the survey goes ahead we will hire one local observer per helicopter. We will ask the HTO to recommend someone. Because it is so long and in remote locations, we will have to contact those people and see if they want to be away from home for a long time.

David I: I believe that we have covered all the agenda items and I want you to expect an answer from us in two days. If you don't have any more to say we have been repeating the information. Can we conclude the meeting? So we have to consult with the community people if the survey is to come? Or only if they are approved?

Debbie: With respect to the sample program, if the HTO approves it they can work with the conservation officer and go on the radio and tell hunters about it. Then the HTO and CO can go through the kit with the hunter and tell them how to collect the samples. You can do it a different way though. It's up to you.

David I: We can go on the radio tomorrow. We need to inform the public. Just to initially inform the community of what is to be expected in the future about the samples and the survey. If people are interested then they can come to the meeting scheduled in two days. I think we can start closing.

[HTO Board Members marked on map areas that they have hunted and caught caribou]

Caribou on Baffin Island: Sharing Local Knowledge

Solomon M: We have to rely on the older knowledge, and only some of us have that knowledge now. We used to rely on our elders to consult with before we go hunting, but it's been surveyed according to IQ. They mentioned that all wildlife have basic traditional IQ connected with them. But we may have to differentiate, to determine how caribou may cross over and what part of the land. We may have different conclusions so we would have better knowledge if we combine the knowledge (from elders and younger people).

Debbie: Sometimes we get data that we can't explain but you might be able to. With this partnership we can make sure that this research incorporates your expertise and by working together build our understanding on Baffin Island caribou.

Solomon M: There's only 5 caribou in Steensby, and he saw 2 to so that's 7.

Solomon A: Referring to Southampton Island - whalers were there at the time caribou went extinct. It was because of whalers, not Inuit. The Europeans, they can never leave nothing behind. That is not us Inuit. I had a grandmother that past away in 75, but born in late 1800's. I am from near Arctic Bay. There used to be a trail right through town. My grandmother said every 50-75 years they go back up to the same place every time. She was expecting them back before she dies but they finally came back in the 80s at the peak

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of the caribou in North Baffin. But when they came back there wasn't as many as my grandmother had said. Last year when I went back the trail is not as wide. I think it should be considered that in North Baffin the caribou don't go back for up to 75yrs. They may not be one caribou on site but when the time comes they will come. They always come. They came back in the 80's. Maybe in 20 years time they will come because 30yrs has passed already.

Debbie: I appreciate you sharing knowledge from your grandmother. The idea is consistent with what we've heard from around the island. The caribou are expected to come back following with your knowledge.

David: Maybe the food they eat is very slow to grow.

Daniel: Thank you for approaching us with your survey and wanting us to share our knowledge. In the past our ancestors used to meet between Pond Inlet and here – usually in winter - and at another spot between



Southampton and here. The caribou fluctuated in the past, but 40-50 years later there used to be so many caribou in the communities roaming freely. That is how they used to fluctuate. Because there used to be old caribou sites that they could be seen in the past but they are abandoned now. That is how we used to survey them in the past as Inuit. We can't consult with those people anymore. I would like the health and population of caribou to be determined more accurately than before. I would like Igloolik to be included. Thank you for approaching us. Would you like our information?

Debbie: Thank you. I appreciate that you have a lot of knowledge about caribou and a good communication and monitoring system that may have been used more in the past than today. But that information (from the past) may be important for us today – providing information on where we might locate caribou and on behavior. It's important for us to collect this knowledge and include it when we do this kind of work.

Solomon M: I know my father's knowledge. I used to travel with him on Baffin Island and hunt with an arrow. I don't know my grandmothers knowledge. I am not a shaman but there are still people that are. My dad and I used to travel from here to here (marked on map) (caribou trail). There are a bunch of small inukshuks in this area. There is a caribou trail about five to six feet away from the inukshuks. He used to use the bow and arrow. But I never seen the caribou walk south on it, only north. I think it is only a north trail. That is my knowledge. I don't think there is anymore caribou here (west of Barnes Ice Cap). (7 caribou caught near Steensby last year).

Solomon M: We have changed our traditional hunting methods for hunting. Majority of the hunters use 4 wheelers but some go inland by walking. But majority use Hondas now.

Map Summary

See Figure 11.

Areas outlined in red were described as areas used by members of the Igloolik HTO for hunting and where caribou could be found. Further information was described as follows:

1. Bray Island – This area was described by Salomon M. as an island that Igloolik hunters had hunted all caribou present on it. HTO members identified this island as a priority for survey for this reason.
2. Caribou were identified as having moved to and from Koch Island across the ice and were present on the island in the summer. The importance of this movement was noted with reference to the potential shipping route to Steensby Inlet as part of the Baffinland Iron Ore Project. This would potentially see all-year shipping across that area, likely limiting or prohibiting caribou movement to and from Koch Island.
3. The two points represent the locations where Theo (Igloolik Conservation Officer) saw collared caribou that were believed to have been originally collared by Mike Ferguson in South Baffin.
4. Theo described caribou having crossed the Fury and Hecla Strait from Baffin Island to the Melville Peninsula – not seasonal or yearly movement – its occasional
5. From Hall Beach to this point there is a Honda trail that is used for caribou hunting.



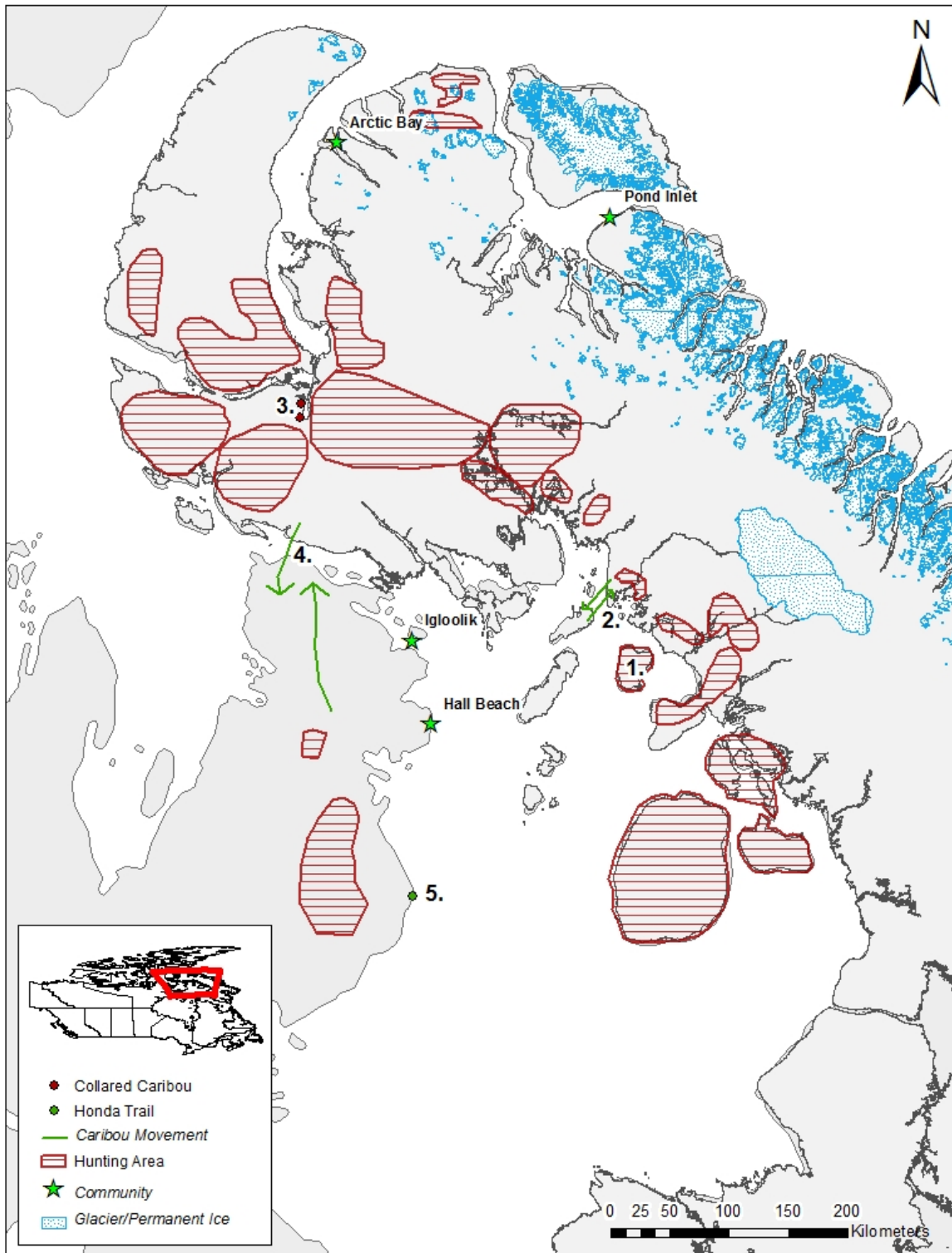


Figure 11. Digitized summary of information provided by the Igloolik HTO and meeting participants, December 2011.

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...special thanks to all participants and special guests!

