



Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

Consultation Summary Report

Polar Bear Research Group
Department of Environment
Government of Nunavut
Igloolik, NU

Executive Summary

Government of Nunavut, Department of Environment (DOE) representatives, together with representatives from the Kitikmeot Regional Wildlife Board (KRWB), Nunavut Tunngavik Inc (NTI), Nunavut Wildlife Management Board (NWMB), where available, conducted consultations with Hunters and Trappers Organizations (HTOs) from October 20-28, 2020. The purpose of the consultations was to provide co-management partners with an overview of the most recent scientific study results on the Gulf of Boothia (GB) polar bear subpopulation, as well as collect feedback on the results presented and collect additional traditional knowledge (TK). Only the HTOs in communities that hunt from the GB subpopulation were consulted. The feedback and TK collected during these consultations will be considered when forming Total Allowable Harvest (TAH) recommendations for the GB subpopulation to be submitted to the NWMB for decision. This report attempts to summarize the comments made by participants during the consultations.

Preface

This report represents the Department of Environment's best efforts to accurately capture all information that was shared during consultation meetings with the Hunters and Trappers Organizations of Gjoa Haven, Igloolik, Kugaaruk, Nauyasat, Sanirajak, and Taloyoak. The views expressed herein do not necessarily reflect those of the Department of Environment, or the Government of Nunavut.

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1.0 Report Purpose and Structure

This report is intended to collate and summarize comments, questions, concerns and suggestions provided by the HTOs in response to the results from the 2015-2017 GB scientific study. Pre-study consultations with these communities were conducted in 2013.

The following communities were consulted from October 20-28, 2020:

- Gjoa Haven, October 20, 2020
- Taloyoak, October 21, 2020
- Kugaaruk, October 22, 2020
- Nauyasat, October 26, 2020
- Sanirajak, October 27, 2020
- Igloodik, October 28, 2020

During the meetings DOE provided input on what the GN's TAH recommendation would be for GB. Representatives from the NWMB, NTI, KRWB, Kivalliq Wildlife Board (KWB), and the Qikiqtaaluk Wildlife Board (QWB) were invited to these meetings and they participated whenever representatives were available to attend in person.

2.0 Purpose of Consultations

The purpose of these consultations was to discuss the newest scientific information regarding the GB polar bear subpopulation as reported in the GN scientific study report produced by the GN polar bear biologists. In addition, the GN also put forward a TAH recommendation during these consultations, but also discussed that management objectives can be formulated depending on the communities' needs and objectives for co-managing this subpopulation.

2.1 Format of Meetings

The meetings were held in the evening (e.g., beginning between 17:00 and 18:30) and ran between 2.5 to 4 hours depending on HTO. Meetings were facilitated and led by GN Polar Bear Biologists M. Dyck and J. Ware. The biologists presented the historic management background, and a detailed overview of the results from the 2015-2017 polar bear study conducted in GB (Appendix 1). The participants were invited to ask questions, raise concerns, or provide recommendations throughout the meetings. It was

also pointed out that there is still the on-going GB TK study in which results are expected by the end of 2020, depending on how the COVID-19 pandemic evolves.

After the presentation, questions/discussion continued until no further questions were raised. At the end of the meeting, the GN position on the TAH for GB was presented. In addition, it was also mentioned that the GN position may not reflect the Management Objective goal of the communities and communities were encouraged to work with the Regional Wildlife Organizations (RWOs) and/or the GN to develop a Management Objective for the GB subpopulation. The biologists explained that consideration for a TAH that differs from the GN recommendation should include the uncertainty of the results, the changing environment, and the needs of communities. Discussions and questions were raised regarding the tag distribution in GB and M'Clintock Channel (MC) for communities that harvest from both subpopulations. The biologists advised the participants that this is a matter for relevant RWOs to consider as tag allocation within a subpopulation falls under their purview.

3.0 Summary by Community

The objectives of the consultation meeting were made clear to the HTO members prior to and at the start of each meeting. There were many similar questions, concerns and suggestions raised by HTO Board members in the communities consulted. A full, detailed report of the questions and comments from each community can be found in Appendix 2.

3.1 Gjoa Haven Consultation Summary

Date: October 20, 2020

Time: 18:50 – 21:15

Representatives:

- GN-DOE, Polar Bear Biologists M. Dyck, J. Ware
- GN-DOE, Conservation Officer J. Skilling
- GN-DOE, Regional Manager, K. Methuen
- Gjoa Haven HTO Board Members

Comments and Questions:

After the presentation about GB, board members discussed their experiences from over the past years and they lined up with the GN study results. Generally, the board members agreed with the GN findings. It also became clearer by comments from board members that currently, not much hunting in GB is done by Gjoa Haven hunters due to unpredictable ice conditions. Some points were raised that the distribution of tags for

GB and MC are not distributed fairly, especially now that MC shows an increase in bear abundance. The GN representatives suggested this subject be raised by the HTO with the KRWB. The board was thankful and appreciative that the GN visited the community to present the results and to have a discussion. Some clarity was provided on how BEARWATCH and individuals associated with the project are related to GN projects.

3.2 Taloyoak Consultation Summary

Date: October 21, 2020

Time: 17:45 – 20:15

Representatives:

- GN-DOE, Polar Bear Biologists M. Dyck, J. Ware
- GN-DOE, Conservation Officer D. Anavilok
- GN-DOE, Regional Manager, K. Methuen
- Taloyoak HTO Board Members

Comments and Questions:

After the presentation about GB, board members discussed their experiences from over the past years and how they lined up with the GN study results. Generally, the board members agreed with the GN findings. Some points were raised that the distribution of tags for GB and MC are not distributed fairly, especially now that MC shows an increase in bear abundance. The GN representatives suggested this subject be raised by the HTO with the KRWB.

3.3 Kugaaruk Consultation Summary

Date: October 22, 2020

Time: 18:50 – 21:20

Representatives:

- GN-DOE, Polar Bear Biologists M. Dyck, J. Ware
- Kugaaruk/ Kurtairojuark HTO Board Members
- KRWB representative Ema Qaqqutaq.

Comments and Questions:

After the presentation about GB, board members discussed their experiences from over the past years and how they lined up with the GN study results. Generally, the board members agreed with the GN findings. A longer discussion ensued about handling and collaring bears, and whether this could be applied in the future to answer questions from the HTO especially as it relates to shipping and industrial activities.

3.4 Naujaat Consultation Summary

Date: October 26, 2020

Time: 18:10 – 21:50

Representatives:

- GN-DOE, Polar Bear Biologists M. Dyck, J. Ware
- GN-DOE, Conservation Officer P. Papatsie
- GN-DOE, Acting Regional Manager J. Neely
- Naujaat HTO Board Members
- QWB Chairperson J. Qillaq
- NTI Director of Wildlife P. Irngaut
- NWMB D. Ndeloh, S. Mapsalak, KJ England

Comments and Questions:

After the presentation about GB, board members discussed their experiences from over the past years and how they lined up with the GN study results. Generally, the board members agreed with the GN findings. A longer discussion ensued about how current allocations are distributed among communities and that some communities would like to see this reviewed. It was also discussed what steps are involved to see allocation changed via relevant RWOs.

3.5 Sanirajak Consultation Summary

Date: October 27, 2020

Time: 19:15 – 21:15

Representatives:

- GN-DOE, Polar Bear Biologists M. Dyck, J. Ware
- GN-DOE, Conservation Officer B. Grosset
- GN-DOE, Acting Regional Manager J. Neely
- Sanirajak HTO Board Members
- QWB, Chairperson J. Qillaq
- NTI, Director of Wildlife P. Irngaut
- NWMB, Director of Wildlife D. Ndeloh, NWMB Biologist KJ England

Comments and Questions:

After the presentation about GB, board members discussed a little of their GB experiences and few observations from past years and they somewhat lined up with the GN study results. Some comments were made that just few bears are harvested in GB by Sanirajak.

3.6 Igloodik Consultation Summary

Date: October 28, 2020

Time: 18:40 – 21:42

Representatives:

- GN-DOE, Polar Bear Biologists M. Dyck, J. Ware
- GN-DOE, Acting Regional Manager J. Neely
- Igloodik HTO Board Members
- QWB, Chairperson J. Qillaq
- NTI, Director of Wildlife P. Irngaut
- NWMB, Director of Wildlife D. Ndeloh, Biologist KJ England

Comments and Questions:

After the presentation about GB, board members discussed sea ice changes, shipping, and that more bears are seen – though much of the observations were related to Foxe Basin. There was discussion about harvesting cubs and the permit for that, and how to get a TAH increase in Foxe Basin. Overall, the members agreed with the findings of the study.

4.0 Overall Consultation Summary

The consultations for all communities harvesting from GB were conducted in a roundtable, open discussion format in which all participants were able to provide feedback, ask questions, and speak. Participants offered context and understanding to the scientific results. The major points raised by communities regarding GB were:

- 1) agreement with the scientific findings that the population appears stable—no major changes based on land observations—since the last scientific study in 1998-2000, and
- 2) GB tag allocation is a major concern.

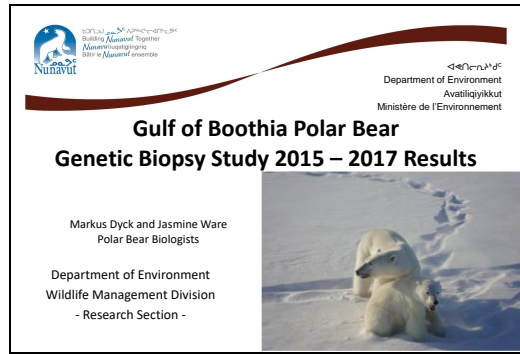
Minor points, which represent comments by some communities but not all, included an interest in gathering movement data to determine potential effects of increased industrial development and shipping and an interest in harvesting cubs.

The GN proposed no change in TAH for GB based on the scientific findings of a stable population. Given the overall community agreement with the findings, there were no major oppositions to this proposal. There is an ongoing Inuit Qaujimajatuqangit study for GB which may offer more comprehensive insight into hunters' and users' observations of bear distribution or abundance.

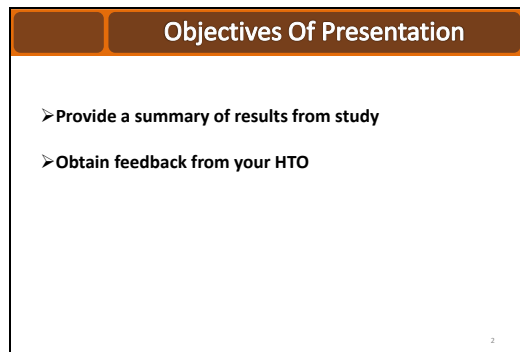
One of the major points brought up during consultation was that the tag allocation needed to be revisited to ensure fairness and equity among the communities that harvest from GB. This was raised most emphatically by communities that were harvesting from both MC and GB populations. The GN representatives discussed roles and responsibilities of the relevant bodies for creating the tag allocation among communities. The GN outlined the process via the RWOs and offered to provide guidance or further information to any interested community.

Appendix 1: Complete Consultation Presentation of the Gulf of Boothia Polar Bear Study Results 2015-2017

Slide 1



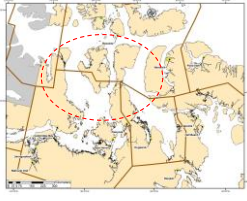
Slide 2



Slide 3

Background

- First mark-recapture study between 1973-78
 - MC and GB treated as one unit, estimate of 1,081
- GB estimate increased to 900 in mid-90s based on local knowledge and biased sampling
- MC estimate decreased from 900 to 700 based on local knowledge in mid-90s
- Population boundaries in 1995 and 2001

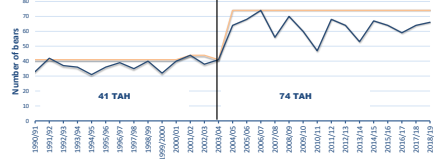


3

Slide 4

Background

- 1998-2000--Mark-recapture estimate for GB was 1592 bears
- TAH of 41 for GB until 2003/2004
- Increased TAH to 74 bears in 2004/2005
- Average harvest per year: **63 bears since 2005**



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Slide 5

Background

- Population status unknown (stable? increasing?)
- Population boundaries of MC/GB/LS?
 - Inuit Qaujimagatuqangit/genetics suggest movement between both units

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Slide 6

Goals of study

- Need for new information – current data was deficient
 - Re-assess population abundance
 - Evaluate population boundaries/movements of bears
 - Provide information for review of Total Allowable Harvest (TAH)
 - Observe effects of changing sea-ice conditions
 - Assess potential impacts of industrial activity

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Slide 7

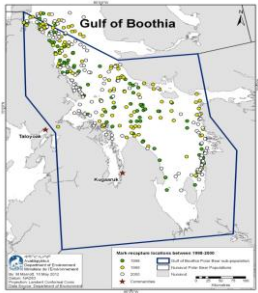
Study method choices

- Co-management partners indicated concern about drugging & handling bears
 - Explore alternative population assessment methods
 - Better reflect Inuit societal values
- Balance with analysis needs –to properly monitor population

Slide 9

Genetic capture mark-recapture study goals

- Estimate polar bear abundance in GB
- Compare with 1998-2000 estimate
- Compare information on reproduction, survival
- Cannot estimate movement or boundaries with this method



The map shows the Gulf of Boothia in northern Canada, with a blue outline indicating the study area. Green dots represent bear locations. A legend in the bottom right corner identifies symbols for 'Study area', 'Bear locations', 'Bear capture locations', and 'Bear capture dates'. The map also includes a scale bar and a north arrow.

Slide 10

Study funding and support



The slide displays logos for the following organizations: Nunavut, Environment and Climate Change Canada (Environment et Changement climatique Canada), WWF, and the Qikiqtaaluk Wildlife Board. Below the logos, it lists the HTOs from Gjoa Haven, Igloodik, Kugaaruk, Nauyasat, Taloyoak, and Sanirajak.


HTOs from Gjoa Haven, Igloodik, Kugaaruk, Nauyasat, Taloyoak, Sanirajak

Slide 11

Study Design

Community Participation

- Survey design and method choice - 2013
- Survey observers – 2015 through 2017
- Review & evaluation of results - 2020





The image shows a vertical strip of a person's face, possibly a survey observer, looking down.

Slide 12

Study Design

- Method choice: genetic capture mark recapture
- Timing of study: mid-April to early June
- HTO participation on searching and sampling flights where available






- Used helicopters to search

Slide 13

Study Design


- Recording age class, sex, body condition, litter size, location of bears

Slide 14

Study Design

1 2 3 4 5



Skinny

Appearance extremely gaunt; ribs and shoulder blades protruding; ribs easily felt with the hand. A strong hollow feel to spine between the pelvis and tail or, if missing, strongly so.

Thin

Bone structure, ribs, pelvis easily felt with the hand. One rib does not touch, but having some muscle covering them. The hollow between the pelvis and tail is obvious, but softer.

Average


Bone is fully covered in fat. Obvious fat is present over pelvis and shoulders, ribs less obvious. The hollow between the pelvis and tail is absent.

Fat

Bone not as rounded as body appearance; ribs and shoulder blades are very soft. Pelvis and all long bones, obvious fat over wings and shoulders.

Very Fat

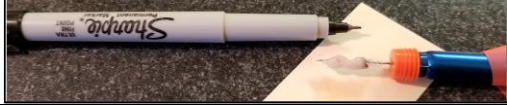
Bone is extremely rounded; ribs appear not at all. For the long, ribs of fat on neck and lower shoulders.



Slide 15

Study Design

- Collected small tissue samples for genetic analysis (to genetically identify and “mark” an individual)
- No cubs-of-the-year sampled
- No drugging, no collaring
- No specific ages or samples for other studies (e.g., contaminants)



Slide 16

Study Design - Analysis

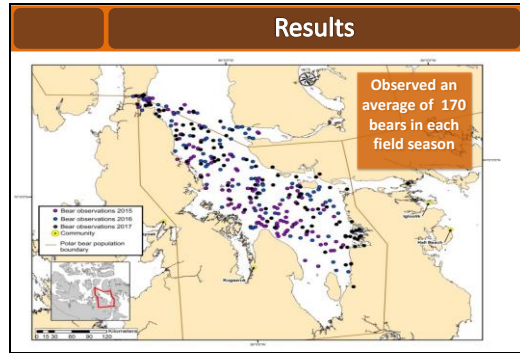
- Included all available information for analysis:
 - Genetic mark-recapture (biopsy) information 2015-2017
 - 1998-2000 capture mark-recapture information
 - Harvest recoveries (e.g., when an ear tag/lip tattoo is recovered by a hunter) 1976-2017
 - 1976-1997 capture mark-recapture information

Slide 17

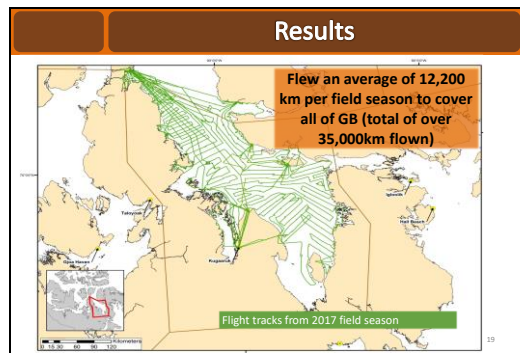
Analysis Goals

- Use all information to determine:
 1. Trends in abundance from 2000-2017
 2. Survival rates of different age classes and sexes over time
 3. Reproductive parameters such as size of litters, litter rate per adult female (how productive are the females/population)
 4. Population growth rate – determined using survival rates and litter production rates
 5. Evaluate body condition of bears across the entire GB area

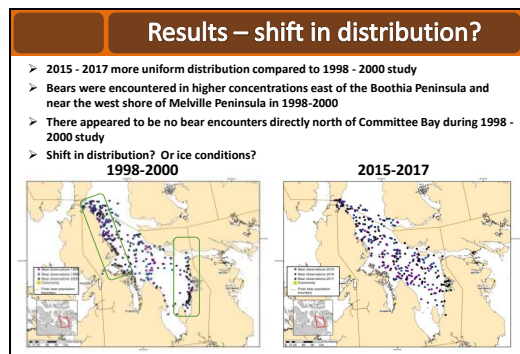
Slide 18



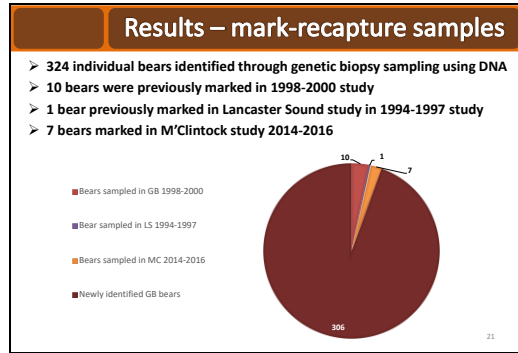
Slide 19



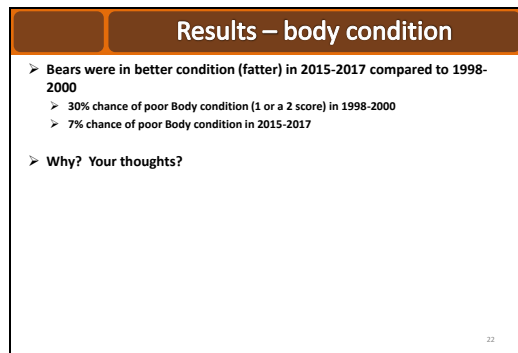
Slide 20



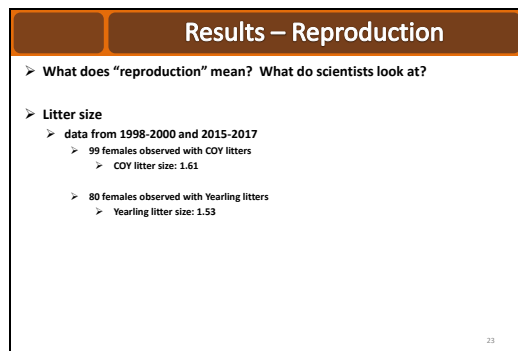
Slide 21



Slide 22



Slide 23



Slide 24

Results – Reproduction cont.

- Number of offspring per adult female

1998-2000	2015-2017
➤ 0.51 COYs/adult female	➤ 0.43 COYs/adult female
➤ 0.37 yearlings/adult female	➤ 0.36 yearlings/adult female

 - 85% chance that COYs per adult female was less in 2015-2017 compared to 1998-2000
- Number of yearlings per adult female is important because it shows how many cubs-of-the-year survive to be yearlings
 - good measure of reproduction
- The GB subpopulation has healthy reproduction

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Results – Survival


- Females and males separated
- Adults and subadults separated
- Data support similar survival across time
- Unsurprisingly, subadults have the lowest survival of these groups with subadult males lower than subadult females.
- There were fewer adult males than expected, but that is likely due to the past harvest with a 2 males for 1 female harvest system

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Slide 26

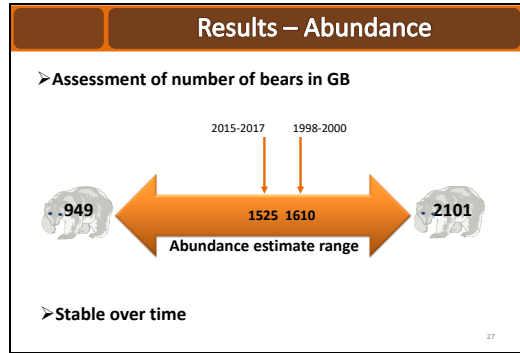
Results – Population growth rate

- Population growth rate similar to assessments from the last study
(growth rate is simply the difference between what is added through births minus the deaths and takes into account how animals survive)
- Growth rate indicates strong potential for growth



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Slide 28

Results – Interpretation

➤ GB is doing well, healthy subpopulation for now

➤ Because we don't have a quantifiable idea about movement, we are likely counting bears from other subpopulations like LS and MC as GB bears ➔ increases the abundance assessment.

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Further Questions

➤ Boundary between GB-MC-LS?

- Genetic mark-recapture method does not provide data to answer these questions
- Movement data are necessary
- How important is the boundary issue to you and other users?
 - IQ says there is movement. How much? Where? When? Who?
 - Are bears changing where they choose to spend their time? Is this related to sea ice changes? Seals?

➤ Options:

- The Government of Nunavut is committed to surveying Lancaster Sound in the next few years
 - With your support, we could propose to put collars and satellite ear tags on a small number of bears in LS and MC/GB to gather info about bear movements between and among these areas.

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Further Questions

- Do you agree that the number of bears stayed relatively the same over time?
- What did you observe in the bears' body condition over time?
- Are there enough bears to harvest? Are there too few? Too many?
- Is there anything special that you observed and wanted to share with us?
- Where do you agree/disagree with our findings?

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Slide 31

GN Recommendation

- The GB subpopulation has remained stable – we recommend no change in TAH
- What are your thoughts about the recommendation?

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Slide 32

Further Questions? - Thank you

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Appendix 2: Complete Consultation Summary of the Gulf of Boothia Community Consultations

Nunavut Community Consultations on the results from the 2015-2017 Gulf of Boothia Polar Bear Study

October 20-28, 2020

HTOs Consulted:

**Gjoa Haven
Taloyoak
Nauyas
Kugaaruk
Igloodik
Sanirajak**

Summary of Consultations:

A: Gjoa Haven

October 20, 2020

Time Start: 18:50

Time End: 21:15

Participants:

Enuk Pauloosie
William Aglukkaq
James Qitsualik via cell phone video chat
Simon Komangat
Jimmy Qirqqut
Roger Ekilik
Ben Putuguq
Jimmy Pauloosie
Ralph Porter Sr.
J. Skillings – GN-DOE
K. Metheun – GN-DOE
M. Dyck – GN-DOE
J. Ware – GN-DOE
Jacob Keanik - translator

- Markus introduced option to go over background of MC/GB or skip it? Question to the board---what would you prefer?
- Ralph: we don't need super detailed on the background so you can go through it quickly.

Background slides: review – our objective to provide new data for the co-management partners and the NWMB to make decisions on setting harvest levels. We are here to hear feedback.

Study methodology: review, no questions

Community participation: review; no questions

Study design: review; no questions

Study design analysis: explained why the amounts of data matter for getting the results; no questions

- Ben: Years ago, when the moratorium came, I was one of the Board members back then and remember it. We used to go all the way to Prince of Wales Island before the quota system was put in place to harvest as much as we could.

- Markus: thank you, I'd like to hear about the ice back then.
- Ben: it's totally different. There isn't any ice really.

GB Results:

- Willy—the board isn't that interested in Gulf of Boothia because it is very rare that we go there to hunt. The ice conditions are too dangerous. Young hunters do not have any knowledge about that area. We are not that interested in this population.
- Ralph said if a bear doesn't want to show up, you can't see it. It is the knowledge of our ancestors.
- Ben: when our young hunters go to Gulf of Boothia, they don't have a clue about the ice conditions and it's very dangerous...the ice can just take them.
- Willy: that actually happened with a sport hunting group—the ice split and took the hunters out to sea.
- Ben: the hunters that were taken the sport hunters, I was there, and I managed to get home before the ice split. The younger generation doesn't have a clue how the ice conditions.
- Markus: I can go over GB very quickly. It is my job; I have to tell you about it.

GB Results/TAH recommendation: Because its stable and there are no changes that we can detect, we are recommending that there is no change to the TAH. If the communities feel differently—want more meat or public safety is an issue, then that is an opportunity to discuss how the TAH could change.


- Willy: It doesn't affect us.
- Markus: That's pretty much it for the presentation for the MC/GB. Are there any questions that the community here has with regards to GB/MC/LS boundaries and movements? We can hear these comments and try to see if they can be incorporated into our future work. We are doing LS and are going to be analyzing those samples in the next 4-6 years and we will let you know what we find—were there MC bears up there that we marked in 2014-2016.
- I know there is no desire from this community for collaring, but there are some communities that are interested in movements because they are wondering about climate change, increased development, increased shipping. For example, NTI approached me once about impact on bears from a development project, but

I couldn't answer those questions because we don't have movement data. For now, maybe this is okay, but this may be important in the future.


- If there are specific questions from the communities or specific areas of interest, bring those forth to the regional wildlife board/NWMB priority—those priorities help the GN determine how they focus their resources and money along with our mandate to get updated information for the polar bear subpopulations.
- **Question Simon:** Peter DeGroot seems to be doing a lot of research in the last 20 years. What does he do with you guys?
- **Answer Markus:** He works for a university, not affiliated with GN. He is part of a big project, multiple universities, maybe 25 organizations supporting BearWatch – Peter is involved, but he is not the lead. It is looking at genetics, bacteria, developing a kit for fecal sampling. A lot of different projects but Peter is a tiny part of the bigger project. The GN supported Bearwatch because there are bits and pieces of this project that could help for management that we could not collect alone.
- **Question Willy:** Is this work they are doing helping us? It is helping the government...but what is it doing for us?
- **Answer Markus:** the samples are still being analyzed...from the many samples they are trying to determine if it's possible to see contaminants and genetics. As the GN, we could not do it. The idea was to be able to harness the resources of universities and their labs to gather information and develop potential new methods for non-invasive health monitoring of the bears.
- **Answer Jasmine:** also, we don't know if what BearWatch has proposed will work –it was an idea that had to be tested. The idea was to develop less invasive technologies and methods, but will it actually work? Don't know.
- **Question Ralph:** so whatever Peter does it is not affiliated with the NWMB?
- **Answer Markus:** that is correct. Whatever Peter does is not counting bears and they are not primarily responsible to providing info to NWMB for management decisions.
- Willy: they are mostly doing contaminants, health, same as they are doing with the fish.

- Roger: Hunting bears in GB is too far—takes a lot of gas and people don't go there. Mostly MC.
- Markus: the GN is not responsible for allocation—the KRWB does that. For GB, all 3 regional wildlife boards are involved for GB—they all have to talk to each other. That requires a lot of discussion, I think. I think it requires involvement of all the RWOs.
- Ben: Bears in MC once it starts to freeze up, they start to come to town...that's because they are not being harvested due to the moratorium. Even during the summer, there are bear sightings now.
- Markus: Also, probably not that much noise and traffic going out, so they aren't afraid.
- Ben: it's because they aren't being harvested or disturbed by machines. They are even sighted far inland on King William Island. The population is healthy.
- Willy: Another thing is that between here and Taloyoak, there used to be a lot of traffic between the two communities even in the spring. Lately they have been seeing bears between here and Taloyoak. Seeing a lot of bears tracks, even wolf and wolverine around Clarence islands. Packs of wolves on the sea ice – Markus you've seen the wolves come into camp, two of them. Even going up to Boothia. But there are packs of wolves and they can also kill polar bears, from experience.
- Markus: the wolves could have an impact on the offspring of polar bears
- Willy: bottom line is that we saw a lot of bear sign and the 3 bears we got were very healthy and over 10 ft.
- Markus: that lines up with what we are seeing –that is really nice to hear.
- **Question Simon:** you were going to talk about sea ice Markus?
- **Answer Markus:** I think the way we looked at sea ice was that we included it our body condition analysis and how that might affect the body condition. We know from satellite imagery from last 30 years that ice has changed. We didn't do full analysis from satellite imagery or ice analysis on ice specifically. I don't know if that's answering your question.
- Simon/Willy nod it was sufficient answer

- Ben: Used to have icebergs that even have cracks and there used to be abundance of seals and there were ice packs and they were easy to spot. Nowadays the bears are moving more because there are less icebergs –we don't see the icebergs anymore.
- Willy: we don't see much ice anymore.
- Markus: agree with the satellite imagery—barely any ice in MC channel in fall
- Willy: people that used to go harvest belugas to Prince of Wales, but as soon as they get westerly winds the ice would get pushed in and they'd be stuck for weeks---they have a hard time getting through because of ice, but now no problem...20 years a big difference in sea ice.
- **Question Markus:** that's the other question I have---if this northern area is free of ice, what's going on with bears? Do they stay on the little ice? Do they go on land? What do you guys see when you travel in the summer?
- **Answer Ben:** northwest king William island, bears would be swimming miles away from sea ice and can catch seal in open water. They're still hunting even if it's free of ice. They're always traveling even when it's full of ice.
- Willy: During the summer months, July/Aug prince of Wales, I stood and counted 33 bears in Cunningham bay—this happens when the beluga whales are coming in with their calves.
- Markus: to Willy---we tried to figure something out with you remember?
- Willy: polar bears going after belugas staying in the mouth of the bay to catch them.
- **Question James** (via video on smartphone): Going to that old MOU, remember we had that issue with Taloyoak with them “stealing” our tags when the TAH went to 12. But maybe this is a RWO issue.
- **Answer Markus:** You are correct, this is definitely a point to bring up with the RWO.
- **Question James:** I'm trying to make the numbers more equal. I'm just trying to make the communities have a fair trade. If we want a higher TAH is that NTI?
- **Answer Jasmine:** that would be the NWMB to raise the TAH. The RWO decides how to allocate the TAH.

- **Question Willy:** Why is Taloyoak involved in the TAH for MC when they were not involved when we signed the MOU. Taloyoak can harvest from MC but Gjoa can't get to GB. What are bears considered when they are harvested—MC/GB
- **Answer Markus:** The boundary goes right through Taloyoak
- Willy: so, if Taloyoak has a defense kill is that considered MC
- Ben: there was a big male harvested as defense and counted as GB -- happened last year
- Markus: that is something that Kevin/Jack look into
- Kevin: okay
- **Question Jack:** isn't within 30km of the management unit a buffer zone?
- **Answer Markus:** yes, there is a 30 km zone that they can go on both sides.
- Willy: to board---do you have any concerns on bears?—time to ask
- **Question:** ---is there going to be  other polar bear survey again some time soon?
- **Answer Markus:** that is a very good question---we have seen with our experience that having these long empty data periods of many, many years, it makes analysis very, very challenging. Not just in MC, all the populations this is a struggle having these long gaps. That was the old system because it worked for money resources, bears are long-lived, and it was the management and monitoring plan initially, but now we have realized that 15–20-year gaps are not good for analysis. Ideally, we'd like to be back in a few years for a one-year effort to sample bears in MC. That would help us get better data and get better estimates for survival. That is where the HTO comes in—if you make it a priority and identify it to the RWO and NWMB---say it's not okay to have long huge gaps for population assessments---that helps then us and the GN to make our case to allocate time/funding.
- **Question Kevin:** question regarding the 30 km buffer zone – where did that come from?
- **Answer Markus:** that was originally from the MOU—because bears don't respect boundary and hunters may not have always a precise location.

- Willy: like the Hadley Bay population and with NWT
- **Question Jack:** does that get carried forward from the MOU into the new polar bear management plan?
- **Answer Markus:** not sure, probably, don't have it memorized, can check. Just want to thank you for allowing us to come in person and giving us your time. Just because we are talking here, doesn't mean that we have to end the conversation...we are open for contact and can help any way we can.
- **Question Simon:** how often could you come to Gjoa Haven?
- **Answer Markus:** 2013 and now 2020 – so maybe twice in 7 years? We rotate through the 12 subpopulations – we have a better chance to make it to the regional AGM and we are certainly open to joining via video conference on an HTO meeting if you have interest or questions for us.
- Jasmine: Unfortunately, you are looking at all the biologists for Nunavut. What we'd like to do personally isn't always what we can do realistically. We would ideally be able to make regular visits and updates for all communities.
- Simon: reason I'm asking is because we've been waiting to hear since 2017
- Markus: I'll tell you the same thing I told Cambridge Bay—it was a long time to wait for these results I admit, it is not ideal --- MC was challenging because the data was so sparse, analysts really struggled to analyze the little bit of data, ransomware, and COVID. I wanted to be able to stand behind these numbers and support them and so it took longer than we predicted. We apologize for that.
- **Question Wally:** another comment/concern I'd like to mention is did you do MC then to GB? --
- **Answer Markus:** we did them at the same time
- **Question Wally:** could you do a survey in the summer?
- **Answer Markus:** No---because there is still ice enough for bears, but not enough for pilots. The pilots don't want to fly over open water and bears would still be in the water and on ice pans during that time—we would not be able to do proper coverage of the area. You'd have to have really low ice and bears would have to be on shore.

- Wally: it is good to hear that we are having a recommended increase and the population is healthy. Of course, we'd like a bit more. A lot of  activity and population is increasing.
- End of meeting

B: Taloyoak

October 21, 2020

Start: 17:45

End: 20:15

Participants:

Joe Ashevak, Chairperson HTO

Tommy Aiyout

Bruce Takolik

Jayko Neeveacheak

Kovalak Kootook

J. Ware – GN-DOE

M. Dyck – GN-DOE

K. Methuen – GN-DOE

D. Anavilok – GN-DOE

- Joe: Board wanted to know whether there was going to be a public meeting and were under the impression that there was going to be a public meeting. It appears that Jimmy the manager forgot to bring this up to the GN (Joe asked Jimmy if he let the GN know that the HTO wanted a public meeting and Jimmy indicated that he forgot). *Note, the GN did not receive any notification or request for a public meeting prior to this meeting.
- This is very important to us and we can wait—sometime this winter would be good. We really want this and have been waiting a long time. M'Clintock is very important. Is this a possibility to do?
- Markus/Jasmine – This is possible to do, but we don't know if it is likely and we cannot commit at this moment because we need to discuss with our supervisors and figure out a schedule.

Background slides: review; no questions

Study design/methods slides: passed around biopsy dart; answered a few questions regarding how the dart sampled the bear. No other questions.

Community participation slides: review; no questions

GB results:

- **Question Joe:** what is the TAH for GB?
- **Answer Markus:** 74
- **Question Jayko:** are you guys getting new equipment –like cameras and stuff to take pictures that have the built-in ability to see how big the bears are?
- **Answer Markus:** I think I know what you're saying, and it might be a bit more complicated to determine actual size from a picture -- we would need to know altitude, distance, focal length. It might be possible to calculate size and do that. We could look into that.
- **Question Tommy:** talking about quota –all those communities Gjoa, Igloodik, Sanirajak, What the quota like before MC was shut down?
- **Answer Markus:** it was 42 until 2003/2004. It was increased to 74 in 2004/2005 because the study in 1998-2000 showed ~1600 bears instead of 900. I was around at that time of the moratorium in MC that communities were given a few tags for GB to preserve traditions during that moratorium and low harvest in MC.
- Joe: that was a big jump from 42 to 74.
- Markus: yes, I don't know how the recommendation went, but it seems that the 74 has been okay because the population has remained stable, though there may be some environmental changes that have helped the population---like the sea ice thinning/reduction in multi-annual ice and becoming better habitat for fish/seals/algae/etc.
- **Question Jimmy:** no colons being collected anymore?
- **Answer Jasmine:** correct, that was a collaborator project and they had funding for only a set number of years. That funding has run out and now they are working on analyzing the data. I am not sure when reports/information will be ready, but reports will be sent to communities with what they find.

- **Question Jimmy:** about credits? If we want to have a sport hunt, can we use our credits for sport hunts?
- **Answer Kevin:** Yes, that is not a problem. However, keep in mind that we haven't approved any outfitter licenses due to COVID. But we can help support you for that if you have questions. Not much going on with sport licensing this year still with COVID.
- **Question David A.:** with the feces and Peter DeGroot study ---maybe ask the HTO to make sure there was approval – we're not sure there was approval.
- **Answer Markus:** I'm pretty sure that all Bearwatch research had permits—they would have gone through our department.
- **Question Kevin:** do you know when that permit expires?
- **Answer Markus:** I'm not sure—probably multi-year
- Kevin: during the research permit review period that is a good time to bring up any concerns or comments---that is the time to bring that forward and decide if you support. If you don't say anything, it is assumed to be approval from the HTO.
- **Question Bruce:** Is it mostly the GN that counts bears or do other people do it?
- **Answer Markus:** mostly it is GN, but sometimes we have to have help because it is only me and Jasmine. There are a few people that have lots of experience that we bring on to help out on big projects. I'm in charge of the program and I only get people with experience to do the work. And there are locals involved—it's not just the biologists.
- Following the meeting after Jasmine/Markus left, Kevin remained for other agenda items and it was mentioned again that there was **a lot of disappointment that the public would not be hearing these results**. Kevin reiterated that it appears this was not communicated to the GN and the biologists were not able to plan for this. Tonight, was the first it was brought up about the desire for a public meeting.
- End of meeting

October 22, 2020

Start: 18:50

End: 21:20

Participants:

Athol Ihakkaq
Jesse Apsaktaun
Mariano Uqqaraluk
Columban Pjuarajok
Mark Kutsiutikku
James Nasalik
Ema Qaqqutaq from KRWB
J. Ware – GN-DOE
M. Dyck – GN-DOE

Introduction and Objectives:

- mandate is to provide this information to co-management partners. Ideally, I would have liked to have both the science and IQ studies come out at the same time---unfortunately COVID impacted the IQ study researcher's ability to finalize the study at the same time.

Background:

- background of studies from 1970s to 2000. Heard from communities from last 3-4 days is that there have been a lot of changes in the environment and sea ice. Our obligation is to get new information to not just the GN, but also hunters, HTOs, RWOs, and to NWMB because they need the information to set the TAH; no questions
- The question that was important at the time—number of bears can be answered by the biopsy darting. However, with this method, we cannot answer questions about movement or industrial activity.

Community participation:

- incorporate the input from HTO/hunters to help us know where to look for bears--where were good places to search; no questions

Study Design/Methods: review; no questions

Study Design/Analysis: review; no questions

Results: shift in distribution? Why are there changes in the bear observations?

- Ema: that area in committee Bay was usually open water in 1998-2000
- Athol: Yeah, that is often open water near the floe edge

Results: body condition? Any thoughts or similar observations of you guys as to bear fatness? Are you seeing any skinny bears? No real comments---board seemed to agree

Results: reproduction – key measures we look at to help compare from old study to new study or to other populations

- **Question Jesse:** have the number of Coys per adult female gone down because there are more females in the population now than 1998-2000?
- **Answer Markus:** can't remember off the top of my head---will have to consult the report, but my memory is that the number of males has gone down slightly---likely because of the 2:1 harvest ratio. Females may have increased slightly.
- **Answer Jasmine** – cited report for female proportion – 57% in 98-00 and 61% in 15-17. That is in line with the 2:1 male to female sex ratio—that's why it's not 50:50.

Results: survival; no questions

Results: growth rate; no questions

Results: abundance; population is stable, even with changes in environmental changes. This is good news. This is a collective accomplishment among the hunters and government in managing this population.

GN Recommendation: we are not recommended a change in TAH.

- **Question Ema:** would you recommend to SARA to down list?
- **Answer Markus:** there isn't anything to down list because they look at polar bears as a whole. SARA and COSWIC looks at these data for the next assessment. The next assessment will be likely in 2025—I provide this information to them. Plus, this information not only goes into Canadian assessment, but also internationally. I am defending the Nunavut polar bear numbers internationally. This is good information for the outside world. However, it is important to remember to that we, me and you, we cannot know for certain what the future holds---what do the environmental changes impact for bears do in 5, 10, 20 years. What do the communities want and feel? There are different communities in Nunavut that note public safety, levels of social tolerance, I hear the communities say those things. It is important for the community to come up with what you want to do with this population---having a management objective. The decision you make now, always keep in mind to keep the future in mind.

Shows video of biopsy darting

- One more thing to mention to be fair since I've mentioned to the other communities. This is about movement....I respect that communities and HTOs do not want collaring or handling. I have had, in the past, organizations have asked about impacts of development on polar bears, but I could not provide that information because we do not have it. There is no pressure from me or the GN for collaring, but it's important to think about what questions you have and the information you need---describes benefits of collaring.
- I know that we have not been able to visit communities and I regret that. You are looking at the 2 people, sometimes 1 person, and we can't be there or everywhere.
- Jasmine: also, as the future unfolds, if there are priorities from the communities, bring those forth to the RWO and NWMB priority meetings because the GN uses those to help determine how they allocate funding. We have a mandate for abundance, but for other priorities, knowing what communities wants is very helpful.
- Markus: addresses why it has taken so long for us to get here with results. DNA analysis, finding old samples, ransomware, COVID
- Another thing we learned is that having long gaps of 15 years makes it very difficult to get survival. Doing one more year of marks/biopsy sampling would be helpful, maybe 5 years.

Questions:

- **Question Mariano:** did you see any bears that were wounded or sick?
- **Answer Markus:** in 3 years, I haven't seen any sick bears and no dead bears. I didn't see any dead cubs.
- Mariano: We had 4 bowhead whales die and was wondering if the bears were sick from that---not sure why the whales died.
- Jesse: going back to the topic of collars, I like the ideas of perhaps of collaring some bears because I do like seeing scientific data because it can tell a story. I'm not pushing back against IQ. But I like to see the procedure – what are the pros and cons --- how many bears would you collar. I would want to see the positive and negative impact. Because it would be good to see where the bears

are traveling. In the past 3 years, we are having bowhead whale issues since the cruise ships. Is the Northwest Passage going to affect the bears?

- Jasmine: I feel like the IQ tells a story and the collars tell a story too –they together, tell a bigger story.
- Jesse: We need to get our residents to understand the positive and negative of bears. For example, if we have 10,000 bears and we collar 10 bears, what are the negative effects on those? I would recommend you providing a pros and cons. pamphlet
- Markus: Would it be helpful just to have a document, but that probably leads to more questions....it might be helpful to have a chat after you
- Athol: the Baffin area with the mine---they're going to put a shipping route in--- that is going to affect the bears—we know that.
- Jesse: It's like we need the scientific data because we don't live out on the land like our grandparents did...I live in settlements 99% of the time. We have to educate ourselves and the future---like the shipping lanes.
- Markus: what you're exactly saying is similar to Baffin Bay and Kane Basin--- communities saw climate change and wanted to know where the bears were going and what denning was doing. We worked with them and put out about 10 collars every year, a total of 30-35. And the data are huge
- Athol: the IQ and putting the collars together. I agree with the collars for the future.
- Markus: we are doing the LS starting next spring. We can maybe have communications to see what could work with the HTO. We have 3 years – maybe we could put a few collars out depending on your questions.
- Jasmine: to Jesse – maybe you could write your specific questions/concerns and that would help us design a study and collars.
- Mariano: I don't see any huge bears anymore 14-15ft bear.
- Markus: These are good observations to provide to Pam---that's the type of IQ that we need. When another study done in a few years, maybe there are different sizes and you document them.

- After board members left, GN representatives gave KRWB representative the MC presentation so that he also was informed about the study results.

D: Naujaat

October 26, 2020

Start: 18:10

End: 21:50

Participants:

NTI: Paul Irngaut

QWB Chairperson: James Qillaq

NWMB: Denis Ndeloh, KJ England, Steve Mapsalak

GN: Markus Dyck, Jasmine Ware, Jon Neely, Peterloosie Papatsie

HTO: Hugh Haqpi – acting manager

Paul Angotituar

David Ammaa

John Ell Tinashlu

Peter Manniq

Dino Mablik

Mark Tigumiar – vice chairman

- Meeting started with introductions around the room
- Presentation
- GN representatives stressed that the IQ study is ongoing and has been delayed due to COVID because its results depend on ability of researcher, Pam Wong, being able to verify interviews and speak with interviewees. Ultimately, together the science and IQ will all go together to the NWMB for decisions for a bigger picture. Looking for a good discussion among everyone – we want to get feedback on what we present this evening.
- Paul Irngaut: Informing the group that NTI wasn't on the first leg of the consultations and explaining that he and James (QWB) are here as observers.
- Markus: asks board if they want to do background on GB and they agreed.
- **Background slide review:** no questions
- **Goals of Study/need for new info:** no questions

- **Question Hugh:** the boundary that you first showed is the boundary? What are the new boundaries that you show?
- **Answer Markus:** *reversed to previous slide showing 1970s boundary*
Biologists back in the 1970s/Govt of NWT/local communities outlined as where there are a lot of bears and because they didn't know much about numbers of bears for any areas, they decided to survey this area. So, this circle (*shows red circle) was in a way arbitrary.
- Paul I.: can I explain a little bit? Explains the role of the Range States, Polar Bear committees like the PBAC/PBTC.
- Markus: Further explains the management unit boundaries---The brown lines show boundaries based on movements of female bears with collars that were put on bears in the 1980s-1990s.
- **Question David:** Question about the boundaries -- that NWT boundary (*red circle) that is pretty big --- do the tags depend on the boundaries?
- **Answer Markus:** For each of the areas, we know how many bears there are in each of these areas and the NWMB has set a TAH based on that. Based on how many bears there are in total and based on what the management objective is --- some communities want a population to stay stable, so you can't harvest as many if you want to keep population stable. From the total # that is determined the TAH. For Gulf of Boothia, NWMB decided 74 total allowable harvest and then the RWO decides how the tags get distributed.
- Denis: I think what he was asking: Is there a relationship to the size of the management unit to the number of tags?
- **Answer Jasmine:** No, the size doesn't tell you how many bears there are. Some areas are quite big but don't have many bears. MC/GB for example. Tags are based only on how many bears there are in an area.
- **Study method choices slides:** Discusses how alternative options to traditional capture mark recapture were presented during initial consultations in 2013 (aerial survey, DNA biopsy). Reviews biopsy darting and how it works. Shows biopsy dart, passes it around. Explains how the method differs from traditional mark recapture and why we don't get as much data.
- **Question Hugh:** does the genetic DNA biopsy indicate age and health of the bear? Has there been any disease since the start of the mine?

- **Answer Markus:** Lots of good questions in there. We cannot get the exact age because we do not have a tooth. We cannot see anything for contaminants—our sample is too small. And no disease can be seen other than a big injury on the bear because we are not handling or touching the bear. The hunters can report back if they notice something weird or sick with the bears, disease – fills in gaps that we have with the science study.
- **Community participation slides:** no questions
- **Study design slides:** no question
- **Question:** From the 70s study to now --- how do you see the health from then to now?
- **Answer Markus:** good question---we are going to get to that in a minute---not really from the 70s cause we don't have tissue and samples from back then, but we were able to compare to the 1998-2000 study and we will get to that shortly.
- **Results:**
- **Question Hugh:** was there any changes in the biopsy based on climate change? Were bears getting fat, getting skinny, any disease
- **Answer Markus** – We can't see disease from this type of study. We rely on hunters to bring in anything that looks diseased. Body condition we do know, and we will talk about that in a couple of slides.
- **Review of shifts in distribution slide:** Based on where we observed and sampled bears in 2015-17 compared to 1998/2000, appears to be a distributional change---maybe because of sea ice and seals? Bears have likely adjusted to these changes
- **Comment:** maybe more narwhal carcasses?
- **Peterloosie:** Those 2 high concentration areas in 2015-2017 – are two polynyas. Usually a polynya with open water around these areas that were empty of bear observations in 1998-2000.
- **Question Markus:** Do hunters notice changes in ice? How does ice look when compared to 20 years ago?
- David: The ice is very thin and more drifting snow---it's not compacting and not making ice. Not forming properly.
- Markus: how is that for seals?

- John: When it is very thick, it is good for the seals. When it is very thin, it is not good for seals.
- **Results: Body condition**
- Comment: Bears back then were skinnier so this fits with what you're showing us.
- **Question Hugh:** Have you noticed difference in temperature and its effects on body condition? As in warmer temperatures make bears skinnier and the cooler temps get them fatter and ready for hibernation?
- **Answer Jasmine:** we haven't looked at that, but we could easily see what the average temps were during the field work for each of the study years and compare.
- Peterloosie: I think that the seal pups are getting bigger – saw one that was 3 ft long –huge. Maybe they are bigger and feeding bears.
- Jasmine: Describes thinning ice and changing productivity of ecosystems with decreasing ice thickness and more dynamic ice being potentially helpful for bears because the ecosystem is boosted in productivity (algae, fish, seals, bears). Theory because we do not have data on seals or fish for these areas. Markus is working with DFO to try and get information for seals.
- Markus: describes efforts to get seal info with DFO. The Lancaster Sound is where we are going to try to get seal info as a start.
- Hugh: I'm from Baker Lake where there are no polar bears. Back in the 60s and 70s, there were 4 or 5 bears caught super inland --- the bears were migrating to the west. Cause looking at LS and GB and comparing the distance from Gjoa Haven and Hudson Bay is about the same distance.
- Markus: There are some bears that move a long distance. Gives a couple of examples.
- **Question John:** I have a question about scientists---do you keep in contact with other provinces, territories? Or do you not talk to the other scientists?
- **Answer Markus:** There are 8 populations in Nunavut that are shared between jurisdictions/provinces/territories that I work with when there are studies – mentioned Baffin Bay and James Qillaq working with Greenland. Also, Western

Hudson with Manitoba. All the jurisdictions meet once per year, more frequently on the phone, so definitely in contact with other scientists and jurisdictions.

- I also present information gathered in Nunavut to international community and defend the Nunavut harvesters and Nunavummiut. We exchange this information with different countries.
- Paul I.: talked in Inuktitut for a while and explained he reviewed the PBTC and polar bear advisory committee and status table. That you guys meet once per year and review the polar bear populations.
- John: conversation in Inuktitut with Paul I.
- Paul I: John was asking about the ECCC ongoing mark-recapture study in Western Hudson and the effects of being handled/lack of hearing. At the Advisory Meeting where ECCC is a member, we voiced our concerns with handling bears, but also mentioned that that handling occurs in Manitoba which Nunavut has no control or jurisdiction over.
- Inuit have been opposed to handling of wildlife of any kind, especially polar bears. We have pushed for biopsy darting. We have made this known to our counterparts in Manitoba and ECCC. They know our concerns and to date we haven't seen any changes on their part.
- Peterloosie: I think John that was saying is that the bears are going partly deaf after so many helicopters getting close and then landing next to them. Then the partially deaf bears are moving north into Nunavut and causing issues.
- Steven: you came here to do a presentation to do Gulf of Boothia; I think that maybe we stick on topic.
- Markus: We are happy to answer to any questions and it's not like we are here that often so we are more than happy to entertain any questions on any topics for as long as you all want.
- Break --- 10 minutes ---
- **Reproduction slides:** coys/yr/igs – offspring per ad. Female
- **Question Hugh** - Are there more cubs with females in old study?
- **Answer Jasmine** – there are a few that have 2 cubs more than just 1; some hunters see 3 coys, none were seen during the study period, but maybe recently this is happening more?

- **Question Peterloosie** – reproduction is low with 1.6?
- **Answer Markus:** I know it looks low, but in context, it is not a low number. That is actually very good reproduction numbers in Gulf of Boothia *explains values that would be concerning. The observation you see represent localized observations; our number is averaged across the entire study area at the same time so *all the moms with single cubs and twins get counted and averaged.
- **Question Hugh** – pb numbers are low with low seal numbers?
- **Answer Jasmine** – we do not have seal numbers in Nunavut, likely it is the case when seals are poor, bears likely do not reproduce.
- **Survival slides:** -- no questions
- **Pop growth slide** – no questions
- **Abundance slide** – no questions; describe the range of the number and why there is a range – uncertainty in science because no one thing can know all. It reflects that there are likely biases and errors in places, that is why the result produces a range of numbers rather than an exact number.
- **Further questions slide:** other questions that the hunters/communities have regarding boundaries, denning, development (mines, shipping) --- if these become concerns, methods such as collaring would likely have to be employed. IQ and DNA biopsy can inform parts of the puzzle, but each method provides its own information.
- Markus: further questions – do you see bears staying the same?
- Comment: feels like they are increasing around.
- Markus: That's definitely true – between 1850-1935 that's when a lot of whalers came to Canada/Nunavut and bears were shot. Not many bears in the 1950s and 1960s –but definitely more bears now.
- John: even berry picking, we have to bring our gun and be a safety guide
- Paul: Can't even go camping anymore.
- Markus: that's good information – need to talk to Pam and see if that's helpful to include and help us to understand the bigger picture – have bear distribution changed? ---could ask that for Pam to include

- Hugh: population going up, bears come more to community. IQ says there is bear movement and that is true – larger bears move farther out. Now and then, there is sometimes a 12-footer, but average is 8 ft.
- Markus: do you see you big bears?
- Peterloosie: They are talking more Foxe Basin, not so much Gulf of Boothia for those big bears
- **GN Recommendation TAH slide:** with the info the government collected, and with the objective to maintain the subpopulation, we are not recommending a change in TAH.
- **Discussion with group about TAH Increase and Tag Allocations – originated organically from group and created lots of discussion with NTI, NWMB, QWB, and GN offering information on processes, options, and clarifications for how TAH increases or reallocation among communities may occur.**
- **Question:** about harvesting, can we have more than 5 tags?
- **Answer Markus:** There are a few options. The government is not recommending a change. However, depending what is presented to the NWMB, there are options for the Regional Wildlife Organizations and communities to talk ---have to be on the same page – the communities have to have the same objective –keep pop same, higher, lower. Then, the RWO, supported by HTO's needs, makes their submission to NWMB – may or may not be the same as the Governments.
- We have to understand that this is not black and white, we know that the population has stayed the same, but I don't have a crystal ball to know what the future holds. When the decision makers (RWO, NWMB, etc) increase the TAH, there is a risk that the system that you could screw up the system --- it is a question of how much risk are you willing to take. Are you willing to take a risk that is very high --- say TAH of 90-100? – but that is very very risky. We want to make sure we provide for future generations – that is our mandate in the Government. But it is not for us to say what the management objective for a population should be. This is a decision for the communities to think about. It is not an easy decision.
- Another option is to bring forth a request for reallocation to the Regional Wildlife Organizations– based on concern or need. The RWOs can redistribute the tags at any time—does not need to be a new study or anything like that.

- Anything that is not clear, contact us, we give you information. Our door is open.
- Hugh: Looking at TAH by Minister, maybe redistribute the tags ---like Coral Harbour. Difficult to talk to Arviat, Coral Harbour
- Markus: You can only discuss reallocation of tags with the communities that harvest from the same subpopulation. So, Gulf of Boothia communities. And Foxe Basin communities (Coral, Cape, etc)
- Comments: Naujaat suffering defense kills and impacts on their quota from hunters coming from Rankin and Arviat.
- Markus: we have to take a look at that and see. But harvests come off the hunter's home community – part of the Polar Bear Management Plan. MOUs are no longer in force
- *surprise comments from group indicating they are not aware of the Polar Bear Management Plan and have not seen it.
- Markus: *Explains the process the Polar Bear Management Plan went through before being ratified by the NWMB and Minister* --- The Polar Bear Management Plan was accepted after going through a multi-year process in which all HTOs across the territory were consulted. *NTI nods agreement* RWOs were consulted and part of it too. All partners were involved and – drafts sent back and forth and back and forth. Public hearing in fall 2018 and all HTOs invited.
- Denis: wanted to provide clarification for what Markus is talking about for the Polar Bear Management Plan – the wording about hunter's home community is part of an appendix that is approved on an interim basis right now.
- KJ: it is on the NWMB website.
- **Video of darting:** clapping from John – *not sure if sarcasm or true support of method/video*
- **Question Peterloosie:** what do you think of the 1:1 harvest ratio? I think that it will increase polar bear populations in the future.
- **Answer Markus:** This is something the communities wanted, maybe not every community, but the majority. Also, in the Polar Bear Management Plan hearings. There is a concern because the TAH was not adjusted when Nunavut went to 1:1. The TAHs were set to protect females and maximize sustainable harvest. But, when 1:1 went into effect, there is a chance that more females would be

harvested and could be riskier. If there is a concern, the GN will bring those concerns to the NWMB. Just because it's 1:1 doesn't mean it has to stay that way if there is a conservation concern with consultation with community.

- Hugh: there was a concern we would like to know the male/female ratio, we want to have balance and not drive the population down and what happens with climate change in the future is not really known.
- Markus: When there are concerns, hunters raise the flag – like MC not being able to find males – that was a trigger to lower harvest in MC and to do study. We rely on hunters to provide information because it's not possible to do studies/surveys frequently – costly.
- **Question Paul I.:** Asking how much harvesting done from here.
- John: Yes 5
- **Question:** That's why I ask if we can get more than 5. More people are hunting up there. Would like more tags. And more people go camping to hunt in March. – mostly people go to the island in Committee Bay (Peterloosie – about half the hunters go to the big island in Committee Bay).
- Markus: You don't have to wait for a new study, you can raise this with the NWMB with information or bring up with RWO to reallocate.
- John/Paul: conversation in Inuktitut -- summarizes that HTOs can allocate half a tag for a cub – request has to come from HTO, then approved by someone, Superintendent maybe. Also, they have made requests to increase TAH to the KWB but haven't heard anything. We have a committee, under NTI, Nunavut Inuit Wildlife Secretariat, the chairs sit on the committee and we can bring it up at the next meeting.
- James Qillaq – adds comments in Inuktitut
- Comments – Rob Harmer explained procedure in spring, and we are just starting to put it on paper and we can't just have ask – we have to go through process.
- Paul I.: Six communities harvest from GB so it seems that the allocation isn't exactly fair. But if want an increase in TAH, will have to bring to RWO which brings it to NWMB. If you want a re-distribution, then RWO has to do that – KWB, QWB, KRWB – they all are responsible for allocating GB.
- Steve M.: I used to be the Chair for the HTO when the MOU, there was a decrease in the TAH, Mitch Taylor was the pb biologist. There was a quota of 3

for GB for Naujaat. When the quota went to 74, Naujaat went to 5. The way the tags are allocated is done by the Regional Wildlife Organizations – it's up to them. But they have to follow the TAH. *note – not clear what this reduction is referring to. MD is not aware that there was TAH reduction for GB while Mitch Taylor was working.

- **Question:** Do you know when this will be going to the NWMB?
- **Answer Markus:** We have to finish consultations first and we maybe are done by Wednesday, and we could get back to the office and be told to get something ready for the NWMB. I don't know though.
- Jasmine: And just to reiterate, even if nothing ever goes to the NWMB and this study never happened, the concerns and requests for redistribution of tags can go to the Regional Wildlife Organizations at any time. Technically, they can reallocate each year the tags. They usually don't but it is within their rights/responsibilities.
- Steve/John Ell/James: conversation in Inuktitut
- Denis: assuming the request comes from the GN to the NWMB at some point, what is going to happen very likely, because it is 3 regions and NWMB cannot set a TAH Nunavut-wide --- the Board will determine what the TAH is for Gulf of Boothia. The NWMB will then send a letter to the 3 RWOs and ask to know how the RWOs are going to share it. The RWOs will meet and decide and then provide that info to the NWMB and this will be sent to the Minister. This is also when the communities can have their voice heard.
- Paul I.: that is why I mentioned the committee at NTI that we will bring forth this issue. If communities want to increase the TAH within the already set TAH, then that is the RWO jurisdiction.
- John Ell: conversation in Inuktitut – about Foxe Basin – *not sure what was said. Left abruptly*
- Paul I.: I was explaining that communities get together to discuss and agree on what they want—if they bring that forth, it is much more powerful than a single request.
- KJ: because there are so many communities and regions are covered, the easiest option would be to request for a transfer of credits for a short-term increase in quota. Another option would be going to the RWO, to advocate with

the other RWOs, for a change in allocation. Thirdly, work with all the RWOs and advocate for a change in TAH.

- **Question:** when do you plan to study Gulf of Boothia again?
- **Answer Markus:** With the previous study plans, studies were done every 10-15 years. With this analysis, we realized that this long timeframe is too long. Makes the analysis really difficult to have that long period with nothing. We ideally would like to come back in 4 or 5 years after study completion to sample bears in the entire area, but only for a single year. This would put more 'marks' as we call them into the population and give us better understanding of survival, reproduction. Four to five years after the single year sampling effort, we'd do another full study—where we survey the entire area 3-4 years in a row. But that depends on what information is coming in --- from communities, or the environment. NWMB sets regional priority and makes list --- get what you think is important on the priority list. Helps the GN allocate funding and know what is pressing priorities.
- **Question Hugh:** would 4 or 5 years be enough for you?
- **Answer Markus:** we would do a single year, cover the whole area between April/June. We'd do this in 4-5 years. In 5 years, we need to put more marks out because the bears marked in 2015-2017 are dying.
- We cannot get a full population abundance by putting 1 year of marks out. There is maybe a chance if we do genetic samples in 1 year, there is maybe a way to update the abundance – but there is no guarantee because it will be the first time. We are learning as we go.
- Jasmine: noted the increase in time for DNA biopsy analysis. DNA analysis takes significantly longer than traditional mark-recapture – by at least 9-10 months.
- Markus: we are open to communication and work for you.
- Jon Neely: I didn't realize that defense kills from residents from other communities might be counted on your quota so we can look at that. We also have money in the deterrence budget – HTOs can apply for up to 10k for bear deterrence equipment – bear bins, fence. If a bear does damage your cabin, we have another program that can pay up to a few k for repairs and such. Talk to Peterloosie a bit tomorrow.

- Peterlooise: We applied for scare cartridges in early June – but we haven't heard.
- Jon: We can look into that – I wasn't aware of this application. I do apologize – I did not see that program application this year. That is something we will fix on our side. We will make sure that program works better for you.
- KJ: thanked the biologists and their work, difficult to get around – only 2 of them. Thanks to the HTO for community sampling program.

End of meeting

E: Sanirajak

October 27, 2020

Start: 19:15

End: 21:15

Participants:

NTI: Paul Irngaut
 QWB Chairperson: James Qillaq
 NWMB: Denis Ndeloh, KJ England
 GN: Markus Dyck, Jasmine Ware, Jon Neely, B. Grosset
 HTO: Lizzie Phillip-Qanatsiaq – secretary manager
 Jopie Kaernerker – Chairperson
 Danny Arvaluk
 Jaypeetee Audlakiak
 Sam Arnardjuak
 Zillah Piiallaq
 Cain Pikuyak
 George Innuksuk

Introductions around the room

Question to the Board re: background – Markus asks Board how much detail on background

Question: how much time with all the background?

Markus—material about 2-2.5 hrs but depends on interaction and how many questions the members have. I think it's beneficial to have the background so we can go over it.

Objectives of Presentation: reminds Members that the IQ study is ongoing for Gulf of Boothia. We are hoping that the information you have is provided to Pamela. Ideally, the science and IQ would be together, but COVID has prevented the IQ and the fact that Sanirajak has not had a Manager for quite some time.

Background review slides: no questions

Goals of study slides: Refreshed commitment of MOUs that new research had to be conducted for GB in 2015. Review goals including how sea ice changes incorporated – see how bears are doing as sea ice changes. No questions.

Study method choices slides: Refresh that DNA biopsy method was supported by communities back in 2013. The DNA biopsy method gives us information about the abundance. Reminded about drawbacks of biopsy darting. No questions.

Community participation slides: review, no questions

Study design/analysis slides: review, remind that hunters bring muscle and fat that can be used to address contaminants questions; no questions

Results slides...map with dots, flight lines....map comparison old vs new distribution – no questions

Question Jasmine – are you seeing bears evenly distributed like in the 2015-17 study? Didn't catch answer...something with Naujaat

Who was sampled slide – tells us some bears are moving between areas – no questions

Jasmine question -- Body condition slides – have you noticed fewer skinny bears than 20 years ago?

Comment: Maybe more carcasses on shore than other areas?

Hunters are only over in GB in spring only – bears are skinnier due to mating, Sanirajak only goes there in spring

Some people do not hunt bears anymore because the hides are not worth a lot of money

Reproduction slides – review; no questions

Survival slides, review;– no questions

Growth rates slides – no question

Abundance slide – interpretation slide – no questions

Questions slide – questions: walrus on top of ice in September – did bears get counted in spring down there?

Answer Jasmine – we sample them when there is ice in spring, when there is open water we can't sample really – too dangerous for flying

Question was more about FB – when we do FB we actually do it in fall, Aug and Sep.

Review of slides and questions...are there too many bears in GB, too few?

Comment: not too many bears hunted in GB, not too many sport hunts; COVID-19 likely not much sport hunts

Question – seal populations is having an impact on pb population? Under water sonar...might have an impact on bear populations

Answer Markus – explained NWMB priority list, work with RWO to have seal abundance and impacts on priority list; I can also ask DFO biologists to see if there is a desire for research

TAH slide – question-in the winter when the quota is not completed; traditional hunting and bears taste better in summer – can we hunt in summer.

Jasmine Answer – when you hunt is an HTO decision; The GN does not care when hunts occur; season is July 1 – June 30...all year.

Question: when there are more bears in summer, and there are sport hunters, how can we harvest more?

Answer JNeely – we normally distribute tags in fall, but tags can be sent sooner in the season to assist with sport hunts if you want to have summer hunts

Movie – darting.....

Question: When you are doing your research – have you seen the bigger bears? 12-14 feet or more?

Question Markus - In FB? Or GB?

Question: they move in March, Sanirajak hunts in spring in GB...where are they moving to?

We asked hunters to show but they could not tell because of the ice conditions, changing too much

Question: is that the same in Hudson Bay bears from Churchill?...assumed the question relates to abundance(?).

Markus Answer – there are different numbers of bears in the populations, and not every area that is large does not necessarily have a large number of bears.

No more questions - End of meeting

E: Igloodik

October 28, 2020

Start: 18:40

End: 21:42

Participants:

NTI: Paul Irngaut
QWB Chairperson: James Qillaq
NWMB: Denis Ndeloh, KJ England
GN: Markus Dyck, Jasmine Ware, Jon Neely
HTO: Jacob Malliki
David Irngaut – Chairperson
Gideon Taqaugak
Daniel Akittirq
Michelline Ammaaq
Joannie Alaralak
Salomon Mikki
Natalino Piugattuk
Loyd Idlout
Janet Airut - translator

Introductions around the room

Background slides: review; no questions

Goals of Study: review and reasoning for new research study – MOUs obligations for updated information and Total Allowable Harvest information to decision-makers – RWO/NWMB; no questions

Study method choices: review when initial consultations occurred in 2013. Balance between methods and the trade-offs between different method choices. Review that all HTOs supported the less invasive method. Describe DNA biopsy and passed around dart. Explained how skin sample and genetics works to 'mark' or identify a bear so that we can track it through time. No questions.

Community participation slides: Review; no questions

Study design/goals slides: review; no questions

Results: maps – questions – shift in distribution?

Salomon: answer – count up to 47 family groups in summer – count bears in summer would be better.

Jasmine – is it new to see more than 2 cubs; usually 2 offspring, but recently seen 3 cubs, a bit rare but seen

Question Salomon – Could you monitor in summertime? Is that possible?

Answer Markus: The area you pointed on the map is Foxe Basin and we do our monitoring in the summer there. But for GB the ice doesn't go away completely so we do it in the spring when most bears will be on the ice hunting and breeding.

Natalino – ice comes from aquu, ice transports animals, no more ice up there and around Moag Bay there are polar bear tracks, some come up to community (this past summer); not so much ice through Hecla and Fury strait

Salomon – are bears afraid of ships? Is it because there was a ship? Ship in Hecla Strait, ice breaker.....this summer there were lots of bears near the cabins

Comment: this summer saw lots of bears in that area, more than usual...during September

Question Jasmine – do hunters go in springtime to GB or mostly summer? Do hunters see GB much in the spring?.....

Michelline – recently less ice in that area, lots of tracks.

Paul I....shifting ice is likely;

Jasmine...if more ice is shifting, ice breakers are coming through, maybe this is a time to find out how bears are moving, maybe if it's important to the community?

Gideon – if there is less ice, less polar bears, but we do not see a negative effect yet

Salomon – bears are usually where there is food; ships were dumping in that area and the seal moved; the seals went further up, maybe bears are moving up there; same in Lancaster sound across Arctic Bay

Natalino – if area is researched the funding is always a problem; excuse is always there is no funding available.....

Markus/Jasmine – nod in agreement that funding is always a challenge for big projects

Question Salomon – why are you not searching up there – points to BB and KB...bears are likely moving up there and are coming down into our areas?

Answer Markus – we did sampling and research in Baffin and KB, and we had collars, but we are doing LS in 2021 for several years; maybe some bears move between MC/GB and we pick them up –

Jasmine – we are doing LS work in spring—same as MC and GB so that also might help to find out how/where they move/are at that time of year. Sampling at the same time of year gives us information that is more comparable compared to spring vs. fall sampling.

Question: why does our quota never get an increase when we feel bears are increasing? *Interpreter struggling to translate conversation – following meeting, Inuktitut-fluent GN staff member indicated that the conversation also included that Igloolik area igunaq caches were being raided by bears in FB and that's one of the reasons the HTO wants to harvest more bears in the FB area.

Answer Jasmine: gave Baffin Bay example and how process went for increase there.

Answer Markus: Describes RWO allocation responsibility and NWMB responsibility of increasing TAH. The reason there has not been an increase for GB is that there has not been new scientific information since 1998-2000.

Paul – you can approach NWMB with requests, this information goes to the govt, you have to clarify why you want quota increased; because of the studies and the results they give to NWMB; there are 3 RWOs for GB; the quota is 74 for all the communities; for FB you would need to talk to that RWO and communities.

Gideon – there are NWMB reps here; concerned about seals, there are no caribou, they would deny us quota increase for bears because they've done it before.

Natalino – took sport hunter to hunt bear, caught collared when I was 7 years old; collar came off and they lost it; head was “separated from neck”??....*maybe no fur on neck?*...a bear was caught and hide was no good and he is asking for replacement of hide from GN

Question Daniel – in FB they wanted a cub, or a family group?

Answer Paul I...it comes out of the quota,

Requested a mother and a cub last year but we did not hear about it...anyone catches a cub it counts 0.5 of a tag; *HTO comments and discussion about what ‘half a tag’ means. In order to stay on topic of presentation, GN indicated that these questions they could answer at an HTO meeting since they live in Igloolik and would be happy to answer harvest-related questions during a regular meeting*

James...to NWMB send your request about cubs....to them;

Results slide – describe how many individual bears and recaptures there were for GB

Question Jacob - Where is MC?

Answer Markus – explained where it is on a map

Results body condition –

Question Jasmine: Why are bears in better condition?

David: When Paul was kid almost no bears around; whenever a bear came near community, it made the news; because if there are more bears, they get skinnier – not enough food and they fight; haven't seen skinnier ones; I think and what I see is we used to wait until quota is increased, there are less bears and they are not attacking each other; the numbers will decline; not so much on the ice, more time on land; they tend to be fatter now; when people went caribou hunting hunters saw no caribou but polar bear tracks; they sometimes tend to stay in one place-someone cried about what is going to happen about to polar bears, it was a biologist, GB area always had polar bears – there are hardly any bears because they are on the land – we think if funding is available they should research sooner to get increase in quota; when they do research bears are not scared of machinery and people; the bears are not scared of people anymore; some hunters are aware of changes on bears; I would like to see more IQ being used;

Salomon – GB is being researched, I have been to Churchill and saw somebody attacked from bear; bears come into the community, up to 200 bears *unclear the time frame that the 200 observations came from*,

Natalino – went over quota, we were not penalized, we are grateful and there are lots of bears around

Paul I....talked about that the MOU is replaced by new plan; quotas were increased in BB; when a female is caught the quota is decreased, now it is 1 male or 1 female for any overharvest; the federal govt is not always in agreement with increase in quota but we have the reports from the government.

Reproduction slides – no questions

Survival slides – no questions

Growth – no slides

Abundance slides – no comments

Did not go over slides with boundary issues

Recommendations – slides

Denis – explains the process of how it works with TAH decisions and the role of NWMB; different ways of decisions and what info is used for decision making; says the GN position is to keep TAH same; Denis also explain or asks what is the risk the GN is willing to take with a new TAH decision

Paul I: the last TAH was changed in 2003 – no change in TAH since then, what is it what the communities want, The GN position is only a recommendation; send a request to NWMB, no problem if you do not agree with the recommendation right now

Natalino: chose a little increase in TAH because we have to kill bears or family group for different reasons; or the yearling is left behind when she is having another cub

Daniel-the other communities have not been communicating of what they want, and we can negotiate about the 74 bears; meet with other communities to increase quota, or talk to them

Jasmine – we are taking notes, we send them around to the communities so you can see what was discussed among the communities

Paul – we visited different communities, in Naujaat they hunt in GB, but Hall Beach does not really harvest there; have not heard from other communities

Salomon-if we make a request about GB, we need to ask QWB for support, and what government are they talking about? The Federal government, American government...?; would they say no about request immediately?

Paul explains process about how the RWOs need to discuss and decide how to split up the TAH and allocate among the communities. With NTI there is the NIWS that can assist; with NWMB you go take the request and then to RWO.

Film sampling

End of meeting