

**Draft Report on Inuit Knowledge Regarding  
Climate Change and the Baffin Bay Polar Bear Population**  
Martha Dowsley  
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## **Executive Summary of Draft Report on Inuit Knowledge Regarding Climate Change and the Baffin Bay Polar Bear Population**

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During spring, 2005, interviews were conducted with elders and senior hunters in the three Nunavut communities which harvest polar bears from the Baffin Bay population (Pond Inlet, Clyde River and Qikiqtarjuaq). Between 15 and 20 interviews were conducted in each community focusing on observations of changes in the polar bear population, observations on the climate during the last 15 to 20 years and also peoples' views of bear management. The results are presented by community, and include quotes from participants explaining their answers.

There are several general trends in the responses regarding the Baffin Bay polar bear population. 83% of respondents said that the population had increased. The reasons for this conclusion were that more bears were seen near the communities and near cabins and camps, and that hunters were encountering bear sign in areas not previously used by bears. Some people noted that these observations could reflect a change in bear behaviour rather than an increase in population. 62% of respondents said that bears are less fearful of humans, and 94% said that bears are causing more damage now than 15 years ago. 57% of respondents reported that bears tend to be skinnier now and 5 people in Clyde River reported an increase in fighting among bears.

Discussions about climate change showed that there is high variability in the environment. There were general trends indicating that the floe edge is closer to the shore now, the sea ice is thinner, there are fewer icebergs and glaciers have receded. People were not sure whether climate change was affecting polar bears or what those effects might be.

Respondents were asked several questions about polar bear management in the Baffin Bay area. People did not know much about polar bear hunting by Greenlanders. They also held varying opinions about the quota system and whether or not it was responsible for the increase in the bear population since the 1960s. When asked about their views on the biologists' studies of bears, there was again a mixed response, with some participants feeling concern for the long-term effects on bear health and quality of meat. Many respondents also did not really understand how the government is set up or how the biological studies were carried out, and also expressed shyness about asking for more information or help from government employees.

### **Conclusions**

The results show there is some change that has resulted in more polar bears being seen around the Baffin Bay communities, and there are changes in bear behaviour and health. The fact that people are seeing more bears has led many people to believe there is an increase in the polar bear population. There are some trends in observations of climate change, but also much yearly variation. This topic should be studied further. Finally, the responses show that wildlife managers need to talk more to the communities about polar bear management and about the specific issues concerning the Baffin Bay population.

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**Introduction**

This report summarizes the traditional knowledge relating to polar bear populations and climate change observed by Inuit in the three Baffin Bay communities –Pond Inlet, Clyde River and Qikiqtarjuaq, as expressed in interviews during spring of 2005. Participants were asked questions regarding polar bear population, behaviour and health (Section 1), climate change (Section 2) and understandings and views on the management of polar bears in Baffin Bay (Section 3).

**Methodology**

The interviews were conducted from April to June 2005 in the three Baffin Bay communities. Most interviews were conducted in the homes of the respondents (senior hunters and community elders), and generally included a translator. Interviews lasted between one hour to one and a half hours.

These questions were part of a larger interview related to my PhD thesis and the interviews were purposefully relaxed so that respondents could expand on topics that they knew a lot about or were more comfortable discussing. For this reason the number of respondents to each question varies. People were also generally unprompted with regards to possible explanations of their observations. This was done to allow them to express their own views and not be influenced by what I might want to hear.

**Section 1 Observations on polar bear population and behaviour**

**Q 1 Has the polar bear population increased, decreased or stayed the same over the past 10 to 15 years?**

Pond Inlet

All 15 respondents indicated that the bear population has increased. 13 people offered explanations. Seven said there were more bears around the community or cabins. Seven said there were more bears and bear signs on the land. One person said the bears were forced onto the land because there is less ice.

Some comments:

“There are too many polar bears now, most of them will be hungry and prone to attack people. Before there were never polar bears around here until recently.”

“There were not many bears around Pond Inlet when I was growing up. We used to have caches of muktuk and seal. The polar bears only bothered them once in a while. Now there are lots of polar bears! I never suspected there would be polar bears in the western fiords and now there are. There are fewer seals there, but the bears are probably looking for food over there.”

Clyde River



16 people answered this question. 14 said the population had increased. One said the increase was only slight and the other said there was no change. Nine of the people who said the population has increased gave reasons. 5 said there were more bears nearby, that people didn't have to go very far to hunt them anymore. 2 people said they were seeing lots of young bears and bears with no ear tags. Two other hunters gave different statements:

"When I was young at the Home Bay area, there was a lack of polar bears. But in April and May the big males come looking for females there now."

"There are too many bears. Before, when we went dog teaming for hunting we didn't come across many bears. We were getting 45 a year anyway. The government says that's too many. We should be able to get more now since we were able to get that when they were scarce."

#### Oikiqtarjuaq

16 people answered this question. Four people said they didn't know if the population had changed. Nine people said the population had increased and 3 said the population was the same.

Ten people explained their answers further. For the people who said the population had increased, 4 said they knew the population had increased because they were seeing bears near the community. One person said he had seen more signs out on the land. Two people said they had seen bears or signs where there didn't used to be any bears.

Three of the people that weren't sure offered these observations:

"I don't know. The polar bears are usually at the floe edge and the sea. But this year they are not really down at the sea. They are more by the land. Probably there is not enough to harvest there (not enough food at floe edge). And there are walrus by the floe edge so the seals are probably more close to land."

"I can't answer, but I think they increased, but it could be due to change of weather or the polar bears are following their prey. We say they have increased because the weather got warmer and probably the polar bears have come nearby the communities. They are coming more to the community."

"I tend to believe the biologists. They are saying there are fewer bears. So I'm sticking with them. Even though I've seen a lot of bears and they look like they're increasing."

**Q 2 In open water season have you seen changes in polar bear behaviour such as when they come to shore or what they do once they are on shore?**

#### Pond Inlet

7 people responded to this question. All indicated there was no change in when bears come to shore. 5 respondents stated during their interviews that bears had lost their fear of people. One elder explained this:

"Long ago polar bears would go away fast. When there are more animals of any kind they are less afraid. We used to have lots of caribou around town, even right here, beside the house. It was the same thing. When there are fewer animals, when the hunter is trying to catch them he has to be really quiet. But when there were lots of caribou, one was sleeping in front of the house. He didn't get up or care about the noise."

#### Clyde River

15 people answered this question at least in part. Three people said there was no change in behaviour of the bears when they come on shore. Five people said the bears are not scared of people anymore. One person noted that hungry bears do not scare easily, whereas well-fed bears do. The other respondents said there was no change in when the bears come on shore, though one person offered a more detailed answer:

"Usually they come after the break up season. They come to the fiords, some stay out swimming and come on land to sleep, some are more curious than others. They usually come after the land fast ice breaks up, when the multi-year ice washes in from the north. When you scare them away (from town) they get used to it and they learn you won't hurt them."

#### Oikiqtarjuaq

5 people answered this question. One said more bears are coming. One said he didn't know. The others indicated no change had occurred in timing or behaviour.

### **Q 3 Are there more or fewer bears around town now than 10-15 years ago?**

#### Pond Inlet

7 people responded to this question. Six said more bears were coming. 1 person said the number varies. Even though many people used the presence of bears in town during the fall as an indication that their population had increased, some respondents gave more textured answers:

"It seems to be that more are coming to the community. When the polar bears are hunting they are not so careful because of the noises they always hear. Even dogs' barking damages their ears. So polar bears are not as successful at hunting so they come to the community to find food." (see health question, #6, for more details on this explanation).

"They started coming to town in the 1960s, early 1970s. Polar bears can think like a person, they won't forget things right away. If they come and find food around here, people chase them away and the polar bear will come again the next year. They will remember where they found food. If a bear is chased away from town, it will come back at night when things have quieted down."

"Polar bears don't like the smell of dogs and they used to stay away because we had dogs everywhere. Now there are fewer dogs so the bears come to the settlements. We used to cache meat and they didn't bother it. Now there are more bears and they dig up the caches."



#### Clyde River

14 people answered this question and all agreed that more bears were coming to town in the fall.

"More are coming to town, because there are more bears, not because they are extra attracted to town. It's a different bear almost every time, but skinny ones keep coming back."

"In the fall they seem to be hungry, they've been lying around for a long time. The town bears are also more likely to be young ones."

#### Oikiqtarjuaq

13 people responded to this question. Five said more bears come to the community in the fall. Two said more come to the island in general but not necessarily the community and 6 people said it is the same as at least 10 years ago.

"Back then we only saw them (around the community) when there was no ice. Now even in the winter they come around."

**Q 4 Compared to 15-20 years ago, are there more, fewer or the same number of tracks, bear kills and bears seen when you go hunting in spring, summer, fall, winter?**

#### Pond Inlet

9 people responded to this question. Four said there were more bears in all seasons, no one said there were more just in winter, four said there were more in spring, one said summer, and one said fall.

"Before we had a certain time to see polar bears –during March and April when the polar bears are looking for seal pups and during the full moon. Now any time we can see them."

"Since 1990, even when you go out boating you can see more, for example sleeping on the shore."

#### Clyde River

14 people responded. One person said it was the same as 15 years ago. Seven people said you could see more bear signs in all seasons. Three specified spring as having more bears and 4 specified fall as a time to see more bears than previously.

#### Oikiqtarjuaq

11 people responded to this question. Four said there were more bears in general. Two said there were fewer in the winter, while one person said there were more in winter. Three people said there are more in spring and one person said there are more in summer.

"They rotate. Some years they are in different places. In the last four years they have been further south, before that they were further north. 15 years ago in some places you could see more. A few weeks ago we saw more tracks to the north."

A sport hunt guide said that they couldn't find bears to the south of the community in spring 2005 and one of his clients was unsuccessful. He took the next client north and saw many bears.

**Q 5 Is there more less or the same damage to cabins, meat caches and other equipment? If there is more damage, why is that?**

Pond Inlet

The 11 respondents all agreed that bears cause more damage now than ten years ago. 5 people said it was nearly impossible to have a meat cache now. One person explained that people are building cabins out on the land more than before because tents are too vulnerable to bears. One respondent said that in the early 1960s it was also impossible to have a cache.

"They don't run away when they hear something. They don't care. They are causing more damage too, they even go up to tents and bother people."

Six respondents elaborated on their observations about more damage. Two respondents said that it was because the bear population was too high. Four people stated that the noises caused by machines, dogs and the act of conducting research on bears causes the bears to lose their hearing. The bears then cannot hunt as well and are not as afraid of humans. This results in bears coming around people more.

Clyde

14 people answered this question. 13 people replied that bears are causing more damage now, in particular to cabins and meat caches. One respondent didn't know if there was more now or not.

"There seems to be more damage, but you have to take into consideration that we're leaving more stuff out on the land than 15 years ago. But if you leave meat caches they are pretty much guaranteed to be gone."

"We used to cache 4 or 5 seals in a row, covered them just with gravel. Used to never be touched. But now it disappears even if we put rocks on it. Polar bears don't like to use their claws and scratch them (wear them down), so they stayed away from the gravel. They wouldn't dig it. Now they do."

A total of nine people explained why they thought there was more damage. Three people only explained it was because there are more bears now. Two people said it was because there are more bears and more fighting and some can't get food, so those bears come to where people are. Two respondents said the bears got used to people and the same ones kept coming back. Two respondents said there are more people and more food around, which was attracting bears.



#### Qikiqtarjuaq

Six people responded to this question. Five of them said there was more damage and one person said it was the same. All the people who said there was more damage elaborated on why. Three said it was because there are more human things around for bears to get into. One person said it was because there are more bears. One blamed the environment: "The bears are more hungry. There is a problem with the ice. The rough ice makes it hard for them to find seals, but there is the same number of seals."

Two people also mentioned a lack of fear:

"The only change I've noticed is when I was growing up the polar bears would scare easily and run away. Even when they were around shacks they didn't break windows or do damage but now they are not afraid. They used to avoid communities before and now they don't."

"More people are hunting them. In the past, using harpoons, only experienced hunters would go for bears, now with rifles, anyone can hunt, even women, so the bears are less afraid."

#### **Q 6 What is the health of the bears that come to town?**

##### Pond Inlet

Ten people discussed this question. Two people said there is no pattern. Eight said the bears that come to town are skinny.

##### Clyde River

For town bears there were three responses, one said skinny bears come to town, while another person said any kind come to town but skinny ones keep coming back. One person said there was nothing different in the health of town bears compared to other bears.

#### Qikiqtarjuaq

Only one person commented specifically on town bears. He said that the ones that are close to the community are fatter than ones further away.

#### **Comments on the general health of bears**

##### Pond Inlet

There were 7 comments about the general health of bears. 4 said it was variable 2 said there were more skinny bears in general now. The seventh respondent stated: "I noticed since they started tagging bears, the ones with the tags were the skinniest. Even now when we look for bears, we go further to where they aren't so skinny and the meat is better."

Three elders talked about a loss of hearing in polar bears. One indicated that the bears no longer care about noises around people, one said that when an animal's population is high the animals lose their fear and don't mind loud sounds. Both of these could indicate that



bears are getting used to noises, however, the third respondent was adamant that the reason was hearing loss:

A: "There are many more polar bears and I know exactly why. Right now their hearing is worse because of helicopters and airplanes that did research on them, gunshot sounds, these things make them deaf. That's why they can get close to town."

Q: What about their sense of smell?

A: "They got used to our smell....For the proof that polar bears are losing their hearing due to how research is done, their hearing is worse from the tranquilizer. Back then the polar bears could hear dogs coming from far away and if the polar bear got away his ears were already damaged."

#### Clyde River

14 respondents discussed general bear health. Seven respondents said polar bears are skinnier over all, while one respondent said only males were skinnier now. Five people said there was more fighting among bears as evidenced by more scars, broken canines and the discovery of bears that had died from fighting. One person said cubs are leaving the dens earlier and one person mentioned that cubs leave their mothers earlier due to big males attacking them. Four people said there was no change in overall bear health.

One person mentioned hearing loss:

"Skidoos hurt their ears. IQ says when we used to hunt with dogs, if you missed a bear it would have damaged his hearing and he will be less lucky in hunting and get skinny. So hunters say 'it's too bad we missed that bear' not because they wanted to get it, but because they know that afterwards the bear will be damaged."

#### Oikiqtarjuag

Six people commented on general bear health. Two people said it was variable. Three said there are more skinny bears. Two gave other comments:

"Now people are finding more dead bears that climbed the mountains and fell down – they were looking for eggs."

"The wolves are actually injuring and hunting the cubs and now the wolves are a problem by killing the cubs. We never used to see wolves so we were not aware of any killing of cubs. But for the past 3 or 4 years the number of wolves has increased. From IQ we know the caribou are coming, the wolves move before them, so probably the caribou are coming. A hunter has seen a cub that was killed by a wolf pack."

## Section 2 Climate Change Questions

The issue of climate change is very complicated, especially since there is high yearly variability in environmental conditions. Certain aspects of the environment certainly seem to be different in all three communities, but interviewees gave varying answers to the questions. The low number of responses may indicate that although the respondents thought about that aspect of the environment they had not noticed changes and therefore did not say anything because they were specifically asked about changes.

### **Q 7 Have there been any changes in the ice? Floe edge, icebergs, rough ice, changes in amount of snow?**

#### Pond Inlet

14 people replied to this question, 13 said there had been changes while the other person replied that there had not been. People were asked to expand on the sorts of changes they had seen in the past 10 to 15 years and were sometimes prompted with examples of the sorts of changes I was interested in.

#### Quality of Ice

Eight people said that the general quality of the sea ice has changed. Four mentioned that the ice is thinner now. One said the land fast ice is often more slushy, another said there is less multi-year ice and there is less ice in spring. Comments about the hunting area around Button point included that the ice there is thinner now, that there is no ice there now, and that it is more smooth ice and one can drive a skidoo there in winter now whereas one could not in the past.

#### Cracks in Sea Ice

One said there were fewer cracks now because the ice is thin and one said that nothing about cracks had changed.

#### Break up

Four people mentioned break up as being faster during July and that it begins up to two weeks earlier, while one person said the time of break up had not changed.

#### Freeze up

Three people mentioned that freeze up is later. In the past it was in October but now it takes place in November or December. During this time the ice is more brittle.

#### Icebergs

Ten people mentioned icebergs, nine of them said there were fewer icebergs now, while one said the number varies.

#### Floe Edge

Seven people mentioned the floe edge. Of these, 6 said it was closer now and the other respondent said that it was a bit different. Two of the people who stated that the floe edge was closer gave the following explanations:



"The icebergs are like nails, they hold the ice in. Since there are fewer icebergs there (around Button Point) the ice edge is closer."

"When I'm flying to and from Clyde River, there are not a lot of icebergs and the floe edge is closer to the land. In the Clyde River area, way back, when there were lots of icebergs, the floe edge was further out. Recently there are strong winds from the south so the icebergs left and the floe edge came in closer. The icebergs come from Greenland (between Greenland and Ellesmere) and they go into Clyde and the coast just north of it. The current is from the north and from Lancaster Sound coming east... The ice changes in Baffin Bay mean less ice patches so the bears come to land to hunt. Because polar bears can swim, but when they are tired they go to land. Probably Clyde people know more because when there is no ice on the ocean, the polar bears go to land, mostly by Clyde River."

#### Glaciers

4 respondents mentioned that the glaciers are receding.

#### Snow

Two people said there was more snow and one said there was less snow on the land.

#### Clyde River

16 respondents answered this question. Three said there had been no significant changes. The others expanded on their observations about specific features.

#### Ice quality

6 people mentioned that the ice is thinner now. One person explained that there is more snow on the ice and this insulates the ice and stops it from being so thick. Two people said ice quality was variable and there was no pattern of change.

"The ice is sharper now, not as hard as before. In the past the ice was really thick. The cracks were very narrow, deep and tapered down like a 'V'. Now they have straight edges."

"The salt water doesn't freeze as hard as before. Every year we chip the ice at seal breathing holes, today it is not as hard, not as brittle. Now in June the bottom of puddles (on the ice) is not slippery, it's not melting from the top, it's melting from everywhere through the ice, like the inside of a bone. Today the ice is also thinner. People used to say when the leads opened they looked tapered going down in them because of the thickness. They no longer look tapered."

#### Cracks in Sea Ice

Three people said there was no obvious trend regarding cracks. Two people said there were more cracks and one person said sometimes there are hardly any cracks.

#### Ice Bergs

There were 12 responses about icebergs. 10 people reported that there are fewer icebergs. Two people reported no change in the number of icebergs.

#### Floe Edge

Four people said the floe edge was closer now and one person claimed it was different now, but did not elaborate.

#### Rough Ice

Eight people discussed rough ice. Three said there was no change. Four people said there was more rough ice. Two of these people explained the rough ice is caused by there being fewer icebergs to hold in the ice. One person said the rough ice occurs when the wind is from the south or east.

#### Break up

Six people gave responses about spring break up. One said it is about the same as in the past. Five said it was earlier now. One person specified a change of about 2 weeks earlier.

#### Freeze up

Four people said it was a couple of weeks later now. One person said it is highly variable.

#### Glaciers

Two people mentioned glaciers and said that they are melting more around Clyde River.

#### Wind

Four people mentioned wind. One said it is variable, and one said there was less wind. The other two gave these comments:

"We used to only have wind from the north. 3 or 4 years ago the wind started coming from the south too."

"Seems like there is more wind. Seems to be more strong winds. It was soft snow in the south, less blowing snow. Now the snow is harder there (from being blown more)."

#### Oikiqtarjuag

13 people responded to this question. One of these people said there was no change because everything is highly variable. The others gave details about specific changes.

#### Ice quality

Four people said the ice is thinner now and getting more dangerous. One also said there is less pack ice.

"I went bear hunting all the way to the Dewline on Durban Island and the ice there was moving up and down. That was 4 years ago in March. It was not like that there when I was growing up. It was solid."



#### Cracks

One person said cracks appear earlier in the spring and there are more of them. Another person said there are usually leads open in winter off the north end of the island but lately there haven't been.

#### Icebergs

8 people commented that there are fewer icebergs now.

#### Floe Edge

Six people all answered that the edge is closer to land now.

"The floe edge is closer to the land and there are hardly any icebergs. That's why the floe edge is close by. The icebergs keep the ice from going anywhere. They are like plugs."

#### Rough Ice

Two people mentioned there is more rough ice. One qualified that by explaining that the floe edge is closer and the rough ice is generally by that, so the rough ice is close to the land now.

#### Break up

Three people said break up is earlier now.

#### Freeze up

One person said freeze up is later and slower now.

#### Snow

Two people mentioned snow, one saying there is more and one saying there is less.

#### Glaciers

Three people discussed a snowcap that used to stay all year on a mountain on Qikiqtarjuaq Island. There used to be bear dens in this snow, but now the snow doesn't stay all year and the bears no longer den there.

#### **Q 8 Have you heard of global climate change? Have you seen any evidence of it in your area?**

##### Pond Inlet

Six people responded to this question. 5 said they believe the changes they have observed are caused by this. The other respondent said he did not think he had observed any changes that could be attributed to climate change.

##### Clyde River

15 people responded to this question. 9 people said it was getting warmer, while 6 people said the climate fluctuates a lot so there is no evidence of a warming trend.

#### Oikiqtarjuaq

10 people answered this question. Six said it was warmer now and one said there is more variation now. Two people made specific comments on changes:

"Yes, it has affected our area. In the past we could hunt for different animals further. Now we can't go further, we have to hunt nearby on the ice." This comment seemed to refer to the difficulty of traveling on the ice.

"I am experiencing it. In winter there are usually cracks from the points of land and I can put my net under water. But now there are hardly any cracks so I can't fish for char any more."

One said there was no change

"I don't know anything about the environment. I don't think there is any global change. It is now May and there should be spots where it should have melted but there aren't and it is still frozen. So it doesn't appear to be warmer."

#### **Q 9 Could climate change contribute to what you have observed about polar bears?**

##### Pond Inlet

Three people responded to this question, all said they didn't know.

##### Clyde River

Three people gave responses:

"No, because polar bears can go and follow the seals further, so they won't have trouble hunting. Also the snow covers the breathing holes but polar bears can still hunt, it's just for people."

"Seems like yes because polar bears are getting skinnier. If it gets warmer it will affect polar bears. They like to be cold."

"Yes, it could effect the polar bear's food, even with small amount of temperature change, the food will change. These days some livers (of seals) don't look good. Also the shedding of the seal fur. Molting is this time of year usually. Now you sometimes find ones that are molting in other times of the year."

##### Oikiqtarjuaq

Five people responded. Two said 'I don't know'. The other three gave comments:

"It may be. There are not enough icebergs and the denning areas have less snow and it is melting in summer. The bears are more hungry. There is a problem with the ice. The rough ice makes it hard for them to find seals, but there are the same number of seals."

"Harp seals usually have breathing holes during the winter but because the weather is always changing, the ice freezes over quickly and so the seals are on the surface of the ice. They move around on the top of the ice, they can't get back in their holes because the holes froze. Then they are killed by polar bears."



“Maybe the ice in the sea is melting and the bear have no where to go. It is very noticeable, they will go to land. There are no icebergs for them to go to.”

### **Section 3 Understandings of Management**

#### **Q 10 What do you know about polar bear hunting by Greenlanders?**

##### Pond Inlet

Four people discussed this question, three did not know much about it, but one commented:

"I've heard they are catching more. Sometimes polar bears go from here to Greenland and they don't have a quota system so it will affect our quota. They use polar bear skins for clothes so they are hunters too."

##### Clyde River

There were 5 responses to this question. Two said they didn't know anything. One said he heard they catch more polar bears there, while another only knew they use dog teams for hunting bears. The fifth person said:

"There is more hunting there because it's a part of their lives. More hunting there than here, it's like it was here 30 or 40 years ago."

##### Oikiqtarjuaq

Three people answered this question. Two said they didn't know much about it. The other said on television it shows they have polar bear clothes.

#### **Q 11 Can you tell me about the quota system here? Do you agree with it?**

##### Pond Inlet

10 people discussed the quota system. Five said they like the system while two specifically said they like the increase in the number of tags. Three people said they don't like the specific rules and two people want more tags. Most people gave comments:

"A few years ago I thought the quotas were not useful, but then they increased the number of tags so I'm okay with it now. We wouldn't even need quotas now because people see bears and don't even try to get them. If we stopped using quotas we could probably manage. The fur value is decreasing so people don't even try to catch them. Soon the only money from them will be from sport hunt guiding."

"We can't have all the bears that there are. So it has increased the population of bears, it's like that all around. Before people would get all the bears. The population will decrease since we can only catch males, so soon the population of males will be so little."

"I like the idea of the quota. If we don't have a quota and there are more hunters we'll have fewer polar bears. The population will go down."

"I don't like the idea of the quota system. It's only in winter and none in summer and we should be able to get bears in summer. They are dangerous when they are hungry."



#### Clyde River

11 people discussed the quota system. Seven said they like the quota going back to 45. Two said they wanted it higher. One said he liked the system in general and didn't care if the quota was high or low. One person wanted the quota to allow the taking of any bear because males have tough meat.

"I like it at 45. I'd be concerned if the polar bear quota dropped and we still had problems and also if we couldn't fill the quota, that would be a major concern. But lots of bears come into town and there were a lot around this spring."

#### Oikiqtarjuaq

Three people responded to this question. These are their comments:

"A sad part is that elders used to eat cubs but they are not able to do that now and they miss that. The quota system is not very efficient. If I had to shoot one (in defense) it is taken away from the quota. There are too many bears now."

"It's much better (to have quota system). If we don't have it more bears get shot."

"I'm happy they increased the quotas because there will be fewer bears in the community. Recently at A's outpost camp there were three bears."

#### **Q 12 Were there more or fewer bears before the quota system began?**

##### Pond Inlet

Seven people responded to this question, all agreed that the quota system was at least partially responsible for the increase in the bear population.

"The population has increased since we got quotas, because we can only kill so many. They shouldn't have the quotas because the polar bears are dangerous. We should be able to get them year round."

#### Clyde River

4 people discussed this question. Two people said the bear population was the same before the quota and now. One said there were more bears but didn't know if the quota had caused this. The final respondent said this:

"We caught fewer bears before there was a quota. Now there are more bears. The quota allows more bears to be caught."

#### Oikiqtarjuaq

Only one person responded to this question: "Before there was no law about hunting season, now there is a law, that's why there are so many now."

#### **Q 13 What do you think about biologists catching bears?**

##### Pond Inlet

Seven people responded to this question. Two people said research hurts the bears' hearing and makes them skinny. One person said he like biologists and liked working

with Mitch Taylor. One person suggested studying them all year and another said he is now supportive of the research because the population did not move away. Some people were concerned about how research affects bears:

"The temper of the bears change and they become more dangerous."

"Sometimes we don't want to eat animals that have been researched. So when we get a polar bear with an ear tag, they way 'that's a government bear' and it's usually skinny. We really don't want to eat those ones that are tranquilized. We feel it isn't safe. Maybe it is, but that's what we feel. When we see polar bears being put to sleep and measured, we see them as being abused by those people."

#### Clyde River

Three people answered this question. Two people said they don't believe the biologists and that the population has increased. They suggested biologists should study the population all year round. A third person said that research hurts the bears' ears and makes them skinny.

#### Oikiqtarjuaq

Two people gave information about biologists:

"The NWMB appoints them to do research on bears."

"I don't go to meetings but we always hear about it. We hear that polar bear and caribou are decreasing and they tell us how many there are."

Q: Did the biologist tell you why the polar bears are decreasing?

"Because maybe they are being controlled and it is similar to retaliation."

#### **Other Comments**

During the interviews some people who were particularly knowledgeable were asked questions related to this study but not part of the questionnaire.

#### Pond Inlet

Q: the Government thinks there are fewer bears, but hunters are seeing more, what should be done?

A: "We're not really worried about that. It's like this, in Alaska there is no quota for bowheads, but we are getting more bowheads. So maybe what others do doesn't impact us."

Q: the Government thinks there are fewer bears, but hunters are seeing more, what should be done?

A: It's the same as if someone told me the cows are less numerous down south, I might say to stop killing them. I lived here my whole life and so I believe what I see, not the researchers."



### Qikiqtarjuaq

Q: Some people think the sea ice is melting and that is why the polar bears are coming to land more. Could that be true?

A: I believe that is actually happening because the snow banks have melted and the ice tends to melt more quickly and when there are no icebergs they need to get dry on land so they have to come to land.

Q: Do you think the population could actually be decreasing because of climate change?

A: I sort of believe that too, knowing the dens have melted. The ice on the mountains on Qikiqtarjuaq melted starting in 1968 gradually, but that is an estimate.

### **General Comments About the Government**

Several interviewees complained that government employees do not listen to their problems. I think most relate to a lack of communication between government representatives and local people. Here are the concerns expressed to me:

"Government should listen to Inuit, we should be able to hunt in summer. The quota should be open all year."

"Last summer someone caught a harp seal with a square head from sickness. Inuit don't want to eat sick or skinny seals. What should I do about these things?"

Me: Take a sample and give it to the wildlife officer.

"We tried to go to the officer but we are always told to just throw it away because they don't believe there is sickness or skinniness."

"I was camping with my brother and I killed a bear that was wrecking my tent near Tasialuit, south of Canso Channel, last summer. The wildlife officer wanted to come and take a picture but he never came. Why? Doesn't he care?"

Me: Tell him again. Maybe he doesn't have money to give to you.

"I won't go to him again. He won't help if he didn't help the first time."

### **Conclusions**

#### **Population**

People generally think the bear population has increased, because they have seen more bears near human habitation and also bears have been appearing in places that did not used to have bears.

#### **Behaviour**

Many respondents said that bear behaviour has changed to be more tolerant of people. In Clyde River people noticed more fighting among bears.

#### **Health**

People often reported that bears are skinnier now than in the past. No one mentioned any difference in the number of cubs seen per female bear, although this was specifically queried during the health section. Some elders are concerned about hearing loss in bears caused by noises from machines, dogs and research activities.

**Climate Change and Possible Impacts on bears**

Climate change observations varied widely among participants. There is a general consensus that there are fewer icebergs now than in the past, and as a result the floe edge is closer to the land. Respondents did not have a clear idea of how, or if, this was affecting bears.

In Qikiqtarjuaq the disappearance of year-round snow in denning areas on the island was mentioned often and given both as evidence of climate change and as evidence to how it might affect bears.

**Management**

Respondents generally expressed that the problem was that too many bears were seen around people and that it was dangerous.

Many people were ignorant of the management system or the reasons for it. They also expressed reluctance to seek better information from either their HTOs or the government. This behaviour may be cultural and should be addressed by wildlife managers.



### **Appendix 1 Interview Questions**

Q 1 Has the polar bear population increased, decreased or stayed the same over the past 10 to 15 years?

Q 2 In open water season have you seen changes in polar bear behaviour such as when they come to shore or what they do once they are on shore?

Q 3 Are there more or fewer bears around town now than 10-15 years ago?

Q 4 Compared to 15-20 years ago are there more, fewer or the same number of tracks, bear kills and bears seen when you go hunting in spring, summer, fall, winter?

Q 5 Is there more less or the same damage to cabins, meat caches and other equipment? If there is more, why do you think that is happening?

Q 6 What is the health of the bears that come to town?

Q 7 Have there been any changes in the ice? Floe edge, icebergs, rough ice, changes in amount of snow?

Q 8 Have you heard of global climate change? Have you seen any evidence of it in your area?

Q 9 Could climate change contribute to what you have observed about polar bears?

Q 10 what do you know about pb hunting by Greenlanders?

Q 11 Can you tell me about the quota system here? Do you agree with it?

Q 12 What do you think about biologists catching bears?

Q 13 Were there more or fewer bears before the quota system began?

