Submission to the Nunavut Wildlife Management Board

Issue: 2012/2013 Polar Bear Total Allowable Harvest (TAH) for the Western Hudson Bay (WH) sub-population.

Dear Mr. Kusugak,

Thank you for this opportunity to provide input into the written hearing for the Western Hudson Bay Polar Bear TAH. The issue of Western Hudson Bay polar bears is highly controversial because it has been highly politicized by multiple interest groups who advocate for polar bear research, tourism and conservation. As a result, there are a number of polarized opinions about the best way to manage this sub-population.

Let's now take a look at some evidence and Inuit Qaujimajatuqangiit for Western Hudson Bay as part of your written hearing:

- The WHB sub-population is the second most southerly polar bear sub-population. The Southern Hudson Bay (SHB) polar bear sub-population is the furthest south and its population has remained stable over the last 20 years.

- The WHB sub-population has been used as a model for global climate change to support predictions that polar bears in the Arctic will decrease based on measures of body condition and vital rates of WHB polar bears. There is no doubt that climate has changed and continues to change. Inuit have witnessed and were amongst the first to report these changes.

- However, beyond the current claim about population decline, elders' observations of Western Hudson Bay suggest a much broader picture of this population. NTI conducted a workshop in August 2005 with elders and hunters from Arviat, Whale Cove, and Rankin Inlet. The elders and hunters were Ollie Ittinuar, Joe Kaludjak, Louis Voisey, Simon Kowmuk and Joe Karetak. They all reported that the population had increased substantially since the early 1900's when polar bears were rarely observed in Western Hudson Bay. For example, when the quotas were first introduced in the late 1960's, Arviat had a quota of 5 which hunters rarely filled. Hunters from Rankin Inlet and Whale Cove would travel beyond Arviat to harvest bears. Beginning roughly around the 1980's, Inuit in Western Hudson Bay started to encounter more bears. They were able to fill their quota of 15 in one day. During the early 1990's, hunters from Rankin Inlet and

Whale Cove did not travel far to fill their quotas. In 2005, hunters from Rankin Inlet were able to fill all 15 tags in the Rankin Inlet area.

- Inuit take a long-term view of the health and stability of animal populations. *IQ* reveals that polar bear populations fluctuate with environment conditions over long periods of time. Inuit also believe that population trends can only be understood well by taking proper account of the movement of bears.

- There has also been a long history of interaction between the community of Churchill and polar bears. Inuit have observed bears feeding at the Churchill dump. During World War II, there was a large military presence in Churchill where the population reached over 6000 people. As a result, the garbage produced was massive. More recently, because polar bears were known to be attracted to the garbage dump, a building was constructed to hold the garbage and the open dump was closed.

- An entire tourism industry has been built around polar bears in Churchill. There have been many practices conducted in the past to develop the tourism in Churchill that are no longer tolerated today such as feeding. This history of human bear interaction causes direct problems for Inuit when polar bears reach Inuit communities and expect to be fed or are looking for food because they have associated humans with food. Inuit report that the behaviour of some of these bears is different because they actively search for food near communities or for dogs.

- This iconic animal is used to generate revenue for organizations such as Polar Bear International (PBI), which have dedicated staff whose sole purpose is to generate revenue that is used to fund research activities that include handling. This sub-population of polar bears is the most handled polar bear population in the world. The effect of this handling on polar bears that has taken place over the last 20 or more years is not completely known.

- In 2005, the NWMB increased the TAH for the Western Hudson Bay sub-population from 47 to 56. Shortly after, the United States Geological Survey and Canadian Wildlife Service (CWS) reported that the population had been in decline from about 1200 animals in 1984 to less than 950 animals in 2004. Inuit disputed this result because of problems in the methods used and the study area covered by CWS.

- In 2007, this polar bear sub-population was predicted to decline significantly below 950 animals to less than 700 animals by 2012 using the RISKMAN modeling exercise. After the NWMB public hearing, the NWMB made a decision to reduce the TAH to 8.

- In 2011, the Government of Nunavut completed an aerial survey for Western Hudson Bay. This resulted in an estimate of 1000 animals. This value is likely an underestimate because not all bears were counted. For example, there are bears known to be denning during the time of the study. Any animals in dens that were not checked were not included in the final estimate.

- Given this most recent population estimate of 1000, it is critical to discuss why there appears to be a difference in the prediction that the population should have decreased (to less than 700 animals by 2012 as estimated by the RISKMAN model) regardless of harvest that contributed to the decision to reduce the TAH to 8. A TAH of 8 cannot be underestimated in terms of the huge negative impact that this has had on Inuit living in this region, mainly in terms of safety. Simply put, the estimate had predicted a drastic decline to less than 700 animals, while a current conservative estimate shows the population to be 1000.

- Safety to Inuit is a huge concern. In the past few years, after the decision was made to reduce the TAH to 8, there have been multiple polar bear encounters in the communities even though Inuit go to great lengths to deter problem bears and to comply with the law. During the recent consultations, Inuit clearly expressed that safety and security concerns need to be addressed and that polar bears are being treated as more valuable than human life.

- In the view of Inuit, the target level for WHB polar bears had been set too high. In the Inuit longer-term view of the WHB trend, going back to the 1940's and before, a lower population level is more typical and therefore more appropriate for conservation based on sustainable use. Also, Inuit understand WHB polar bears to be part of a shared population with neighboring groups, in particular Foxe Basin that is much larger.

- Based upon harvest data from 1990 to 2011 (see Figure 1), the average annual harvest of WHB polar bears over this period was about 35 animals per year. This value represents 3.5 percent of the current sub-population estimate. In comparison, the harvest levels of surrounding sub-populations of Foxe Basin, Davis Strait, and Southern Hudson Bay are currently between 4 to 6 percent of the sub-population estimates.

Recommendations

- Set target populations for harvest level purposes that account realistically for long-term natural population fluctuations and potential immigration and emigration events.

- Acknowledge the GN effort to consult with Inuit and to improve survey methods to reduce intrusive handling of polar bears. For example, Inuit have not been consulted on the mark-recapture analysis that is currently being conducted by CWS and the United States Geological Survey.

- Based upon IQ and the recent aerial survey information, NTI supports the communities' request to increase the TAH to 3.5 percent of the most recent population estimate (which would amount to a TAH of 35).

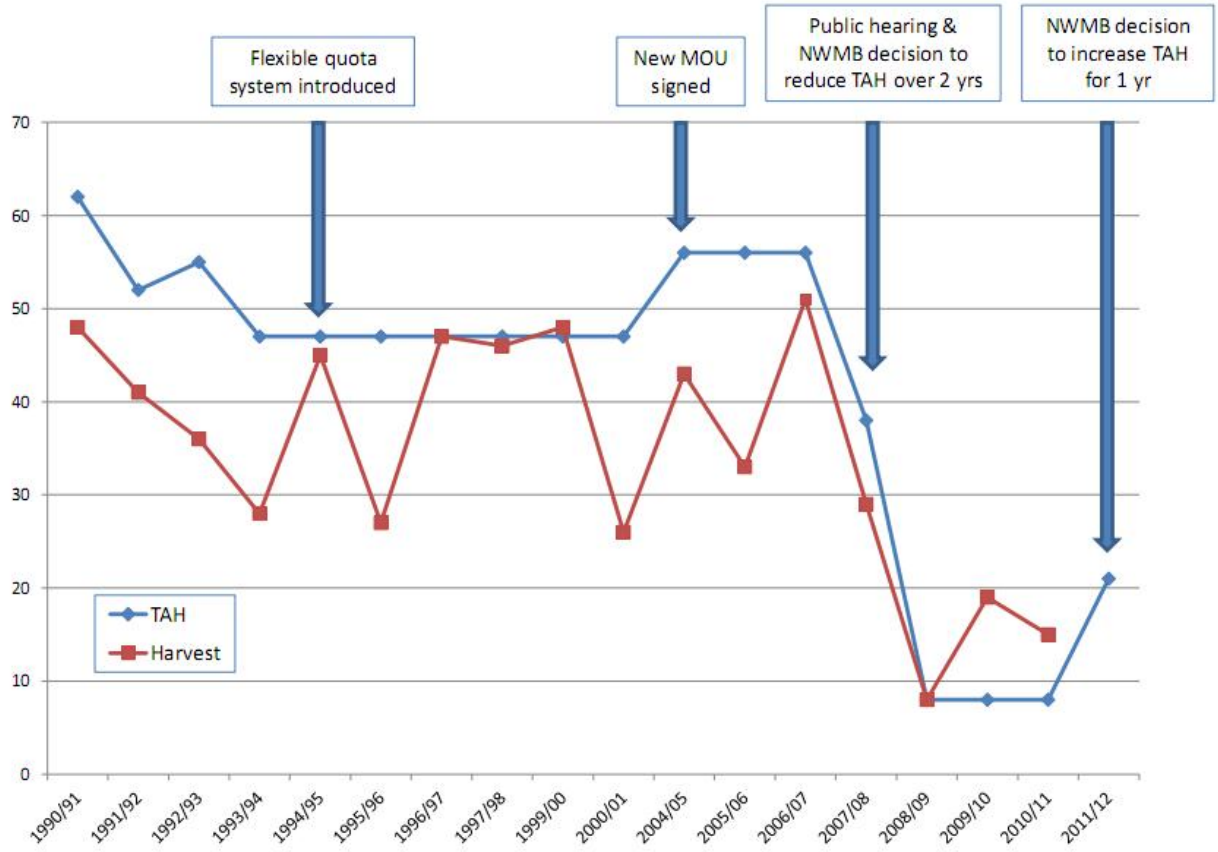

Figure 1. Changes in Total Allowable Harvest (TAH) and actual harvest of polar bears in the Western Hudson Bay. Taken from GN Briefing Note on Request for Decision – May 18 2012 submitted to the NWMB.

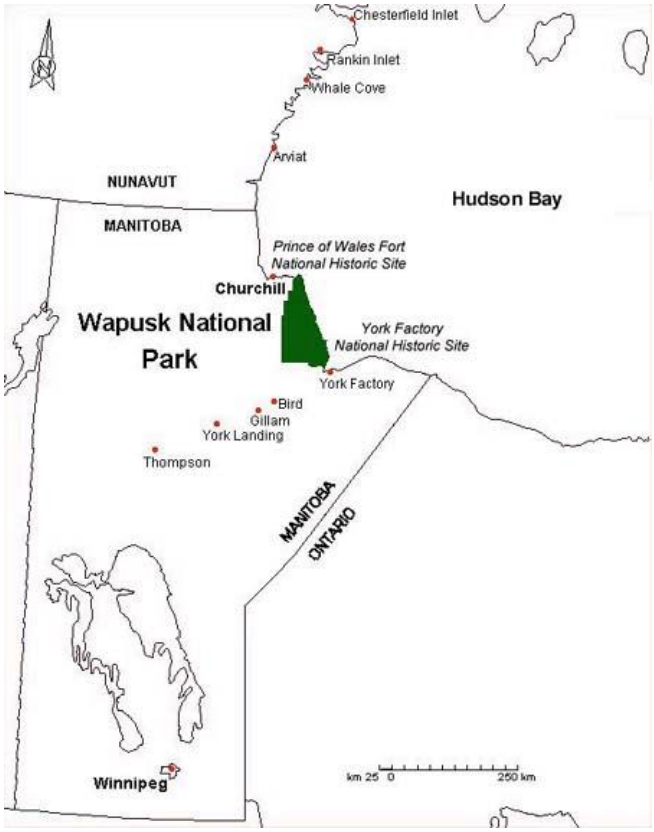

Figure 2 – Location of Wapusk National Park which is location of the principal study area for CWS

Appendix I – Excerpt from NTI Position Paper (2009) for Western Hudson Bay polar bears

In the view of Inuit, the target population for West Hudson Bay polar bears (1400) was unrealistically set. In the longer-term view of the West Hudson Bay trend, going back to the 1940's and before, a lower population level is more typical and therefore more appropriate for conservation based on sustainable use.

General Knowledge of Polar Bears in the West Hudson Bay Region

Female polar bears (*arnaluit*) normally enter a den in November or December to give birth, usually to two cubs (*atiqtaqtaq*). The preferred polar bear denning sites are usually situated on south-facing locations on small hills or cliffs where snow accumulates. Polar bears may eat a lot of grass and seaweed prior to going into dens. Females with cubs (*piaraliik*) usually leave the den around April, the same locations are reused in subsequent years. Inuit know where these favoured denning areas are located and they would visit these denning areas to hunt bears. This was a preferred method of hunting polar bears because it was efficient. But other information about polar bears was also highly relevant for hunting. For example, female bears usually move at a characteristic speed, males are distinguished by being a darker yellowish colour, and female tracks are usually broad, while male tracks are longer and narrower.

Age Group	Description
Atiqtaqtaq	A newborn cub
Atciqtaq	A cub
Piaraq	A cub that is with its mother
Advarautaq	A cub about 1 year old
Nalitqaihiniq	When they are a little bit bigger than an *advarutaq*, which is a little bit bigger than a sled dog, about the height of the mothers belly.
Namiaq	Offspring that is the same size as its mother
Nukaugaq	A young male
Tadzaq	Adult female
Anguruaq	Full grown male
Arnaluit	Pregnant female
Piaralik	Female with cubs
Namiariit or Pingahuqat	Family group with cubs

Table 2 - Polar Bear Inuktitut terminology.

The main diet of polar bears is ringed seals, although they also prey on bearded seals, walruses, and small whales such as beluga and narwhal. Polar bears also scavenge for dead marine mammals, including carcasses of larger animals such as bowhead whales. Polar bears also seek bird eggs in the spring. Polar bears hunt ringed seals in the winter by waiting at the seal breathing holes in similar fashion to Inuit hunters. Polar bears have been seen to surprise their prey by swimming under water to catch a seal basking on a piece of ice or a ringed seal sleeping in the water.

Inuit emphasize that recent biological population estimates and *Inuit Qaujimajatuqangit* are not operating at the same geographic and temporal scale. Direct attempts to compare or to integrate parts from each source without full comprehension of the background often lead to misunderstanding. Inuit consider the current population to be higher than it has ever been in this region when compared to historic population levels extending from the early 1900s up to the 1970s. People living in West Hudson Bay communities, and especially in Arviat, have been coping with more frequent encounters of polar bears due to their abundance and changes in their distribution and behaviour. As indicated by hunters and elders who traveled extensively throughout the region as RCMP Special Constables, the population of polar bears in West Hudson Bay was extremely small during the 1930s and 1940s; an observation that is consistent with analyses of the harvest records obtained from the Hudson's Bay Company archives[1] and other research findings[2].

Polar bears are considered a very dangerous animal. From the 1960s, the population of bears has increased to current levels where hunters must be more aware for the safety of themselves and their families when camping on the land. This concern for some cases acts as a deterrent to visiting certain important seasonal hunting, fishing and food-gathering locations[3] which has had a significant impact on their lives.

Inuit indicate that the situation has become more difficult because of observed changes in polar bear behaviour. Historically, from the 1930s to the 1970s, when a bear saw an Inuk, the bear would flee. Today, the bears are not fearful of humans. Polar bears that have been exposed to tourism and other encounters with humans in the Churchill area have become habituated to human activity and are considered dangerous. Inuit have observed both direct and indirect feeding of polar bears in the Churchill area. Inuit support the tourism activity in Churchill, but view with disfavour consequent alteration of polar bear behaviour that results in the bears' fearlessness, and even attraction, to humans and their sled dogs.

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[1] Honderich, J.E. "Wildlife as a hazardous resource: An analysis of the historical interaction of humans and polar bears in the Canadian Arctic 2,000 B.C. to A.D. 1935" M.A. Thesis, University of Waterloo, 1991.

[2] Tyrrell, M. "More bears, less bears: Inuit and scientific perceptions of polar bear populations on the west coast of Hudson Bay." *Études/Inuit/Studies* 30 (2006): 191-208.

[3] Tyrrell, *More*, 191.

Inuit also expressed the view that polar bears in the region had been affected when there was a large Canadian and U.S. military presence in Churchill during World War II. For many years the human population of Fort Churchill was small, but following the establishment of a military base and airfield in 1942, the population of Churchill dramatically increased from several hundred people to several thousand people. At one stage of WW II there were over 4000 people living in Churchill.[4] One immediate impact of this human population increase was the production of large quantities of garbage. Workshop participants observed polar bears regularly feeding at the garbage dump during this period. In the early 1960s, both the Canadian and U.S. military left Churchill and the human population has since declined to less than 1000 people. Recently, access to the dump has been closed to polar bears. Interviewees indicated that this loss of a ready food source would affect polar bear population numbers and behaviour.

In summary, Inuit pointed out that the size of the polar bear population and polar bear behaviour have been affected by a series of human related activities in the Churchill area. This includes hunting by Aboriginal people in denning areas, direct and indirect feeding of polar bears by people in Churchill, removal of polar bears by military and civilian safety officers, and various types of research conducted on polar bears over the past several decades.

Observations on Changes in Polar Bear Behaviour from Four West Hudson Bay Communities

Arviat

Arviat (which means 'a place of bowhead whales') is located on the west coast of Hudson Bay about 300 km north of Churchill, Manitoba. Inuit historically utilized the area surrounding Arviat to hunt marine mammals such as beluga whales, bowhead whales, ringed seals and walrus for subsistence. The community of Arviat became a more permanent location for Inuit in the 1920s with the arrival of the Hudson's Bay Company trading post (1921) and Catholic and Anglican missionaries (in 1924 and 1926 respectively). The area provides forage for thousands of geese

[4] Coutts, R. "Churchill, Manitoba: Centuries of History on the 'Bay of the North Sea'" *Heritage/Patrimoine*, v. 3, no. 4, (2000), 10-13.

and is where large numbers of barren ground caribou are found during their spring and fall migrations. Several specific named locations, including the Maguse River, Tahanne, Nunaluaq and Siugaajuk, were identified as important areas for fishing and hunting.

Sea-ice break up and freeze up in Hudson Bay varies each year; spring break up usually occurs in the third week of June, and freeze-up usually begins at the end of October. The Hudson Bay does not completely freeze over, although it freezes each year from the shore to the floe-edge approximately 10 to 16 kilometres offshore in this particular region. Beyond the floe edge there are leads, or areas of open water, between the floe edge and the sea ice that cover most of Hudson Bay throughout the fall, winter and early spring seasons. These leads (*aulaniirq*) freeze over and break up repeatedly, as Hudson Bay is a very windy area and wind has a huge impact on the formation and break up of sea ice. Although temperature does affect the thickening of ice, precipitation (in this case, in the form of snow) has a greater effect on ice thickness; generally, when there is more snow, the ice will be thinner.

From the 1930s to the 1950s, two elders who traveled frequently from Churchill to Chesterfield Inlet as part of their responsibilities as RCMP Special Constables, rarely saw polar bears. One of the Special Constables traveled to Churchill to get supplies and to deliver mail to people in the area during the early 1950's. He stated that encounters with polar bears were rare. For example, in one year, the dog teams they used for traveling smelled something at Nunaalaaq (a location between Arviat and Churchill). He was puzzled because there were no caribou to be seen. He later learned that a denning polar bear (hunted by an Inuk hunter later that year) was in that area. He first observed a live polar bear when he was about 18 years old, despite extensive travel in the area; during spring and summer family camping trips, there were almost no encounters with polar bears.

In general, all interviewees believed that polar bears could travel to other areas of Hudson Bay depending on the sea ice and currents. When the polar bear quota system was introduced in the late 1960's, the community of Arviat received a quota of five polar bears. The interviewees indicated that they would be fortunate if three polar bears were taken in any single year.

Inuit started to notice more polar bears in the region, beginning in the 1970s, when in their spring and summer camps. In the last 10 years, they indicated that polar bear population numbers have

further increased. Both elders and hunters expressed the view that polar bears constantly move in search of food, and are capable of traveling great distances. Where previously there were very few sightings and encounters, there are now many more sightings of females and their cubs, and of individual polar bears. The hunters observed that camping on the land at the present time requires much more vigilance due to the higher frequency of chance encounters with polar bears.

Whale Cove

Whale Cove (*Tikirarjuak,* which means 'long point') is located approximately 160 km north of Arviat. This is a traditional Inuit hunting area for beluga, ringed seal and walrus. This area also has excellent fishing rivers and habitat conditions suitable for thousands of geese and migrating caribou. From the late 1950's to about 1980's there were very few encounters with polar bears in this region. One hunter indicated that when he caught a polar bear in those days, it was a big event because it was so rare. When the quota system was introduced in the 1960's, Whale Cove hunters typically travelled to the Arviat region to hunt polar bears. More recently, hunters do not need to travel as far to hunt bears because they are found closer to the community. One hunter stated that he would like to know more about the situation of the bears in Ontario and the Eastern Hudson Bay, noting that there are many factors that affect the population, such as the currents and winds that push the ice platforms used by these animals to different areas of Hudson Bay.

Rankin Inlet

Rankin Inlet (*Kangirliniq*, which means 'deep bay' or 'inlet') is located approximately 70 km north of *Tikirarjuaq* and is the most recent settlement in the Kivalliq region of Nunavut. Rankin Inlet was not a traditional camping area; it was created following mining operations that began in 1953 and resulted in Inuit from other northern communities moving there to work in the North Rankin Nickel Mine which operated from 1957 to 1962. Prior to the mining development, few Inuit lived in the immediate area because of the scarcity of wildlife. Inuit in this area fished for Arctic char and hunted caribou and geese in fall and spring at the mouth of *Iqalugaarjuk*. Currently, Inuit hunt seals, beluga whales, caribou, and polar bears in this area. >From the late 1950's to the early1980's there were very few encounters with polar bears. However, recently there have been more and more encounters with polar bears and successful hunts in the vicinity

of Marble Island, and during the summer, Inuit have to monitor polar bears that come into the community. Hunters and observers at mining camps in the area are now seeing polar bears 20 to 30 km inland from the Hudson Bay coast.

Chesterfield Inlet

Chesterfield Inlet (*Igluligaarjuk*, which means 'places of few houses') is one of the oldest settlements in Nunavut. It is located approximately 100 km north of Rankin Inlet. Inuit historically utilized this area to hunt both terrestrial and marine animals. In 1914, a Royal Northwest Mounted Police detachment was established in Churchill. The coastal area between Chesterfield Inlet and Churchill was regularly patrolled by the RCMP[5], including the two special constables who participated in this polar bear workshop. From the 1930's to 1940's, very few polar bears were observed and hunted in the Chesterfield Inlet area. It was only when hunters travelled to Coates Island (about 400 km east of Chesterfield Inlet) to hunt walrus that they were almost certain to see, and hunt, polar bears. They would also be more certain of encountering polar bears if they traveled to Wager Bay (about 240 km to the north). Recently, people have observed greater numbers of bears closer to Chesterfield Inlet. For example, groups of polar bears were not normally seen, but they are now. Furthermore, polar bears now congregate near the Baker Lake River waiting for freeze-up, something they did not do in earlier times. A hunter indicated that in one day while hunting he counted over 20 polar bears. Based on his previous experience of the area, he concludes that the abundance and distribution of polar bears in this area has changed markedly in recent years.

Summary

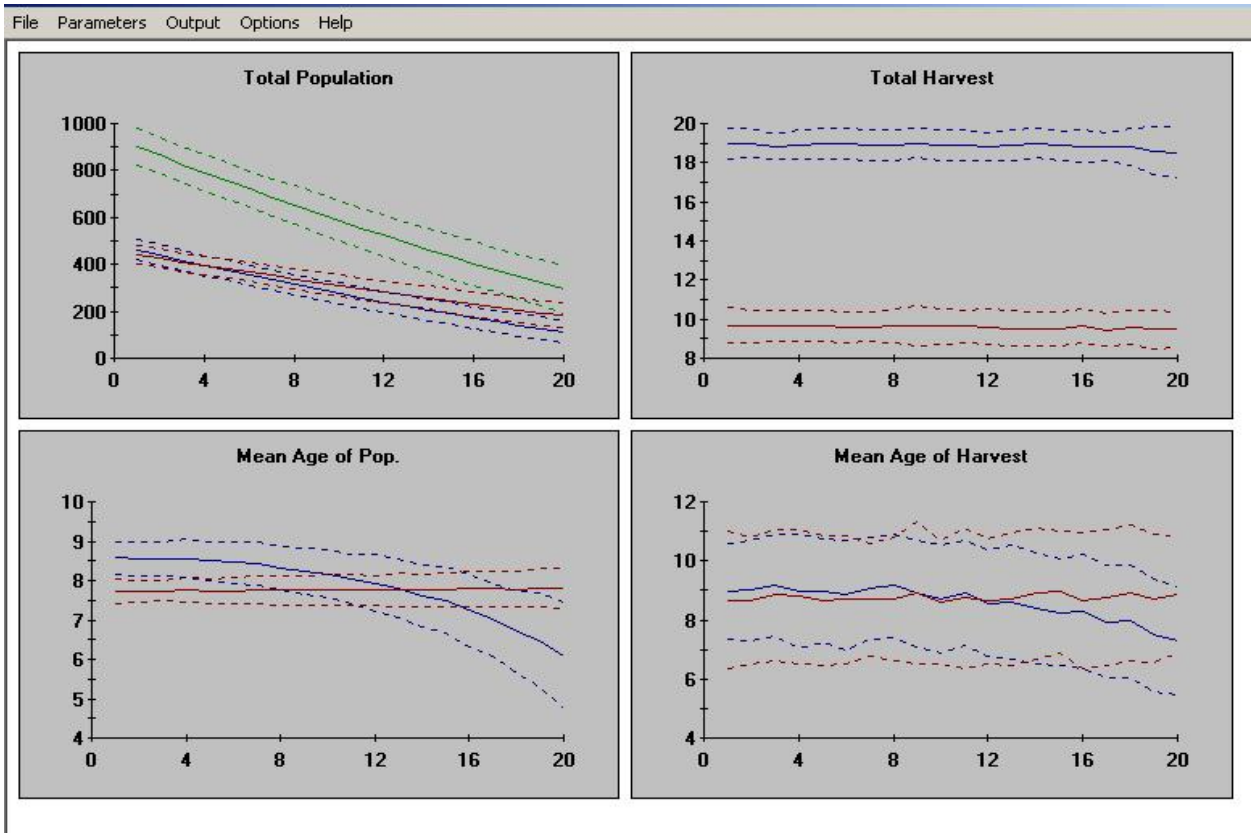
Inuit note that from the 1930's to 1970's that there were very few polar bear sightings in the Arviat area. However, beginning in the 1970's, Inuit noticed an increase in the polar bear population. More recently, polar bear population in this area has increased substantially. There are also many sightings of female polar bears with cubs. Further north in the area of Whale

[5] In 1920, the RCMP replaced the Royal Northwest Mounted Police throughout Canada.

Cove and Rankin Inlet, there were few polar bear sightings from the late 1950's. Early 1980's polar bears were seen more frequently. Recently there has been an increase in polar bear sightings all year round. Near Chesterfield area, there were very few polar bear sightings, despite the fact that there were no hunting quotas or limitations. However, very recently this has changed. There are now many polar bears in this area all year round. There are also sightings of polar bears in groups, which was extremely rare in the past. It appears that some polar bears are staying in this area year-round. Hunters also noticed that some polar bears are displaying a change in their migratory behaviour.

Appendix II – Riskman population projection for Western Hudson Bay based on available information. The initial population was set at 935 (Regehr et al. 2007), demographic parameters are from Regher et al. (2007), a sex selective harvest was selected, and harvest was based on 7 year mean from 2004/2005-2010/2011 of 28. Initial Riskman Project File provided by Dr. Mitch Taylor.

Population projected to number 652 animals at year 8 (2011/12) of Riskman projection assuming an initial population of 935 in 2004.



Year	All	Males	Females
2	865.895	440.512	425.384
3	825.543	415.842	409.702
4	790.550	394.596	395.954
5	758.221	375.401	382.819
6	720.734	353.568	367.166
7	684.749	332.607	352.142
8	652.162	314.132	338.030
9	618.961	294.599	324.363

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