

BINDER INDEX FOR THE NUNAVUT WILDLIFE MANAGEMENT BOARD IN- PERSON PUBLIC HEARING TO CONSIDER THE REVISED NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN

<u>DESCRIPTION</u>	<u>TAB</u>
Agenda_____	1
Hearing Purpose and Rules_____	2
<u>Government of Nunavut-Department of Environment Proposal for Decision and Supporting Evidence:</u>	
Government of Nunavut-Department of Environments' Proposal for Decision seeking approval of the proposed Nunavut Polar Bear Co-Management Plan_____	3
Revised Draft Nunavut Polar Bear Co-Management Plan_____	4
Consultation Summary for the Nunavut Polar Bear Co-Management Plan_____	5
Government of Nunavut Presentation on community consultations_____	6
<u>Written Submissions – Received by May 24th 2017:</u>	
Nunavut Tunngavik Incorporated submission_____	7
Qikiqtaaluk Wildlife Board submission_____	8
Hall Beach Hunters and Trappers Organization submission_____	9
Mayukalik (Kimmirut) Hunters and Trappers Organization submission_____	10
Mittimatalik (Pond Inlet) Hunters and Trappers Organization submission_____	11
Sanikiluaq Hunters and Trappers Organization submission_____	12
Arviat Hunters and Trappers Organization submission_____	13
Makivik Corporation submission_____	14
World Wildlife Fund Canada submission_____	15
Environment and Climate Change Canada submission_____	16
Parks Canada Agency submission_____	17
<u>Written Submissions – Received by October 30th, 2015</u>	
Qikiqtaaluk Wildlife Board submission_____	18
Igloodik Hunters and Trappers Organization submission_____	19
Mittimatalik (Pond Inlet) Hunters and Trappers Organization submission_____	20

Nattivak (Qikiqtarjuaq) Hunters and Trappers Organization submission	21
Pangnirtung Hunters and Trappers Association submission	22
Sanikiluaq Hunters and Trappers Organization submission	23
Kitikmeot Regional Wildlife Board submission	24
Government of Northwest Territories submission	25
World Wildlife Fund Canada submission	26
Environment and Climate Change Canada submission	27
Parks Canada Agency submission	28

NWMB Relevant Documents:

NWMB Letter of Invitation to the In-person public hearing to consider the proposed Nunavut polar bear co-management plan (April 13 th , 2017)	29
Public Notice of the NWMB in-person public hearing to consider the proposed Nunavut polar bear co-management plan (April 14 th , 2017)	30
NWMB Letter Re: Summary of NWMB's pre-hearing teleconference on the draft agenda for the public hearing on the Nunavut polar bear co-management plan (April 13 th , 2017)	31
NWMB Letter of Invitation to a pre-hearing teleconference concerning the Government of Nunavut's proposed Nunavut polar bear co-management plan (March 23 rd , 2017)	32
NWMB Letter of Invitation to a pre-hearing teleconference concerning the Government of Nunavut's propose Nunavut polar bear co-management plan (February 8 th , 2017)	33
NWMB Letter of Invitation to the Written public hearing to consider the proposed Nunavut polar bear co-management plan (September 4 th , 2015)	34
Public Notice of the NWMB Written public hearing to consider the proposed Nunavut polar bear co-management plan (September 4 th , 2015)	35

AGENDA FOR THE NUNAVUT WILDLIFE MANAGEMENT BOARD PUBLIC HEARING TO CONSIDER THE GOVERNMENT OF NUNAVUT'S POLAR BEAR CO-MANAGEMENT PLAN

Day 1: June 6th, 2017

TIME OF DAY	PROPOSED TIMING FOR SUBMISSIONS, QUESTIONS AND COMMENTS	MAXIMUM PROPOSED TIME
9:00 – 9:20 AM	Introductions, Chairperson opening remarks & opening prayer, NWMB review and approval of the Day 1 Agenda	20 minutes
9:20 – 10:00 AM	Government of Nunavut-Department of Environment <i>Proposal for Decision</i>	40 minutes
10:00 – 10:15 AM	Mid-morning Break	15 minutes
10:15 – 12:00 PM	Questions and comments to Government of Nunavut <i>Proposal for Decision</i>	1 hour and 45 minutes
12:00 – 1:30 PM	Lunch Break	1 hour and 30 minutes
1:30 – 3:00 PM	Questions and comments to Government of Nunavut <i>Proposal for Decision</i>	1 hour and 30 minutes
3:00 – 3:15 PM	Mid-afternoon Break	15 minutes
3:15 – 3:35 PM	Nunavut Tunngavik Incorporated submission	20 minutes
3:35 – 5:15 PM	Questions and comments to Nunavut Tunngavik Incorporated submission	1 hour and 40 minutes
5:15 – 7:00 PM	Dinner Break	1 hour and 45 minutes
7:00 – 8:30 PM	Qikiqtaaluk RWO/HTO/RIA submissions	1 hour and 30 minutes

*June 6th - 8th 2017
Cadet Hall, Iqaluit Nunavut*

AGENDA FOR THE NUNAVUT WILDLIFE MANAGEMENT BOARD PUBLIC HEARING TO CONSIDER THE GOVERNMENT OF NUNAVUT'S POLAR BEAR CO-MANAGEMENT PLAN

Day 2: June 7th, 2017

TIME OF DAY	PROPOSED TIMING FOR SUBMISSIONS, QUESTIONS AND COMMENTS	MAXIMUM PROPOSED TIME
8:30 – 8:45 AM	Chairperson opening remarks & opening prayer, NWMB review and approval of the Day 2 Agenda	15 minutes
8:45 – 10:00 AM	Questions and comments to Qikiqtaaluk regional submissions	1 hour and 15 minutes
10:00 – 10:15 AM	Mid-morning Break	15 minutes
10:15 – 10:45 AM	Questions and comments to Qikiqtaaluk regional submissions	30 minutes
10:45 – 11:45 PM	Kivalliq RWO/HTO/RIA submissions	1 hour
11:45 – 1:15 PM	Lunch Break	1 hour and 30 minutes
1:15 – 1:45 PM	Kivalliq RWO/HTO/RIA submissions	30 minutes
1:45 – 3:00 PM	Questions and comments to Kivalliq regional submissions	1 hour and 15 minutes
3:00 – 3:15 PM	Mid-Afternoon Break	15 minutes
3:15 – 3:45 PM	Questions and comments to Kivalliq regional submissions	30 minutes
3:45 – 5:15 PM	Kitikmeot RWO/HTO/RIA submissions	1 hour and 30 minutes
5:15 – 7:00	Dinner Break	1 hour and 45 minutes
7:00 – 8:45 PM	Questions and comments to Kitikmeot regional submissions	1 hour and 45 minutes

*June 6th - 8th 2017
Cadet Hall, Iqaluit Nunavut*

AGENDA FOR THE NUNAVUT WILDLIFE MANAGEMENT BOARD PUBLIC HEARING TO CONSIDER THE GOVERNMENT OF NUNAVUT'S POLAR BEAR CO-MANAGEMENT PLAN

Day 3: June 8th, 2017

TIME OF DAY	PROPOSED TIMING FOR SUBMISSIONS, QUESTIONS AND COMMENTS	MAXIMUM PROPOSED TIME
8:30 – 8:45 AM	Chairperson opening remarks & opening prayer, NWMB review and approval of the Day 3 Agenda	15 minutes
8:45 – 9:45 AM	Qaujimaniliit submissions	1 hour
9:45 – 10:00 AM	Mid-morning Break	15 minutes
10:00 – 11:00 AM	Questions and comments to the Qaujimaniliit submissions	1 hour
11:00 – 11:20 AM	Makivik submissions	20 minutes
11:20 – 12:00 PM	Questions and comments to Makivik submissions	40 minutes
12:00 – 1:30 PM	Lunch Break	1 hour and 30 minutes
1:30 – 1:50 pm	World Wildlife Fund submissions	20 minutes
1:50 – 2:30	Questions and comments to World Wildlife Fund submissions	40 minutes
2:30 – 3:10	Environment Canada and Parks Canada submissions	40 minutes
3:10 – 3:25 PM	Mid-afternoon Break	15 minutes
3:25 – 4:15 PM	Questions and comments to Environment Canada and Parks Canada submissions	50 minutes
4:15 – 5:00 PM	Public statements/questions and responses	45 minutes
5:00 - 5:20 PM	Final comments from hearing parties and the NWMB	20 minutes

*June 6th - 8th 2017
Cadet Hall, Iqaluit Nunavut*

RULES FOR THE NUNAVUT WILDLIFE MANAGEMENT BOARD IN-PERSON PUBLIC HEARING TO CONSIDER THE PROPOSED NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN

April 14th 2017

THE PURPOSE of this Nunavut Wildlife Management Board (NWMB) in-person public hearing is to consider the Government of Nunavut- Department of Environment's *Proposal for Decision* to the Board (Proposal) seeking approval of the Nunavut Polar Bear Co-Management Plan. The Proposal, along with other documents comprising the best available information to date, is available for review or download from the NWMB's website (www.nwmb.com).

HEARING RULES:

1. The NWMB (the Board) shall provide notice to the public at least thirty (30) days prior to the deadline for filing hearing submissions.
2. Any interested person or body may file with the Board a written submission and supporting documentation¹ in response to the Proposal for approval of the Nunavut Polar Bear Co-Management Plan– duly translated into Inuktitut or English as the case may be – by no later than 5:00 p.m. (Iqaluit time) on May 19th 2017.
3. Unless persuasive written and translated reasons are provided to the Board for late filing, the Board will not consider materials for this hearing that are not filed on time.
4. The requirements for translation of submissions and supporting documentation filed with the Board does not apply to individual members of the public.
5. For all others who file supporting documentation with the Board, the requirement for translation does not apply to such documents over ten (10) pages in length, as long as each supporting document that is not translated is accompanied by a concise, translated summary (English and Inuktitut) at least two (2) pages in length.
6. The Board shall ensure that all materials filed with it or produced by it are made publicly available, subject to relevant confidentiality or privacy concerns.

¹ “*Supporting documentation*” refers to one or more studies, articles, opinions or other documents separate from a person's or organization's written submission, filed as additional evidence and/or arguments in support of that person's or organization's submission.

7. The NWMB shall provide simultaneous English and Inuktitut translation at the hearing, to the extent reasonably possible.
8. A quorum of NWMB members shall be present at the hearing.
9. Any representative or agent of the Government of Canada or Government of Nunavut, any Hunters and Trappers Organization or Regional Wildlife Organization, and any Inuk shall be accorded the status of party for the hearing.
10. Unless invited by the Board to be a party, any other person or body wishing to be named as a party by the Board shall make an appropriate request in writing to the Board.
11. All parties and other participants at the hearing are required to treat one another and the NWMB with respect.
12. The NWMB shall provide a reasonable opportunity for oral presentations from each of the parties at the hearing by their choice of official, expert or counsel.
13. Any member of the NWMB, the NWMB's Director of Wildlife or the NWMB's Legal Counsel may ask relevant questions of any other party at the hearing.
14. Any party may ask relevant questions of any other party at the hearing.
15. The NWMB shall provide members of the public in attendance at the hearing a reasonable opportunity to make statements and to ask questions of the parties and the NWMB.
16. Every person at the hearing wishing to speak or ask a question shall raise his or her hand, and shall only speak once the NWMB Chairperson has recognized him or her.
17. The NWMB Chairperson reserves the right to place reasonable time limits on presentations, statements and questions.
18. The NWMB shall make an audio recording of the hearing available upon request.



SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD

FOR Information:

Decision: X

Issue: Resubmission of the draft Nunavut Polar Bear Co-Management Plan

Background

During the development of the draft Polar Bear Co-Management Plan (the plan, Attachment 1) a working group was tasked with developing a replacement to the existing Memorandum of Understanding (MOU). The working group focused on addressing concerns with the existing MOU and with ensuring that the plan reflects the jurisdictional perspective on polar bears. Overall, polar bears are doing well and have increased from the low population numbers of the 1960's and 70's. Public safety has become a serious concern as a result of the increase in population and /or changes in bear distribution and concentration.

A successful polar bear management plan needs to reflect Inuit societal values and concerns. It must support and ensure continued Inuit involvement in polar bear co-management and conservation.

The new draft plan better reflects Inuit Qaujimajatuqangit and is more accessible to Nunavummiut.

Current Status

The Department of Environment (DOE) has incorporated many of the comments received during the Nunavut Wildlife Management Board (NWMB) Written Public Hearing (September – October 2015) into the draft plan, which has improved the document. When reviewing comments received, DOE considered what was heard from and said to communities and Hunters and Trappers Organizations (HTO's) during consultations. Where possible, efforts were made to modify language or to better represent the position that was being proposed.

Consultations

The initial consultations and summary were provided with the original DOE submission. Additional consultations were undertaken after revisions were made to the draft to address comments received during the NWMB Written Public Hearing. These consultations were undertaken during October and November of 2016. DOE presented the revised draft plan to the Regional Wildlife Organizations (RWO's) at their Annual General Meetings, as well to the Nunavut Inuit Wildlife and Environment Advisory Committee (NIWEAC) during its fall meeting. The NIWEAC was instrumental in developing the initial draft in 2014. The Consultation Summary for those meetings is included as Attachment 2 of this document. The current draft Nunavut Polar Bear Co-Management Plan reflects input received from those meetings.

DOE also sought a second review of the draft plan from Environment and Climate Change Canada (ECCC) and their feedback was incorporated, as ECCC was the most critical commenter during the NWMB Written Public Hearing. ECCC's comments were also reflected in other reviews, notably by Parks Canada and World Wildlife Fund. This second ECCC review resulted in additional edits to better clarify language in the draft plan.

Recommendation

DOE requests that the Nunavut Wildlife Management Board approve the revised Nunavut Polar Bear Co-Management Plan.

Attachments

- 1) Draft Polar Bear Co-Management Plan
- 2) Consultation Summary

NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN (to replace existing Memoranda of Understanding)

PREFACE

Management of polar bears in Canada is conducted at the territorial and provincial level. Federal lands, such as Migratory Bird Sanctuaries, National Wildlife Areas and National Parks, are managed for conservation purposes and may include management for polar bears. In addition, there is recognition that management requires coordination of national efforts. In Nunavut, management of wildlife is governed by the Nunavut Land Claims Agreement (NLCA). The NLCA requires that Inuit play an effective role in all aspects of wildlife management. The management of polar bears shall acknowledge the best available scientific knowledge and *Inuit Qaujimajatuqangit* (IQ). The process for decision-making is clearly defined under the NLCA.

The Nunavut Minister of the Environment and the Nunavut Wildlife Management Board (NWMB) hold the ultimate responsibility and primary responsibility for wildlife management, respectively, under the NLCA. The NWMB has the responsibility of approving management plans (Article 5 section 5.2.34 d(i)). This plan has been prepared in cooperation with Nunavut Tunngavik Inc., the Department of Environment, Regional Wildlife Organizations, Hunters and Trappers Organizations, and Inuit community members from throughout Nunavut.

Successful management of polar bears depends on the commitment and cooperation of all co-management partners involved in implementing the directions set out in this plan.

Implementation of this management plan is subject to appropriations, priorities, and budgetary constraints of the participating jurisdictions and organizations.

EXECUTIVE SUMMARY

This management plan has been developed cooperatively by co-management partners to improve the existing polar bear management regime in Nunavut. It replaces the Memoranda of Understanding (MOUs) that have directed management efforts to date. These efforts have been instrumental in facilitating the recovery of polar bear populations from the lows of the 1950s, while maintaining harvest opportunities for Inuit.

This intent of this plan is: 1) to provide guidance and direction to co-management partners for decision-making; and 2) identify goals and objectives for polar bear management. Improved communications, co-management partner participation, and cooperation will be fundamental to the plan's success.

Previous management relied heavily on scientific monitoring and modeling to determine sustainable harvest rates. This scientific approach has been effective and will continue, but now allows for full participation of Inuit. Improved collection and use of *Inuit Qaujimajatuqangit* (IQ) and increased Inuit participation in all aspects of management are central to the goals of this plan.

TABLE OF CONTENTS

PREFACE.....	1
EXECUTIVE SUMMARY	2
TABLE OF CONTENTS	3
ACKNOWLEDGEMENTS.....	5
1. INTRODUCTION	6
2. GUIDING PRINCIPLES.....	7
3. GOAL OF THE POLAR BEAR MANAGEMENT PLAN.....	8
4. SPECIES DESCRIPTION.....	8
4.1 Status:	8
4.2 General description.....	8
4.3 Distribution.....	9
4.3.1 Global range	9
4.3.2 Nunavut range.....	9
4.4 Biology	10
4.4.1 Life cycle and reproduction	10
4.4.2 Natural mortality and survival	11
4.4.3 Diet	11
4.4.4 Habitat	12
5. BACKGROUND	12
5.1 Historical perspective	12
5.2 The Nunavut perspective	12
5.3 Legislative frameworks and agreements.....	13
6. POLAR BEAR CO-MANAGEMENT IN NUNAVUT	14
6.1 Nunavut Tunngavik Inc.	14
6.2 NWMB	14
6.3 RWOs	14
6.4 HTOs	14
6.5 Government of Nunavut	15
6.6 Government of Canada.....	15
7. CONSERVATION THREATS AND CHALLENGES.....	16
7.1 Industrial activity	16
7.2 Tourism.....	17
7.3 Pollution/contaminants	17
7.4 Habitat alteration	17
7.4.1 Climate change	17
7.4.2 Denning	18
7.5 Population boundaries	18

7.5 Polar Bears and People	19
7.7 Inter-jurisdictional considerations	19
7.8 Trade.....	20
8. MANAGEMENT PLAN OBJECTIVES.....	20
8.1 Harvest management and objectives (Angujaujunnaqtunik Aulattiniq)	21
8.1.1 Harvest Management	21
8.1.2 Selective Harvesting	22
8.1.3 Harvest Reporting and Monitoring	22
8.2 Information and knowledge gathering (<i>Qanuqtuurniq</i>) and objectives.....	24
8.2.1 Gaining knowledge.....	24
8.2.2 Research.....	25
8.3 Habitat management and environmental stewardship (<i>Avatitinnik Kamatsiarniq</i>) objectives.....	26
8.4 People and bears (<i>Inuillu Nanuillu</i>) and objectives	27
8.5 Working together (<i>Piliriqatiginniiq</i>) and objectives.....	28
8.5.1 Within Nunavut	28
8.5.2 Between jurisdictions.....	28
8.5.3 Sharing information and knowledge.....	28
9. IMPLEMENTATION OF THE PLAN	29
9.1 Harvest Management.....	30
9.2 Information and Knowledge Gathering (<i>Qanuqtuurniq</i>): Actions	30
9.3 Habitat Management and Environmental Stewardship (<i>Avatitinnik Kamatsiarniq</i>) Actions.....	31
9.4 People and Bears (<i>Inuillu Nanuillu</i>) Actions.....	31
9.5 Working Together (<i>Piliriqatiginniiq</i>) Actions.....	32
10. PLAN REVIEW	32
APPENDICES	33
Appendix A - Subpopulation Status Table	33
Appendix B – Subpopulations and Status.....	41
Appendix B I – Baffin Bay (BB) subpopulation status	41
Appendix B II – Davis Strait (DS) subpopulation status	41
Appendix B III – Southern Hudson Bay (SH) subpopulation status.....	42
Appendix B IV – Western Hudson Bay (WH) subpopulation status.....	43
Appendix B V – Foxe Basin (FB) subpopulation status.....	43
Appendix B VI – Gulf of Boothia (GB) subpopulation status.....	44
Appendix B VII – M’Clintock Channel (MC) subpopulation status	44
Appendix B VIII – Lancaster Sound (LS) subpopulation status.....	45
Appendix B IX – Kane Basin (KB) subpopulation status.....	45
Appendix B X – Norwegian Bay (NW) subpopulation status	46
Appendix B XI – Viscount Melville Sound (VM) subpopulation status	46
Appendix C – Flexible quota system.....	47

Appendix D – Research Schedule50

Appendix E - Literature Reviewed50

ACKNOWLEDGEMENTS

This management plan was developed by a co-management working group consisting of Gabriel Nirlungayuk and Paul Irngaut (NTI), Markus Dyck and Paul Frame (DOE), James Qillaq (QWB), Attima Hadlari (KRWB), Ross Tatty (KWB), and Chris Hotson (Okalik Consulting). Additional review and drafting of text was provided by Lynda Orman (DOE), Andrew Maher (PC), Peter Hale (ECCC), and David Lee (NTI). Significant assistance during consultations was provided by Leetia Janes, Lazarus Arreak, Gailene Pigalak, Jackie Price, Ema Qaggutaq, Leah M. Muckpah, and Jason Mikki.

1. INTRODUCTION

Management of polar bears in Nunavut predates the Nunavut Land Claims Agreement (NLCA) by several decades. In the 1960s and 70s, harvest restrictions were placed on Inuit with little or no consultation. Restrictions (e.g., limiting the number of polar bears harvested per year per subpopulation) were the primary means of population recovery in regions where abundance was reduced as the result of unsustainable harvest. Since then, implementation of the NLCA, and improved research and understanding of polar bear biology has strengthened management and increased Inuit involvement. Over the last 50 years polar bear management has focused on recovery of polar bear numbers, which has largely been achieved. The focus of polar bear management now shifts to maintaining, or reducing numbers in areas where public safety is a concern and/or where there are detrimental effects on the ecosystem due to increased numbers of polar bears. This plan has been developed to guide polar bear management in Nunavut through 2026, and explicitly recognizes the requirement to engage Inuit in polar bear management.

Inuit hunter observations indicate that polar bear numbers have increased from the population lows of the 1950s and 60s. This is confirmed by scientific studies on Most Nunavut subpopulations. During this time period, polar bears did not pose a serious threat to human safety; Inuit did not worry about going camping in those days and life generally existed in seasonal camps where families were safe. Today, however, safety concerns, in part, result from increased polar bear numbers in some Nunavut subpopulations. Increased interactions may also be due to changes in the distribution of bears from being on sea-ice to being on land for longer periods, and change in Inuit settlement away from a dispersed lifestyle to one with established communities.

Despite scientific and traditional knowledge/IQ indicating that polar bear numbers have increased since the 1950s, conflict exists between Inuit observations and public perspective on the status of the species. Pressure to conserve and protect polar bears from national and international environmental and non-governmental organizations, climate change advocates, and the general public at large has created contention about the status of polar bear populations. Inuit believe there are now so many bears that public safety has become a major concern. Public safety concerns, combined with the effects of polar bears on other species that Inuit and scientists are observing (e.g., ringed seal and water fowl populations) suggest that in many Nunavut communities, the polar bear may have exceeded the co-existence threshold of Nunavummiut.

*“...in my lifetime we have seen opposite ends of the spectrum where
when I was a child we saw no bears and now we can see*

40 bears a year near town” Sandy Akavak, Elder, Kimmirut

In Canada, polar bears have been managed to increase populations since the 1970s, largely through sustainable hunting practices. Prior to the fur trade and whaling, polar bears were predominantly harvested by indigenous peoples. The increase in whaling sealing, fur trade and Arctic explorations during the late 1800s and early 1900s resulted in Arctic-wide increases in polar bear hunting by non-indigenous people. The five polar bear range states, Russia, Canada, the United States, Norway and Greenland, agreed that the polar bear needed protection to prevent a further decline, and the Agreement on the Conservation of Polar Bears was signed in 1973. Management of polar bears has since evolved to include setting sustainable harvest levels, maximizing harvest through sex-selective harvesting, reporting and submitting harvest data and samples, as well as non-quota limitations (NQLs) that include protection of family groups. Although seen by some Inuit as restrictive, these NQLs are supported by the Nunavut Hunters and Trappers Organizations (HTOs).

Although Inuit support Nunavut's polar bear management efforts, they are directly affected by increased polar bear abundance from the standpoint of personal safety and property damage (e.g., cabins and food caches). Restrictions such as these, as well as public safety and property damage concerns potentially undermine Inuit support when population numbers are perceived to be high.

2. GUIDING PRINCIPLES

The following principles will guide conservation and management decisions within the framework of the NLCA:

- To integrate Inuit societal values and Inuit traditional knowledge, collectively called Inuit *Qaujimajatuqangit* (IQ), in polar bear management;
- *Inuit Qaujimajatuqangit* and scientific knowledge will be considered in decision-making. Both perspectives, always taken/considered together, will continue to inform decision-making;
- To consider public safety in management actions;
- To consider the ongoing social, cultural, and economic value of the polar bear in decision-making;
- To consider other aspects of the ecosystem when we consider polar bears;
- Polar bears will be managed at the subpopulation level, and their status will be assessed regularly to ensure that information is available for timely conservation, and long-term sustainability;

- Where there are threats of serious or irreparable damage to polar bear populations or habitat, lack of certainty will not be a reason for postponing reasonable or precautionary conservation measures.

3. GOAL OF THE POLAR BEAR MANAGEMENT PLAN

To maintain viable and healthy polar bear subpopulations for current and future generations, and to ensure that polar bears remain an integrated and functioning part of the ecosystem while monitored and appropriate harvests are allowed.

4. SPECIES DESCRIPTION

Inuktitut name – Nanuq, Nanuk

English name – polar bear

French name – Ours blanc

Scientific name – *Ursus maritimus* (Phipps 1774)

4.1 Status:

Canada: Special Concern (*Species at Risk Act*) 2011

IUCN: Vulnerable (2015)

Nunavut Wildlife Act: Not assessed

4.2 General description

The polar bear is a member of the order *Carnivora* and the family *Ursidae*. It is the top terrestrial predator in the arctic marine environment. Polar bear breeding biology is characterized by low reproductive rates, a long life span, and late sexual maturity.

Webbed and enlarged front paws make the polar bear a strong swimmer and its curved claws are well-suited for “hooking” seals, their primary food source. Other adaptations to the Arctic environment include furred pads (improved insulation and traction) on the paws, and black skin (absorb solar energy). Polar bear fur usually appears to be white, but it may also be yellowish or off-white, depending on the time of year and sex. Polar bears exhibit extraordinary strength when crushing through sea ice, digging into birth and haul-out lairs of seals, and moving large boulders to access meat caches. Adult males are larger (up to 300 cm long) and heavier (800-1000 kg) than adult females, which do not usually exceed 400 kg in weight and 250 cm in length.

4.3 Distribution

4.3.1 Global range

Polar bears occur as a circumpolar species in the sub-arctic and arctic regions of the northern hemisphere. It was initially believed that they represented a single population that ranged throughout the Arctic, with animals being carried passively on the sea ice by currents. However, satellite telemetry studies and mark-recapture data have shown that they do not wander throughout the Arctic, but rather show seasonal fidelity to local areas. Movements and distributions are mainly determined by sea ice which is used as a platform for feeding, mating, and denning. Globally, all polar bears are divided into 19 “subpopulations”, 13 (excluding bears of the Arctic Basin) of which are in Canada (Figure 1). There is an estimated world population of about 26,000 (95% Confidence Interval 22,000 – 31,000) polar bears. Approximately 14,000 to 16,000 polar bears are found in Canada (See Appendix A for current status). The majority of Canada’s polar bear subpopulations are found in Nunavut.

4.3.2 Nunavut range

As of 2016, there are 12 recognized subpopulations of polar bear within Nunavut (Baffin Bay, Davis Strait, Southern Hudson Bay, Western Hudson Bay, Foxe Basin, Kane Basin, Lancaster Sound, Norwegian Bay, Gulf of Boothia, M’Clintock Channel, Viscount Melville Sound, and Northern Beaufort Sea). Eight of these subpopulations are shared with other jurisdictions and user-groups and four are entirely within Nunavut (Figure 1). A more detailed background and description of Nunavut’s polar bear subpopulations is provided in Appendix B.

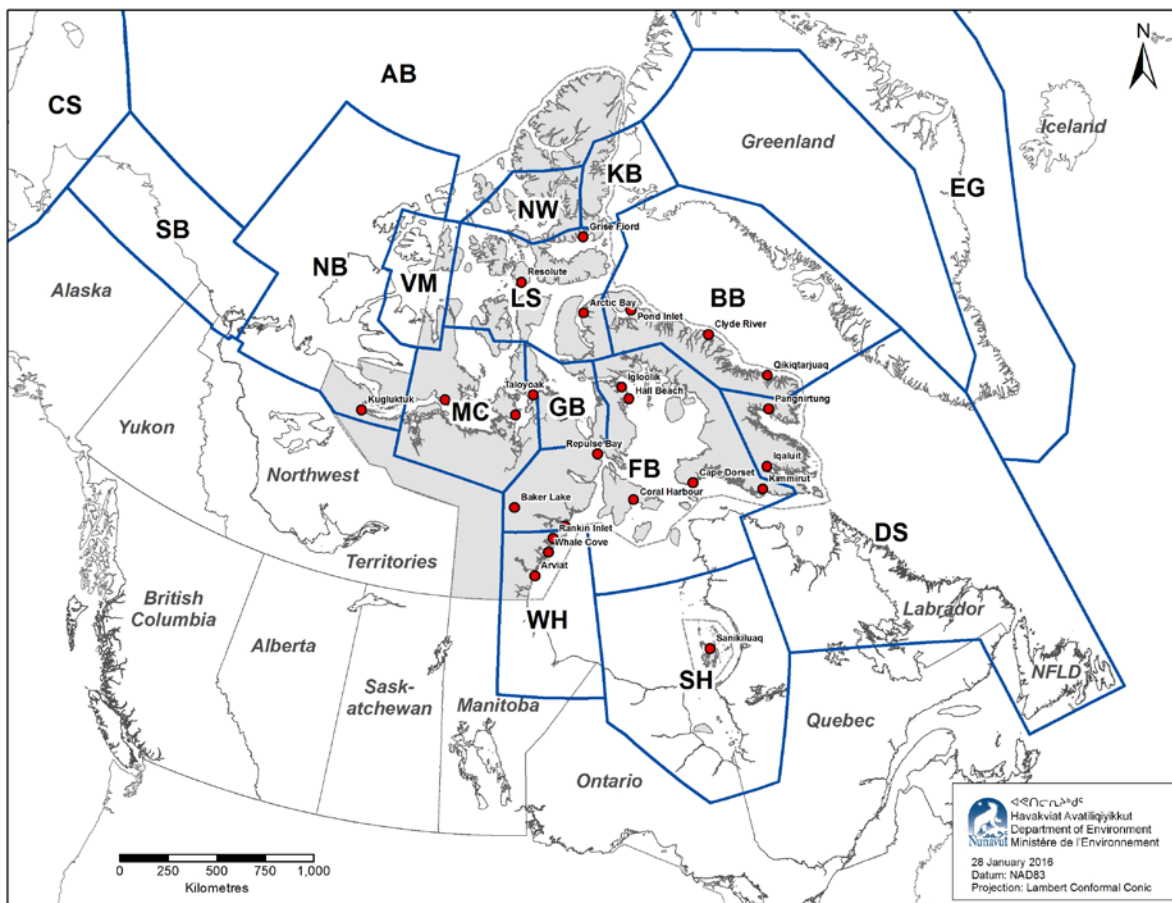


Figure 1. Canadian and Nunavut (dark grey) polar bear subpopulations [BB = Baffin Bay; DS = Davis Strait; SH = Southern Hudson Bay; WH = Western Hudson Bay; FB = Foxe Basin; GB = Gulf of Boothia; MC = M'Clintock Channel; LS = Lancaster Sound; KB = Kane Basin; NW = Norwegian Bay; VM = Viscount Melville Sound; NB = Northern Beaufort Sea; SB = Southern Beaufort Sea.

4.4 Biology

4.4.1 Life cycle and reproduction

Breeding occurs between March and June. When a male mates with a female, ovulation is induced, although implantation of the fertilized egg is delayed until October. Female age at first reproduction ranges between four and seven years of age, with most subpopulations having females producing litters by age six. By age six, male polar bears are normally reproductively mature, however younger males often do not reproduce due to competition from older and bigger males. It appears that most males are entering the reproductive segment of the population between eight and ten years old.

Pregnant females prepare and enter maternity dens in late fall and the cubs, normally one or two, are born between November and early January. IQ suggests that the

timing of birth is later in higher latitudes. In northern subpopulations dens are generally excavated in snow, and are then covered and closed by snowdrifts. They are frequently located on islands or land that is near the coast and adjacent to areas with high seal densities in spring. An anomaly to this pattern of behaviour is the maternity dens for the Western Hudson Bay and Southern Hudson Bay polar bears: their dens are up to 120 km inland at traditional denning areas, and initially dug in soil.

At birth, cubs weigh approximately 0.6 kg. They are nursed inside the den until sometime between the end of February and the middle of April. By this time, cubs weigh 10-12 kg. A new litter is produced after three years of raising cubs, making the average inter-litter interval approximately 3.6 years.

4.4.2 Natural mortality and survival

Aside from humans, polar bears have been observed and documented as posing a threat to other polar bears. Inuit and scientists have observed predation by wolves on polar bear cubs-of-the-year. Walruses have also been reported to kill polar bears in self-defence, but this is infrequent. Every main life history stage of a polar bear has different challenges, such as hunting success and experience, and hierarchical rank; therefore the survival rates vary accordingly. Moreover, the survival rates for these life stages also vary slightly among subpopulations because of the differences in ecosystem productivity and seasonal ice duration.

Biologists recognize four important age categories: 1) cubs-of-the-year; 2) yearlings and sub-adults, 3) prime-age adults, and 4) senescent adults. These categories are also divided by sex because males generally have lower survival rates than females. In the wild, the maximum age is estimated to be 30 years.

Inuit recognize 11 different age categories/class of polar bears. They are 1) *Atiqtaqtaq* – a newborn cub, 2) *Atciqtaq* – a cub, 3) *Piaraq* – a cub that is with its mother, 4) *Advarautaq* – a cub that is about one year old, 5) *Nalitqaihiniaq* – when a cub is a little bigger than an *advarautaq* (a bit bigger than a sled dog, about the height of the mother's belly), 6) *Namiaq* – offspring that is the same size as its mother, 7) *Nukaugaq* – a young male, 8) *Tadzaq* – an adult female, 9) *Anguruaq* – a full grown male, 10) *Arnaluit* – a pregnant female, 11) *Piaralik* – a female with cubs. Although some of these age categories are general and specific for the same age, they represent the diverse understanding Inuit have of polar bears.

4.4.3 Diet

Polar bears are carnivorous. Throughout their Nunavut range, ringed, bearded and harp seals make up most of the polar bear's diet. Other species like walrus, beluga whale, narwhal, bowhead whale, birds, and harbour seal are also preyed upon

opportunistically. Polar bear also eat eggs, berries, and seaweed.

Polar bear diet varies throughout the year, and across its range. Primary feeding tends to be in spring when seal pups are abundant; however, polar bears will hunt and scavenge throughout the year, feeding opportunistically on vegetation, berries, eggs, and birds. Fish and ringed seals are also successfully preyed upon when there is little or no sea ice in summer.

Polar bears are well-adapted to times of food abundance and shortages. When food is in high abundance, polar bears can increase their body mass significantly. When food becomes scarce or unavailable, polar bears can live off their stored fat reserves.

4.4.4 Habitat

Polar bears can be found in all coastal and offshore areas of the Canadian subarctic and arctic. Access to land is essential during the ice-free periods, but also for mid-winter denning. They also use the marine environment for hunting marine animals. Polar bears have adapted to all types of sea ice, and are strong swimmers capable of traveling long distances in open water. Inuit have observed that bears can exist in open water and on sea ice for the majority of their lives (the Inuktitut term for this is *tulayuituq*).

In Nunavut, polar bears den mostly on land. Denning sites are locations that have sufficient snow cover in early winter for the construction of the dens. Dens can also be found on moving multi-year ice and areas of annual rough ice. All maternity denning sites are important areas because they provide shelter for the mother and offspring. All maternity denning sites are protected under the Nunavut *Wildlife Act*.

5. BACKGROUND

5.1 Historical perspective

The polar bear management system in Nunavut dates back to the Northwest Territories, prior to the creation of Nunavut. This system includes setting of harvest quotas (now called Total Allowable Harvest or TAH), instituting harvest seasons, and harvest reporting and sample submission. After the creation of Nunavut, memoranda of understanding for each subpopulation were implemented between the DOE and each RWO and HTO to guide harvest and management.

5.2 The Nunavut perspective

Management in Nunavut has focused on sustainable harvest using population estimates derived from scientific studies. Although abundance in most subpopulations was low prior to the 1970s (the reason for the Agreement on the Conservation of Polar Bears), many have recovered or increased since that time. As

of 2016, the statuses of the 12 subpopulations in Nunavut are determined to be: 3 uncertain, 1 likely decline, 4 likely stable, 2 stable, and 2 likely increase (see Appendix A). Nunavummiut believe that polar bears have become less afraid of humans and more likely to damage property, as the result of an apparent increase in polar bears in some areas. In Nunavut, human safety and the right of Inuit to harvest are high priorities. Increased interactions between humans and bears, and a right to protect human safety and property have led to an increase in defence kills. Considering all removals come off the TAH this can lead to a reduction in the community harvest, resulting in a loss of opportunity for traditional harvesting activities.

5.3 Legislative frameworks and agreements

In Nunavut, wildlife is managed according to Article 5 of the Nunavut Land Claims Agreement. Article 5 sets out the creation of the Nunavut Wildlife Management Board (NWMB), which is the primary instrument of wildlife management in Nunavut. It defines the roles of the NWMB, government, Hunters and Trappers Organizations (HTOs), and Regional Wildlife Organizations (RWOs).

The Nunavut *Wildlife Act* sets out harvest management, licensing, reporting and sample submission. Further details on management, including research, harvest, and TAH determinations have been detailed in previous Memoranda of Understanding (MOUs) developed for all subpopulations (12) jointly with RWOs, Hunters and Trappers Organizations HTOs and the Department of Environment (DOE). These MOUs shall be replaced with this management plan. Enforcement provisions are in place in regulations under the *Wildlife Act*.

In Nunavut, each of the co-management partners fulfills its respective role as defined in the NLCA (see Figure 2). This plan applies to the Nunavut Settlement Area as defined in Section 3.1.1 of the NLCA.

In 2011 the polar bear was listed under the federal *Species at Risk Act (SARA)* as a species of special concern. While there are no associated effects on Inuit harvest or management actions, a national management plan must be developed according to SARA legislation in order to prevent a species from becoming threatened or endangered. This Nunavut-based management plan may be adopted, in whole or part, as part of the national plan.

In 1973, Canada was a signatory to the International Agreement on the Conservation of Polar Bears. The Agreement holds member states accountable for taking action to protect the ecosystems in which polar bears live, paying special attention to places where polar bears den, feed, and migrate. Range states also must manage polar bear populations in accordance with proper conservation practices, based on best available scientific data. Recently, range states have agreed to include Inuit

traditional knowledge as part of the body of knowledge to be considered for polar bear conservation and management. There also exist inter-jurisdictional agreements between Canada and Greenland in Davis Straits, Baffin Bay and Kane Basin subpopulations, and Canada and the United States on polar bears in general.

6. POLAR BEAR CO-MANAGEMENT IN NUNAVUT

The following co-management partners participate in polar bear management, their roles are defined in full detail in Section 5 of the NLCA. A brief summary is provided below, however the NLCA is the guiding document. Figure 2 illustrates not only the partners but decision-making process.

6.1 Nunavut Tunngavik Inc.

Nunavut Tunngavik Incorporated represents all Inuit beneficiaries in the Nunavut Settlement Area, in line with the NLCA that was signed in 1993 by the Inuit of Nunavut and the Government of Canada. The NLCA is constitutionally protected under Canada's *Constitution Act*, 1982.

6.2 NWMB

The NWMB's role is defined in the NLCA, sections 5.2.33 and 5.2.34. Its role consists of, but is not limited to, setting Total Allowable Harvest rates (TAH) and Non Quota Limitations (NQLs). In addition, it approves management plans and the designation of rare species.

6.3 RWOs

The role of RWOs is defined in section 5.7.6 of the NLCA. The role of the RWOs includes, but is not limited to, regulating the activities of HTOs in their regions, including allocating TAH among communities, and distributing any accumulated harvest credits (1 un-harvested bear equals 1 credit, see Appendix C) as required to cover accidental, defence, or illegal kills. The RWOs may also return credits annually to augment a community's harvest. Credits may not be transferred between communities that share a population without the written consent of the community that accumulated the credit.

6.4 HTOs

The role of HTOs is defined in sections 5.7.2 and 5.7.3 of the NLCA. These roles include, but are not limited to, regulating the harvesting activities of their members, including all beneficiaries within the community. They allocate tags for species with TAH, and set harvest seasons. As per the NLCA, the HTOs may develop rules for non-quota limitations. They open and close their polar bear hunting seasons to

optimize polar bear hunting for their communities and determine if sport hunts will be allowed in the community.

6.5 Government of Nunavut

The Nunavut Minister of Environment retains the ultimate authority over polar bear management in Nunavut as per the NLCA. DOE staff conduct research, work to collect IQ, and make management recommendations to the NWMB for decision. Conservation Officers enforce the Nunavut *Wildlife Act* and its regulations. DOE implemented new programs starting in 2013 to reduce human-bear conflicts, and to reduce and compensate for damage to property as a result of bears.

6.6 Government of Canada

Under the federal *Species at Risk Act* (SARA), Environment and Climate Change Canada is responsible for completing a national management plan for polar bears, and has responsibilities for the management of listed species where they occur on federal land. The Government of Canada is responsible for managing polar bears and their habitat on federal lands under the jurisdiction of the federal Minister of Environment (National Wildlife Areas and Migratory Bird Sanctuaries, National Parks, National Park Reserves and National Historic Sites). The Government of Canada contributes to scientific knowledge of polar bears through research and helps to coordinate polar bear management across the country. Canada signs international agreements on behalf of all jurisdictions and has responsibilities to coordinate international management actions for polar bears, with the advice of the co-management boards and jurisdictions. It is involved in international polar bear management including the Convention on International Trade in Endangered Species (CITES) and the 1973 *Agreement on the Conservation of Polar Bears*.

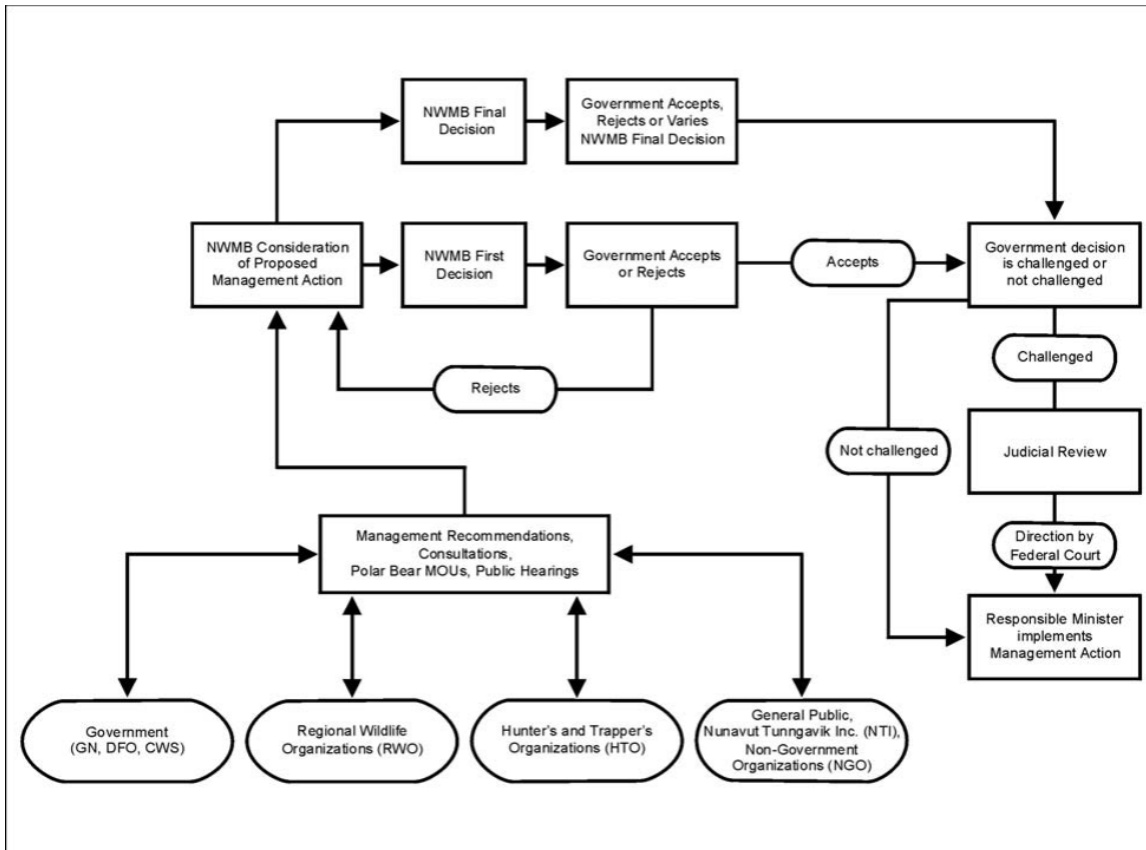


Figure 2. The Co-Management Framework in Nunavut (after Obbard et al. 2010).

7. CONSERVATION THREATS AND CHALLENGES

Nunavut has a management system whereby threats of any kind, including those posed by industrial activity or climate change, can be identified and responded to relatively quickly. For example, if a significant reduction in the body condition, recruitment, or overall abundance of a subpopulation is detected and attributed to a threat, the appropriate action can be taken to implement conservation measures to stop or mitigate these changes. The following are current threats, or threats expected to occur within the 10 year life of this plan.

7.1 Industrial activity

There is considerable potential in Nunavut for industrial activities to be harmful to polar bears and their habitat. There are several active and proposed mines, and other industrial pursuits, that could affect bears directly, or through increased shipping traffic and pollution. Noise and disturbance from humans or exploration activity in any form near dens could cause disturbance, the abandonment of offspring, or the displacement of denning bears if it is not carefully planned and controlled. Any shipping activities through primary feeding areas may lead to

disturbance and reduce the hunting success of polar bears. These activities could also increase the abandonment of seal dens. If industrial activities (e.g., oil or gas exploration and development, shipping, mining exploration and operations) lead to an oil spill in sea ice habitat, polar bears and seals will be directly exposed to oil, with effects ranging from ingestion of oil, hair loss, kidney failure, and ultimately death. Increasing industrial activities may cause an increase in the local human population (both the indigenous population and non-indigenous people), the amount of refuse, and other wildlife attractants. As a consequence, bear-human encounters are also likely to increase, leading to a potential increase of injury and/or mortality.

7.2 Tourism

There always has been a great interest in the Arctic and its resources and wildlife. This interest has recently grown as the result of easier access to remote destinations across the Arctic. Any increase in human activity (e.g. by boat, ATV and snowmobile traffic) increases the amount of disturbance to polar bears. Currently, Nunavut does not have a polar bear viewing tourism industry as sophisticated as Manitoba, but various locations in Nunavut offer similar opportunities that could become focal points for intense polar bear viewing. Although some side effects of tourism can be controlled by proper policies and management, the cumulative impacts of several negative stressors (e.g. disturbance, environmental changes, and contaminants) is not clear and therefore warrant heightened awareness.

7.3 Pollution/contaminants

Polar bears are at the top of the Arctic food chain, and as such accumulate high levels of various environmental pollutants through the food they ingest. A majority of these polluting compounds, mostly organochlorines, reach the Arctic via wind and ocean currents from industrialized areas. These compounds are usually fat soluble and remain in fat tissue, with concentrations accumulating progressively at higher levels throughout the food chain. It has been demonstrated that various organochlorines are passed from mothers to cubs through their milk.

How these pollutants and chemical compounds affect polar bear populations and their health and fitness over the long-term is not well known. However, it is very likely that their survival and their immune and reproductive systems are negatively affected. With new pollutants and uncertain long-term impacts for polar bears, a combined and reinforced response to these stressors is anticipated.

7.4 Habitat alteration

7.4.1 Climate change

Climate change is affecting terrestrial and marine environments in Nunavut. Although there is growing scientific evidence linking the impacts of climate change to reduced

body condition of bears and projections of population declines, no declines have currently been attributed to climate change. IQ acknowledges that polar bears are exposed to the effects of climate change, but suggests that they are adaptable. It is challenging to predict and mitigate the effects of climate change on the polar bears' sea ice habitat. Active management and increasing the frequency of subpopulation assessments will allow for more responsive decision-making in response to climate change. The loss of annual sea ice in southern subpopulations may be offset by improvements to heavy multi-year ice in other portions of the range. Subpopulation boundaries may shift as bears adapt to fluctuations in their environment.

*“..people (in the south) think climate change will hurt polar bears
but the bears will adapt, and there will always be an arctic and ice”*
Leopa Akpalialuk, Pangnirtung HTO board member

7.4.2 Denning

Other important habitat includes denning and coastal areas used as summer retreat areas during ice free periods. In Nunavut, most polar bears den on land, either along the slopes of fiords, or on peninsulas or islands. All maternity denning sites are important areas because they provide shelter for the mother and offspring, and contribute to the growth of the population.

A significant amount of polar bear habitat, including known denning areas, are currently within the boundaries of national parks, territorial parks, or other protected areas, such as Migratory Bird Sanctuaries and National Wildlife Areas. Existing protected areas will play an increasingly important role in the face of growing development in the Arctic.

7.5 Population boundaries

The division of polar bears into subpopulations is based on movement patterns estimated from satellite telemetry data, as well as tag returns of harvested bears. Although boundaries are accepted for management purposes, it is understood that bears occasionally move across these artificial boundaries at times, moving and responding to their environment. It is important to recognize that these boundaries have formed the basis for management actions for over four decades, and have been beneficial to managers for setting harvest levels and for researchers focusing their population assessment studies.

Contrary to the scientific view of subpopulations above, Inuit believe that polar bears travel regularly among different geographic areas of Nunavut and that there may be fewer than 13 subpopulations in Canada. As the understanding of the structure of polar bear populations improves, there will be an ongoing need to review current subpopulation delineation. Ongoing studies using satellite telemetry collars may

provide information that could result in boundary changes. It will remain a challenge to balance Inuit perspective on population structure with current subpopulation designations. Maintaining Inuit support for subpopulation boundaries is fundamental to the success of polar bear management in Nunavut. Reconciling IQ with scientific knowledge as it evolves will be a necessary but considerable challenge.

7.5 Polar Bears and People

Inuit and their ancestors have been living in close proximity to polar bears for thousands of years. The human population in Nunavut is currently higher than it has ever been and continues to grow, with most of the population concentrated in 25 communities. At the same time, it is recognized that, in many areas across Nunavut, there are more bears now than 40 or 50 years ago. Human-bear interactions have increased and led to an increase in defence of life and property kills (DLPK) of polar bears.

These DLPKs are included in the TAH and reduce Inuit hunting opportunities. Defence kills occur in communities and on the land in hunting and fishing camps. Inuit have stored meat for centuries in traditional meat caches, both within small traditional camps on the land, and within communities. The loss of nutritious food due to polar bear depredation is a significant cost to Inuit.

Reduced hunting opportunities and associated loss of meat and hide are only part of the impact Inuit feel from harvest restrictions. There is also an impact on the transfer of Inuit knowledge and culture over time when restrictions are put in place.

“...it is like ripples in a pond, we lose the hide and the meat and the hunt, but there is also loss of culture and knowledge. We no longer travel to the areas we used to hunt polar bears, so a generation has no knowledge of the land and traditional camping areas, we no longer have sport hunters so we no longer keep dog teams and we cannot pass on that knowledge, we no longer have skins to handle and women cannot pass on the skills to prepare and sew.”

David Irqut, HTO Director and Elder, Taloyoak

7.7 Inter-jurisdictional considerations

In Nunavut, eight of 12 polar bear subpopulations are shared with other jurisdictions. The shared populations are Northern Beaufort Sea and Viscount Melville Sound (shared with NWT*), Foxe Basin (shared with Quebec*), Southern Hudson Bay (shared with Ontario* and Quebec*), Western Hudson Bay (shared with Manitoba*), Davis Strait (shared with Labrador*, Quebec* and Greenland*), and Baffin Bay and Kane Basin (shared with Greenland). Cooperative efforts on research and consultation between jurisdictions should be encouraged as part of these efforts. Current jurisdictional efforts to consider combined total allowable removal levels

between jurisdictions are a positive step for cooperative management however this remains a significant challenge due to the complexities of multiple jurisdictions and land claims.

(*This denotes a simplified relationship between jurisdictions and does not reflect the respective sub-jurisdictional entities and their stakeholders and boards).

7.8 Trade

The 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has been in effect in Canada since July 1975. Polar bears are included in *Appendix II* to the Convention which means that trade is allowed under strict conditions including that it must be non-detrimental to the species and CITES permits are required.

As the responsible authority for the implementation of CITES, Environment and Climate Change Canada (ECCC) must determine if the export or import of a species would be detrimental to the survival of that species. Such “non-detrimental findings” (NDFs) are a requirement of the Convention. The international export of polar bears from Canada is considered non-detrimental (with the exception of export of bears harvested from the Baffin Bay subpopulation).

Given the shared jurisdiction for wildlife in Canada, coordination among provincial and territorial jurisdictions is required to ensure that total removals among jurisdictions within shared subpopulations is sustainable and defensible at the national and international level.

Ongoing domestic and international export of polar bear parts, such as hides, depends on sound harvest reporting and sustainable harvest levels. Communities have unanimously supported efforts to maintain international trade options for polar bears as an important component of community economic development. The listing of polar bears on CITES *Appendix I* would have a negative impact on conservation efforts as the economic benefit to communities will be reduced and the incentive to manage for abundant populations will be lost. In September 2015 the Animal Committee of CITES determined that the current trade in polar bear hides and parts is not detrimental to the survival of the species in the wild.

8. MANAGEMENT PLAN OBJECTIVES

The following five main components are considered important for co-management partners to achieve the goal of the management plan:

- Harvest management (*Angujaujunnaqtunik Aulattiniq*)
- Information and knowledge gathering (*Qanuqtuurniq*)
- Habitat management and environmental stewardship (*Avatitinnik Kamatsiarniq*)

- People and bears (*Inuillu Nanuillu*)
- Working together (*Piliriqatiginniiq*)

8.1 Harvest management and objectives (Angujaujunnaqtunik Aulattiniq)

8.1.1 Harvest Management

Legislated harvest restrictions have been the primary management tool used to facilitate the recovery of polar bear populations throughout Nunavut. As new information becomes available, co-management partners work together to establish a Total Allowable Harvest (TAH) for each polar bear population. The TAH represents the total number of polar bears that can be harvested according to the management objective of the subpopulation. These numbers are based on detailed scientific data, population trends, IQ, and past harvest information.

Once the TAH is established, local communities are given the choice whether they wish to harvest the set number of bears for their own needs or to allocate a portion of the total for sport hunts. All bears harvested, whether for subsistence purposes, sport hunts, or in defence of life/property, are accounted for and subtracted from the annual TAH of the nearest community. In the event that human-caused mortality exceeds the annual TAH of a particular community, additional tags will be issued and will be counted as part of the following year's TAH. Any portion of the TAH that goes unused will be counted as credits, which can then be used in subsequent years. This accounting regime is known as the Flexible Quota System – refer to Appendix C for a detailed discussion.

While the TAH for each polar bear population is subject to change, the following harvest restrictions are legislated in the Nunavut *Wildlife Act* and do not vary according population dynamics or annual removals:

1. No person shall harvest a polar bear that is under three years of age unless
 - a. It appears to be abandoned by its mother; or
 - b. Its mother was killed or harvested as an emergency kill in accordance with section 97 of the Act and there is little likelihood of it surviving.
2. No person shall harvest a female polar bear that is accompanied by a bear that is or appears to be under three years of age (A polar bear is deemed to be three years old on the first day of the January that follows the third summer after its birth).
3. No person shall harvest a female polar that is in a den or that is constructing a den.

The use of Non Quota Limitations, including seasonal harvest restrictions, sex selective harvesting (the harvest of two males for every one female), and the protection of family groups are also important components of Nunavut's polar bear

harvest management regime.

8.1.2 Selective Harvesting

Selective harvesting of wildlife populations is a common management practice whereby individuals of a certain age, sex or body size are selectively harvested in order to achieve a specific management goal. In Nunavut, the use of age and sex selective harvesting has been used to recover polar bear populations, while maximizing harvest opportunities for Inuit.

Sex-Selective Harvesting

Polar bears are a polygynous species, which means that one male often mates with multiple females during a single breeding season. Accordingly, a few male bears are capable of siring many offspring. Females on the other hand generally only mate once every 2-4 years because they must give birth and raise their young alone. Therefore, the number of females in a given population is the most important factor affecting future abundance and population growth.

Scientific modeling has shown that harvesting 2 males for every 1 female is the best way to increase/maintain polar bear populations, while simultaneously maximizing the harvest for Inuit. Harvesting at a ratio of 1 male for every 1 female is possible but would likely require the adoption of lower, more conservative harvest rates for most populations.

Age-Selective Harvesting

As noted above, only those bears that are three years of age and older are allowed to be harvested. This is meant to ensure polar bear populations remain stable via the recruitment of new cubs.

8.1.3 Harvest Reporting and Monitoring

Timely harvest reporting and sample collection are essential components of any wildlife management system. They provide invaluable information about population health, and are required to maintain international trade in polar bear parts. The following body parts shall be collected from each polar bear that is harvested in Nunavut:

- (a) lower jaw
- (b) baculum (penis bone), as proof of sex in the case of males
- (c) ear tags, if present
- (d) straight line body length and chest girth
- (e) other samples or measurements, as required.
- (f) additional samples and measurements (e.g., body condition, body size, etc.)

It is recognized that consultation and training may be required before additional information can be collected. Hunters will be paid for samples at a rate determined by the Department of Environment. In the event of a defence of life or property kill (DLPK) the Superintendent of Wildlife (GN) may authorize payment for samples collected by HTOs or individuals on behalf of the Department in the absence of a Conservation Officer in the community.

The parts that show the age, sex and species of a polar bear are: teeth for the age, the jaw or skull for the species, the baculum for the gender, and a meat sample for genetic identification of the sex if no baculum was provided. DNA determination will constitute evidence of the sex. If the reported sex is different from the genetic result, the genetic result is considered the final sex determination for TAH purposes.

Potential future harvest management actions may include:

1) If a decline in a population is noted by science/IQ and the objective is to increase or maintain the population, actions may include:

- Reduce the TAH, or institute a moratorium until the desired target number is reached;

2) If an increase in a population is noted by science/TK and the objective is to decrease or maintain the population, actions may include:

- Increase or maintain the TAH; however, If the TAH is increased, appropriate monitoring must be conducted as a follow-up to measure the success of the management action;

3) If a population is determined to be stable by science/TK and the objective is to maintain the population at the current level actions may include:

- Maintain the current harvest conditions unless there is evidence of declining body condition, recruitment, etc.

As a future option to address the concerns of public safety and potential new subpopulation management objectives, the following objectives will be considered as new information (subpopulation inventories) becomes available:

1) When the status, trend, and management objective of a particular population can support it:

- Eliminate the sex-selective harvest (i.e. harvest 1:1 male to female). As discussed above, harvesting polar bears at a 2 male:1 female ratio maximizes the number of bears that Inuit can harvest; accordingly, switching to a 1:1 harvest will likely result in a reduced TAH. DOE will consider these requests on a case-by-case basis, and only as new information becomes available;

8.2 Information and knowledge gathering (*Qanuqtuurniq*) and objectives

8.2.1 Gaining knowledge

To date, most polar bear research has focused on the estimation of population abundance and trends, and the delineation of population boundaries using physical mark-recapture and telemetry collars. However, Inuit resistance to these research methods has resulted in a shift to less invasive methods, including genetic mark-recapture studies and aerial surveys. These methods do not require the handling of bears, but they must be done more frequently because they do not provide the same degree of detailed information about the individual polar bears or the populations in general.

DOE has implemented various new research methods to monitor Nunavut's polar bear populations that require less or no handling, addressing hunters concerns. That means that a variety of information that biologists previously obtained through research activities is no longer available. Information obtained through prior research on growth, development, and variation of bears across Nunavut can now be collected through hunters. Communities and hunters can provide this information voluntarily to accommodate this loss of data by collecting additional information to supplement population data information. This will aid in understanding polar bear biology and ecology in a broader context.

In addition to ongoing scientific research and monitoring, improvements are being made in the collection of IQ for use in decision-making. Inuit observe bears year round and provide current and historical knowledge that help in decision-making. Harvester observations of body condition can be used to help infer health, as can observations of reproductive success, such as bears with single cubs, twins and triplets. On its own, this information may not be enough for decision-makers, but when used mutually with other sources of knowledge, the decision making process is strengthened.

The following objectives are aimed at providing information that will help in making decisions:

- Increase the frequency of population surveys and monitoring;
- Continue to improve Inuit involvement and participation in research;
- Improve and continue gathering and archiving IQ in relation to polar bears and their habitat;
- Improve and continue to gather supplementary information of harvested bears by hunters;
- Continue to develop and evaluate new and less invasive methods of research;

- Consider not only the effects of ecosystem changes on polar bears, but also how polar bears affect other species, specifically ringed seals and eider ducks;
- Continue genetic research and collaring to clarify potential boundary changes where needed and supported by communities;
- Continue to review developing knowledge when considering boundary changes to reflect Inuit knowledge;
- Improve information reporting related to polar bears and bear-human interactions;
- Improve the analysis of bear-human interactions to determine causes and potential mitigation measures;
- Continue traditional mark-recapture and delineation studies using collars where needed and supported by communities, or when alternative studies do not provide sufficient data for management decisions.

8.2.2 Research

The Department of Environment intends to conduct population inventories of each subpopulation on average every 10 years (depending on the monitoring techniques applied). Harvest statistics and sample collection will be ongoing in order to further aid management decisions. When possible, a concurrent IQ study will be conducted to complement the population inventory. A schedule of subpopulation inventories and IQ studies is found in Appendix D.

Community residents (with priority to HTO members) shall have the opportunity to participate in polar bear research projects. HTOs will have input into the proposed studies and IQ will be used to guide research efforts.

In addition to the ongoing population monitoring conducted by DOE, other partner organizations and individuals conduct research on polar bears throughout Nunavut. Some of these initiatives include research examining the impacts of contaminants and climate change on polar bear populations, ecological studies, feeding studies and many others. The information gathered through these projects will be considered in management decisions as well.

While the Government of Nunavut has invested considerable effort into the development and use of less invasive research methods to study polar bears, there may be instances when collaring and physical mark-recapture studies are needed to collect more detailed information about a particular population or populations. The Government of Nunavut will seek the support of HTOs prior to implementing studies that utilize these methodologies.

Physical mark-recapture and collaring studies require researchers to use immobilizing drugs in order to safely handle polar bears. When a bear has been immobilized within one year of the date of harvest, \$1000.00 compensation will be paid to the hunter who harvested the polar bear. HTOs will be consulted and

informed of all research initiatives involving the use of chemical immobilization; harvesters can consult their local Conservation Officer to determine whether a bear has been previously immobilized. Any damage to the hide from research activities will be compensated for based on the reduced amount of the hide's market value. Also, any bear killed during DOE polar bear research activities will receive a tag from the nearest community and the community will be paid \$5,000.00 in compensation from the appropriate government authority. These compensation amounts will be reviewed during the 5 and 10 year reviews of the plan. ECCC and Parks Canada also have guidelines for research-related polar bear mortality. HTOs are encouraged to negotiate compensation packages with other researchers or companies that may destroy a bear in defence of life and property when the community reviews the respective research or development permits.

8.3 Habitat management and environmental stewardship (*Avatitinnik Kamatsiarniq*) objectives

Polar bears use most parts of the Arctic and sub-arctic habitat in which they live. From annual and multi-year ice to open water and land, they are always moving. Ensuring that polar bear habitat remains available and usable will take significant effort because of the magnitude of the Arctic and the fact that many threats originate elsewhere. Stewardship can be partially achieved through regulatory processes that occur within Nunavut. However, contaminants that are brought north by wind and ocean currents and climate change are issues that occur far beyond Nunavut.

Current habitat stewardship is further supported by the existing parks and protected areas in Nunavut, including National Parks, Territorial Parks, Migratory Bird Sanctuaries, and National Wildlife Areas.

Objectives that promote stewardship and protect habitat must be local and also consider the broader causes and issues. These objectives include:

- Ensure that stakeholders have the resources and information to participate effectively in regulatory reviews, such as Environmental Impact Assessments;
- Improve monitoring for contaminants in order to respond to potential health concerns resulting from consumption;
- Consider how increasing shipping and resource development activities may affect individual polar bears and populations, both separately and cumulatively;
- Focus research to improve the understanding of climate change impacts, both negative and positive, on ecological conditions that are important to polar bears and that inform conservation and management actions;
- Identify important habitats for polar bears and implement appropriate habitat protection measures through cooperation with appropriate agencies;

- Consider the creation of special management areas, parks, and other land use designations for additional habitat protection and stewardship.

8.4 People and bears (*Inuillu Nanuillu*) and objectives

The polar bear maintains a position of significant cultural importance to Inuit. Harvesting polar bears for meat, tradition, and economic benefit is still very important, and the harvest of one's first bear is a significant milestone in a hunter's life. Minimizing the number of bears that are killed in defence of life and property (DLPK) and maintaining the traditional harvest are important to all communities.

When a DLPK happens, the hide, meat, and all parts of harvested polar bears are turned over to the local HTO after the Conservation Officer has determined that it is a legitimate DLP kill. When there is an irregular or illegal kill, the Conservation Officer will seize the parts of the bear necessary to complete the investigation. The specimens of the killed bear are collected as normal. When it has been determined that the kill was accidental or a DLPK, the Conservation Officer shall ensure that all seized parts from the kill are turned over to the local HTO. The cleaning and drying of the hide is the responsibility of the HTO because the HTO retains the hide. In all cases, the hides in question must be properly stored and preserved and returned to the HTO as soon as possible to prevent damage and loss of economic revenue.

If there is any dispute about the distribution of the hide, meat, or parts of the bear from a DLPK, the decision is deferred to the appropriate RWO. There is no payment to the HTO or the hunter for specimens, or for cleaning and drying the hide of a bear taken illegally. As per the Nunavut *Wildlife Act*, all seized parts from bears taken illegally are disposed of as directed by the judicial authority.

The following objectives are aimed at reducing bear-human conflict and reducing injury/mortality:

- Continue to develop and implement community bear plans;
- Hire bear monitors when needed and train and equip them;
- Continue to develop and improve methods for protecting people, property, and meat caches;
- Ensure that the Wildlife Damage Compensation and Wildlife Damage Prevention Programs are functional and being used;
- Improve communications to the public about bear safety, deterrence, and available programs;
- Work with Hamlets and HTOs to improve local storage for meat in camps and communities as part of the bear-human conflict prevention program.

8.5 Working together (*Piliriqatiginniiq*) and objectives

8.5.1 Within Nunavut

This plan was developed with the direction of a co-management working group and the participation of all HTOs and communities. This is a positive step in improved cooperative management, and the following objectives will help to further improve cooperation within Nunavut:

- Involve Inuit in research, including design, field studies and reporting;
- Improve the collection and archiving of IQ so that it is accessible for planning and decision-making.

8.5.2 Between jurisdictions

Working together should also take place at the inter-jurisdictional level. Polar bear inter-jurisdictional agreements should be developed for all subpopulations that are shared with Nunavut. Domestic agreements are underway for some subpopulations and already exist between Canada and the United States, and Canada and Greenland. User-to-user groups should also pursue agreements on shared populations; one such agreement already exists in the western portion of the Kitikmeot and the Inuvialuit in NWT.

The following objectives will help to foster improved cooperation beyond Nunavut:

- Foster user-to-user agreements between Inuit organizations and other jurisdictions;
- Work toward developing compatible management regimes for shared populations;
- Build cooperative research programs in areas such as population monitoring, contaminants monitoring, and traditional knowledge studies;
- Continue to improve coordination between different levels of government and partners. Environment and Climate Change Canada, Parks Canada, DOE, RWOs and HTOs all have a role and an interest in implementation of this plan;
- Work toward joint decision-making processes involving all the boards linked to a shared subpopulation

8.5.3 Sharing information and knowledge

Simply having knowledge is not enough to manage the species. Ensuring that knowledge and information are shared will help all co-management partners to make better informed decisions. Currently, information flow is sporadic and all parties need to make improvements. This is best done by formalizing information sharing through communications and outreach:

- Develop a communications strategy for sharing information;
- Develop data sharing agreements with other agencies and jurisdictions;
- Ensure that the results of studies, both scientific and IQ, are shared with all co-management partners;
- Continue to contribute to the Polar Bear-Human Interaction Management System, work with the human-bear conflict subcommittee of the Range States and outside organizations to quantify and characterize successful polar bear deterrent measures.

9. IMPLEMENTATION OF THE PLAN

Achieving the objectives identified above will require cooperation of co-management partners, jurisdictions and significant investment of financial and human resources. No changes to existing TAH will occur until new information becomes available, the current management objective of managing for maximum sustainable harvest will continue. New information (see Appendix D) will be presented to the NWMB (when available) along with a review of the management objective for the subpopulation and a review of any new scientific research or IQ study. At that time, a new TAH will be recommended that is consistent with the subpopulation management objective and the objectives of this plan.

The co-management structure in Nunavut requires an NWMB decision for any change to TAH, management objectives, or NQL. It is difficult to predetermine which action, or actions, will be undertaken within the co-management framework and as a result of the NWMB decision-making process as each individual scenario will have its own set of circumstances, including management objective, Inuit Qaujimajatuqangit, population size and trend, as well as population projections under differing harvest scenarios. As the primary decision-making body, the NWMB makes decisions, and no plan or action can be prejudged in this format. This does not mean that action will not be taken, as the goal of the management plan is *"To maintain viable and healthy polar bear subpopulations for current and future generations, and to ensure that polar bears remain an integrated and functioning part of the ecosystem while monitored and appropriate harvests are allowed."*, rather that the outcome will be based on the best available information at the time. In that context, the following are examples, identified by co-management partners, of what actions may be taken in order to implement this plan.

Prior to action being taken, there will be appropriate consultation and dialogue with co-management partners and neighbouring jurisdictions to ensure success.

9.1 Harvest Management

Management Action	Priority	Timeline
Undertake a review of the sustainable removal rates for females	high	3 years
Test revisions to the flexible quota system to ensure they are administratively feasible (revisions will switch to a 1:1 reduction in TAH the following year for overharvest, i.e. if one female is overharvested the reduction will be only one female the following year (If a female overharvest cannot be accommodated through credits or from the following year's TAH than regular flex quota reductions will apply were male credits will go into the bank as opposed to being automatically available).	high	2 year
Expand and increase harvest bio-characteristics reporting upon peer review of research objectives	high	5 year
Improve handling of hides taken as DLPK to ensure no loss in hide value	high	Ongoing
Ensure harvest reporting and sample submission is adequate to address needs	high	Ongoing
Develop a training program for Inuit in communities to establish an Inuit data collection program for hunter effort and interviews and collection of polar bear bio-characteristics	moderate	5 years

9.2 Information and Knowledge Gathering (Qanuqtuurniq): Actions

Habitat Management and Environmental Stewardship (*Avatitinnik Kamatsiarniq*):
Actions

Management Action	Priority	Timeline
Develop a knowledge and information sharing framework for co-management partners	High	2 years
Gather local and Inuit knowledge and incorporate into planning and decision-making	High	Ongoing
Strive to increase the involvement of Inuit in research, planning, and decision-making	High	Ongoing
Conduct population assessments as per the	High	Ongoing

inventory schedule and make the results publicly available in a timely manner		
Continue to develop, evaluate and apply research techniques that will provide the essential information with minimal or no impact on polar bears	Medium	Ongoing
Develop a 25 year research strategy for polar bear ecosystem-based monitoring identifying and prioritizing research gaps	Medium	2017
Build partnerships with external researchers and governments to increase DOE capacity both for science and IQ, and implement the 25 year research strategy through outside funding and partnerships	Medium	Ongoing

9.3 Habitat Management and Environmental Stewardship (*Avatitinnik Kamatsiarniq*) Actions

Management Action	Priority	Timeline
Encourage the development, sharing and implementation of best management practices with stakeholders, tourism operators, and industry	Moderate	Ongoing
Seek to build capacity in all co-management organizations to better participate in regulatory review processes	Moderate	Ongoing
Continue to participate in the contaminant monitoring program for polar bears	Moderate	Ongoing
Study effects of marine shipping and development of mitigation measures	Moderate	10 years

9.4 People and Bears (*Inuillu Nanuillu*) Actions

Management Action	Priority	Timeline
Seek program funding to train and equip bear guards	High	Ongoing
Develop educational material (e.g., posters, fact sheets, website material) for communities, tourists, mining camps, etc., on best practices to minimize human-bear interactions	High	Within 2 years
Develop, adopt and implement community bear management plans and community human-bear-interaction protocols	Moderate	Within 3 years
Develop a communications plan and education materials for bear safety	Moderate	Within 3 years

Conduct a review of Damage Compensation and Damage Prevention Programs	Moderate	Within 3 years
--	----------	----------------

9.5 Working Together (*Piliriqatiginni*) Actions

Management Action	Priority	Timeline
Seek cooperative research partners to build further capacity in IQ studies and scientific research	High	Ongoing
Build capacity in HTOs to provide support and participation in research projects	High	Within 3 years
Develop a knowledge and information sharing framework for co-management partners	High	2 years
Identify inter-jurisdictional agreements near completion and ensure resources to finalize	High	Ongoing
Identify inter-jurisdictional agreements that need to be pursued and ensure resources to initiate	Moderate	3 years
Explore research agreements with neighboring jurisdictions for shared populations	Moderate	5 years
Improve cooperation with federal agencies such as Parks Canada and Canadian Wildlife Service so that their land management efforts also support this plan	Moderate	5 years

10. PLAN REVIEW

To ensure that the goal and objectives of this management plan have been realized, it is essential to measure progress as the plan is implemented. At 5 and 10 years, a co-management working group will conduct a mid-term review of objectives with respect to progress made. Where objectives have been met, they will be revised according to current needs. Where objectives have not been met, additional actions and new timelines may be identified. Co-management is an ongoing effort that evolves in line with available knowledge and information. The review will consider the number of polar bears in each subpopulation, their health, the trends (population, reproduction, survival rates etc.), the conservation of habitat (largely the sea ice, but also denning areas), the reduction of human-bear conflict occurrences and resulting decrease in DLPKs, and the incorporation of IQ.

APPENDICES

Appendix A - 2016 PBTC Status Table

1. Purpose

Under its Terms of Reference, the Polar Bear Technical Committee (PBTC) is to provide an annual report to the Polar Bear Administrative Committee (PBAC) on the status of each of Canada's 13 sub-populations of polar bears that is based upon the best available scientific information and Traditional Ecological Knowledge.

This document defines the various terms used in the Status Table and the basis on which the status of each sub-population was assessed by the PB TC in February 2014.

2. Definitions

2.1 Population estimate

The most recent estimate of abundance reviewed and accepted by the PBTC.

2.2 Historic Trend

Historic trend is the PBTC's assessment of changes in abundance that a sub-population may have experienced since the signing of the international *Agreement on the Conservation of Polar Bears* (1973), which led to current management practices and research. The most recent population estimate and the first comparable documented historic estimate are examined. If a direct comparison of abundance estimates cannot be made or there is only a single estimate of abundance, other lines of evidence may be used in this assessment.

2.3 Recent Trend (15 Years Ago to Present)

Recent trend is the PBTC's assessment of the direction of abundance over the last 15 years. The objective of this assessment is to inform the P BAC as to whether a sub-population has increased, decreased, or remained stable. Recent trend is assessed by comparing the most recent population estimate to the previous population estimate. If a direct comparison of population estimates cannot be made or is not applicable, other lines of evidence such as population viability analyses, productivity indicators, and recent harvest pressure may be used to infer any changes in recent abundance.

2.4 Local and/or TEK assessment

This column represents known documented traditional ecological knowledge or Inuit Qaujimajatuqangit on the status of each of the polar bear subpopulations.

2.5 Future Trend (Present to 10 Years into the Future)

Future trend is the PBTC's assessment of the anticipated direction of abundance. The objective of this assessment is to inform the PBAC as to whether a sub-population is likely to increase, decrease, or remain stable over the next 10 years. Multiple lines of evidence including but not limited to population estimates, population viability analyses, productivity indicators, harvest pressure, and traditional ecological knowledge may be used in this assessment.

2.6 Potential Maximum Removals

The annual total number of human-caused polar bear mortalities from a sub-population allowed under quota(s), Total Allowable Harvest, Total Allowable Take, and/or voluntary agreements. When the annual harvest is reported it generally include all human caused mortalities including DLPs, mortalities due to research, and mortalities due to human activities e.g. consumption of toxic materials related to development.

3. Historic Trend Assessment

3.1 Steps to Assess Historic Trend

Compare current population estimate with the first documented and comparable historic population estimate. When a current estimate is directly comparable to an historic estimate, a designation without any qualifier (i.e. reduced, stable, or increased) may be used.

If the current estimate is not directly comparable to an historic estimate because of differences in study area, or methods, a comparison may be made but any assessment of changes in abundance are inferred. In this case, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).

When population estimates cannot be compared, other lines of evidence such as the most recent population attributes of the sub-population (e.g. age structure) may be used to infer changes in the abundance of the sub-population. This does not include TEK. Again, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).

When there is insufficient information or lack of confidence in available information to make an assessment of change in abundance, the sub-population is assessed as uncertain.

Additional text is provided in the comments section of the status table. It includes listing items such as major threats and other lines of evidence that may have been used.

3.2 Status Designations

Reduced	Current population estimate is statistically significantly lower than historic population estimate
Stable	Current population estimate is not different from historic population estimate
Increased	Current population estimate is statistically significantly higher than historic population estimate
Likely Reduced	Current or inferred current population abundance is lower than historic or inferred historic population abundance
Likely Stable	Current or inferred current population abundance is not different from historic or inferred historic population abundance
Likely Increased	Current or inferred current population abundance is higher than historic or inferred historic population abundance
Uncertain	Insufficient information or lack of confidence in available information to make an assessment

4. Recent Trend Assessment

4.1 Steps to Assess Recent Trend

Compare current population estimate with previous population estimate assuming current population estimate is appropriately recent. When a current estimate is directly comparable to its previous population estimate, a designation without any qualifier is made (i.e. reduced, stable, or increased).

If the current estimate is not directly comparable to its previous population estimate because of differences in study area, methods, or is outdated, and cannot be updated by PVA, a comparison may be made but any assessment of changes in recent population abundance are inferred and a qualifier is required (i.e. likely reduced, likely stable, or likely increased).

When population estimates cannot be compared or are not applicable to assess recent trend, other lines of evidence such as the most recent population attributes of the sub-population (e.g. age distribution) may be used to infer any changes in the abundance of the sub-population. This does not include TEK. Again, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).

When there is insufficient information or lack of confidence in available information to make an assessment of changes in population abundance, the sub-population is assessed as uncertain.

Additional text is provided in the comments section of the status table. It includes listing items such as major threats and other lines of evidence that may have been used.

4.2 Recent Trend Designations

Decline	Current population estimate is statistically significantly lower than previous population estimate
Stable	Current population estimate is not different from previous population estimate
Increase	Current population estimate is statistically significantly higher than previous population estimate
Likely Decline	Current or inferred current population abundance is lower than previous or inferred previous population abundance
Likely Stable	Current or inferred current population abundance is not different from previous or inferred previous population abundance
Likely Increase	Current or inferred current population abundance is higher than previous or inferred previous population abundance
Uncertain	Insufficient information or lack of confidence in available information to make an assessment

5. Future Trend Assessment

5.1 Steps to Assess Future Trend

Compare current population estimate with future population estimate but not exclusive to a population viability analysis (PVA). P VAs are considered in the assessment as long as the data

derived vital rates used to generate the simulations are not older than 15 years. In all these cases, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).

In addition to PVAs, other lines of evidence (e.g. body condition, litter size, sea ice trend, TEK) may be used to predict future trend of a sub-population.

When there is contradictory evidence, insufficient information or lack of confidence in available information to make an assessment of future changes in population abundance, the sub-population is assessed as uncertain.

Additional text is provided in the comments section of the status table. It includes listing items such as major threats and other lines of evidence that may have been used.

5.2 Future Trend Designations

Likely Decline Future population abundance predicted to be lower than current population abundance

Likely Stable Future population abundance predicted not to be different from current population abundance

Likely Increase Future population abundance predicted to be higher than current population abundance

Uncertain Contradictory evidence, insufficient information, or lack of confidence in available information to make an assessment.

Subpopulation	Estimate	±2 SE or 95% CI	Year of Population Estimate	Method	Historic Trend	Local and/or TEK assessment	Recent trend	Future trend	Historic annual removal (5 yr mean)	Historic annual removal (3 yr mean)	Historic annual removals (last year)	Potential Maximum Removals (last year)	Comments/Vulnerabilities/Habitat	Jurisdiction
Baffin Bay	2,074	1542-2606	1997 1	M\R	likely reduced	stable ²	likely decline ³	uncertain ⁴	146	136	136	133 (NU:65+GL:68)	currently being reassessed, high harvest, decline in sea ice, increased shipping	NU, GL
Davis Strait	2,158	1833-2542	2007 5	M\R	likely increased	increased ⁶	likely increase ⁷	likely decline ⁸	110	114	95	QC + 75 (NU:61+NL:12+GL:2)	based upon 2007 survey information, high harvest; decline in sea ice;	NU, QC, Nfld & Lab, GL
Foxe Basin	2,580	2093-	2009-10 9	A	stable	increased ¹⁰	stable ¹¹	likely decline ¹²	106	103	114	QC + 123	long term decline in sea ice; potential for increased shipping for mineral extraction	NU, QC
Gulf of Boothia	1,592	870-2314	2000 13	M\R	likely stable	increasing ¹⁴	likely stable ¹⁵	likely stable ¹⁶	60	62	67	74	Current and projected habitat change may affect productivity of ecosystem. Subpopulation has high vital rates and low harvest.	NU
Kane Basin	164	94-234	1997 17	M\R	likely reduced	Increasing ¹⁸	Uncertain ¹⁹	uncertain ²⁰	5	5	3	11 (NU:5+GL:6)	currently being reassessed, likely a sink population connected with Baffin Bay, small population, decline in sea ice;	NU, GL
Lancaster Sound	2,541	1759-3323	1995-7 21	M\R	likely stable	Increasing ²²	Uncertain ²³	uncertain ²⁴	87	85	80	84	historic sex-skewed harvest, habitat decline, potential for increased shipping for mineral extraction	NU
M'Clintock Channel	284	166-402	2000 25	M\R	likely reduced	stable ²⁶	likely increase ²⁷	uncertain ²⁸	3	4	5	5	increasing oil/gas development; loss of multi-year ice; currently being reassessed	NU
Northern Beaufort Sea	1,291*	n/a	2006 29	M\R	likely stable	stable ³⁰	likely stable ³¹	likely stable ³²	43	39	35	77 (NU:6+ NWT:71)	TEK study complete; increasing oil/gas development; decline in sea ice;	NU, NWT
Norwegian Bay	203	115-291	1997 33	M\R	uncertain	stable ³⁴	uncertain ³⁵	uncertain ³⁶	2	2	1	4	small, isolated population	NU
Southern Beaufort Sea	1,215*	n/a	2006 37	M\R	uncertain	stable ³⁸	likely decline ³⁹	likely decline ⁴⁰	40	32	22	56 (US:35 + ISR:21)	Bromaghin et al. 2015 under review by Polar Bear Technical Committee - more indepth discussion to happen in 2017; annual variability in ice conditions results in changes in density; bears are shifting to NB because of ice conditions; TK study completed; potential for oil/gas development	US, YK, NWT
Southern Hudson Bay	943	658-1350	2012 41	A	stable	stable James Bay; increased in East Hudson Bay ⁴²	stable ⁴³	uncertain ⁴⁴	59	46	43	45 (NU:20 + QC:24 + ON:1)	Uncertain due to contradictory lines of evidence: large declines of body condition, declines in survival rates yet no change in abundance, TEK indicates winter body condition has not changed, TEK indicates that reproductive rates have improved, TEK and science indicate changes in sea ice, ice free season increased by 30 days between 1980-2012. recent high harvest, habitat decline; decline of permafrost-based denning habitat; revised voluntary harvest agreement of 45 currently in effect.	NU, QC, ON

Viscount Melville Sound	161	93-229	1992 ⁴⁵	M\R	likely reduced	increased ⁴⁶	likely stable ⁴⁷	uncertain ⁴⁸	5	5	2	7(NU:3 +NWT:4)	currently being reassessed	NU, NWT
Western Hudson Bay	1,030	754- 1406	2011 ⁴⁹	A	likely reduced	increased ⁵⁰	likely stable ⁵¹	likely decline ⁵²	25	28	28	24 (NU) + Manitoba	sea ice decline; harvest; declines in body condition and lower productivity compared to adjacent Foxe Basin and South Hudson Bay subpopulations; historic decline in abundance from late 1980s through late 1990s linked to reduced survival due to timing of sea ice breakup; recent analysis indicated relative stability in subpopulation from 2001-2010, a period during which there was no significant trend in sea ice freeze up or breakup; continued linkage between female survival and sea-ice conditions.	MB, NU

From the Polar Bear Technical Committee, 2016 (this document is revised annually by the PBTC, the most current version will always be considered as relevant at the time)

Notes

M/R - Physical Mark Recapture Survey

A - Aerial survey

n/a - not available

* The revised estimates for NB and SB is the result of management boundary change. It is based on a USGS analysis.

2016 PBTC Status Table Footnotes

1. Taylor et al. 2005
2. Dowsley 2005a; Dowsley 2005b; Dowsley 2007; Dowsley and Taylor 2006; Nunavut Wildlife Management Board (NWMB) Public Hearing minutes and submissions for April 2008, September 2009;
3. Combined harvested considered unsustainable: Taylor et al. 2005 plus simulations in PBSG 14 and 15 proceedings suggest abundance of 1,546 in 2004
4. Vital rates for Riskman PVA are 18 years old; TEK indicates population is stable; there is current research and ongoing assessment
5. Peacock et al. 2013
6. Kotierk 2010a, 2010b
7. Peacock et al. 2013; Stirling 1980.
8. The impact of a TAH increase on the population has not been modeled; predicted trend after survey was completed at harvest levels in 2007 was considered stable (Peacock et al. 2013); NWMB Davis Strait public hearing submissions May 16-17, 2011
9. Government of Nunavut (GN) final report 2012
10. Sahanatien pers. com. 7 Feb 2013; Dyck pers. com. 7 Feb 2013; Canadian Wildlife Service Nunavut consultation report 2009
11. GN report 2012; Atkinson et al. 2010; Taylor et al. 2006; Taylor and Lee 1995
12. No signs of deteriorating body condition or litter size (GN report 2012)
13. Taylor et al. 2009
14. Keith et al. 2005; Canadian Wildlife Service Nunavut consultation report 2009
15. For the period 2000–2015, assuming all sources of removals in the population sum to 74 bears/yr, the population can be expected to persist at a stable population size (Taylor et al. 2009)
16. Hunters in area reporting ice conditions have improved productivity, harvest levels remain stable (Dyck pers com. 2013)

17. Taylor et al. 2008
18. Canadian Wildlife Service Nunavut consultation report 2009
19. Population simulations of existing data suggest that only a very small quota (<2) may be sustained for this subpopulation (Taylor et al. 2008).
20. Vital rates for PVA are 17 years old, current research and ongoing assessment
21. Schwinsburg et al. 1980; Taylor et al. 2006; Taylor et al. 2008
22. Canadian Wildlife Service Nunavut consultation report 2009
23. For the period 1997-2012, the population would be expected to be stable under the historical harvest regimen (1993-97). At the current mean harvest rate of 78 bears/yr (2002-2006), we estimate that the population is more likely to decline than to increase (Taylor et al. 2008).
24. Vital rates for Riskman PVA are 16 years old
25. Taylor et al. 2006
26. Inuit report that bears are moving to neighbouring areas throughout the region. (Keith et al. 2005; CWS Nunavut consultation report 2009)
27. Likely an increase based on quantitative assessment of growth rate (Taylor et al. 2006)
28. Vital rates for PVA are 14 years old; several research planning consultations has been completed; further consultations ongoing.
29. Griswold et al., unpublished; Stirling et al. 2011
30. Pokiak pers. comm. 7 Feb 2013; Carpenter pers. com. 7 Feb 2013
31. Population size used for management was historically adjusted to 1,200 due to bias in population estimate (Amstrup et al. 2005; Stirling et al. 2011).
32. Durner et al. 2009, Stirling et al. 2011, and TEK (Joint Secretariat, unpublished) indicate stable population and habitat conditions may improve in short-term
33. Taylor et al. 2006; Taylor et al. 2008
34. Canadian Wildlife Service Nunavut consultation report 2009
35. Vital rates for Riskman PVA are 17 years old and vital rates were substituted from other populations (Taylor et al 2008); no recent work in the area
36. Vital rates for Riskman PVA are 17 years old and vital rates were substituted from other populations (Taylor et al. 2008)
37. Griswold et al., unpublished; USGS 2010
38. Pokiak pers com. 7 Feb 2013; Carpenter pers. com. 7 Feb 2013
39. Population estimate is lower but not statistically different from previous population estimates (Amstrup et al. 1986, Regehr et al. 2006).
Quotas were based on the understanding that the total harvest of independent females would not exceed the modeled sustainable maximum of 1.5% of the population (Taylor et al. 1987) and that a 2:1 ratio of males to females would be maintained in the total quota harvested (Stirling 2002)
40. Based on sea ice declines (Durner et al 2009), changes in body conditions measured in Alaska (Rode et al. 2010) and modeling (Regehr et al. 2010)
Estimated risk of future decline is based on vital rates estimated from 2001-2006 data used in demographic models that incorporate sea ice forecasts.
41. Obbard et al. 2013
42. NMRWB Public Hearing Inukjuak February 2014
43. Based on comparison with previous subpopulation estimates (Obbard et al. 2013; Obbard 2008; Kolenosky 1994).
44. Body condition decline, vital rate declines and changes in ice conditions; Inuit observations show no decline in body condition or abundance (Obbard pers. com. 2014, Obbard et al. 2013, NMRWB, unpublished)
45. Taylor et al. 2002
46. Canadian Wildlife Service Nunavut consultation report 2009; community consultations in 2012 and 2013
47. Harvest managed for population growth since last survey including a 5 year moratorium; comparable litter size in 2012 (GNWT unpublished)
48. Vital rates for Riskman PVA are 22 years old; population reassessment currently in process

49. Stapleton et al. 2014

50. Canadian Wildlife Service Nunavut consultation report 2009, Kotierk 2012, NWMB Public Hearing minutes 2005; Tyrrell 2006

51. Lunn et al. 2014 Unpublished Report

52. Based on body condition, abundance estimates, reduced reproductive productivity, and changes in ice conditions (Stirling and Parkinson 2006, Stapleton et al. 2014, Lunn pers. com.)

Appendix B – Subpopulations and Status

Appendix B I – Baffin Bay (BB) subpopulation status

Brief history

A 1989 subpopulation estimate of 300-600 bears was based on mark-recapture data in which the capture effort was restricted to shore-fast ice and the floe edge off northeast Baffin Island. However, Inuit knowledge indicated that an unknown proportion of the subpopulation is typically offshore during the spring and was unavailable for capture. A second study (1993-1997) was carried out during September and October, when all polar bears were on land and the estimated number of polar bears in BB was 2,074. In 2004, abundance estimates were revised to fewer than 1,600 bears, based on population viability simulations using vital rates from the capture study and new information that included Greenland's harvest records. This resulted in significant reductions in TAH that are still in place in 2016. A genetic mark-recapture survey was completed in 2013 and a new population estimate will be available in late 2016.

Current Status: 2,074 bears (1997)
Science – reduced
IQ – stable
current TAH – Nunavut 65
– Greenland 67

Subpopulation recommendations:

- Maintain current population abundance and review management objectives and TAH when the new inventory study is complete.
- Communities believe that the population size is sufficient and should not be managed for increase. New combined TAH for Nunavut and Greenland will be based on new population estimates and recommendations from scientific working groups on what a sustainable harvest would be to keep the population stable at that level.
- Upon receipt of the new population assessment and establishment of a sustainable TAH seek a review of the non-detrimental findings to allow for the export of hides and other bear parts.
- Re-assess the population boundary between BB and KB
- Increase cooperation between all jurisdictions that share this population to ensure a sustainable harvest

Appendix B II – Davis Strait (DS) subpopulation status

Brief history

The initial subpopulation estimate of 900 bears for DS was based on an estimated correction from the original mark-recapture calculation of 726 bears, which was felt to be too low. In 1993, the estimate was increased to 1,400 bears and then to 1,650 in 2005. These

increases were to account for the bias as a result of springtime sampling, the fact that the existing harvest appeared to be sustainable and was not having a negative effect on the age structure, and traditional knowledge that suggested more bears had been seen over the last 20 years. The most recent inventory of this subpopulation was completed in 2007; the new subpopulation estimate is 2,158. The population is characterized by low recruitment rates and high population density where sea ice conditions are deteriorating and variable. A new 2-year study is planned to begin in 2017.

Current status: 2,158 bears (2007)

Science – not reduced

IQ – increased

current TAH – Nunavut = 61

– Nunavik = 32

– Nunatsiavut = 12

– Greenland = 3

Subpopulation recommendations:

- Maintain current population abundance and review management objective and TAH when a new inventory study is complete.
- Re-assess the FB/DS boundary near Kimmirut.
- Increase cooperation among all jurisdictions that share this population to ensure a sustainable harvest
- Hold joint hearings of relevant boards
- Encourage inter-jurisdictional discussions between user groups to identify appropriate allocation between regions

Appendix B III – Southern Hudson Bay (SH) subpopulation status

Brief history

The initial estimate of population numbers came from a three-year (1984-1986) mark-recapture study, conducted mainly in the Ontario portion of the subpopulation. This study and the more recent telemetry data have documented seasonal fidelity to the Ontario coast during the ice-free season, and some intermixing with the Western Hudson Bay and Foxe Basin subpopulations during winter months. In 1988, a population-modeling workshop suggested an increase in the calculated subpopulation estimate from 900 to 1,000 bears, because portions of the eastern and western coastal areas were not included in the area during original sampling. Additionally, the area away from the coast may have been under-sampled due to difficulties in locating polar bears inland (i.e., below the tree line). Thus, some classes of bears, especially pregnant females, were believed to be under-sampled. A new analysis of the 1984-1986 capture data produced an estimate for the study area of 634 and, for 2003-2005, 673. In addition, there are some areas in which it is unsafe to capture bears. An aerial survey conducted between 2011 and 2012 by Ontario estimates the SH abundance at 951 bears. A voluntary inter-jurisdictional harvest agreement was agreed upon which expires in 2016.

Current status: 943 bears (2016)

Science – stable

IQ – increasing

current TAH – Nunavut = 25 (Voluntary agreement reduced it to 20 expires 2016)

– Ontario = 3

– Quebec = 22

Subpopulation recommendations:

- Maintain current population abundance and review management objective and TAH when a new inventory study is complete.
- Increase cooperation among all jurisdictions that share this population to ensure a sustainable harvest
- Help Quebec to develop a management plan and system to ensure that TAH is respected and followed and all harvesting is reported.
- Continue with inter-jurisdictional user-to-user discussions to ensure agreement on the fair allocation of the agreed TAH.

Appendix B IV – Western Hudson Bay (WH) subpopulation status

Brief history

The subpopulation was estimated to be 1,194 in 1987 and 935 in 2004. Before 1998, the subpopulation had apparently remained the same, indicating that DOE research conducted in 2011 using aerial surveys provided a new estimate of 1,030 bears. However, this estimate and the previous one have overlapping confidence intervals, suggesting no change, although techniques of past research projects differed. A recent new analysis by Environment and Climate Change Canada also confirmed that the population remained stable at least for the past 10 years.

Current status: 1,030 bears (2013)

Science – stable

IQ – increase

current TAH – Nunavut = 28

– Manitoba = 8

Subpopulation recommendations:

- Maintain current population abundance and review management objectives and TAH when a new inventory study is complete.
- Increase cooperation with Manitoba

Appendix B V – Foxe Basin (FB) subpopulation status

Brief history

A total subpopulation estimate of 2,119 was developed in 1996 using mark-recapture analysis based on tetracycline biomarkers. IQ suggests that the subpopulation of polar bears has increased (GN consultations in FB communities 2004-2009); the subpopulation estimate was increased to 2,300 bears in 2005 based on IQ. The 2009-2010 aerial surveys produced a new population estimate of 2,580, indicating that the population has remained relatively stable over time.

Current status: 2,580 bears
Science – stable
IQ – increasing
current TAH – Nunavut = 123
– Nunavik = 7

Subpopulation recommendations:

- Maintain current population abundance and review management objectives and TAH when a new inventory study is complete.
- Increase cooperation among all jurisdictions that share this population to ensure a sustainable harvest
- Hold joint board hearings and meetings

Appendix B VI – Gulf of Boothia (GB) subpopulation status

Brief history

Based on IQ, a recognition of sampling deficiencies, and polar bear densities in other areas, an interim subpopulation estimate of 900 was established in the 1990s. After a mark-recapture survey between 1998 and 2000, the subpopulation was estimated to number 1,592. The status of GB is stable, or slightly increasing. A new 3-year population study began in 2015.

Current status: 1,592 bears (2000)
Science – not reduced
IQ – increasing
current TAH – Nunavut = 74

Subpopulation recommendations:

- Maintain current population abundance and review management objectives and TAH when the new inventory study is complete.

Appendix B VII – M'Clintock Channel (MC) subpopulation status

Brief history

An estimate of 900 bears was derived from a six-year study undertaken in the mid-1970s. Following the completion of a mark-recapture inventory in the spring of 2000, the subpopulation was estimated to number 284. A moratorium was put in place, followed by a significantly reduced harvest that was in place until 2015/16 where an increase in TAH

occurred. The management objective for this population is recovery. A genetic mark-recapture study was started in 2014 and will be completed by 2017. Communities indicate that there has been a recovery in the bear population since the TAH reduction and that bears are seen in areas now where in previous years none were present. The number of bears currently in MC was deemed to be "about right" by locals, with few if any individuals supporting an increase above the current population level. The new estimate will likely be available in 2017.

Current status: 284 bears (2000)
Science – reduced, but likely increasing
IQ – increasing
current TAH – Nunavut = 12

Subpopulation recommendations:

- Maintain current population abundance and review management objectives and TAH when the new inventory study is complete.

Appendix B VIII – Lancaster Sound (LS) subpopulation status

Brief history

The subpopulation estimate of 2,541 is based on an analysis of both historical and current mark-recapture data up to 1997. This estimate is considerably larger than a previous estimate of 1,675 that included Norwegian Bay. Currently, there are no data available to assess the population size.

Current status: 2,541 bears (1998)
Science – stable
IQ – n/a
current TAH – Nunavut = 85

Subpopulation recommendations:

- Maintain current population abundance and review management objectives and TAH when a new inventory study is complete.

Appendix B IX – Kane Basin (KB) subpopulation status

Brief history

The size of the subpopulation was estimated to be 164 bears, based on a mark-recapture study undertaken between 1994 and 1998. The small population was believed to be in decline due to overharvesting, and a collaborative study between Greenland and Nunavut was begun in 2011 to examine population boundaries and abundance. The final year of a genetic mark-recapture study was completed in the spring of 2014. A new estimate will be available in 2016.

Current Status: 164 bears (1997)

Science – reduced
IQ – stable
current TAH – Nunavut = 5
Greenland = 3

Subpopulation recommendations:

- Maintain current population abundance and review management objectives and TAH when the new inventory study is complete.
- Re-assess population boundaries between BB and KB
- Work closely with Greenland to ensure that a sustainable harvest occurs

Appendix B X – Norwegian Bay (NW) subpopulation status

Brief history

The current (1993-97) estimate is 203. Data collected during mark-recapture studies and from satellite radio tracking of adult female polar bears, indicate that most of the polar bears in this subpopulation are concentrated along the coastal tide cracks and ridges along the north, east, and southern boundaries. This population is genetically distinct compared to other polar bear populations.

Current status: 203 bears (1998)
Science – data deficient
IQ – n/a
current TAH – Nunavut = 4

Subpopulation recommendations:

- Maintain the current population abundance and review management objectives and TAH when the new inventory study is complete.

Appendix B XI – Viscount Melville Sound (VM) subpopulation status

Brief history

The current subpopulation estimate of 161 was based on a mark recapture survey completed in 1992. GNWT is currently completing a mark-recapture study and a new estimate should be available in 2017.

Current status: 161 bears (1992)
Science – data deficient
IQ – increasing
current TAH – Nunavut = 3
– NWT = 4

Subpopulation recommendations:

- Maintain the current population abundance and review management objectives and TAH when the new inventory study is complete.

- Increase cooperation among all jurisdictions that share this population to ensure a sustainable harvest.

Appendix B XII – Northern Beaufort Sea (NB) subpopulation status

Brief history

The 1998 subpopulation estimate was 1,200 bears. A 2006 mark-recapture survey suggested that the size of the NB subpopulation has remained stable at approximately 980 bears.

Current status: 980 bears (2006)
 Science – stable
 IQ – increasing
 current TAH – Nunavut = 6
 – NWT = 71

Subpopulation recommendations:

- Maintain the current population abundance and review management objectives and TAH when the new inventory study is completed.
- Increase cooperation among all jurisdictions that share this population to ensure a sustainable harvest.

Appendix C – Flexible quota system

Rationale and administration of the flexible quota system

INTRODUCTION

The flexible quota system for polar bears assumes that the annual maximum sustainable yield of males and females for a given population has been divided among the communities that share the population. Each community receives its share of the maximum sustainable harvest of males and females as an annual baseline allocation. For polar bears, the maximum harvest that can be sustained is realized when the harvest is two males for every female. However, not every community can harvest exactly two males per female every year. In some years, the full allocation may not be taken. In other years, the kill may exceed the annual base allocation of males or females. The flexible quota calculation takes these variations into account:

- 1) Any “credits” from previous years when not all the bears were harvested,
- 2) The total number of males killed or removed from the population, and;
- 3) The total number of females killed or removed from the population.

ADMINISTRATION/ACCOUNTING

The flexible quota system is nothing more than a system for administering the portion of the total population maximum sustainable yield. First, the sustainable yield of males and females for a given population must be identified. If a subpopulation has management

objective that requires a TAH to be above the maximum sustainable yield to reach a specific objective then that must first be identified. Then the base annual allocation for each subpopulation is established and the flexible quota system is used to adjust the TAH as required to keep the harvest within the management objective.

Simulation modelling has shown that, for polar bear populations, about twice as many males as females can be harvested. The sustainable number of females is defined as the number that can be removed without causing a decline in the number of females in the population (generally considered to be approximately 1.5 % of the population). However, it is different for the males. Because the males do not produce the cubs, twice as many can be taken. A 2M:1F harvest sex ratio does reduce the number of males in the population to about 70% of the number that would be present if the harvest were unselective. The mean age of the males in the population is also reduced by about two years. However, this has the effect of focusing the harvest on younger males in the more abundant age classes. We assume that the females can still find mates and that younger bears mate just as successfully as older bears. The available data support this. There is no evidence of diminished reproduction, even in populations where it is clear that over-harvesting has depleted the males. Males are reproductively mature by the time they are between 4 and 5 years old, and on average females are only available to mate every two years because of extended parental care.

The annual base allocation value is an annual allotment that does not vary. However, if a community over-harvests either males or females in a given year, that over-harvest must be compensated for by reducing the annual actual allocation.

The actual sex ratio is only taken into consideration when the kill of females has exceeded the sustainable number (i.e., the actual allocation for that year). The reason is to avoid penalizing a community that shuts down the harvest when the last female has been taken. It is the number of bears taken that really matters. The proportion of females in the harvest is only an indication of what the sex ratio for the next year will be. As long as a community has not exceeded the allowable kill of males or females, there is no reduction in TAH, regardless of the sex ratio of the kill.

Credit is given for any unused current allocation of males and females. The credits can be either male or female. Credits are specific to a given subpopulation and cannot be used for other subpopulations. Credits shall be administered by the responsible RWO and the RWO shall make the allocation of credits as appropriate. If a female credit is requested, there must be a male credit available to exchange, because there cannot be more negative male credits than positive female credits. It is sustainable to over-harvest the males as long as an equivalent number of females is under-harvested. As long as there is at least one positive female credit for each negative male credit, there is no reduction to the TAH. This means that as long as the total TAH is not exceeded, and as long as the females are not over-harvested, the TAH for the following year will stay at the maximum base allocation.

Credits are a special case because they represent individuals that were not taken, so they are in addition to the estimated population. Credits are administered separately. Credits

accumulate until the next population inventory, and then they are zeroed because the total population is taken into effect when a new TAH is determined.

1. All human-caused mortality to polar bears will be taken from the TAH of the nearest community. In the event that the human-caused mortality exceeds the TAH, extra tags will be issued and the TAH for the following year will be correspondingly reduced in line with the flexible quota system.
2. A naturally abandoned cub will be counted as a natural death and not counted against the TAH.
3. Any bear that is found near death can be killed as a humane action and, once the Conservation Officer has certified that the bear was near death, the humane kill will not be counted against the TAH.
4. When a Nunavut beneficiary kills a bear, the tag will come from that person's home community if that community has a TAH in the population that the bear was harvested from. Otherwise, the nearest community must provide the tag.
5. When a female with cubs, yearlings, or juveniles is killed, the cubs, yearlings and juveniles are also regarded as killed (even if they run away). For TAH determination purposes, the cubs and yearlings are counted as males and only $\frac{1}{2}$ tag each. The juveniles are counted as whole tags of whatever sex they are. If the cubs run away after the female is killed, the cubs are counted as $\frac{1}{2}$ tag and all male, however the yearlings and the juveniles are each counted as whole tags and the sex is counted as $\frac{1}{2}$ male and $\frac{1}{2}$ female.
6. If credits are available, they may be used to address all types of kills, including accidental, illegal, and defence kills.
7. If a community shuts down its harvest after exceeding the maximum allowable females, the unused tags are counted as harvested males **for calculating the proportion of females only** so as not to penalize the community for shutting down the harvest before filling all the tags. If a community does not exceed the current allocation for females, for TAH calculation purposes the harvest sex ratio is assumed to be 0.33 (i.e., 2 males:1 female).
8. Subpopulation credits accumulate until the next population inventory results are final. Then all credits are set back to zero because the new TAH is based on the new population information, and the entire sustainable take is allocated to the new TAH. Any credits will be realized as TAH increases if the population information was accurate and the credits are not used. The communities then resume collecting credits from the new start, as before.

Appendix D – Research Schedule

Proposed schedule to conduct subpopulation status by scientific method and collection of IQ, as of 2016

Subpopulation	Previous survey year and method	Next survey year and method	Previous IQ survey	Proposed IQ survey
Baffin Bay	2011-2013 Genetic mark-recapture	2021 To be determined	2015	2022
Davis Strait	2005-2007 Mark- recapture	2017-18 Genetic mark-recapture	2007-2008	2018
Foxe Basin	2010-2011 Aerial survey	2017 Aerial survey	2008-2009	2018
Gulf of Boothia	1998-2000 Mark -recapture	2015-2017 Genetic mark-recapture	n/a	2017
Kane Basin	2012-2014 Genetic mark recapture and aerial survey	2021 To be determined	n/a	2024
Lancaster Sound	1997 Mark-recapture	2018-20 To be determined	n/a	2019
M'Clintock Channel	1998-2000 Mark-recapture	2014-2017 Genetic mark recapture	2002-2006	2016
Northern Beaufort Sea	2006 Mark-recapture	2019	n/a	TBD
Norwegian Bay	1998 Mark-recapture	2018 To be determined	n/a	2018
Southern Hudson Bay		2016 Aerial survey	2013	TBD
Viscount Melville	2012-2014 Mark-recapture	TBD	n/a	TBD
Western Hudson Bay and Southern Hudson Bay	2011 Aerial survey	2016 Aerial survey	2011-2012	2021

This schedule is tentative and assumes full availability of funds and human resources. The priorities and needs may shift over the coming years, which will affect timing of this schedule. TBD-To be determined

Appendix E - Literature Reviewed

Amstrup, S. C. 1993. Human disturbances of denning polar bears in Alaska. *Arctic*, **46**: 246-250.

Amstrup, S. C. 2003. Polar bear. Pp. 587–610 in Wild mammals of North America: biology, management, and conservation. 2nd Edition. G.A. Feldhamer, B.C. Thompson, and J.A. Chapman (eds). John Hopkins University Press, Baltimore, MD.
biology, management, and conservation. 2nd Edition. G. A.

- Amstrup, S. C., Durner, G. M., McDonald, T. L., Johnson, W. R. 2006. Estimating potential effect of hypothetical oil spills on polar bears. US Geological Survey, US Department of the Interior. 55 pp.
- Atkinson, S. N., Nelson, R. A., Ramsay, M. A. 1996. Changes in the body composition of fasting polar bears (*Ursus maritimus*) : the effect of relative fatness on protein conservation. *Physiol. Zool.* **69**: 304-316.
- Atkinson, S., Garshelis, D., Stapleton, S., Hedman, D. 2012. Western Hudson Bay polar bear aerial survey, 2011. Government of Nunavut, Final Report, Igloolik, Nunavut. 56 pp.
- Best, R. C. 1984. Digestibility of ringed seals by the polar bear. *Can. J. Zool.* **63**: 1033-1036.
- Bethke, R., Taylor, M. K., Amstrup, S., Messier, F. 1996. Population delineation of polar bears using satellite collar data. *Ecol. Appl.* **6**: 311-317.
- Blix, A. S., Lentfer, J. W. 1979. Modes of thermal protection in polar bear cubs – at birth and on emergence from their den. *Am. J. Physiol.* **236**: R67-R74.
- Brice-Bennett, C. 1977. Land Use in the Nain and Hopedale Regions. Pp 97-203 in Our footprints are everywhere, Inuit land use and occupancy in Labrador. C. Brice-Bennett (ed.). Labrador Inuit Association, Nain, Greenland.
- Bytingsvik, J., Lie, E., Aars, J., Derocher, A. E., Wiig, Ø., Jenssen, B. M. 2012. PCBs and OH-PCBs in polar bear mother-cub pairs : a comparative study based on plasma levels in 1998 and 2008. *Sci. Total Env.* DOI: 10.1016/j.scitotenv.2011.12.033.
- Campagna, L., Van Coeverden de Groot, P.J., Saunders, B., Atkinson, S., Weber, D., Dyck, M.G., Boag, P.T., Loughheed, S.C. 2013. Extensive sampling of polar bears (*Ursus maritimus*) in the Northwest Passage (Canadian Arctic Archipelago) reveals population differentiation across multiple spatial and temporal scales. *Ecol. Evol.* **3**: 3152-3165.
- Clark, D. A., Stirling, I., Calvert, W. 1997. Distribution, characteristics, and use of earth dens and related excavations by polar bears on the western Hudson Bay Lowlands. *Arctic*, **50**: 158-166.
- Colborn, T., vom Saal, F. A., Soto, A. M. 1993. Developmental effects of endocrine-disrupting chemicals in wildlife and humans. *Environ. Health Perspect.* **101**: 378-384.
- Comiso, J. C., Nishio, F. 2008. Trends in sea ice cover using enhanced and compatible AMSR-E, SSM/I, and SMMR data. *J. Geophys. Res.-Oceans* **113**: C020507.

- Damstra, T., Barlow, S. Bergman, A., Kavlock, R., Kraak, G. V. D. 2002. Global Assessment of the state-of-the-science of endocrine disruptors. Geneva: World Health Organization.
- de March, B. G. E., de Wit, C., Muir, D. C. G., Braune, B., Gregor, D. J., Norstrom, R. J. 1998. Persistent organic pollutants. Pp. 183-372 in AMAP Assessment Report: Arctic Pollution Issues. Oslo: Arctic Monitoring Assessment Programme.
- DeMaster, D. P., Stirling, I. 1981. *Ursus maritimus*. Polar bear. *Mammal. Spec.* **145**: 1-7.
- Department of Environment. 2014. Summary of Community Consultations on the draft Nunavut Polar Bear Management Plan development and process. Government of Nunavut, Iqaluit, Nunavut.
- Derocher, A. E., Stirling, I., Andriashek, D. 1992. Pregnancy rates and serum progesterone levels of polar bears in western Hudson Bay. *Can. J. Zool.* **70**: 561-566.
- Derocher, A. E., Andriashek, D., Stirling, I. 1993. Terrestrial foraging by polar bears during the ice-free period in western Hudson Bay. *Arctic*, **46**: 251-254.
- Derocher, A. E., Stirling, I. 1995. Temporal variation in reproduction and body mass of polar bears in western Hudson Bay. *Can. J. Zool.* **73**: 1657-1665.
- Derocher, A. E., Stirling, I. 1998. Geographic variation in growth of polar bears (*Ursus maritimus*). *J. Zool. (Lond.)* **245**: 65-72.
- Derocher, A. E., Stirling, I. 1998. Maternal investment and factors affecting offspring size in polar bears (*Ursus maritimus*). *J. Zool. (Lond.)* **245**: 253-260.
- Derocher, A. E., Wiig, Ø. 1999. Infanticide and cannibalism of juvenile polar bears (*Ursus maritimus*) in Svalbard. *Arctic*, **52**: 307–310.
- Derocher, A. E., Wiig, Ø., Bangjord, G. 2000. Predation of Svalbard reindeer by polar bears. *Polar Biol.* **23**: 675-678.
- Derocher, A. E., Wolkers, H., Colborn, T., Schlabach, M., Larsen, T. S. & Wiig, O. 2003. Contaminants in Svalbard polar bear samples archived since 1967 and possible population level effects. *Sci. Total Environ.* **301**: 163-174.
- Donaldson, G. M., Chapdelaine, G., Andrews, J. D. 1995. Predation of thick-billed murre, *Uria lomvia*, at two breeding colonies by polar bears, *Ursus maritimus*, and walruses, *Odobenus rosmarus*. *Can. Field-Nat.* **109**: 112-114.

- Dowsley, M., Wenzel, G. W. 2008. "The time of the most polar bears": A co-management conflict in Nunavut. *Arctic*, **61**: 177–189.
- Durner, G. M., D. C. Douglas, R. M. Nielson, et al. 2009. Predicting 21st-century polar bear habitat distribution from global climate models. *Ecological Monographs*, **79**: 25–58.
- Dyck, M. G., Daley, K. 2002. Cannibalism of a yearling polar bear (*Ursus maritimus*) at Churchill, Canada. *Arctic*, **55**: 190-192.
- Dyck, M. G. Baydack, R. K. 2004. Vigilance behaviour of polar bears in the context of wildlife-viewing activities at Churchill, Manitoba, Canada. *Biol. Cons.* **116**: 343-350.
- Dyck, M. G. 2006. Characteristics of polar bears killed in defence of life and property in Nunavut, Canada, 1970-2000. *Ursus*, **17**: 52-62.
- Dyck, M. G., Baydack, R. K. 2006. Human activities associated with polar bear viewing near Churchill, Manitoba, Canada. *Human Dimensions of Wildlife*, **11**: 143-145.
- Dyck, M. G., Romberg, S. 2007. Observations of a wild polar bear (*Ursus maritimus*) successfully fishing arctic charr (*Salvelinus alpinus*) and fourhorn sculpin (*Myoxocephalus quadricornis*). *Polar Biol.* **30**: 1625-1628.
- Dyck, M. G., Morin, P. 2011. In vivo digestibility trials of a captive polar bear (*Ursus maritimus*) feeding on harp seal (*Pagophilus groenlandicus*) and arctic charr (*Salvelinus alpinus*). *Pakistan J. Zool.* **43**: 759-767.
- Feldhamer, G. A., Thompson, B. C., Chapman, J. A. (eds). Wild mammals of North America. John Hopkins University Press, Baltimore, MD.
- Ferguson, S. H., Taylor, M. K., Messier, F. 2000. Influence of sea ice dynamics on habitat selection by polar bears. *Ecology*, **81**: 761-772.
- Ferguson, S. H., Taylor, M. K., Rosing-Asvid, A., Born, E. W., Messier, F. 2000. Relationships between denning of polar bears and conditions of sea ice. *J. Mammal.* **81**: 1118-1127.
- Fikkan, A., Osherenko, G., and Arikainen, A. 1993. Polar bears: the importance of simplicity. Pp. 96-151 in Young, O. R., and Osherenko, G. (eds). Polar politics: creating international environmental regimes. Ithaca, NY: Cornell University Press.
- Freeman, Milton M.R. and Lee Foote, 2009. Inuit, Polar Bears and Sustainable Use. Edmonton, CCI Press, 252 pages.
- Freeman, M. M. R. 2001. Culture, commerce and international co-operation in

- the global recovery of polar bears. *Pacific Conservation Biology* **7**: 161– 168.
- Freeman, M. M. R., and Wenzel, G. 2006. The nature and significance of polar bear conservation hunting in the Canadian Arctic. *Arctic* **59**:21-30.
- Furnell, D. J., Oolooyuk, D. 1980. Polar bear predation on ringed seals in ice-free water. *Can. Field-Nat.* **94**: 88-89.
- Furnell, D.J., Schweinsburg, R.E. 1984. Population dynamics of central Arctic polar bears. *J. Wildl. Manage.* **48**: 722-728.
- Gentry, A. 2001. Nomenclatural notes: the authorship and date of the specific name of *Ursus* or *Thalarctos maritimus*, the polar bear, is Phipps (1774) and not Linnaeus (1758). *Bull. Zool. Nomen.* **58**: Part 4.
- Gough, W. A., Cornwell, A. R., Tsuji, L. J. S. 2004. Trends in seasonal sea-ice duration in southwestern Hudson Bay. *Arctic*, **57**: 299-305.
- Hamilton, S.G., Castro de la Guardia, L., Derocher, A.E., Sahanatien, V., Tremblay, B., et al. 2014. Projected polar bear sea ice habitat in the Canadian Arctic Archipelago. *PLoS ONE* **9**: e113746. doi:10.1371/journal.pone.0113746
- Hannah, C.G., Dupont, F., and Dunphy, M. 2009. Polynyas and tidal currents in the Canadian Arctic Archipelago. *Arctic*, **62**: 83-95.
- Harington, C. R. 1968. Denning habits of the polar bear (*Ursus maritimus* Phipps). *Can. Wildl. Serv. Report Series No. 5*. 30 pp.
- Hobson, K. A., Stirling, I. 1997. Low variation in blood $\delta^{13}\text{C}$ among Hudson Bay polar bears: implications for metabolism and tracing terrestrial foraging. *Mar. Mammal Sci.* **13**: 359-367.
- Hobson, K. A., Stirling, I., Andriashek, D. S. 2009. Isotopic homogeneity of breath CO_2 from fasting and berry-eating polar bears: implications for tracing reliance on terrestrial foods in a changing Arctic. *Can. J. Zool.* **87**: 50-55.
- Honderich, J. E. 2001. Wildlife as a hazardous resource: an analysis of the historical interaction of humans and polar bears in the Canadian Arctic 2000 B.C. to 1935 A.D. M. A. thesis, University of Waterloo, ON, Waterloo. 193 pp.
- Howell-Skalla, L. A., Cattet, M. R. L., Ramsay, M. A., Bahr, J. M. 2002. Seasonal changes in testicular size and serum LH, prolactin and testosterone concentrations in male polar bears (*Ursus maritimus*). *Reproduction*, **123**: 729-733.
- IPCC (Intergovernmental Panel on Climate Change). 2001. Third Assessment Report: Climate Change 2001 (TAR). Accessible at: <http://www.ipcc.ch>.

IPCC (Intergovernmental Panel on Climate Change). 2007. Fourth Assessment Report: Climate Change 2007 (AR4). Accessible at: <http://www.ipcc.ch>.

Iverson, S. J., Stirling, I., Lang, S. L. C. 2006. Spatial and temporal variation in the diets of polar bears across the Canadian Arctic: indicators of changes in prey populations and environment. Pages 98-117 in I.L. Boyd, S. Wanless, C. J. Camphuysen (eds.). *Top predators in marine ecosystems*. Cambridge University Press, New York, New York, USA.

Kalxdorff, S. B. 1997. Collection of local knowledge regarding polar bear habitat use in Alaska. Marine Mammals Management, Fish and Wildlife Service, Region 7, Alaska. USFWS Technical Report MMM 97-2. U.S. Department of the Interior. 71 pp.

Kingsley, M. C. S., Stirling, I., Calvert, W. 1985. The distribution and abundance of seals in the Canadian High Arctic, 1980–82. *Can. J. Fish. Aquat. Sci.* **42**: 1189-1210.

Kolenosky, G. B., Prevett, J. P. 1983. Productivity and maternity denning of polar bears in Ontario. *Int. Conf. Bear Res. Manage.* **5**: 238-245.

Kurtén, B. 1964. The evolution of the polar bear, *Ursus maritimus* Phipps. *Acta Zool. Fenn.* **108**: 130.

Laidre, K. L. et al. 2015. Arctic marine mammal population status, sea ice habitat loss, and conservation recommendations for the 21st century. *Conservation Biology*, DOI: 10.1111/cobi.12474.

Laidre, K. L., Stirling, I., Lowry, L. F., Wiig, Ø., Heide-Jorgensen, M. P., Ferguson, S. H. 2008. Quantifying the sensitivity of arctic marine mammals to climate-induced habitat change. *Ecol. Appl.* **18**: S97-S125.

Lewis, A., Doidge, W., Suppa, S. 2006. Update of traditional knowledge on polar bears at Inukjuak and Puvirnituq, Nunavik. Report 12-493 submitted to Aboriginal Species at Risk Fund, Environment and Climate Change Canada, Québec Region. Nunavik Research Centre, Makivik Corporation, Kuujuaq, QC.

Letcher, R. J., Bustnes, J. O., Dietz, R., Jenssen, B. M., Jørgensen, E. H., Sonne, C., Verrault, J., Vijayan, M. M., Gabrielsen, G. W. 2010. Exposure and effects assessment of persistent organohalogen contaminants in arctic wildlife and fish. *Sci Total Environ.* **408**: 2995-3043.

Lie, E., Bernhoft, A., Riget, F., Belikov, S. E., Boltunov, A. N., Derocher, A. E., Garner, G. W., Wiig, O., & Skaare, J. U. 2003. Geographical distribution of organochlorine pesticides (OCPs) in polar bears (*Ursus maritimus*) in the Norwegian and Russian Arctic. *Sci. Total Environ.* **306**: 159-170.

Linnaeus, C. 1758. *Systema Naturae*, Ed. 10, Vol. 1. 824 pp. Salvii, Holmiae.

Lunn, N. J., Stirling, I., Andriashek, D., Richardson, E. 2004. Selection of maternity dens by female polar bears in western Hudson Bay. *Polar Biol.* **27**: 350–356.

Lunn, N. J., Stenhouse, G. B. 1985. An observation of possible cannibalism by polar bears (*Ursus maritimus*). *Can. J. Zool.* **63**: 1516–1517.

Markus, T., Stroeve, J. C. and Miller J. 2009. Recent changes in Arctic sea ice melt onset, freezeup, and melt season length. *J. Geophys. Res.* 114:C12024, doi:10.1029/2009JC005436.

Maslanik, J., Stroeve, J., Fowler, C. and Emery W. 2011. Distribution and trends in Arctic sea ice through spring 2011. *Geophys. Res. Letters* 38:L13502, doi:10.1029/2011GL047735.

Mauritzen, M. et al. 2003. Functional responses in polar bear habitat selection. *Oikos*, **100**: 112–124.

McLoughlin, P. D., Taylor, M. K., Messier, F. 2005. Conservation risks of male-selective harvest for mammals with low reproductive potential. *J. Wildl. Manage.* **69**: 1592-1600.

McLoughlin, P. D., Taylor, M. K., Dowsley, M. 2007. Update, COSEWIC status report on the polar bear (*Ursus maritimus*) prepared for the Committee on the Status of Endangered Wildlife in Canada. Government of Nunavut, Department of Environment, Status report: 32, Iqaluit, 59 pp.

McKinney, M. A., Peacock, E., Letcher, R. 2009. Sea ice-associated diet change increases the levels of chlorinated and brominated contaminants in polar bears. *Environ. Sci. Technol.* **43**: 4334-4339.

Malenfant, R.M., Davis, C.S., Cullingham, C.I., Coltman, D.W. 2016 Circumpolar genetic structure and recent gene flow of polar bears: a reanalysis. *PLoS ONE* 11(3): e0148967. doi:10.1371/journal.pone.0148967

Messier, F., Taylor, M. K., Ramsay, M. A. 1994. Denning ecology of polar bears in the Canadian Arctic Archipelago. *J. Mammal.* **75**: 420-430.

Molnár, P. K., Lewis, M. A. and Derocher, A. E. 2014. Estimating allee dynamics before they can be observed: polar bears as a case study. *PLoS One* **9(1)**: e85410. DOI:10.1371/journal.pone.0085410.

Muir, D., Braune, B., DeMarch, B, Norstrom, R., Wagemann, R., Lockhart, L., Hargrave, B., Bright, D., Addison, R., Payne, J., Reimer, K. 1999. Spatial and temporal trends and effects of contaminants in the Canadian Arctic marine ecosystem: A review. *Sci. Total Environ.* **230**:

- Muir, D., Backus, S., Derocher, A. E., Dietz, R., Evans, T. J., Gabrielsen, G. W., Nagy, J., Norstrom, R. J., Sonne, C., Stirling, I., Taylor, M. K., Letcher, R. J. 2006. Brominated flame retardants in polar bears (*Ursus maritimus*) from Alaska, the Canadian Arctic, East Greenland, and Svalbard. *Environ. Sci. & Technol.* **40**: 449–455.
- Norstrom, R. J., Belikov, S. E., Born, E. W., Garner, G. W., Malone, B., Olpinski, S., Ramsay, M. A., Schliebe, S., Stirling, I., Stishov, M. S., Taylor, M. K., Wiig, Ø. 1998. Chlorinated hydrocarbon contaminants in polar bears from eastern Russia, North America, Greenland and Svalbard. *Arch. Environ. Contam. Toxicol.* **35**: 354–367.
- Obbard, M. E., Cattet, M. R. L., Moody, T., Walton, L. R., Potter, D., Inglis, J., Chenier, C. 2006. Temporal trends in the body condition of Southern Hudson Bay polar bears. Climate Change Research Information Note, No. 3. Ontario Ministry of Natural Resources, Applied Research and Development Branch, Sault Ste. Marie, ON, 8 pp.
- Obbard, M. E. 2008. Southern Hudson Bay polar bear project: Final Report. Ontario Ministry of Natural Resources, Peterborough, Ontario. 64 pp.
- Obbard, M. E., Thiemann, G. W., Peacock, E., DeBruyn, T. D. (eds) (2010). *Polar Bears: Proceedings of the 15th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, Copenhagen, Denmark, 29 June–3 July 2009*. Gland, Switzerland and Cambridge, UK: IUCN. vii + 235 pp.
- Obbard, M.E., Middel, K.R., Stapleton, S., Thibault, I., Brodeur, V., and Jutras, C. 2013. Estimating abundance of the Southern Hudson Bay polar bear subpopulation using aerial surveys, 2011 and 2012. Ontario Ministry of Natural Resources, Science, and Research Branch, Wildlife Research Series 2013-01.33 pp.
- Øritsland, N. A., Engelhardt, F. R., Juck, F. A., Hurst, R. J., Watts, P. D. 1981. Effect of crude oil on polar bears. Indian and Northern Affairs Canada, Environmental Studies No. 24.
- Ovsyanikov, N. G. 1996. Interactions of polar bears with other large mammals, including man. *J. Wildl. Res.* **1**: 254-289.
- Palmer, S. S., Nelson, R. A., Ramsey, M. A., Stirling, I., Bahr, J. M. 1988. Annual changes in serum sex steroids in male and female black (*Ursus americanus*) and polar (*Ursus maritimus*) bears. *Biol. Repr.* **38**: 1044-1050.
- Peacock, E., Taylor, M. K., Laake, J., Stirling, I. 2013. Population ecology of polar bears in Davis Strait, Canada and Greenland. *J. Wildl. Manage.* DOI: 10.1002./jwm.489.

- Pedersen, A. 1945. Der Eisbär: Verbreitung and Lebensweise. E. Bruun, Copenhagen.
- Perovich, D. K., Richter-Menge, J. A. 2009. Loss of ice in the Arctic. *Ann. Rev. Mar. Sci.* **1**: 417-441.
- Phipps, C. J. 1774. A voyage towards the North Pole undertaken by His Majesty's Command, 1773. viii, 253 pp., 14 pls. Nourse, London.
- Pilfold, N. W., Derocher, A. E., Stirling, I., Richardson, E., Andriashek, D. 2012. Age and sex composition of seals killed by polar bears in the eastern Beaufort Sea. PLoS ONE; DOI: 10.1371/journal.pone.0041429
- Polischuk, S. C., Letcher, R. J., Norstrom, R. J., Ramsay, M. A. 1995. Preliminary results of fasting on the kinetics of organochlorines in polar bears (*Ursus maritimus*). *Sci. Total Environ.* **160-161**: 465-472.
- Polischuk, S. C., Norstrom, R. J., Ramsay, M. A. 2002. Body burdens and tissue concentrations of organochlorines in polar bears vary during seasonal fasts. *Environ. Pollut.* **118**: 29-39.
- Prestrud, P., and Stirling, I. 1994. The international polar bear agreement and the current status of polar bear conservation. *Aquatic Mammals* **20**: 113-124.
- Ramsay, M. A., and Dunbrack, R. L. 1986. Physiological constraints on life history phenomena: The example of small bear cubs at birth. *Am. Nat.* **127**: 735-743.
- Ramsay, M.A., Stirling, I. 1988. Reproductive biology and ecology of female polar bears (*Ursus maritimus*). *J. Zool. (Lond.)* **214**: 601-634.
- Ramsay, M. A., Stirling, I. 1990. Fidelity of female polar bears to winter den sites. *J. Mammal.* **71**: 233-236.
- Ramsay, M. A., Hobson, K. A. 1991. Polar bears make little use of terrestrial food webs: evidence from stable-carbon isotope analysis. *Oecologia*, **86**: 598-600.
- Regehr, E. V., Amstrup, S. C., Stirling, I. 2006. Polar bear population status in the southern Beaufort Sea: U.S. Geological Survey Open-File Report 2006-1337, 20 pp.
- Regehr, E. V., Lunn, N. J., Amstrup, S. C., Stirling, I. 2007. Effects of earlier sea ice breakup on survival and population size of polar bears in western Hudson Bay. *J. Wildl. Manage.* **71**: 2673-2683.
- Regehr, E. V., Hunter, C. M., Caswell, H., Amstrup, S.C., Stirling, I. 2010. Survival and

breeding of polar bears in the southern Beaufort Sea in relation to sea ice. *J. Anim. Ecol.* **79**: 117-127.

Richardson, E., Stirling, I., Hik, D. S. 2005. Polar bear (*Ursus maritimus*) maternity denning habitat in western Hudson Bay: A bottom-up approach to resource selection functions. *Can. J. Zool.* **83**: 860-870.

Rockwell, R. F., Gormezano, L. J. 2009. The early bear gets the goose: climate change, polar bears and lesser snow geese in western Hudson Bay. *Polar Biol.* **32**: 539-547.

Rode, K.D., Amstrup, S.C. and Regehr, E.V. 2010. Reduced body size and cub recruitment in polar bears associated with sea ice decline. *Ecol. Appl.* **20**: 768-782.

Rode, K. D., Peacock, E., Taylor, M., Stirling, I., Born, E. W., Laidre, K. L., Wiig, Ø. 2012. A tale of two polar bear populations: ice habitat, harvest, and body condition. *Popul. Ecol.* **54**: 3-18.

Rosing-Asvid, A., Born, E. W., Kingsley, M. C. S. 2002. Age at sexual maturity of males and timing of the mating season of polar bears (*Ursus maritimus*) in Greenland. *Polar Biol.* **25**: 878-883.

Russell, R. H. 1975. The food habits of polar bears of James Bay and southwest Hudson Bay in summer and autumn. *Arctic*, **28**: 117-129.

Sahanatien, V., Peacock, E., and A. E. Derocher. 2015. Population substructure and space use of Foxe Basin polar bears. *Ecology and Evolution*, **5**: 2851-2864.

Sahanatien, V., Derocher, A. E. 2012. Monitoring sea ice habitat fragmentation for polar bear conservation. *Animal Cons.* DOI : 10.1111/j.1469-1795.2012.00529

Saunders, B. L. 2005. The mating system of polar bears in the central Canadian Arctic. M.Sc. Thesis, Queen's University, Kingston, Ontario.

Serreze, M. C., M. M. Holland, and J. Stroeve. 2007. Perspectives on the Arctic's shrinking sea ice cover. *Science* **315**: 1533–1536

Sonne, C., Dyck, M., Riget, F., Bech-Jensen, J.E., Hyldstrup, L., Letcher, R., Gustavson, K., Gilbert, T., and Dietz, R. 2015. Globally used chemicals and penile density in Canadian and Greenland polar bears. *Environmental Research* **137**: 287-291.

Sonne, C., Riget, F. F., Dietz, R., Kirkegaard, M., Born, E. W., Letcher, R., Muir, D. C. G. 2005. Trends in fluctuating asymmetry in East Greenland polar bears (*Ursus maritimus*) from 1892 to 2002 in relation to organohalogen pollution. *Sci. Total Environ.* **341**: 81-96.

- Sonne, C., Leifson, P. S., Dietz, R., Born, E. W., Letcher, R. J., Hyldstrup, L., Riget, F. F., Kirkegaard, M., Muir, D. C. G. 2006. Xenoendocrine pollutants may reduce size of sexual organs in East Greenland polar bears (*Ursus maritimus*). *Environ. Sci Technol* **40**: 5668-5674.3
- Sonne, C. 2010. Health effects from long-range transported contaminants in Arctic top predators: An integrated review based on studies of polar bears and relevant model species. *Environ Int.* **36**: 461–491.
- Sou, T. and Flato G. 2009. Sea ice in the Canadian Arctic Archipelago: modeling the past (1950-2004) and the future (2041-60). *J. Climate* **22**: 2181-2198.
- Smithwick, M., Mabury, S. A., Solomon, K. R., Sonne, C., Martin, J. W., Born, E. W., Dietz, R., Derocher, A. E., Letcher, R. J., Evans, T. J., Gabrielsen, G. W., Nagy, J., Stirling, I., Taylor, M. K., Muir, D. C. G. 2005. Circumpolar study of perfluoroalkyl contaminants in polar bears (*Ursus maritimus*). *Environ. Sci. & Technol.* **39**: 5517–5523.
- Stapleton, S., Peacock, E., and Garshelis, D. 2016. Aerial surveys suggest long-term stability in the seasonally ice-free Foxe Basin (Nunavut) polar bear population. *Marine Mammal Science*, **32**: 181-201.
- Stapleton, S., Peacock, E., Garshelis, D., Atkinson, S. 2012. Foxe Basin polar bear aerial survey, 2009 and 2010: Final Report, Government of Nunavut, Iqaluit, Nunavut.
- Stapleton, S., Atkinson, S., Hedman, D., and Garshelis, D. 2014. Revisiting Western Hudson Bay: using aerial surveys to update polar bear abundance in a sentinel population. *Biol. Cons.* **170**: 38-47.
- Stempniewicz, L. 2006. Polar bear predatory behavior toward molting Barnacle geese and nesting Glaucous gulls on Spitzbergen. *Arctic*, **59**: 247-251.
- Stirling, I., McEwan, E. H. 1975. The caloric value of whole tinned seals (*Phoca hispida*) in relation to polar bear ecology and hunting behavior. *Can. J. Zool.* **53**: 1021-1027
- Stirling, I., Archibald, W. R. 1977. Aspects of predation of seals by polar bears. *J. Fish. Res. Board Can.* **34**: 1126-1129
- Stirling, I., Calvert, W., Cleator, H. 1982. Underwater vocalizations as a tool for studying the distribution and relative abundance of wintering pinnipeds in the High Arctic. *Arctic*, **36**: 262-274.
- Stirling, I. 1988. Attraction of polar bears *Ursus maritimus* to off-shore drilling sites in the eastern Beaufort Sea. *Polar Rec.* **24**: 1-8.

- Stirling, I., Andriashek, D. 1992. Terrestrial denning of polar bears in the eastern Beaufort Sea area. *Arctic*, **45**: 363-366.
- Stirling, I., Derocher, A. E. 1993. Possible impacts of climatic warming on polar bears. *Arctic*, **46**: 240-245.
- Stirling, I., Andriashek, D. A., Calvert, W. 1993. Habitat preferences of polar bears in the western Canadian Arctic in late winter and spring. *Polar Rec.* **29**: 13-24.
- Stirling, I., Lunn, N. J., Iacozza, J. 1999. Long-term trends in the population ecology of polar bears in western Hudson Bay in relation to climatic change. *Arctic*, **52**: 294-306.
- Stirling, I., Parkinson, C. L. 2006. Possible effects of climate warming on selected populations of polar bears (*Ursus maritimus*) in the Canadian Arctic. *Arctic*, **59**: 261-275.
- Stroeve, J., Holland, M. M., Meier, W., Scambos, T., Serreze, M. 2007. Arctic sea ice decline: faster than forecast. *Geophys. Res. Lett.* **34**: L09501.
- Taylor, M., Larsen, T., Schweinsburg, R. E. 1985. Observations of intraspecific aggression and cannibalism in polar bears (*Ursus maritimus*). *Arctic*, **38**: 303– 309.
- Taylor, M. K., Lee, L. J. 1995. Distribution and abundance of Canadian polar bear populations: a management perspective. *Arctic*, **48**: 147–154.
- Taylor, M. K., Akeeagok, S., Andriashek, D., Barbour, W., Born, E. W., Calvert, W., Cluff, H. D., Ferguson, S., Laake, J., Rosing-Asvid, A., Stirling, I., Messier, F. 2001. Delineating Canadian and Greenland polar bear (*Ursus maritimus*) populations by cluster analysis of movements. *Can. J. Zool.* **79**: 690–709.
- Taylor, M. K., Laake, J., Cluff, H. D., Ramsay, M. A., Messier, F. 2002. Managing the risk from hunting for the Viscount Melville Sound polar bear population. *Ursus*, **13**: 185–202.
- Taylor, M.K., Laake, J. L., McLoughlin, P. D., Born, E. W., Cluff, H. D., Ferguson, S. F., Rosing-Asvid, A., Schweinsburg, R., Messier, F. 2005. Demography and viability of a hunted population of polar bears. *Arctic*, **58**: 203–214.
- Taylor, M.K., Laake, J.L., McLoughlin, P.D., Cluff, H.D., Messier, F. 2006. Demographic parameters and harvest-explicit population viability analysis for polar bears in M'Clintock Channel, Nunavut. *J. Wildl. Manage.* **70**: 1667–1673.
- Taylor, M.K., Laake, J. L., McLoughlin, P. D., Cluff, H. D., Born, E. W., Rosing-Asvid, A., Messier, F. 2008a. Population parameters and harvest risks for polar bears (*Ursus maritimus*) in Kane Basin, Nunavut and Greenland. *Polar Biol.* **31**: 491-499.

- Taylor, M. K., P. D. McLoughlin, and F. Messier. 2008b. Sex-selective harvesting of polar bears *Ursus maritimus*. *Wildlife Biology* 14:52-60.
- Taylor, M.K., Laake, J. L., McLoughlin, P. D., Cluff, H. D., Messier, F. 2009. Demography and population viability of polar bears in the Gulf of Boothia, Nunavut. *Mar. Mammal Sci.* **25**: 778-796.
- Thiemann, G. W., Iverson, S., Stirling, I. 2008. Polar bear diets and Arctic marine food webs: insights from fatty acid analysis. *Ecol. Monogr.* **78**: 591-613.
- Thenius, E. 1953. Concerning the analysis of the teeth of polar bears. *Mammal. Bull.* **1**: 14-20.
- Tyrrell, M. 2006. More bears, less bears: Inuit and scientific perceptions of polar bear populations on the west coast of Hudson Bay. *Inuit Studies*, **30**: 191–208.
- Van de Velde, F., Stirling, I., Richardson, E. 2003. Polar bear (*Ursus maritimus*) denning in the area of the Simpson Peninsula, Nunavut. *Arctic*, **56**: 191–197.
- Verreault, J., Gabrielsen, G. W., Chu, S. G., Muir, D. C. G., Andersen, M., Hamaed, A., Letcher, R. J. 2005a. Flame retardants and methoxylated and hydroxylated polybrominated diphenyl ethers in two Norwegian Arctic top predators: Glaucous gulls and polar bears. *Environ. Sci. & Technol.* **39**: 6021-6028.
- Verreault, J., Muir, D. C. G., Norstrom, R. J., Stirling, I., Fisk, A. T., Gabrielsen, G. W., Derocher, A. E., Evans, T. J., Dietz, R., Sonne, C., Sandala, G. M., Gebbink, W., Riget, F. F., Born, E. W., Taylor, M. K., Nagy, J., Letcher, R. J. 2005b. Chlorinated hydrocarbon contaminants and metabolites in polar bears (*Ursus maritimus*) from Alaska, Canada, East Greenland, and Svalbard: 1996-2002. *Sci. Total Environ.* **351**: 369-390.
- Verreault, J., Norstrom, R. J., Ramsay, M. A., Mulvihill, M., Letcher, R. J. 2006. Composition of chlorinated hydrocarbon contaminants among major adipose tissue depots of polar bears (*Ursus maritimus*) from the Canadian high Arctic. *Sci. Total Environ.* **370**: 580-587.
- Verreault, J., Dietz, R., Sonne, C., Gebbink, W. A., Shamiri, S., Letcher, R. J. 2008. Comparative toxokinetics of organohalogen contaminants in two top Greenland carnivores: Captive sledge dogs (*Canis familiaris*) and wild polar bear (*Ursus maritimus*). *Comp. Biochem. Physiol., Part C* **147**: 306–315.
- Vongraven, D., Peacock, E. 2011. Development of a pan-Arctic monitoring plan for polar bears: background paper. Circumpolar Biodiversity Monitoring Programme, CAFF Monitoring Series Report No.1, January 2011, CAFF International Secretariat, Akureyri, Iceland.

- Vongraven, D. et al. 2012. A circumpolar monitoring framework for polar bears. *Ursus Monogr. Ser.* 5.
- Wang, M., Overland, J. E. E. 2012. A sea ice free summer Arctic within 30 years-an update from CMIP5 models, *Geophys. Res. Lett.*, DOI:10.1029/2012GL052868.
- Watts, P. D., Hansen, S. E. 1987. Cyclic starvation as a reproductive strategy in the polar bear. *Symp. Zool. Soc. (Lond.)* **57**: 305-318.
- Wenzel, G. 1983. Inuit and polar bears: observations from a hunt near Resolute Bay, N.W.T. *Arctic* **38**: 90-94.
- Wenzel, G. 1995. Ningiqtuq: Inuit resource sharing and generalized reciprocity in Clyde River, Nunavut. *Arctic Anthropology* **32**: 43-60.
- Wenzel, G. 2004. Polar bear as a resource: an overview. Third northern research forum open meeting position paper. URL: http://www.nrf.is/open_meetings_files/Yellowknife_2004/Wenzel.pdf.
- Wiig, Ø., Amstrup, S., Atwood, T., Laidre, K., Lunn, N., Obbard, M., Regehr, E., and Thiemann, G. 2015. *Ursus maritimus*. The IUCN Red List of Threatened Species 2015: e.T22823A14871490.
- Wimsatt, W. A. 1963. Delayed implantation in the Ursidae, with particular reference to the black bear (*Ursus americanus* Pallas). Pp. 49-76 in Delayed implantation. A.C. Enders (ed.). University of Chicago Press, Chicago, IL.

Consultation Summary for the Draft Nunavut Polar Bear Co-Management Plan, revised as a result of input received through the NWMB Public Hearing

October 15 , 2016, Nunavut Inuit Wildlife and Environment
Advisory Committee, Rankin Inlet

October 20, 2016, Kitikmeot Region Wildlife Board AGM,
Cambridge Bay

October 26, 2016, Kivalliq Wildlife Board AGM, Rankin Inlet

November 7, 2016, Qikiqtaalik Wildlife Board AGM, Iqaluit

Department of Environment, Government of Nunavut
Iqaluit, Nunavut

Executive Summary

Government of Nunavut, Department of Environment (DOE) representatives conducted consultations with the three Regional Wildlife Organizations and the Nunavut Inuit Wildlife and Environment Advisory Committee (NIWEAC) between 15 October and 7 November 2016. The primary purpose of these consultations was to advise co-management partners of revisions to the draft Polar Bear Co-Management Plan that were made as a result of input received during the Nunavut Wildlife Management Board (NWMB) public hearing process.

Although there was significant consultation to develop the draft submitted to the NWMB for approval in the fall of 2015, relevant comments and edits received during the written public hearing held by the NWMB resulted in edits to the draft. The changes to the draft were largely organizational and for provision of further clarity. A high level review and explanation of what was changed and why, as well as changes that were suggested and not made, were considered by the working group. The Regional RWOs Annual General Meetings were an appropriate venue for those consultations, as well as the NIWEAC fall meeting, as this meeting was instrumental in formulating the original working draft in 2014.

This report attempts to summarize the comments made by participants at the meetings and how those comments were addressed.

Preface

This report represents the Department of Environment's best efforts to accurately capture and translate all of the information that was shared during consultation meetings with the RWOs and NIWEAC.

The views expressed herein do not necessarily reflect those of the Department of Environment or the Government of Nunavut.

Table of Contents

Executive Summary.....	i
Preface	ii
Table of Contents	iii
1.0 Summary Purpose and Structure	1
2.0 Purpose of Consultations	1
2.1 Format of Meetings.....	1
2.2 Meeting Participants	1
3.0 Consultation Summary.....	1
4.0 Conclusion- Next Steps	2
Appendix A- Presentation used during consultation meetings	4

1.0 Summary Purpose and Structure

This summary is intended to summarize comments, questions, and concerns raised during consultation meetings held with the RWOs and the NIWEAC on the Draft Polar Bear Co-Management Plan (PBMP). Although there was significant consultation to develop the draft submitted to the NWMB for approval in the fall of 2015, relevant comments and edits received during the written public hearing held by the NWMB resulted in edits to the draft. The changes to the draft were largely organizational and for provision of further clarity. A high level review and explanation of what was changed and why, as well as changes that were suggested and not made, were considered by the working group.

2.0 Purpose of Consultations

The primary purpose of the consultations was to engage the RWOs in a dialogue on the current status of the draft PBMP and to present revisions to the draft that were made as a result of comments received during the NWMB's written public hearing. This approach was advised by the NWMB. It is important to note that any revisions to the draft were only considered if they were consistent with what was heard from communities, and what was said to communities, during consultations.

2.1 Format of Meetings

The consultations were held during the AGMs of the three RWOs and the fall meeting of NIWEAC. All meetings were chaired by the respective Board Chairperson. A DOE representative was on the agenda to present the information at DOE's request. The presentation (Appendix A) lasted approximately 45 minutes with questions following ranging from 30-45 minutes per meeting. The translations were conducted simultaneously during the meetings.

2.2 Meeting Participants

All meetings were attended by Board members at each of the three RWOs and Chaired by the respective RWO Chairman. Additional participants were from the Nunavut Inuit Wildlife Secretariat, NWMB, Department of Fisheries and Oceans, Environment and Climate Change Canada, and Nunavut Tunngavik Inc. The representative from DOE was Chris Hotson.

3.0 Consultation Summary

The development of the PBMP has been lengthy with community consultations on the draft occurring in the winter of 2014, and regional follow up meetings occurring in the spring of 2014. It was determined that consultation with stakeholders (e.g. RWOs) was appropriate to inform them of the current status of the PBMP and to advise what changes had occurred to the draft PBMP since its submission to the NWMB for approval in 2015. Presenting to the RWO AGMs and the NIWEAC fall meeting was considered appropriate stakeholder consultation to allow for advice and input on the process and to allow for further dissemination to Hunters and Trappers Organizations through their participation on the RWO Boards. The PowerPoint presentation as well as the current draft PBMP was also sent to each HTO for information following the AGMs. This approach to disseminating the information enabled those Board members who were in attendance at the AGMs to update their respective HTO Boards.

The presentation reviewed what has been done to date and then explained specific changes that were made to the draft (e.g. splitting threats and challenges into two sections, splitting industrial activity and tourism into two threats, changing the wording of the roles of Parks Canada and ECCC, plus editorial fixing). It was explained that some comments received during the written public hearing were considered but not included when making edits to the draft as they would not have enhanced the quality or clarity of the draft (e.g. a comment that there are not more bears than in the 1960's, which did not correspond with what was heard during consultations).

The questions received during this round of consultations were similar to what was heard during initial consultations with HTOs and communities. Most were queries as to whether the plan was addressing issues that Inuit have stated are important throughout the consultations and development of the PBMP.

These questions are listed below along with an explanation of what was said at the time, or how the issue was resolved after the consultations.

- There are too many bears now - *this perspective has been adequately included in the draft as proposed.*
- Public Safety is a concern with the perceived higher concentrations of bears - *this has been covered in the draft and specific actions developed to help address this concern including: 1) improved education for bear safety; 2) improved training for polar bear monitors for communities; 3) better access to deterrent methods (bear bangers/ flares etc.).*
- Cabin /property damage is a problem and the compensation programs are difficult to access - *this has been addressed in the draft and actions developed to address this concern include reducing the complexity of forms and providing assistance in completing forms through Conservation Officers in the communities.*
- Negative and inaccurate public opinion about status of polar bears - *the concern is that world media misrepresents the status of polar bears while Inuit are experiencing high concentrations of bears and public safety concerns. Although negative public opinion and inaccuracies are beyond the scope of the PBMP, there is a strong message in the draft that: 1) bears pose a safety risk; 2) there are too many bears in some areas and other species (birds and seals) are being harmed; and 3) Inuit have been managing the species well.*
- Loss or damage to hides being held while under investigation for Defense Kills - *this concern is identified in the draft PBMP and actions to resolve investigations in a timely manner and to ensure no loss in hide value are identified.*
- A concern was raised about a recent event where an Inuk hunter was in a community other than his own and had a Defense of Life and Property Kill. The question arose regarding this incident and what community the tag was to come from - the hunter's home community or the community he was visiting - *A review of the previous Memorandum of Understanding's text and the current draft PBMP text was undertaken and the current draft was revised to remove the uncertainty in that situation.*

4.0 Conclusion- Next Steps

The Department of Environment considered the comments and suggestions received during the consultation meetings in finalizing the draft plan for resubmission to the NWMB Public Hearing Process.

Submission to the NWMB is expected in February 2017. The expectation is for the Nunavut Land Claims Agreement decision-making process to be completed, and for the PBMP to be implemented, on July 1, 2017.

Appendix A- Presentation used during consultation meetings

17/11/2016

[illegible]

Outline

- What have we done?
- What was the outcome of the NWMB Hearing?
- What were the changes to the draft plan?
- Next steps?

▷^b▷^s▷^c▷^d▷^C▷^s▷

- P/^at^er A/cn/Lc^mA/C?
- T^bo^dJ^r VⁱpⁿN^cL^bo^d o^ap⁴ b^le^cn^ap^ev^db^e
bⁿL^aV^c d^ec^et^erⁿAⁿoⁿLⁱ?
- P/^cL^bo^d d^erⁿO^bd^e r³g^ec^ed^ed^epⁿ c^ewⁿf?
- A^bC^r A/cn/L^do^b?

[illegible]

What have we done?

- Formed a working group of stakeholders
- Prepared and reviewed an outline with IWAC in June 2014
- Developed a rough draft

የፖሊስ ለርቢዮች ርዕስ

- የከተማ አስተዳደር ዘመናዊነት ማሻሻያ
ለጥበቃና ምርምር
- የከተማ አስተዳደር ዘመናዊነት ማሻሻያ
ዕውቀት ልማት ስልጣን ማስተላለፍ
ዕውቀት ልማት (IWAC) ሪፖርት 2014
- የከተማ አስተዳደር ዘመናዊነት ማሻሻያ
ዕውቀት ልማት ስልጣን ማስተላለፍ

What have we done?

- Consulted with all communities in the winter of 2013
- Revised and finalized a draft based on input
- Held regional meetings to review and improve draft and review management objectives in spring 2013
- An internal DoE review shortened and simplified

The NWMB Process

- Submitted to NWMB and they held a written hearing
- NWMB reviewed input received during written hearing and adjourned meeting
- Asked Minister to consider input received

**መፃዓት ኮሌጥሰኝና ልማት
ኮሚሽን ለፖሊሲና ስራ**

- ጋራው ስራ ላይ የሚገኙት የፖሊሲና ስራ ማሳሰቢያዎችን ለሰራተኛው ስራ ማሳሰቢያዎች ለማሳሰብ
- መፃዓት ኮሌጥሰኝና ልማት ማህበረ ሰራተኛው ስራ ማሳሰቢያዎች ለሰራተኛው ስራ ማሳሰቢያዎች ለማሳሰብ
- ፖሊሲና ስራ ማሳሰቢያዎች ለሰራተኛው ስራ ማሳሰቢያዎች ለማሳሰብ

Changes to the draft

- Wanted actions section more robust

$$\langle \mu \rangle \approx \frac{1}{2} \left(\frac{1}{\mu_1} + \frac{1}{\mu_2} \right)$$

- **ለፖሊስና ለፍርድ ቤቶች ማቅረብ**

Sample Action Table

[illegible]

Changes to the draft

- Hired editors to reduce duplication and improve the draft for better reading

$$\Delta \rho_{CD} \sigma^a \rho^c \rho^b \sigma^b \rho^c$$

- [illegible]

What we did not change

- Wanted more supporting science

$Ld\sigma^{\alpha}Lc \ll P\Delta c \gg^{\alpha}rcJ^c$

- $\Delta \text{Lc} \gg \Delta \text{b} \approx \Delta \text{a}$

What we did not change

- Wanted more supporting science

Ldσ^abc ΔPΔc▷^aΓcJ^c

- $\Delta \rho_{\text{LQD}}^{\text{LQD}} \propto \Delta \rho_{\text{LQD}}^{\text{LQD}} \propto \Delta \rho_{\text{LQD}}^{\text{LQD}}$

What we did not change

- The fact that people see more bears in almost all areas

Ldσ^abc ΔPΔc▷^aΓcJ^c

- **പാലീനേഷ്യൻ ഫോറം** **പാലീനേഷ്യൻ ഫോറം** **പാലീനേഷ്യൻ ഫോറം**

What we did not change

- The tone and intent, to develop a plan that better represents what Inuit see and believe

Ldσ^abc ΔPΔc▷^arcJ^c

- [illegible]

What we did not change

- Wanted more supporting science
- Concerns about meat caching as
- The fact that people see more bears in almost all areas
- The tone and intent, to develop a plan that better represents what Inuit see and believe

Ldσ³bc <PΔc>^{ab}rcJ^c

- ለፌዴራል ልምት/ልማት ፍትሃዊነት
- ለፌዴራል ልማት/ልማት ፍትሃዊነት ልማት
- ለልማት/ልማት ልማት ልማት ልማት
- ለልማት/ልማት ልማት ልማት ልማት

Next Steps

$$\Lambda^{\mathfrak{b}}\dot{\mathcal{C}}\sigma$$

$$\Lambda\sigma\mathcal{L}\mathfrak{A}^{\mathfrak{b}}\mathcal{J}\mathcal{L}\mathcal{L}\mathfrak{A}\dot{\mathcal{C}}^{\mathfrak{c}}$$

- Ensure that the draft reflects what we heard and what we said during consultations
- Resubmit to the NWMB for approval
- Implement for the 2017-2018 Season

Questions?

¿Puede ser?

Thank you/ᄃᆞᆫ ᄇᆡᆯᆫ

$\mathrm{d}r_r \mathrm{H} \mathrm{d}r_a$

Outline

- What have we done?
- What was the outcome of the NWMB Hearing?
- What were the changes to the draft plan?
- Next steps?

[illegible]

- $P \vdash \neg \neg \neg P$?
- $\neg \neg \neg P \vdash P$?
- $\neg \neg \neg P \vdash \neg P$?
- $\neg \neg \neg P \vdash \neg \neg P$?

Direction

- To develop a plan that better represents what Inuit see and believe in regard to polar bears
- To try and develop a plan that could be adopted under the Species at Risk Act (*SARA*)

סמל

- $\dot{\gamma}^{\text{b}} \rho^{\text{b}} \gamma \omega \rho \dot{\gamma}^{\text{c}} \sigma < \omega \rho \gamma \omega \dot{\gamma}^{\text{b}} \rho^{\text{b}} \gamma \omega \rho \dot{\gamma}^{\text{c}} \sigma$
- $\dot{\gamma}^{\text{b}} \rho^{\text{b}} \gamma \omega \rho \dot{\gamma}^{\text{c}} \sigma < \omega \rho \gamma \omega \dot{\gamma}^{\text{b}} \rho^{\text{b}} \gamma \omega \rho \dot{\gamma}^{\text{c}} \sigma$

What have we done?

- Formed a working group of stakeholders
- Prepared and reviewed an outline with IWAC in June 2014
- Developed a rough draft

የሥራ ልማት ስራ?

- የሥራ ልማት ስራ ለማድረግ የሚያስፈልጉትን ሥራዎች ለማግኘት የሚያስፈልጉትን ሥራዎች ለማግኘት
- የሥራ ልማት ስራ ለማድረግ የሚያስፈልጉትን ሥራዎች ለማግኘት የሚያስፈልጉትን ሥራዎች ለማግኘት
- የሥራ ልማት ስራ ለማድረግ የሚያስፈልጉትን ሥራዎች ለማግኘት የሚያስፈልጉትን ሥራዎች ለማግኘት

What have we done?

- Consulted with all communities in the winter of 2015
- Revised and finalized a draft based on input
- Held regional meetings to review and improve draft and review management objectives in spring 2015
- An internal DoE review shortened and simplified

የጥፋት ለመቀነስ ምን እናልቀቅ?

- ለአጭር ጊዜ ውስጥ ለሚገኙት ጥያቄዎች 2015
- ለጥያቄዎች ለሚገኙት ጥያቄዎች ለሚገኙት ጥያቄዎች
- ለጥያቄዎች ለሚገኙት ጥያቄዎች ለሚገኙት ጥያቄዎች
- ለጥያቄዎች ለሚገኙት ጥያቄዎች ለሚገኙት ጥያቄዎች
- ለጥያቄዎች ለሚገኙት ጥያቄዎች ለሚገኙት ጥያቄዎች

The NWMB Process

- Submitted to NWMB and they held a written hearing
- NWMB reviewed input received during written hearing and adjourned meeting
- Asked Minister to consider input received

መግዛት ኮሚሽን ለህዝብ ጥያቄዎች
ኮሚሽን ለህዝብ ጥያቄዎች

- መግዛት ኮሚሽን ለህዝብ ጥያቄዎች ኮሚሽን ለህዝብ ጥያቄዎች
- መግዛት ኮሚሽን ለህዝብ ጥያቄዎች ኮሚሽን ለህዝብ ጥያቄዎች
- ለህዝብ ጥያቄዎች ኮሚሽን ለህዝብ ጥያቄዎች

Results of the review

- DoE reviewed all input
- Made some changes to text to reflect concerns
- Did not make other changes because it was contrary to what we heard and what we said

הַיְּהוּדִים הָיוּ מְשֻׁלָּמִים בְּיָמֵינוּ

- $\mathbb{C}^n$ 上的 n 个坐标函数 $x_1, \dots, x_n$ 是 $\mathbb{C}^n$ 上的正则函数。
- $\mathbb{C}^n$ 上的正则函数 $f_1, \dots, f_r$ 的零点集 $V(f_1, \dots, f_r)$ 是 $\mathbb{C}^n$ 上的闭子集。
- $\mathbb{C}^n$ 上的闭子集 V 是正则的当且仅当 $V = V(f_1, \dots, f_r)$ 对某个 r 成立。

Changes to the draft

- Wanted more detail on climate change

ΔρρCΔσ^uρ_c ρ₉^c C^{qb} <^{qb} ρ_Δρ_c

- Λ^bb^oσ_ρL_cΔ^qq_c C^qb_Δρ^qb^bσ^b ρ_cΔ[<]
Δρ^qρ^qσ^uρ_cσ^c

Changes to the draft

- Threats and Challenges is now two sections

[illegible]

- $\dot{\gamma} \propto \omega \propto \sqrt{\tau}$ $\Rightarrow$ $\tau \propto \dot{\gamma}^2$ $\Rightarrow$ $\tau \propto \omega^2$

Changes to the draft

- Wanted industrial activity separated from tourism

ΔΗΚΚΔ>σ^αΓC ΡΘ<C—^αb<^αbΡΔ>ΠC

- ΛχΛCΔ>ςςC ΞαΔ^αδΠ^αχΔC ΛCΠσ^αΓ^ασC
Δ^αΘΠΠΛΔΠ^b>CςςΔCΠσ^αΓC

Changes to the draft

- Wanted changes to the wording of role of ECCC and PC

ΔΥΠCΔσ^αΓC ΥΘ^ε C^εb<^εbΥΔΓC

- ΛΔ^εLcΔςC ΔΥΠςσ^αΓ^ασ^ε Δ^εbΔΥςbC^αΓC
ΛCΓΔ^αΓC ΔΞΓCΓλ^bδ^ε Δ^εL^ε C ΥCΔ^ε
ΔΥλ^εb<^ε CΔσ^αΓσ^ε bαCΓ (ECC) Δ^εL^ε C
Γ^αΥJΔ^εbΥςΔCΓλ^bδ^ε bαCΓ (PC)

Changes to the draft

- Wanted references included

ΔΗΠCΔ>σ^uΠC ΗΘ^cC—^{qb}<^{qb}ΗΔ>ΠC

- Λ^qL<Δ>^qC ασ^cΠΗ^uΠC Λ^qbΗΔ>Δ>ΗL^qθ^c—ΔΠC

Changes to the draft

- Wanted actions section more robust

ΔΓΠCΔσ^αΓC ΓΘ^cΓ^cq₅ > q₅ < ^cb ΓΔΓC

- Λ^ΔLcΔ^cc ΛCηΓΔΠ^bΓ^c ΓC^bΓLσ^αΓC
Γ^αΓ^cΓ^cΓC

Sample Action Table

Management Action	Priority	Timeline
Undertake a review of the sustainable removal rates for females	high	3 years
Test revisions to the flexible quota system to ensure they are administratively feasible (revisions will switch to a 1:1 reduction in TAH the following year for overharvest, i.e. if one female is overharvested the reduction will be only one female the following year (If a female overharvest cannot be accommodated through credits or from the following year's TAH than regular flex quota reductions will apply were male credits will go into the bank as opposed to being automatically available).	high	2 year
Expand and increase harvest bio-characteristics reporting upon peer review of research objectives	high	5 year
Improve handling of hides taken as DLPK to ensure no loss in hide value	high	Ongoing
Ensure harvest reporting and sample submission is adequate to address needs	high	Ongoing
Develop a training program for Inuit in communities to establish an Inuit data collection program for hunter effort and interviews and collection of polar bear bio-characteristics	moderate	5 years

Changes to the draft

- Hired editors to reduce duplication and improve the draft for better reading

[illegible]

- $\nabla_{\mathbf{v}} \mathbf{v} = \mathbf{v}$ (the directional derivative of the velocity vector in the direction of the velocity vector is the velocity vector itself)

What we did not change

- Wanted more supporting science

Ldσ_ulc ΔrPΔcl>^{uu}rc

- $\wedge \nabla \text{LC} \triangleright \zeta \zeta \text{C} \Delta \text{b} \nabla \text{b} \text{r} \Delta \sigma \text{b} \text{r} \sigma \text{b}$
 $\text{r} \text{b} \triangleright \text{r} \text{u} \text{r} \nabla \text{N} \triangleright \sigma \text{r} \text{r} \text{c}$

What we did not change

- Wanted more supporting science

Ldσ^alC ΔPΔCΔ^aΓCJc

- ΔPΔCΔ^alC Ldσ^al σ^aρbLσ^b
σ^aρbLΔ^alC ΔbΔ^aΓCΔPΔCΔ^aΓCσ^aρbσ^b

What we did not change

- The fact that people see more bears in almost all areas

Ldσ_uLC Δ_{HP}ΔC▷[∞]_u∩C_JC

- $a_{\rightarrow a} \tau_u \tau^a \sigma_u \tau_u \sigma^c \Delta_{\sigma} \Delta^c$
 $Cd^q b^c C^q \sigma^q b^h \triangleright c^q LC \ a_{\sigma} \sigma^b$
 $a \Gamma \triangleright \Delta^a a b^h c \cap \triangleright^q \sigma a \sigma$

What we did not change

- The tone and intent, to develop a plan that better represents what Inuit see and believe

Ldσ³lc <PΔcΔ³ncJc

- ∫Pρ_qσ³l Δ¹lL> ΛcncΔΔ_qΔ³σ³l,
Δ³bρ_bρ³d>J <³qJnΓ^b ΔΔσ³b₃b₃d<
ρ₃l³b∫Δ>σ Δ_σ³σ^c cΔ>lnΔ³Δ³σ^b
Δ¹lL> Δ^bΛnlΔ³Δ³σ^b

- Wanted more supporting science
- Concerns about meat caching as
- The fact that people see more bears in almost all areas
- The tone and intent, to develop a plan that better represents what Inuit see and believe

$\Delta \leq C_0$

- [illegible]

Next Steps

- Ensure that the draft reflects what we heard and what we said during consultations
- Resubmit to the NWMB for approval
- Implement for the 2017-2018 Season

Λ^εbĈσ
ΛcηΔ^εηΔ^εc

- CL^εα η^εΔ^εc^εb<^εbηΔ^εc
η^ερηcη^εdΔ^εη
Δ^εcΔ^εbΔ^εcη^εcΔ^εηΔ^εc
Δ^εbΔ^εηΔ^εcΔ^εbΔ^εcη^εcσ
Δ^εΛ^εbη^εσ^εbη^εcΔ^εc
ΔσΔ^εb^εσc^εcη^εb Δε^εη^εΓ
Δ^εΔ^εcηΔ^εηΔ^εbΔ^εc bηΔ^εη^εcσ^εc
Δ^εη^εbΔ^εcΔ^εη^εcΔ^εc
• ΔΔc^εbηΔ^εcΔ^εcη^εb ΔΔ^εσ
2017-2018-Γ
ΔρΔ^εb<^εcΔ^εη^εησ^εησ

Questions?

Δ∧₅₉₅δ∩₅?

Thank you/ $\frac{d\Gamma^b}{dL^a}$



www.tunngavik.com

May 24, 2017

Daniel Shewchuk
Acting Chairperson
Nunavut Wildlife Management Board
P.O. Box 1379,
Iqaluit, NU
X0A 0H0

Dear Mr. Shewchuk:

Re: Public Hearing of the Nunavut Wildlife Management Board (NWMB) to consider the revised Nunavut Polar Bear Co-Management Plan, Iqaluit, Nunavut, June 6-8, 2017

Nunavut Tunngavik Incorporated (NTI) appreciates this opportunity to provide comments on the Nunavut polar bear co-management plan.

A. GENERAL COMMENTS

These comments are based on the consultations conducted by the Government of Nunavut.

- 1) Several HTOs especially in the Baffin and Kitikmeot region expressed concern over the male sex selective harvest. For example, during consultations in the Baffin and Kitikmeot region, communities expressed problems with the 2:1 sex ratio for at least two major reasons. Firstly, for some areas, there are fewer females available. Secondly, the high penalties that communities experience in quota reductions the following year(s) when females are overharvested. A 1:1 ratio was provided as a solution but the response by Government to this change remains uncertain. For example, we suspect that the communities would be very surprised to learn that their total TAH would be lowered. This would result if the Government response was not to increase the number of available females but instead lower the number of available males to meet the 1:1 sex ratio.
- 2) Inuit have repeatedly expressed that bears move between the current subpopulation boundaries. For example, affected communities have expressed that Gulf of Boothia and M'Clintock Channel subpopulations share polar bears. Inuit have also expressed that

bears move and mix within Hudson Bay. A recent study provides evidence for fine-scale structure, but there remains varying levels of gene flow between clusters within the Hudson Bay region (Viengkone et al. 2016¹).

- 3) Inuit and NTI have also expressed concerns over the management and application of the flexible quota system. For example, when there has been application for credits, the release of tags by the Government has sometimes been forwarded to the NWMB for approval. This is considered an unnecessary administrative step. It is expected that the TAH will continue to be provided to the RWOs for allocation to communities and that credit requests will be satisfied in a reasonable amount of time.

B. DETAILED RECOMMENDATIONS

NTI's detailed recommendations are made in order to

- improve the plan's descriptions of *Nunavut Agreement* requirements,
- clarify responsibility for the plan,
- clarify the intent of the plan, and
- add a recommendation regarding the federal government's implementation of the *Convention on International Trade in Endangered Species* (CITES).

Author

On the title page, identify the Government of Nunavut as the plan's author.

Proponent, and approval process

In the Preface or Executive Summary, note that the Government of Nunavut is proposing that the NWMB approve this management plan. In addition, note that the plan will be adopted upon the NWMB's decision being accepted or varied by Nunavut's Minister of Environment.

References to the *Nunavut Agreement*

Throughout the document, replace "Nunavut Land Claims Agreement" or "NLCA" by "*Nunavut Agreement*" or "Agreement".

PREFACE – page 1

In the first paragraph, fourth sentence, add the following underlined words:

¹ Viengkone M., A.E. Derocher, E.S. Richardson, R.M. Malenfant, J.M. Miller, M.E. Obbard, M.G. Dyck, N.J. Lunn, V. Sahanatien, and C. Davis. 2016. Assessing Polar Bear (*Ursus maritimus*) population structure in the Hudson Bay region using SNPs. *Ecology and Evolution* 6(23): 8474-8484.

“The *Nunavut Agreement* recognises Inuit harvesting rights and requires that Inuit play an effective role in all aspects of wildlife management.”

In the second paragraph, second sentence, add the following underlined words:

The NWMB has the discretionary responsibility of approving management plans (Article 5 section 5.2.34 d(i))

In the second paragraph, reword the last sentence as follows:

(from) This plan has been prepared in cooperation with Nunavut Tunngavik Inc., the Department of Environment, Regional Wildlife Organizations, Hunters and Trappers Organizations, and Inuit community members from throughout Nunavut.

(to) This plan has been prepared by the Department of Environment in cooperation with Nunavut Tunngavik Inc., Regional Wildlife Organizations, Hunters and Trappers Organizations, and Inuit community members from throughout Nunavut.

EXECUTIVE SUMMARY – page 2

In the second paragraph, reword the first sentence as follows:

(from) This intent of this plan is: 1) to provide guidance and direction to co-management partners for decision-making;

(to) [same as above, except delete “and direction”]

Note: NTI does not understand this management plan as intended to trigger the Government’s duty to implement NWMB decisions, or to give mandatory instruction to the Government, NWMB, RWOs or HTOs. The Preface, for example, states that “[i]mplementation of this management plan is subject to ...priorities ... of the participating jurisdictions and organizations.”

TABLE OF CONTENTS – pages 3-5

Add the following new subheadings:

6.1 Decision criteria

6.2 Principles of Conservation

Add a new sub-heading, “**6.3 Co-Management Partners**”, and re-number the current sections 6.1-6.6, **6.3.1-6.3.6**.

ACKNOWLEDGEMENTS – page 5

Place the acknowledgements at the end of the document.

1. INTRODUCTION – page 6

In the first paragraph, reword the second sentence as follows:

(from) Restrictions (e.g., limiting the number of polar bears harvested per year per subpopulation) were the primary means of population recovery in regions where abundance was reduced as the result of unsustainable harvest.

(to) Restrictions (e.g., limiting the number of polar bears harvested per year per subpopulation) were the primary means of population recovery in regions where abundance had been reduced [].

2. GUIDING PRINCIPLES – page 7

Reword the last guiding principle as follows:

(from) Where there are threats of serious or irreparable damage to polar bear populations or habitat, lack of certainty will not be a reason for postponing reasonable or precautionary conservation measures.

(to) Inuit harvesting will be limited for conservation reasons only to the extent that a limitation is necessary and only according to the Principles of Conservation. Subject to those requirements of the Nunavut Agreement, lack of certainty will not be a reason for postponing [] conservation measures where there is a sound and credible case, based on evidence, that a risk of serious or irreparable damage to polar bear populations or habitat exists,

Note: This recommendation reflects s. 5.3.3 of the *Nunavut Agreement*, the Principles of Conservation, and the following statements in the Government of Canada’s policy on application of the precautionary approach to resource management:

[the precautionary principle] “cannot be applied without an appropriate assessment of risks.” (page 3). ...“Sound scientific information and its evaluation must be the basis for applying precaution” (page 7). “The emphasis should be on providing a sound and credible case that a risk of serious or irreversible harm exists” (page 7).

Government of Canada, *A Framework for the Application of Precaution in Science-based Decision Making about Risk* (Privy Council Office, 2003).

3. GOAL OF THE POLAR BEAR MANAGEMENT PLAN – page 8

Re-word the goal as follows:

(from) To maintain viable and healthy polar bear subpopulations for current and future generations, and to ensure that polar bears remain an integrated and functioning part of the ecosystem while monitored and appropriate harvests are allowed.

(to) To maintain vital and healthy polar bear subpopulations capable of sustaining harvesting needs for current and future generations, and to ensure that polar bears remain

an integrated and functioning part of the ecosystem while monitored, sustainable harvests occur.

Note: This recommendation takes into account the Principles of Conservation and Inuit harvesting rights in the *Nunavut Agreement*.

4. SPECIES DESCRIPTION - page 8

Under 4.3.1, Global range, second last line, add “according to Canada’s Polar Bear Technical Advisory Group” after “current status”.

Under 4.3.2, Nunavut range, reword the last sentence as follows:

(from) A more detailed background and description of Nunavut’s polar bear subpopulations is provided in Appendix B.

(to) A more detailed background and description of Nunavut’s polar bear subpopulations, together with management recommendations for each subpopulation, are provided in Appendix B.

5.3 Legislative frameworks and agreements – page 13

In the first sentence, add the words underlined below:

In Nunavut, wildlife is managed according to Article 5 of the *Nunavut Agreement*. Article 5 recognizes the right of Inuit to harvest polar bears and trade in polar bear products. It also sets out the creation of the Nunavut Wildlife Management Board (NWMB), which is the primary instrument of wildlife management in Nunavut, and defines the roles of the NWMB, government, Hunters and Trappers Organizations (HTOs), and Regional Wildlife Organizations (RWOs)

6. POLAR BEAR CO-MANAGEMENT IN NUNAVUT – page 14

Immediately after the title, add the following:

The *Nunavut Agreement* and *Wildlife Act* provide the overarching criteria and principles under which Inuit harvesting of polar bears is managed.

6.1 Decision criteria

Conservation, public health and public safety are among the purposes for which Inuit harvesting of polar bears may be limited. Decisions made by the NWMB and Minister must limit Inuit harvesting only to the extent necessary.

6.2 Principles of Conservation

Decisions made by the NWMB and Minister for conservation reasons must apply the following principles:

(a) the maintenance of the natural balance of ecological systems within the Nunavut Settlement Area;

- (b) the protection of wildlife habitat;
- (c) the maintenance of vital, healthy, wildlife populations capable of sustaining harvesting needs as defined in this Article; and
- (d) the restoration and revitalization of depleted populations of wildlife and wildlife habitat.

Insert a new sub-heading, “ **6.3 Co-Management Partners**”, immediately before the sentence commencing with “The following co-management partners participate”. Re-number the current sections 6.1-6.6 sections **6.3.1-6.3.6**.

6.1 – page 14

Re-word the last sentence follows:

The Nunavut Agreement is paramount over legislation, and is constitutionally protected under Canada’s Constitution Act, 1982.

6.2 NWMB – page 14

Re-word the second sentence as follows:

(from) In addition, it approves management plans and the designation of rare species.

(to) In addition, it may approve management plans and the designation of rare species.

6.6 Government of Canada – page 15

Add the underlined sentence below:

Canada signs international agreements on behalf of all jurisdictions and has responsibilities to coordinate international management actions for polar bears, with the advice of the co-management boards and jurisdictions. It is involved in international polar bear management including the Convention on International Trade in Endangered Species (CITES) and the 1973 *Agreement on the Conservation of Polar Bears*. When developing positions that relate to international agreements affecting Inuit harvesting rights in the Nunavut Settlement Area, the Government of Canada is required under the Nunavut Agreement to include Inuit in discussions.

Figure 2 The Co-Management Framework in Nunavut - page 16

Give NTI and similar organizations their own oval named “NTI and other representative Aboriginal Organizations”.

Distinguish between the proposal for decision and recommendations made by other parties.

Delete reference to polar bear MOUs.

Give “hearings” its own box and rename this box “NWMB hearings”.

In the box following the NWMB’s first decision, add the following: “Government accepts, is deemed to accept, or rejects”. In the next oval, replace “Accepts” with “Accepted”.

Replace “Government” with “Minister” in the boxes.

Remove the components referring to judicial challenges of NWMB decisions.

Note: The Minister’s duty to implement final NWMB decisions forthwith applies as soon as the decision is accepted or varied.

Rename the last box as follows:

(from) Responsible Minister implements Management Action

(to) Responsible Minister implements accepted or varied NWMB final decision.

7.5 Population boundaries – page 18

In the first paragraph, reword the last sentence as follows:

(from) It is important to recognize that these boundaries have formed the basis for management actions for over four decades, and have been beneficial to managers for setting harvest levels and for researchers focusing their population assessment studies.

(to) It is important to recognize that these boundaries have formed the basis for management actions for over four decades, and have been relied on by managers to set harvest levels and by researchers focusing their population assessment studies.

7.8 Trade – page 20

At the conclusion of this section, add the following:

Under the Nunavut Agreement, Inuit have the right to sell polar bear hides outside the Nunavut Settlement Area and to receive an export permit for this purpose on demand unless there is good cause for refusal. It is a recommendation of this plan that, when making and reviewing non-detriment findings under CITES, Canada’s Scientific Authority should presume that final decisions of the NWMB respecting TAHs reflect the sustainable harvest level of polar bear subpopulations in Nunavut.

8.1.1 Harvest Management – page 21

In the first paragraph, reword the second sentence as follows:

(from) As new information becomes available, co-management partners work together to establish a Total Allowable Harvest (TAH) for each polar bear population.

(to) As new information becomes available, co-management partners work together to consider or review a Total Allowable Harvest (TAH) for each polar bear population.

In the second paragraph, reword the first sentence as follows:

(from) Once the TAH is established, local communities are given the choice whether they wish to harvest the set number of bears for their own needs or to allocate a portion of the total for sport hunts

(to) Where a TAH is established, HTOs have the choice whether they wish to harvest the set number of bears [] or to allocate a portion of the total for sport hunts.

In the third paragraph, reword the first sentence as follows:

(from) While the TAH for each polar bear population is subject to change, the following harvest restrictions are legislated in the Nunavut Wildlife Act and do not vary according to population dynamics or annual removals.

(to) While the TAH for each polar bear population is subject to change, the following harvest restrictions have been established by the NWMB for enactment in the Nunavut *Wildlife Act*, and do not vary according to population dynamics or annual removals.

8.1.3 Harvest Reporting and Monitoring – page 22

Re-word the last sentence on page 23 as follows:

(from) DOE will consider these requests on a case-by-case basis, and only as new information becomes available;

(to) The NWMB will consider these requests on a case-by-case basis, and only as new information becomes available.

8.3 Habitat management and environmental stewardship (Avatitinnik Kamatsiarniq) objectives – page 26

Add, following the objectives already listed, the following:

- Generally, assist Canada to meet its obligation under Article II of the *International Agreement on Conservation of Polar Bears* to “take appropriate action to protect the ecosystems of which polar bears are a part, with special attention to habitat components such as denning and feeding sites and migration patterns.”

9. IMPLEMENTATION OF THE PLAN – page 29

Throughout this section, clarify where in the document the reader may find “the management objective for the subpopulation”.

In the first paragraph:

- delete the following statement: “No changes to existing TAH will occur until new information becomes available.”
- reword the last sentence as follows:

(from) At that time, a new TAH will be recommended that is consistent with the subpopulation management objective and the objectives of this plan.

(to) At that time, a change to the TAH will be recommended that is consistent with the subpopulation management objective and the objectives of this plan.

- add as the closing sentence: “Otherwise, changes to TAHs may be considered according to the NWMB decision process”.

In the second paragraph:

- reword the first sentence as follows:

(from) The co-management structure in Nunavut requires an NWMB decision for any change to TAH, management objectives, or NQL.

(to) The co-management structure in Nunavut requires an NWMB decision for any change to TAH [] or NQL.

Note: As stated above, NTI does not understand this plan as intended to be mandatory. Therefore a community, government, or any affected party should be free to seek NWMB review of a subpopulation management objective at any time. The NWMB should change such an objective on review if persuaded that the objective adopted in this plan should be revised.

- reword the following phrase as per the reworded goal of the plan:

(from) The goal of the management plan is “*To maintain viable and healthy polar bear subpopulations for current and future generations, and to ensure that polar bears remain an integrated and functioning part of the ecosystem while monitored and appropriate harvests are allowed.*”

(to) The goal of the management plan is “*To maintain vital and healthy polar bear subpopulations capable of sustaining harvesting needs for current and future generations, and to ensure that polar bears remain an integrated and functioning part of the ecosystem while monitored, sustainable harvests occur.*”

Appendix A – page 33

Use the most up-to- date Polar Bear Technical Committee figures at the public hearing and in the plan submitted for approval.

Appendix B – page 41

Clarify throughout this Appendix whether “current ... abundance” is intended to be based on the most recent survey results available, the figure for “current status” shown, or a different source.

At the public hearing, after seeking the views of the HTOs, the NWMB should consider adopting a management objective of decreasing current abundance for the Baffin Bay and Davis Strait subpopulations.

Note: NTI understands the NWMB and Government to be managing the Davis Strait subpopulation, in particular, for decrease.

Thank you again for this opportunity and NTI looks forward to taking part in the upcoming public hearing.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Arreak', with a stylized flourish extending to the left.

James T. Arreak

Chief Executive Officer



May 19, 2017

Mr. Dan Shewchuk
A/Chairperson
Nunavut Wildlife Management Board
PO Box 1379
Iqaluit, NU X0A 0H0

Sent by email to: tsataa@nwmb.com

Qikiqtaaluk Wildlife Board's response to the Government of Nunavut's revised Nunavut Polar Bear Co-management Plan

I thank you for inviting the Qikiqtaaluk Wildlife Board (QWB) to provide a written submission regarding the Nunavut Department of Environment's (DOE) revised polar bear management Plan.

At this time, the QWB does not support the revised Plan. Therefore, the QWB requests that the Nunavut Wildlife Management Board (NWMB) does NOT approve the revised Nunavut Polar Bear Co-Management Plan.

The revised Plan failed to adequately address the concerns and priorities of the QWB as documented in its letter to the NWMB in October 2015. This failure greatly discourages our Board in having faith that DOE wishes to, or will, adequately revise the Plan by addressing our concerns in substantive ways. At our November AGM in Iqaluit, our Board was informed that DOE had worked closely with Environment and Climate Change Canada to revise the plan to meet their needs, but as in the past, the grass-roots, on-the-ground concerns and questions of Inuit, expressed by the QWB, were not met by DOE and appeared to be largely ignored (see the attached pages).

The QWB's faith in the potential outcome of the Hearing process itself is also greatly discouraged because the NWMB decision seemed to indicate that it would follow a fair and equitable in-person public process but subsequently did not invite the 13 Qikiqtaaluk Hunters and Trappers Organizations (HTOs) to participate. When the hearing decision was made, a proper budgeting process should have included all HTOs/communities.

The final revised management plan will replace the current MoUs and implemented once approved. Because the QWB's previous submission has been largely ignored in our opinion, it will probably be impossible to revise sections of the plan upon request by HTOs or RWO to actually meet the needs of the communities in future, if the current revised plan is approved. That leads the QWB to call for rejection of the revised plan at this time.

On the attached pages, you will find more specific comments on the revised Plan itself, in case the NWMB or DOE may at some point decide to address them in demonstrable and significant ways.

Sincerely,

James Qillaq
Chairperson, Qikiqtaaluk Wildlife Board

cc. 13 HTOs in Qikiqtaaluk region
Aluki Kotierk, President, Nunavut Tunngavik Incorporated
Stanley Adjuk, Chairperson, Kivallik Wildlife Board
Joe Ashevak, Chairperson, Kitikmeot Regional Wildlife Board
Department of Environment, Government of Nunavut

Preliminary Comments on the revised Nunavut Polar Bear Co-Management Plan

Qikiqtaaluk Wildlife Board

Submitted to the Nunavut Wildlife Management Board

May 19, 2017

The following comments are preliminary in nature. The Qikiqtaaluk Wildlife Board (QWB) reserves the right to make additional comments and recommendations, pending additional information and opinions that may arise from QWB members and HTO members in Qikiqtaaluk Region, or in response to other co-management partners.

1. In the QWB's 2015 submission to the Nunavut Wildlife Management Board (NWMB), we identified that one of its top priorities was for the Nunavut Department of Environment (DOE) to specify actions that it will take to improve its communication with the co-management partners and Inuit in general, to allow more engagement of stakeholders, and to foster greater cooperation with its co-management partners.

During the intervening 16 months before resubmitting its revised Plan, DOE did not engage the QWB to develop such actions and incorporate specify actions into the Plan to the best of our knowledge. In our opinion, that is a demonstrable failure by DOE to directly address one of the QWB's highest priorities.

Instead DOE have the following actions listed; all of which are overly vague, of inadequate priority, and most are far too long or unclear in their timelines, in the QWB's opinion:

"9.4 Develop a communications plan and education materials for bear safety", Moderate priority, Timeline: Within 3 years"

"9.3 Seek to build capacity in all co-management organizations to better participate in regulatory review processes", Moderate priority, Timeline: Ongoing"

9.5 "Build capacity in HTOs to provide support and participation in research projects", High priority, Timeline: Within 3 years

In addition, during the March 2017 regular and in-camera NWMB meetings, representatives of DOE spoke very strongly and at length against further in-person public hearings on a Plan that is very important to Nunavummiut. This is further continuing evidence that DOE does not truly appreciate the

needs of members of HTOs and other Inuit to present and be listened to by traditional means.

2. In the QWB's 2015 submission to the NWMB, we identified that a second top priority for the revised Plan to develop with all co-management partners very clear plans to collect Inuit Qaujimajatuqangit (IQ) about polar bear in Nunavut and to develop methods to substantively incorporate IQ into future management of polar bears.

The QWB devoted over 2 pages of our 2015 submission to this topic! That is a very clear expression of how important this issue is. We will not repeat all that here again.

During the intervening 16 months before resubmitting its revised Plan, DOE did not engage the QWB in an effort to develop specific and substantial actions for the collection and development of IQ about polar bears and their management. In our opinion, that is a demonstrable failure by DOE to directly and seriously address yet another of the QWB's highest priorities.

In the revised Plan, we did not see any clear and high priority actions on this topic; only vague objectives without priority assignments, like: 8.2.1 "Improve and continue gathering and archiving IQ in relation to polar bears and their habitat" and 8.2.2 "When possible, a concurrent IQ study will be conducted to complement the population inventory."

This is unsatisfactory in our opinion. Elders pass away on an on-going basis. Each passing is a critical loss of knowledge. The QWB has never envisioned that the value of IQ collection and research is dependent on the timing of DOE's scientific inventories. Apparently, DOE does not see IQ as being of value in its own right.

Independently, QWB has taken steps to further investigate and has begun to develop an applicable IQ strategy. From 1980s through the early 2000s, viable, scientifically peer-reviewed and published IQ research methods and management strategies were successfully developed and implemented in conjunction with South Baffin caribou. That IQ work included but was not limited to: historical and current distribution and abundance knowledge (as expressed by Inuit), ecology and habitat relationships over a period of 90 years, plus reliable and subsequently proven concepts and predictions by Inuit, even including an IQ-based management plan (that was not implemented). A similar strategy and methodology can be implemented for polar bear populations in Qikiqtaaluk.

Now, the QWB calls on DOE to commit to providing significant financial resources to fully enable the QWB itself to build and lead a team of experts and future trained Inuit to develop and implement an on-going polar bear IQ research program that in future will provide significant input to a series of community-based and sub-population-based management plans. We call on DOE to commit to funding this QWB-led program in the Nunavut Polar Bear truly-Co-Management Plan, as a high priority to begin by October 2017.

3. In the QWB's 2015 submission to the NWMB, we called for a section in the plan on the dangers of polar bears, to ensure that the plan speaks to the very real danger that polar bears pose to people.

We note that in the Introduction of the revised Plan that DOE now recognizes that Inuit have seen that most polar bear populations are increasing, while science seems to see that most populations are either stable or declining. We believe that the scientific evidence for such conclusions is weak, for example, as evidenced by the recent change in the interpretation of the trend of Baffin Bay bears dating back to 2012-13.

In the Introduction of the revised Plan, it also states that the focus of polar bear management supposedly now shifts to maintaining, or reducing numbers in areas where public safety is a concern and/or where there are detrimental effects on the ecosystem due to increased numbers of polar bears. However, there appears to be little follow through in the rest of the document.

For which populations does this new focus apply?

In our reading, the Plan does not give new and clear management objectives in section 8.1.3, either in general or for specific populations that comply with this supposed new focus.

For example, eliminating sex-selective harvest is stated as being dependent on status, trend **and** management objective. Among the 3 stated management objectives, there is no option to allow a decline to continue through harvesting in a case where there may be public safety concerns. Accordingly, the Plan states that once a decline is detected, the TAH **has** to be reduced, and this requirement is not made contingent on issues of public safety!

A table(s) is needed to show the HTOs and RWOs what the full array of TAH, trend and management objectives that may be considered.

Serious and sincere engagement by DOE of the stakeholders is required to set population objectives based on public safety and ecosystem conditions, and IQ is critical to develop and negotiate such objectives.

Further, the revised Plan presents the issue of public safety from a bear-centered view, most often as DLPK. That is as a killed bear.

References to "fear" felt by Inuit are missing, as are words like "danger" and "attack", words which QWB purposely used in its 2015 submission because they properly reflect the reality in the communities. It appears to us that DOE does not take this issue and reality seriously!

Related to this, is the issue of: "How many bears are enough? How many are too many?" And "What are the target population sizes desired by biologists?"

Inuit have been asking these questions for decades without any substantial replies giving clear targets!

As climate changes, bears may be moving toward communities, so there could be a growing problem. Inuit know that polar bears are highly adaptable animals, which can deal with highly varied and changing ecological conditions. They are adapted to climatic conditions of southern Hudson Bay to Kane Basin and the Canadian High Arctic Islands. Inuit know the adaptability of bear, they respect bears greatly for this adaptability. Just because bears may change in physical condition, there is no evidence that we know of that proves that populations will decline as a result. And thus, there is no evidence that TAHs should be reduced because of climate change or changing condition of bears. But that is the implication whenever governments and their biologists talk about climate change.

On the other hand, Inuit recognize that climate change is more likely to bring bears into closer proximity to humans, causing public safety issues. While bear populations remain resilience to population declines in the face of climate change, in the opinion of knowledgeable Inuit.

The Plan must identify actions that WILL be taken to develop target population levels for all populations in Nunavut. These target population levels must be developed in close and full collaboration with ALL HTOs and RWOs, and public safety issues must be incorporated into the setting of population targets.

As already stated by the QWB in 2015, sections on public safety must be added for background information and in terms of action items. In addition,

the concept of human-tolerance for polar bears in and around communities needs to be an integral component for developing population target levels.

As well, a much stronger and more serious commitment to on-going community-based public-safety monitoring and deterrent programs with very clear and measurable actions must be added to the Plan.

4. The Plan should address how DOE will advocate and justify for removal of polar bears as “special concern” under SARA, removal of all negative NDFs by the federal government, and allowance of unsold hides when negative NDFs are removed. Clear action items on these issues are required.
5. The analyses and interpretation of study results must become an open and collaborative process. RWOs must be able to assign knowledgeable representatives to collaborate in the interpretation of the results of surveys and other scientific studies. These representatives may be traditionally trained Inuit and scientifically trained persons as the RWOs may chose.

After the survey of the Baffin Bay sub-population, the PBTC, PBAC and scientific Authority could not finalize how to interpret with the results. Three communities are still waiting 5 or 6 years after the survey was completed. This situation is wholly unacceptable, TAH decisions must be more efficient!

Future studies require guaranteed publication of results in a timely manner. As a high priority, the recommendation of new TAHs must be dealt within no more than 2 years after the completion of field surveys or studies, and within 1 year if management objectives change in the absences of new surveys.

As well, once the QWB is funded to undertake IQ research, the results of IQ research must be equitably incorporated into all management decisions with comparable timelines, to enable more efficient decision making of management objectives, target population levels and TAH determinations.

6. With support from NTI, the three RWOs have advocated to completely abolish the intrusive science or drugging any polar bears. In our opinion, section 8.2.2 (Page 25, 5th paragraph) should be completely removed.

To: Nunavut Wildlife Management Board

As NWMB requested for written submission hearing from all HTA/HTO across Nunavut, Hall Beach Hunters' & Trappers' Association is submitting this letter as they have two issues with the proposed polar bear management plan. First of all, the names of the Inuktitut for polar bear, and harvested bears being use for nearest community.

1

Second and final issue with the proposed polar bear management plan is the harvested bears would be taken out of the nearest community. In the proposed management plan states that "all bears harvested, whether for subsistence purposes, sport hunts, or in defence of life/property, are accounted for and subtracted from the annual TAH of the nearest community" (pg-21). Hall Beach HTA has spoken about this issue at the QWB annual general meeting for number of times that this needs to be modified more specific of how the tags would be taken out of nearest community. Hall Beach HTA are arguing that if Igloolik residents harvested past our area than it is certain that we would be giving out tags that Hall Beach residents has never harvested before or vice-versa. If Nunavut beneficiary harvested or some Qallunaa (who has a wife from the community and living in the community) harvested a bear whether for defence/property prevention it should be taken out of the beneficiary community, where he lives, not the nearest community. Also part of this issue that is in page 50- 4, if all the tags are filled up from beneficiaries community than the tag would be used from nearest community, Hall Beach HTA believes that this will have great impact for Hall Beach TAH as Igloolik residents are very common to see in our area during the peak of polar bear encounters in south of Hall Beach, HTA are recommending that the system we use still be in effect, where when no TAH is available in the community be used for future TAH.

In conclusion, Hall Beach HTA would like to see omission of Inuktitut Names that is currently in the proposed management plan and the harvested bears being used up for defense/property kills on nearest community be applied to only exploration and research activities.

Vice-Chair – Paul Nagmalik.



[illegible][illegible]

[illegible]

[illegible]

$\langle \Delta \rangle \propto \Omega^b$

ڪڍڻ لاءِ

Joe Arlooktoo
HTA Chairperson
Mayukalik HTA- Kimmirut



Mittimatalik Hunters & Trappers Organization
ᑕᑦᑎᑎᑦᑕᑦᑎ ᑕᑦᑎᑎᑦᑕᑦᑎ ᑕᑦᑎᑎᑦᑕᑦᑎ ᑕᑦᑎᑎᑦᑕᑦᑎ ᑕᑦᑎᑎᑦᑕᑦᑎ
P. O. Box 189, Pond Inlet, Nunavut X0A 0S0
ᑕᑦᑎᑎᑦᑕᑦᑎ 189, ᑕᑦᑎᑎᑦᑕᑦᑎ ᑕᑦᑎᑎᑦᑕᑦᑎ, X0A 0S0
Tel: (867) 899-8856 Fax: (867) 899-8095
ᑕᑦᑎᑎᑦᑕᑦᑎ: (867) 899-8856 ᑕᑦᑎᑎᑦᑕᑦᑎ: (867) 899 8095
Email: htopond@qiniq.com

To Board of
Nunavut Wildlife Management Review Board
Iqaluit, Nu

May 17, 2017

RE: Resubmission of the Draft Nunavut Polar Bear Co-Management Plan Review

Mittimatalik HTO Board has reviewed the Resubmission of the Draft Nunavut Polar Bear Co-Management Plan and have following comments and suggestion based on their review.

1. Mittimatalik HTO would like to see Polar Bear Quota be removed within Baffin Region and Baffin Bay area; for reason being;

- Quota for Nunavut Beneficiaries should not be necessary to hunt Polar Bear because quota is useless for Inuit hunters, as we don't have benefit to sell furs to outside Canada and UK was not to transport Polar Bear furs anymore from Baffin Bay area. Quota should only belong to Sport's Hunter's.

1. If re-movement of Quota becomes effective or approved. We would want the Hunter's and Trapper's Organization to Manage and Administer the Total Allowable Harvest in order to maintain the Polar Bear population. And establish a Polar Bear Administrative Committee to regulate and enforce the Polar Bear harvest and to come up with good plans about Total allowable Harvest of Polar Bear

2. If quota can't be removed we would like our Polar Bear quota increased to 80 Total Allowable Harvest because 21 Total Allowable Harvest is too low as Polar Bears population have been increasing. It's becoming a concern within our Wildlife and Environment. And increasing of Polar Bears has been causing so much disturbance within the food we eat; the caches of meats that are trying to be harvested by hunters are just getting eaten by Polar Bears. Not just the food we eat is being disturbed. Polar Bears are also being seen more getting close to the Communities that can cause danger to the community or even harm to

anyone. Also cabins are getting destroyed by Polar Bears. Hunter's work very hard to hunt and to harvest good food but the caches of meats are just getting eaten by Polar Bears therefore we want hunters to be compensated if the cache of meats gets eaten by Polar Bear or If cabin were destroyed by Polar Bear for reason being Gas, food supplies and Bullets are very expensive to buy and a lot of hunters are unemployed and work hard to harvest food for the community

3. Baffin Bay Polar Bear quota is being shared by 3 communities. We feel that each communities should have separate Quota. We want to see each communities have separate quota reason Polar Bear quota is too low when it's shared by

2. Balancing Female and Male Polar Bear hunting

We would like the Polar Bear hunting to be more balanced. For reason being

- Female Polar Bears with cubs have been seen more getting close to communities than male Polar Bears and it seems to be becoming more common and concerning because female Polar Bears are increasing because male Female Polar Bear with cubs are more increasing than Male Polar Bears are harvested more everywhere in Nunavut and Female Polar Bears are not getting cubs as they should because male Polar Bears are decreasing. And Female Polar Bears with cubs are known to be more dangerous to harm than male Polar Bear. Also sometimes Female Polar Bears get mistaken for male Polar Bear. Hunter's sometimes catch Female Polar Bear by mistake, when a hunter catches female Polar Bear by mistake 2 tags have to be eliminated. We would like that removed

Southern Hudson Bay Polar Bear Management
System -- Sanikiluaq, Nunavut

For

Nunavut Wildlife Management Board Public Hearing
on Nunavut Polar Bear Management Plan

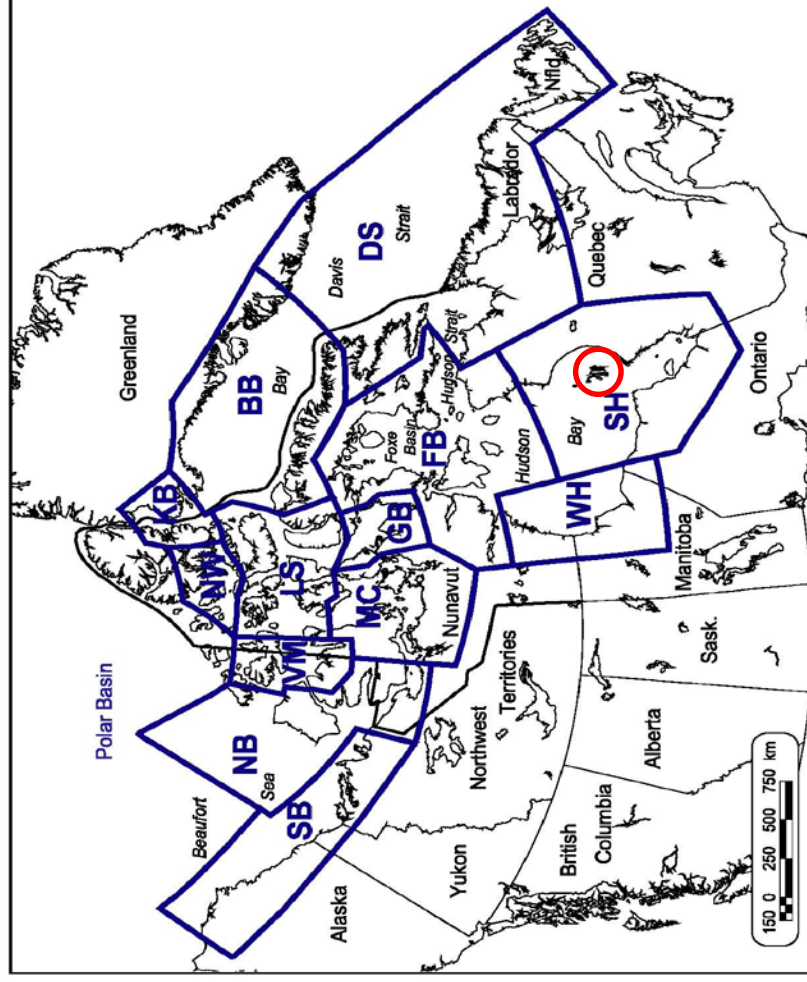
Sanikiluaq Hunters & Trappers

SHB Polar Bear Management System Nunavut



- Sanikiluaq, Nunavut
- Current population 882 (2016)
- The community has used a quota system for over 40 years
- Since 2005, the community has used the MOU which includes a flexible quota system and sex ratio

SHB Polar Bear Management System Nunavut



- Since 2005, Sanikiluaq has been using the flexible quota system.
- This system is based on the Memorandum of Understanding (MOU) between Sanikiluaq and the Government of Nunavut.
- The community has followed the flexible quota system for the past 11 years. Its purpose is to conserve the population and maintain a sustainable harvest level.

SHB Polar Bear Management System Nunavut



- The system also prohibits harvest of family groups, bears in dens, or cubs.
- However, for cultural reasons, a cub can be harvested through a request to the Government of Nunavut.
- The sex selective system means that one female can be harvested for every two males that are harvested.
- The community has been following this system and has not expressed any concerns

SHB Polar Bear Management System Nunavut

- Under the system, every person in Nunavut has the right to protect life and property.



Sustainable Harvest Management

HARVEST SEASON	TOTAL ALLOWABLE HARVEST (TAH)	ACTUAL HARVEST
2005/2006	25 (17 Males: 8 Females)	25 (16 Males: 9 Females)
2006/2007	25 (17 Males: 8 Females)	25 (17 Males: 8 Females)
2007/2008	25 (17 Males: 8 Females)	25 (18 Males: 7 Females)
2008/2009	25 (17 Males: 8 Females)	26 (18 Males: 8 Females)
2009/2010	25 (17 Males: 8 Females)	25 (17 Males: 8 Females)
2010/2011	25 (17 Males: 8 Females)	30 (21 Males: 9 Females)
2011/2012	25 (17 Males: 8 Females)	25 (17 Males: 8 Females)
2012/2013	25 (17 Males: 8 Females)	26 (22 Males: 4 Females)
2013/2014	25 (17 Males: 8 Females)	27 (17 Males: 10 Females)
2014/2015	25 (17 Males: 8 Females)	20 (14 Males: 6 Females)
2015/2016	25 (17 Males: 8 Females)	20 (14 Males: 6 Females)
2016/2017	25 (17 Males: 8 Females)	20 (13 Males: 7 Females)
Totals	300 (204 Males: 96 Females)	294 (204 Males: 90 Females)

- Over this period, the community has harvested bears within the total allowable harvest and also maintained a 2:1 male to female sex ratio harvest.
- In some years, the community has used credits accumulated from unused harvest from previous years as permitted through the flexible quota system
- Since 2014, the community has respected a user to user agreement

SHB Polar Bear Management System Nunavut



- Sanikiluaq HTO has requested credits that they have accumulated from unused harvest in previous years.
- This is part of the flexible quota system currently in place.
- The community of Sanikiluaq has successfully adopted and used this system.

SHB Polar Bear Management System Nunavut



- By using the system, the Sanikiluaq HTO has helped conserve the polar bear population, through a sustainable harvest.
- The HTO has responsibly and successfully managed the system and polar bear harvest for many years.

Issues

- Some concerns include a high population of polar bears that destroy bird colonies which are not in balance with the environment
- Eider ducks are very important part of Sanikiluaqmiut diet
- Another concern is encounters with polar bears in the community.
- Sanikiluaq HTO has been working on establishing a community bear management plan, which identifies preventative measures and deterrent procedures to protect people and property from bears that come close to the community.
- Therefore, harvest remains important not only for cultural reasons but also to maintain bears at numbers that maintain natural balance



SHB Polar Bear Management System Nunavut

- Sanikiluaq is an excellent example of how HTO's in Nunavut conduct responsible harvest practices that are sustainable and respectful of the principles of conservation.

Thank You

Here are some of the things that the Arviat HTO representative Thomas Alikaswa will talk about during the Polar bear Co-Management Plan hearing in Iqaluit.

Gordy: They only use the data that is found outside of Churchill. (Number of bears that are counted outside of Churchill)

Dick: Why don't they count the bears that are in zoos across Canada and in the US?

Thomas: Arviat gets tags from Churchill since the 60's up to today. We need to have our own tags now.

Gordy: Susan Crawford might know a lot about polar bears. I know her through Twitter. Maybe we can contact her and work with her regarding the polar bears.

Sam: International Fur Trades are pricing the polar bear skins at the lowest price. The market value is making a lot of money through polar bears but they are buying from Inuit for cheap

Mary Issumatarđjuak
Arviat HTO Acting Manager
PO Box 529
Arviat, NU X0C 0E0
Phone: (867) 857-2636
Fax: (867) 857-2488



Société Makivik
Makivik Corporation
May 19, 2017

Daniel Shewchuk
Acting Chairperson
Nunavut Wildlife Management Board
P.O. Box 1379
Iqaluit, NU Z0A 0H0

**Re: Draft Makivik Submission to the Nunavut Wildlife Management Board - Nunavut
Polar Bear Co-Management Plan**

Dear Mr. Shewchuk,

Makivik Corporation (hereafter referred to as "Makivik") would like to thank the Nunavut Wildlife Management Board (NWMB) for the opportunity to provide this submission. As you are no doubt aware, Makivik Corporation is the birthright organization that represents the rights and interests of the Inuit of Nunavik (northern Québec). It is a signatory to the Nunavik Inuit Lands Claims Agreement (NILCA) which established the Nunavik Marine Region (NMR), of which the majority lies adjacent to the Nunavut Settlement Area (NSA).

In general, Makivik is supportive of the of the Government of Nunavut's Polar Bear Co-management Plan, and is especially pleased with the extensive community consultations that were undertaken to ensure that the plan reflects Nunavummiut values and attitudes. However, Makivik does have concerns with the area of application of the plan and how the plan could potentially be implemented.

There are two Areas of Equal Use and Occupancy (AEUO) identified in the Nunavut Land Claims Agreement (NLCA) and the NILCA. These AEUO are shared between Nunavut and Nunavik Inuit, and the respective rights of both Nunavut and Nunavik Inuit are set out in the NLCA s. 40 and the NILCA s. 27. On careful review of the Nunavut Polar Bear Co-management Plan, Makivik has concluded that the area of application of the plan is ambiguous. Nowhere in the plan does it state the geographical or jurisdictional boundaries within which the plan would apply. If the plan is meant to apply to the entire NSA, including the AEUO (as defined in NLCA s. 3), then Makivik finds the current version of the plan unacceptable, insofar as Nunavik Inuit have not been consulted on the plan, and have not had any opportunity to provide input into the current draft. Nunavik Inuit must be consulted on any plan that proposes changes to the current management regime in the AEUO and which could affect their rights. For instance, some of the non-quota limitations included in the plan, such as sex-selective harvesting, affect Nunavik Inuit rights to harvest in the AEUO, and any contemplation of acceptance and implementation of these limitations without consultation is contrary to the rights of Nunavik Inuit.

... / 2

www.makivik.org

○ **Head Office • Siège social**
C.P. 179
Kuujuaq QC J0M 1C0
Tél. (819) 964-2925
Fax (819) 964-2613

○ **Montréal**
1111, boul. D^r Frederik-Philips 3^e étage
St-Laurent QC H4M 2X6
Tél. (514) 745-8880
Fax (514) 745-3700

○ **Québec**
555, Grand-Allée E.
Québec QC G1R 2J5
Tél. (418) 522-2224
Fax (418) 522-2636

Furthermore, Makivik reiterates that for any decision the NWMB is contemplating for the AEUO, regardless of whether or not it is exclusive to the said AEUO, the NWMB must employ the decision-making process outlined in NLCA s. 40.2.14 and NILCA s. 27.6.1 and 27.6.2. For clarity, that process requires decisions to be made with two Makivik-appointed alternate members sitting in lieu of members appointed to the NWMB by Nunavut Tunngavik Incorporated. Failure to do so would represent a breach of the processes for decision-making outlined in the Land Claims Agreements. In past decisions regarding polar bear, specifically the initial and final decisions on the establishment of a TAH for Foxe Basin polar bears, the NWMB has ignored this process, despite Makivik having raised attention to this matter in its submission to the public hearing.

In light of the ambiguity concerning the draft Nunavut Polar Bear Co-management Plan's area of application, Makivik proposes three possible alternatives:

- 1) That the plan be amended to clearly indicate that it does not apply to the AEUO;
- 2) That, if such an amendment is not made, the NWMB requests that the Government of Nunavut undertake meaningful and thorough consultations with Nunavik Inuit on the contents of the plan before it is approved by the NWMB;
- 3) i) That the NWMB make a decision now that is applicable to the NSA, but excluding the AEUO and

ii) Upon completion of consultations and integration of the Nunavik Inuit input into a revised plan, that the NWMB along with the Makivik-appointed alternate members would approve the revised plan applying only for the AEUO, in accordance with the NILCA and NLCA.

Makivik would like to correct several other elements of the draft Nunavut Polar Bear Co-management Plan. In Appendix B II, referencing the Davis Strait subpopulation, the plan erroneously states that Nunavik currently has a Total Allowable Harvest (TAH) of 32. In fact, there is no TAH (or Total Allowable Take – TAT) currently in place in either the Nunavik Marine Region or onshore Nunavik for this subpopulation. Makivik would also like to object to the recommendation for the Davis Strait subpopulation that the current population abundance should be maintained. In the outcome document produced after the 2010 user-to-user meeting held in Kuujuaq, the majority of parties to the meeting, including Makivik and the Government of Nunavut, expressed the desire that the management objective for this subpopulation was to reduce the abundance of polar bears. From a Nunavik perspective, this objective has not changed, as our communities with the Davis Strait subpopulation boundaries continue to experience a higher abundance of polar bears than is acceptable. Furthermore, the current abundance of Davis Strait polar bears is negatively impacting other species, such as the Common Eider and Ringed Seal, upon which these same communities depend.

For Appendix B III, the South Hudson Bay subpopulation, a TAT of 23 (not 22 as stated in the plan) has been established for the Nunavik Marine Region and parts of the Eeyou Marine Region. However, this TAT has not been implemented by the relevant Government Authorities, and

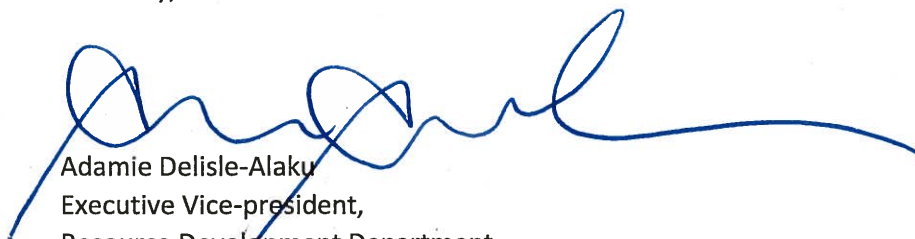
Mr. Daniel Shewchuk
May 19, 2017
Page 3 / 3

indeed is currently subject to court proceedings in a judicial review. Additionally, since expiry of the 2014 voluntary agreement (in November 2016), there is no TAH for Ontario, although there is a longstanding maximum harvest of 30 polar bears. Similarly, no TAT has been established in Nunavik for the Foxe Basin subpopulation.

Makivik trusts that the NWMB will take the necessary steps to ensure that all of the information presented in the Nunavut Polar Bear Co-management plan is accurate prior to its approval. As well, Makivik expects that the NWMB will adhere to the decision-making process for AEUO that is defined under the NILCA and NLCA. If the NWMB determines that doing so is not appropriate, the Board should provide a detailed rationale for its decision to exclude Nunavik Inuit from the decision-making process.

Again, Makivik is thankful for this opportunity to share its views with the NWMB as the board members deliberate this important matter and is confident that these comments will be seen as a productive and useful contribution to the decision-making process.

Sincerely,



Adamie Delisle-Alaku
Executive Vice-president,
Resource Development Department
Makivik Corporation



WWF-Canada
318 Creekside Village
P.O. Box 1750
Iqaluit, Nunavut
Canada X0A 0H0

Tel: (867) 222-1276
Toll-free: 1-800-267-2632
Fax: (416) 489-3611
ca-panda@wwfcanada.org
wwf.ca

May 19th, 2017

Daniel Shewchuk
Acting Chairperson, Nunavut Wildlife Management Board
P.O. Box 1379
Iqaluit, Nunavut, X0A 0H0

Via email: receptionist@nwmb.com

Dear Mr. Shewchuk:

Re: Comments on Nunavut Polar Bear Co-Management Plan

On behalf of WWF-Canada, thank you for the opportunity to submit comments on the Nunavut Polar Bear Co-Management Plan. We acknowledge the hard work from the Government of Nunavut (GN) that has gone into the drafting of this plan, including the many improvements from the previous draft, specifically the section on climate change and the addition of priorities and timelines for implementation.

We recognize the difficulty associated with drafting a management plan for such a wide-ranging species with multiple subpopulations and varying conservation perspectives. Few species elicit as wide a variety of viewpoints on the status, management goals, and future projections as polar bears, both within Nunavut and abroad. It is with these considerations in mind that we submit our comments on the co-management plan.

Section 2 – Guiding principles

The guiding principles for this plan are strong, and if adhered to, will ensure the proper management of polar bears in Nunavut. Of particular note is the need to ‘ensure that subpopulation information is available for timely conservation decisions and long-term sustainability’, and the acknowledgement that a ‘lack of certainty will not be a good reason for postponing reasonable or precautionary conservation measures’. In order to properly implement these two guiding principles, the GN will need to continue to invest heavily in polar bear monitoring and fulfill the survey schedule as listed in Appendix D. Obtaining updated population estimates for the Norwegian Bay, Northern Beaufort Sea, and Lancaster Sound subpopulations, all scheduled for assessment in 2018, is an especially high priority.

Section 5.3 – Legislative frameworks and agreements

Interjurisdictional agreements between Nunavut and neighboring provinces, territories and nations will be crucial to the success of both the Nunavut co-management plan, and the federal Species at Risk Act plan. We urge the GN to treat the renewal, and where necessary, development of interjurisdictional agreements with the highest priority.

The implementation of this plan will also need to consider the Circumpolar Action Plan (CAP) for polar bears, signed by the Government of Canada in 2015. While not a direct signatory, many of the actions in the CAP will be the responsibility of the GN. WWF will be creating a scorecard to monitor the implementation of the CAP across the range of the polar bear, and we look forward to engaging with both the Government of Canada and the GN to highlight the successes of the CAP and identify areas in need of further investment.

Section 7.4.1 – Climate change

Climate change represents one of the best understood threats to polar bears, but also the most challenging threat to combat at the local level. This draft of the plan includes greater reference to the anticipated negative effects of climate change on bears from a scientific perspective. While the vast majority of subpopulations are currently stable, the future trends are an area of concern. It will be important to continue to monitor the effects of climate change on polar bears to test the varying hypotheses regarding polar bears and declining sea ice, using both Inuit Qaujimajatuqangit and science.

Section 7.4.2 – Denning

While some denning areas are currently protected in Nunavut, the identification and protection of additional areas will be a necessary action of this plan. Multiple stakeholders and many of the community delegates at the March 2017 Qikiqtani public hearing for the Nunavut Land Use Plan (NLUP) expressed a strong desire to protect additional denning areas by land use designations. In many ways, the NLUP is the ideal avenue to pursue denning area protections, as the areas are not permanent, can include only seasonal restrictions, and can be altered according to changing community needs or shifts in polar bear distribution. As this plan moves into the implementation phase, we strongly encourage the GN to continue to engage with the Nunavut Planning Commission (NPC) to assign Special Management Area status to all known polar bear denning areas in Nunavut that seasonally prohibit incompatible uses that could disturb denning bears during the denning season.

Section 7.5 – Population boundaries

The proper management of polar bears in Nunavut will require accurate management unit designations to maximize harvest opportunities while ensuring sustainable subpopulations. As sea ice continues to decline, changes in subpopulation structure and distribution are expected. Currently, collaring studies are the only means by which these boundaries can be assessed and remain a necessary aspect of polar bear management.

Section 7.8 – Trade

WWF does not support uplisting polar bears on the Convention of International Trade in Endangered Species (CITES), and publicly commented against the September 2015 proposal to list polar bears on Appendix 1. The development and implementation of both the Nunavut and federal polar bear management plans will strengthen the case against an Appendix 1 listing. However, further actions, such as assigning a Special Management Area land use designation to all denning areas, continuing to monitor subpopulation structure and distribution through collaring studies, and increasing investment

in attractant management and the development of deterrent techniques to minimize human-polar bear conflict will further strengthen the non-detrimental finding from CITES and maintain the international trade of polar bears.

Section 8.1.3 – Harvest reporting and monitoring

If the objective is to decrease or maintain the population, and the total allowable harvest (TAH) is increased, it is noted that ‘appropriate monitoring must be conducted as a follow-up to measure the success of the management action’. The scale of what is considered ‘appropriate monitoring’ in this provision should be at the very least broadly defined in this plan so that the response of the GN can be evaluated following such a decision.

Section 8.2.1 – Gaining knowledge

The GN should improve information reporting related to polar bears and bear-human interactions through better attendance at the Polar Bear Specialists Group working group on human-polar bear conflict, and by contributing all available data to the Polar Bear Human Information Management System (PBHIMS). The GN should also prioritize research into the effectiveness of conflict mitigation techniques and attractant management in communities in conjunction with the hamlets and Hunters and Trappers Organizations across the territory. These actions may increase the polar bear co-existence threshold of Nunavummiut and avoid situations where the TAH is increased to manage human-polar bear conflict, which could be negatively perceived in international fora.

Section 8.3 – Habitat management and environmental stewardship (Avatitinnik Kamatsiarniq)

The GN should work with co-management partners to lead the way on research quantifying the effects of disturbance from industrial development on polar bears, from an IQ and science perspective. In the absence of concrete information on this subject, incompatible activities that could disturb denning polar bears need to be seasonally prohibited through land use designations.

The Last Ice Area (LIA), located in the High Arctic adjacent to the islands of the Canadian Arctic archipelago, is the area where summer sea ice will persist the longest based on climate modelling. Regardless of the debate on the importance of sea ice to polar bears, it is likely that the vast majority of polar bears will follow the sea ice. The management of the LIA, as critical polar bear habitat, will be a very important aspect of future iterations of this plan.

Section 9 – Implementation of the Plan

It is understood that while this plan is prescriptive in some regards, many management actions will come down to case-by-case decisions from the Nunavut Wildlife Management Board and subsequent decisions from the GN Minister of Environment. It will be important for both of these bodies to recognize and consider each of the objectives of this plan and interjurisdictional and international commitments when making decisions.

We applaud the addition of priority-setting and timelines for the management actions of this plan. However, given the short timeframe (less than five years) and ongoing nature of many of these actions, we believe that more frequent progress reporting is necessary, especially in the initial stages of the

plan, we suggest an interim report be drafted two years after the plan is implemented to track the progress of the plan and identify areas of improvement.

Section 9.3 – Habitat management and environmental stewardship (Avatitinnik Kamatsiarniq) actions

One particular action that we feel is not sufficiently prioritized is the study of the effects of marine shipping and development of mitigation measures on polar bears. Industrial development pressure is high in the Arctic, and the current ten-year timeline does not address the need to better understand the effects of disturbance on polar bears in order to allow for much needed industrial development while mitigating the impacts to wildlife. This action needs to be elevated to high priority and a timeline of no more than five years, with work beginning as soon as feasible.

Section 10 – Plan Review

As the jurisdiction with the most polar bears in the country, Nunavut's plan will be the cornerstone of polar bear management in Canada. As noted above, an interim review should come after two years so that problems can be identified. This is a first generation plan, and a review will not be onerous. WWF will also conduct a review of the progress of the plan after two years, which we hope will be a productive exercise to identify roadblocks that need to be addressed before the 5 year review mark.

Concluding remarks

WWF-Canada is supportive of this draft of the Nunavut Polar Bear Co-Management Plan. We have suggested minor revisions for consideration by the NWMB and the GN in their final drafting of the plan. We have also included areas of emphasis and future actions that will be necessary during the implementation of the plan, and we look forward to continued discussions on these topics. We thank the NWMB and the GN for the opportunity to submit comments which we feel will improve the plan, and look forward to expressing our points and hearing from others at the hearing in June in Iqaluit.

Sincerely,



Brandon Laforest
Senior Specialist, Arctic Species and Ecosystems
WWF-Canada

- C.c. Jason Akearok, Executive Director, Nunavut Wildlife Management Board
- C.c. Vicky Sahanatien, Director, Wildlife Management, Nunavut Wildlife Management Board
- C.c. Sarah Spencer, Wildlife Management Biologist, Nunavut Wildlife Management Board



MAY 18 2017

Mr. Dan Shewchuk
A/Chairperson of the Nunavut Wildlife Management Board
1106 Ikaluktuutiak Road, Allavvik Building, 3rd Floor
P.O. Box 1379, Iqaluit, NU X0A 0H0

Dear Mr. Shewchuk:

I am writing in response to your correspondence of April 13, 2017 to the Honourable Catherine McKenna, Minister of Environment and Climate Change regarding invited written submissions and the opportunity to attend a public hearing regarding the Nunavut Department of Environment's revised Nunavut Polar Bear Co-Management Plan.

Thank you for the opportunity to comment and participate in this process. General comments are provided below while more detailed information, including page- and section-specific suggestions for clarification and revision are included in the attached enclosure on behalf of Environment and Climate Change Canada (ECCC).

An ECCC departmental representative (Dr. Sam Iverson) will be present at the public hearing on June 8, 2017 to present ECCC's submission and answer any questions that arise. As per the suggestion of the Nunavut Wildlife Management Board, ECCC will gladly share a presentation and response session at the public hearing with colleagues from Parks Canada Agency.

General comments

While it is recognized that the Plan has evolved and been improved significantly since the last iteration, our review identified three priority topics for suggested further revision. These topics warrant further attention with the aim to improve Canada's ability to communicate a stewardship message and demonstrate a commitment to responsible management both domestically and internationally. Specifically: (1) clarifying the goal and conservation objectives of the Plan, (2) addressing the observed and projected impacts of climate change on polar bear subpopulations more equitably, and (3) restructuring the document to separate threats to the population from challenges in implementing the Plan.

(1) Goal and conservation objectives of the Plan

The Introduction to the Plan casts the polar bear in Nunavut as a species for which the primary concern is population maintenance or reduction in response to public safety concerns and damage to the ecosystem. This characterization is inconsistent with the federal listing of the polar bear as a species of Special Concern in Canada and at various levels of at-risk in several of Canada's provinces and territories. While polar bears are not listed as an at-risk species in Nunavut and stakeholders in Nunavut may not be in uniform agreement about the threats identified in the *National Polar Bear Conservation Strategy* for

Canada (2011), it is nonetheless important that the Co-Management Plan demonstrate an appreciation and understanding of these threats and willingness to take management action should it be deemed necessary by Nunavut wildlife management authorities. The conservation goal stated in Section 3 of the Plan: "To maintain viable and healthy polar bear subpopulations for current and future generations, and to ensure that polar bears remain an integrated and functioning part of the ecosystem while monitored and appropriate harvests are allowed" is appropriate. However the Introduction should highlight the program that is in place to monitor polar bear status and trends and assure interested parties that appropriate management actions will be taken if significant declines occur.

(2) Climate change

The issue described above is particularly pertinent with respect to ongoing climate change in the North and, in particular, its impacts with respect to projected declines in sea ice coverage. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) recommendation that Canada list the polar bear as a species of Special Concern was based primarily on projected sea ice decline and the potential impact that longer ice-free seasons could have on polar bear foraging ecology and population viability. A key consideration is that the projected declines in sea ice coverage go well beyond what has been observed by both Inuit living in the North and scientists and, thus a precautionary approach to management is advised. It is ECCC's view that a management plan that does not seriously consider the potential negative impacts of climate change on polar bears over both the short- and long-term does not demonstrate due diligence with respect to threat identification and mitigation.

(3) Threats and challenges

As suggested in ECCC's previous review of Nunavut's Polar Bear Co-Management Plan, it is recommended that the description and assessment of threats be separate from the challenges. Threats are defined as the proximate activities or processes that have caused, or may cause in the future the destruction, degradation, and/or impairment of the species being assessed. Naturally limiting factors such as aging or disease are not normally considered threats unless they are altered by human activity. Thus, issues such as habitat alteration from climate changes or disturbances from shipping qualify as threats. In contrast, challenges that complicate the implementation of management actions, such as overlapping jurisdictional responsibilities, are not in and of themselves threats. Managing threats is best accomplished when they are classified, ranked, and specific management actions are identified for each threat to mitigate or alleviate its impact. ECCC's suggestion is to divide Section 7 into separate sections for "Threats" and "Management Challenges" and for greater attention to be paid to threat assessment and prioritization.

In closing, I would like to commend the Nunavut Department of Environment for its ongoing commitment and significant effort to develop a polar bear management plan for the territory. With some revisions, I am confident that the Plan will satisfy the needs of the territory and allow for incorporation into the national SARA management plan. I wish the Nunavut Wildlife Management Board well in completing this challenging work and finalizing a decision regarding this proposed Plan.

Sincerely,



Robert McLean
Director General, Assessment and Regulatory Affairs
Canadian Wildlife Service

Enclosure:

Detailed ECCC page and section specific comments table

ENVIRONMENT AND CLIMATE CHANGE CANADA COMMENTS ON THE REVISED NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN

Reference	Comment
General comment	It would be preferable if citations were included in the text. This is particularly relevant in situations when factual scientific or <i>IQ</i> information is presented. Change to Environment <u>and Climate Change</u> Canada throughout document Change Parks Canada to <u>Parks Canada Agency</u>
p. 2, Executive Summary	The Executive Summary describes key procedural and administrative elements of the management plan (i.e., it was cooperatively developed, it is intended to replace the MOUs that have directed management efforts to date, and it emphasizes the central role that <i>IQ</i> plays alongside science in decision making). However, the Executive Summary does not describe key biological and legislative considerations. This information should be included. For example, in the <i>Inuvialuit Settlement Region Polar Bear Joint Management Plan</i> the summary includes paragraphs describing the relevant federal and NWT at-risk listing designations for polar bear that led to the plan being developed, the conservation goal in the ISR (long-term population persistence while maintaining traditional Inuvialuit use), and the principle threats and challenges facing the species (detrimental human activities, climate change). Similarly, the <i>Recovery Strategy for Polar Bear (Ursus maritimus) in Ontario</i> includes an overview of the species distribution and its status in the province, critical habitats for protection (maternal denning sites, spring feeding areas and fall staging areas), and an overview of the main threats and challenges as identified by Ontario (climate change, mortality from negative human-bear interactions).
p. 6, Introduction	It would be beneficial to include an explanation as to why this plan has been developed and Nunavut's key role in global polar bear management and conservation. With respect to the former, a federal management plan became legally required upon designation of the polar bear as a species of Special Concern in 2011. Recognizing that the provinces and territories have the primary responsibility for management of polar bears, there was agreement that the national plan would include a compendium of regional/jurisdictional plans. With respect to Nunavut's role in polar bear management, the territory is home to 12 of the world's 19 subpopulations representing more than half the world's polar bears and, therefore, management actions taken by Nunavut are of paramount importance for ensuring long-term persistence of the species. Although the rationale for why the polar bear has not been listed as an at-risk species under the <i>Nunavut Wildlife Act</i> is clearly explained in the document, it would strengthen Canada's ability to communicate a stewardship message to domestic and international audiences if the document was to strike a more judicious tone with respect to the conservation concerns that are commonly advanced for polar bear.

ENVIRONMENT AND CLIMATE CHANGE CANADA COMMENTS ON THE REVISED NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN

	While stakeholders in Nunavut may not be in complete agreement about the level of risk to polar bear population viability posed by climate change and other threats listed in the <i>National Polar Bear Conservation Strategy for Canada</i> (2011), it is in the national interest that Nunavut's Plan acknowledges these concerns, articulates an understanding of their basis, and makes it clear that Nunavut would respond with appropriate management actions should specific actions be deemed necessary. Finally, a major point of emphasis in the Introduction is public safety and the potential for negative impacts of polar bears on the ecosystem. While public safety is certainly a valid and important concern, there is little scientific support for negative ecosystem effects. The text should be counter-balanced by mention of population objectives and a goal of ensuring that subpopulations neither increase above nor decline below agreed upon targets for population size. As written, considerable detail is omitted with respect to the reasons human-bear conflict is on the rise (i.e., it is a potential by-product of sea ice decline and human population expansion), the effectiveness of deterrence programs, and the implications that a population reduction program would have on harvest quotas (i.e., if the goal is to maintain bear numbers at a lower overall abundance then the annual total allowable harvest level would also need to be adjusted downward once the desired lower abundance was achieved).
p. 7, Introduction para. 3 and 4	A point of clarification with respect to how the current system of polar bear harvest management came into effect: it was the international community that raised alarm about the non-selective and unregulated harvest of polar bears in the 1950s and 1960s. This facilitated an international meeting in 1965 that eventually led to the 1973 <i>Agreement on the Conservation of Polar Bears</i> . It was during the drafting of the language of the Agreement that Canada developed a quota system in order to meet its commitments upon signing of the Agreement. The Nunavut MOUs came about much later.
p. 7, Introduction para. 4	With respect to the five polar bear range states: technically the 1973 Agreement was signed by Denmark because Greenland had not yet been granted control of its natural resources.
p. 8. Section 3	Suggest adding a footnote that provides a definition of what a viable and healthy population is considered to be.
p. 8. Section 4	Suggest adding the CITES status under 4.1
p. 9. Section 4.3.1, para. 3	Globally, all polar bears are divided into 19 "subpopulations", 13 (excluding bears of the Arctic Basin) of which are in Canada <u>and/or shared between Canada and Greenland or the United States</u> .
Figure 1	Suggest shading the entire Nunavut Settlement Area so that it is clear to see that the Belcher Islands are part of NU.

ENVIRONMENT AND CLIMATE CHANGE CANADA COMMENTS ON THE REVISED NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN

p. 11, Section 4.4.3 Diet	Suggest a more detailed summary of scientific findings regarding the use of terrestrial prey items and the extent to which marine mammal versus other prey items contribute to polar bear condition. The scientific literature on this topic is clear and indicates that seals are the single-most critical component of polar bear diets; eggs, berries, and seaweed do not contribute significantly on a population level.
p. 12, Section 5.2	Please clarify: "Management in Nunavut has focused on sustainable harvest using population estimates derived from scientific studies <u>and IQ.</u> " or is the point that the author is trying to make that in the past decisions were made on the basis of science alone and only recently has IQ also been considered.
p. 13, Section 5.3	<u>Agreement on the Conservation of Polar Bears</u> not International Agreement on the Conservation of Polar Bears
p. 14, Section 5.3	<u>Davis Strait</u> not Davis Straits
p. 14, Section 5.3	<u>The Canada-US Agreement is limited to the Southern Beaufort subpopulation</u> not polar bears in general
p. 14, Polar Bear Co-Management, Section 6	This section does not identify the roles for other provinces, other co-management boards, or other countries. These relationships influence management decisions (particularly harvest) in most subpopulations. Additional text would be useful with respect to how harvesting rights in other jurisdictions are considered in Nunavut management planning (and vice versa).
p. 15, Section 6.6	the Convention on International Trade in Endangered Species <u>of Wild Fauna and Flora</u> (CITES)
p. 15, Section 6.6	With respect to international agreements: note also that polar bear are listed under the Convention on the Conservation of Migratory Species of Wild Animals (CMS). While Canada is not a signatory, ECCC may be involved in meetings and discussions to ensure that Canada's management of polar bears is well represented.
p. 16, Section 7	Given the threats and their recognized and/or potential impacts on the species further rationale should be offered as to how a management system that permits hunting (and in some cases may seek to reduce population size via a managed hunt) is compatible with conservation goals. One useful source of information to consult would be <i>the United States Fish and Wildlife Service Polar Bear Conservation Management Plan</i> , Section E (The compatibility of harvest with conservation and recovery) and Appendix C (Population Dynamics and Harvest Management). The USFWS document makes a strong argument that polar bears can be harvested even if they are vulnerable to population decline or known to be in decline so long as adequate monitoring occurs

ENVIRONMENT AND CLIMATE CHANGE CANADA COMMENTS ON THE REVISED NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN

	and certain conditions are met with respect to harvest management practices.
p. 16, Section 7	As suggested in the previous review of Nunavut's Polar Bear Co-Management Plan by ECCC, for the Plan to be of optimal utility as a component of a federal management plan "Threats" should be distinguished from "Challenges". Threats are defined as the proximate activities or processes that have caused, are causing, or may cause in the future the destruction, degradation, and/or impairment of the species being assessed in the area of interest. Thus, issues such as habitat alteration from climate change or disturbances from shipping qualify as threats, whereas issues such as population boundaries and trade are challenges to implementation, but are not in and of themselves threats. Managing threats is best accomplished when they are classified, ranked, and specific management actions are identified to mitigate or alleviate their impact. ECCC's suggestion is to divide Section 7 into separate sections for "Threats" and "Management Challenges" and for greater attention to be paid to threat assessment and prioritization.
p. 16, Section 7.4.1	Climate change is downplayed as a conservation threat. In the Nunavut Plan it is sub-bullet under the 4th ranked threat (habitat alteration), whereas in other assessments (IUCN Red List, National Polar Bear Conservation Strategy for Canada, Ontario Recovery Plan, ISR Joint Management Plan) climate change/sea ice loss is ranked as the top threat. Suggest making a more robust review of the scientific literature on this topic to demonstrate that the risks are well understood. The statement "Although there is growing scientific evidence linking the impacts of climate change to reduced body condition of bears and projections of population declines, no declines have currently been attributed to climate change" is not in alignment with scientific evidence. See for example: Regehr, E.V., Lunn, N.J., Amstrup, S.C. and Stirling, I. 2007. Effects of earlier sea ice breakup on survival and population size of polar bears in western Hudson Bay. <i>Journal of Wildlife Management</i> 71:2673-2683. Lunn, N.J., Servanty, S., Regehr, E.V., Converse, S.J., Richardson, E. and Stirling, I. 2016. Demography of an apex predator at the edge of its range – impacts of changing sea ice on polar bears in Hudson Bay. <i>Ecological Applications</i> 26:1302-1320.
p. 18, Section 7.5, Population boundaries	Population <u>B</u>oundaries, not Population boundaries. Consistent use of capital letters should be checked in section headings throughout the document. Section number is 7.5 repeated two sections in a row.
p. 19, Section 7.5,	The scientific view is that bears do not routinely travel across different geographic

ENVIRONMENT AND CLIMATE CHANGE CANADA COMMENTS ON THE REVISED NUNAVUT POLAR BEAR CO-MANAGEMENT PLAN

Population boundaries	regions of the Canadian Arctic (this is amply demonstrated by genetic data, telemetry data, and harvest recovery data). Rather the scientific information serves as a quantitative basis for delineating management units considering the frequency with which long-distance dispersal events occur.
p. 19, Section 7.5, Polar Bears and People	It is worth noting that the Government of Nunavut has an effective deterrence program in place to reduce human-bear conflicts.
p. 19, Section 7.5, Polar Bears and People	Suggest providing a citation or description of the source(s) of information for the statement that it is recognized in many areas across Nunavut that there are more bears now than 40 or 50 years ago.
p. 21, Section 8.1.1, Harvest Management	The description of harvest management is very well described. In the <i>National Polar Bear Conservation Strategy for Canada</i> (2011) harvest above quotas is listed as a potential threat. This is a management success and it may be useful to include harvest above quota as a potential threat in this management plan. The information provided in this section would then demonstrate that Nunavut takes the threat seriously and has taken appropriate management actions to ensure harvest is sustainable and remains so in the future. Small points/questions: Unused TAH credits are zeroed when a new population estimate is generated? Provisions exist that allow Elders to harvest a cub if a permit is issued in advance?
p. 24, Section 8.2.1, Gaining Knowledge	While some data can be collected through hunters not all of the information required for effective management can be obtained this way.
p. 26. Section 8.3	Suggest changing bullet: Improve monitoring for contaminants <u>and disease</u> in order to respond to potential health concerns resulting from consumption
p. 28, Section 8.5.2	Clarify issues on which efforts for co-management across jurisdictions are ongoing and where new initiatives are required.
p. 29. Section 9	The goal as described in the implementation section has departed from the goal as described earlier in the plan and particularly in relation to the goal as stated in Section 3.
p. 29, Section 9	No changes to existing TAH <u>or non-quota limitations such as sex selective</u> harvest will occur until new information becomes available,...

p. 30-32. Section 9 – Implementation tables	The information included in the tables is very useful. They could be improved by also including specific actions, timelines, and potentially financial implications for the involved parties. Suggest the action: Develop a training program for Inuit in communities to establish an Inuit data collection program... be elevated to high priority Moderate and medium are used interchangeably. Suggest choosing one term for consistency.
p. 31, Section 9.3	Many of the actions included under Environmental stewardship are in alignment with the objectives of the Circumpolar Action Plan. It would be helpful to mention that the data and information collected in Nunavut feeds into international agreements.
Appendix A	Question the value of including the PBTC status table in the management plan given the fact that they are updated every year and will quickly be outdated. Suggest that a reference and web link could be provided to direct readers to their content.
Appendix B	Status assessments should be reviewed and updated for many of the subpopulations. Clarifications are also required for some items. These include: Baffin Bay and Kane Bay– update with new information Davis Strait, Foxe Basin, Southern Hudson Bay – the Nunavik TAH is not a quota, is this number based upon recent harvest levels Northern Beaufort Sea – the number being used in the plan is not the same number being used in the ISR. This highlights the issue of how Nunavut will manage if there are different management objectives among neighboring jurisdictions that harvest the same subpopulation. Southern Hudson Bay – update with new information
Appendix C, and D	Suggest starting each appendix on a new page. Appendix C does not have a title.
Appendix E	Suggest including literature reviewed with the main body of the document and not in a separate Appendix. Left margin should be corrected.



Nunavut Field Unit
P.O. Box 278
Iqaluit, NU X0A 0H0

May 19, 2017

Daniel Shewchuk
A/Chairperson
Nunavut Wildlife Management Board
P.O. Box 1379
Iqaluit, NU X0A 0H0

RE: Public Hearing of the Nunavut Wildlife Management Board concerning the revised Nunavut Polar Bear Co-Management Plan

Mr. Chairperson,

This letter is in response to your invitation of April 13, 2017 to provide submissions and participate in the public hearing to consider the revised Nunavut Polar Bear Co-Management Plan (Plan), developed by the Government of Nunavut. Thank you for the opportunity to participate in this important process; below is a broad overview provided on behalf of the Parks Canada Agency – Nunavut Field Unit.

First, I commend the NWMB and Government of Nunavut for being open to following a modified approval process over the past year and a half; it has resulted in a vastly improved Plan. Parks Canada acknowledges the Government of Nunavut's hard work and dedication to develop an immensely important plan that covers a vast area with such an array of stakeholder and public opinions.

As a manager of over 110,000 square kilometers of land within Nunavut, Parks Canada has a significant responsibility in the management of polar bears and their habitat. There are many examples of terrestrial and marine habitat managed by Parks Canada that is particularly sensitive and important to certain life history stages of polar bears. Some examples are the northern and eastern fiords of Auyuittuq National Park contain substantial denning areas; the coastal areas of Ukkusiksalik and Sirmilik National Parks are heavily used summering areas for polar bears of the Foxe Basin and Baffin Bay subpopulations, respectively.

The conservation of significant species, such as polar bears, and their habitat plays a central role within Parks Canada in Nunavut and nationally, and is a key component of our mandate:

“On behalf of the people of Canada, we protect and present nationally significant examples of Canada’s natural and cultural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations.”



Our mandate is to also present these significant examples of Canada's natural place to the public; thus, Parks Canada also has the important role of developing responsible tourism opportunities for Canadians. A primary concern when developing these opportunities is the need to ensure not only the safety of visitors, but also of polar bears, and managing the risk of bear-human conflict. To ensure this, Parks Canada continues to work closely with other federal and territorial government departments, non-government organizations, outfitters, and communities to develop bear safety programs, and tourism opportunities that are as informed as possible to reduce conflict and educate visitors on bear protection.

Being a federal authority, Parks Canada also has major responsibility in implementing the Species at Risk Act, including working closely in support of Environment and Climate Change Canada, which is leading the development of the National Polar Bear Management Plan. Collaboration between territorial and federal government will also be immensely valuable in the development of this national plan, ensuring it can also be implemented throughout the range of polar bears.

The following attachment includes detailed comments on the Plan; again, thank you for the opportunity to participate in the public hearing. We are encouraged by the progress in the development of the Plan and look forward to continuing to work with the Nunavut Wildlife Management Board, Government of Nunavut, Environment and Climate Change Canada, other co-management partners and the public to ensure successful sustainable management and long-term conservation of an iconic species.

Sincerely,

Jenna Boon
Field Unit Superintendent

Attachments - 1



Appendix 1 – Parks Canada comments on the revised Nunavut Polar Bear Co-Management Plan

Prepared by: Peter Kydd, Acting Resource Conservation Manager, Nunavut Field Unit, Parks Canada Agency

Date: May 19, 2017

The revised Nunavut Polar Bear Co-Management Plan is greatly improved, for which the Government of Nunavut should be applauded. As always, the Government of Nunavut has done a great job respecting community input throughout the consultation process and incorporating local views and recommendations within the Plan. The Government of Nunavut has also done a great job of balancing Inuit Qaujimajatuqangit and science in the Plan. However, there are outstanding issues that are of concern with several components of the Plan. Many of these concerns are consistent with those of Environment and Climate Change Canada; generally, we are supportive of the detailed submission provided by Environment and Climate Change Canada.

Missed Opportunity for Collaboration

While in the revised Plan, Parks Canada has been included within the description of co-management partners and their roles, the continued absence of consultation and collaboration between the Government of Nunavut and Parks Canada is clear. Parks Canada manages a significant amount of land in Nunavut, much of which contains sensitive Polar Bear habitat. As Polar Bear is a federally listed species at risk, Parks Canada plays an important role in the development and implementation of a National Management Plan under the Species at Risk Act. Greater coordination between federal and territorial government departments would lead to a strengthened co-management system, reflected in effective territorial and federal management plans, collaborative use and sharing of resources and expertise, and a healthy, well-managed Polar Bear population.

Management for Status Quo

Parks Canada appreciates the inclusion of the most recent Polar Bear Technical Committee Status Table. However, there is still no discussion or rationale pertaining to why all subpopulation recommendations are to Maintain current population abundance and review management objectives and TAH when a new inventory study is complete. The PBTC Status Table clearly indicates that several populations are not stable, either decreasing (increasing the risk to bear survival), increasing (potentially increasing the risk to humans) or are uncertain; should these subpopulations not be managed accordingly, including taking the precautionary approach?

Citation of Research

The current draft of the Plan has done an insufficient job of citing literature throughout the document. It is encouraging to see a list of literature reviewed in the appendix of the Plan, but the lack of citations throughout document does not assist the reader in understanding what information, both from the scientific and Inuit Qaujimajatuqangit perspective, has been drawn



from where. Citing references through documents is consistent practice with recovery documents and management plans produced by other territorial, provincial and federal governments and would be greatly beneficial in this context.

Threats and Challenges

While there are some linkages between threats to Polar Bears and challenges in Polar Bear management, the inclusion of threats and challenges in one category seems odd; they have drastically different definitions and should be clearly distinguished from one another. Specifically, by understanding the descriptions of and concerns surrounding denning, population boundaries, and inter-jurisdictional considerations, these are obvious challenges in management. The remaining are the clear threats, and should be grouped accordingly.

Climate Change

As indicated in Parks Canada's review during the initial written hearing of the Plan, there is still substantial concern with the lack of discussion or reference to climate change and the impacts on polar bears. There is a growing body of peer reviewed literature that speaks to these changes and impacts on polar bears in Canada. The international community recognized climate change as the most significant threat to polar bears, and is explicitly stated in several agreements between jurisdictions. As stated before, this could impact Canada's reputation as leaders in polar bear conservation and provide other jurisdictions the opportunity to scrutinize polar bear management in Canada.

Implementation of the Plan

The description of Management Actions to be taken to reach each of the Management Plan Objectives is important, especially the revisions that have added priority levels and timelines to each action. Understanding that there are many actions to be completed, most within 3-5 years, this may be an opportune place to facilitate collaboration between co-management partners. Including an additional column, or description in the text preceding the tables, identifying key partners in achieving each action would identify areas where the Government of Nunavut will be looking to co-management partners, including Parks Canada and Environment and Climate Change Canada for assistance. To complete all management actions within the timelines indicated in the Plan, it is anticipated that the Government of Nunavut will need to work closely with co-management partners.

Parks Canada also sees value in the Government of Nunavut including, in the communications strategy for public outreach for bear safety, general information on the status of polar bears, and the need for conservation initiatives. Harvest management is in place for conservation purposes, delivering the message as to why there is a need for conservation is highly important, and will increase public awareness.

Summary

Generally, this Plan is largely improved from the 2015 draft; however there is still room for improvement. Of greatest concern are the lack of consultation and collaboration between Parks



Canada, Environment and Climate Change Canada and the Government of Nunavut; management for the status quo; and, the unsatisfactory description of threats from climate change. With improvements in these areas, Nunavut Polar Bear Co-Management Plan will be a strong guiding document, which will be smoothly implemented, and well respected throughout the polar bear management community.

October, 28, 215



engaging stakeholder participation and foster greater cooperation amongst co management partners?

- 2) The plan is committed using science and improving its engagement with Inuit experience and IQ. This is a necessary work for the territory as a whole and for all species.

It is clear that this new management plan sees its future development through IQ. It provides IQ with a lot of space and continually recognizes its importance. On paper, this is an important argument to make. In action, this will require a lot of work, specifically around engagement and ongoing support directly with knowledge holders.

As an organization that works with the HTOs directly, we know HTOs have been calling for better engagement with Inuit knowledge and experience. As we understand it, it is a call for experience and knowledge to be share, but also the freedom to engage with the process and co management partners more directly. We would like to address this in two parts: the plans renewal/review dates, and IQ research itself.

First to the renewal process for the plan itself. Does the GN plan to support a review process that involves all co management partners and one that is open to critiques raised by community members.

Related to IQ research: Since the creation of Nunavut the goal of incorporating Inuit knowledge into policies and procedures has been constant. Inuit have been making this call for as long as wildlife management became about enforcement. And yet, no structures have been developed to collect IQ and Inuit feedback in a way that is comfortable for communities to share, and that is in a form co management partners can use. QWB believes it is now time for all co management partners to work together to develop a system for continual IQ collection and reporting.

To begin collecting the IQ needed to move this proposed plan into the future, there needs to be a method of collection, sharing, remuneration and reporting developed. HTOs and their membership require an administrative support network that will allow them to then do the work of collecting IQ. What also must be developed is a means for getting this information to co management partners,

In light of a management plan that relies heavily on IQ, QWB wonders what strategies the GN, and all co management partners, have in order to meet the IQ specific needs outlined in this plan. This is a responsibility that is larger than a council of elders or a single IQ coordinator. It requires a Nunavut wide strategy that includes all co management partners. This is needed because no useable methodology for collecting IQ from beginning to reporting has been developed. Not spending time and committing resources to this results in nothing more than having a plan that speaks of the importance of IQ but does not act from it.

Finally, in relation to IQ and science, we encourage the GN to consider the tension of using both systems within the department itself. We raise this question based on our experience with the Foxe Basin subpopulation. As you are aware, QWB requested an increase for this subpopulations TAH. After a public hearing, NWMB provided an initial recommendation to the GN. The GN rejected the initial recommendation and in a letter dated May 29, 2014, provided its rationale for that rejection. The rationale focused largely on the scientific data and population estimates connected to the MoU system. The letter also raised concerns about the validity of the mark and recapture system in developing accurate population estimates. This argument was present just months after a Nunavut wide consultation tour in which the delegates representing the GN presented to all communities this very system, and touting the value of this method in lieu of collaring. This contrast, the two arguments by the same department within a



small timeframe is confusing at best, and it leads QWB to wonder which perspective the GN really supports. We feel it is necessary for the GN to find their own common ground on this matter and ensure the management plan reflects it.

- 3) QWB recommends that a section be included to the plan that highlights the dangers of polar bears, or explain how polar bears attack. This is necessary to ensure the plan speaks to the real danger polar bears pose to people. This will also interrupt the gentle or victim view the international community has on Polar Bears.
- 4) HTOs continue to state that investigations into defense kills do not occur as efficiently as the plan presents them. Polar Bear hides have been ruined and HTOs have not been active in claiming those damages. Does the department have a staffing plan and secured funds to address this matter? QWB staff are committed to ensuring HTO's follow up with claims for damaged hides.
- 5) QWB would argue that the focus of the plan will need to develop to not just focus on the polar bear as an autonomous being, but take a broader approach include polar bear habitat. For example, on page 19 of the plan, its states that if a decline in population is noted by science/local knowledge, then action to be taken will be to reduce the TAH. The concern is that in action, the plan focuses on the harvestors only.
- 6) QWB understands the GN is committed to on going polar bear research. Does the GN have a departmental plan to ensure it has the needed resources and staff to carry out the research schedule, ensure research analysis can occur, and an effective system for reporting back is in place?
- 7) QWB recommends that a comprehensive communications plan on this plan be developed. It would need to be a plan that is rooted in Inuktitut and developed not from the government perspective, but from the community perspective. As the GN was represented at the community consultation tour, as were members of the co management partners, we believe a co management approach to develop an appropriate communication plan would greatly inform the communities about this new management plan, and be an important catalyst in applying the plan within each community.

- Thank you for this opportunity,

- 1) What kind of management was used before the quotas were set?
- 2) People say there weren't as many bears that there is now, what kinds of bears did people prefer to hunt? Why?
- 3) What approach was used when a bear came to a camp? Who had the authority to say who would kill it or not?
- 4) Since the quota has been set, what changes have you seen?
- 5) The management plan recognizes how large the international focus on polar bears are. How does your IITO think this should be addressed?
- 6) What are your community's experience in defense kill investigations? Do they happen quickly or do they take a long time?

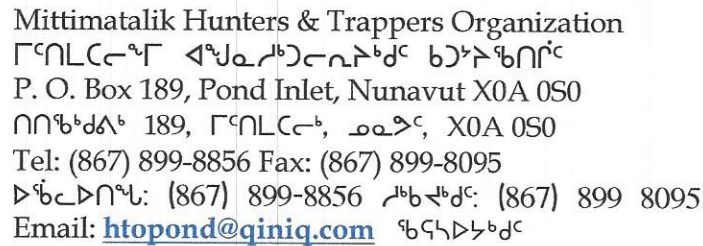
12, A: Polar bear Management Plan

have to be answered in writing only

1. There was no management
2. They hunted all kinds of bears.
why? Cause they caught whatever they saw.
3. Whenever a bear came to camp it was killed.
Cause there was hardly any bears to arrive to camp.
4. Since the quota has been set the bears increased.
Now there are too many.
5. despite globeable warming there are more bears.
6. It depends on the hunter and the Conservation officer.
If report done sooner and if we have a officer
then it would go faster.

12. $\Delta^{\circ} \text{f}^{\circ} \text{H}^{\circ}(\text{aq})$ for H_2O is $-285.8 \text{ kJ mol}^{-1}$.
 $\Delta^{\circ} \text{f}^{\circ} \text{H}^{\circ}(\text{aq})$ for H^+ is 0 kJ mol^{-1} .

- [illegible]



October 28, 2105

Mittimatalik HTO has reviewed the management plan and have the following comments and suggestions based on their review:

1. It is stated in the Management plan that the "best available scientific knowledge" is used and guides management plans being made.
 - according to the proposed management plan the best available scientific Knowledge used for Baffin Bay area is from 1997. This is too outdated, 18 years ago information being used for management plan today is highly affecting how polar bears are being managed today.
 - too many times we hear of polar being or going extinct, this is because we are using a 1 time study based in 1997 and the scientific information is way too old. Often causing contradicting statements between science and Inuit.
 - up to date scientific knowledge and knowledge of Inuit needs to be recorded, most recent documentation needs to be done.
 - NWMB and the Government of Nunavut need to make the documentation of up to date information from both scientific knowledge and knowledge of Inuit a priority. To ensure management plans are based on the most recent knowledge valid to life today.
 - Inuit knowledge holders need to be utilized, while they are still around; before we are forced to rely solely on scientific knowledge.
2. 4.4.3
 - Inuit Knowledge, polar bears are much fatter in the summer or gain much of their fat in the summer. Polar bears seem to be skinnier in the winter compared to summer.
 - there is so much concern that polar bears will have no way of eating if winter season becomes shorter or in relation to climate change. It needs to be noted that polar bears are 'wasting' so much food. Hunting for seals having a few bites and then leaving it to hunt another seal. An abundance of food availability is not good either. Inuit get the blame for leaving eatable animals and polar bears are a major contributor to this.
3. 7.2

there is contradicting statement here, we all need to ensure that speculations are left out and a conclusion needs to be made on one idea at a time. Validation needs to be made, update our scientific knowledge and connect it to Inuit Knowledge and they should back each other up.
4. 7.3.1

we would just like to express our support to the statement made by Leopa that is noted here.
5. 7.4

we agree satellite transmitting devices provide the most accurate information, however we would suggest finding some other way of attaching transmitters to polar bears. Collars alter a polar bears ability to hunt. With a polar bear, some of their hunting requires them to quickly dive into small, tight spaces (seal hunting) collars and ear attachments would really alter their ability or hurt them.

6. 7.5
 - we would like to be able to harvest polar bear in the summer, when they are fatter, and taste different from winter.
 - We all need to find a way of confirming the idea that 'maybe or perhaps polar populations are on a decline'. This needs to become a clear statement either they are or not, no more assumptions. There is a concern for safety of people, with increased polar bear and Inuit interactions. We need to find out why interactions have increased there are many ideas or theories, but we need to confirm if it's a population issue or not.
 - due to safety concerns of Inuit with increased interactions with polar bears the funding spoken about here needs to be accessible to Inuit and be communicated. It is crucial that Inuit safety is taken seriously and that the funding availability becomes a reality to protect people, Inuit knowledge of many aspects including knowledge of land, ways of hunting, navigation, land marks, hunting grounds, camping grounds and many other aspect of Inuit tradition and culture such as use of dog teams, raising a dog team, polar bear hunting, butchering, cleaning and preparation of hide and sewing of clothing.
7. 7.7
 - we would like to know why Baffin Bay is the only population not allowed to take part in the international trade. We should not be penalised for out dated population statistics, it is not our fault. We have been aware that the population stats need to be updated, we push for a thorough data collection in a year. Not a season, not once in a year but a thorough data collection.
 - we feel left out in the ability to sell or trade and we would like to be able to sell polar bear hides.
8. 7.8.1
 - we would suggest an actual reporting schedule to be used. Our HTO has thrown out so many hides, caused by waiting so long for investigations to be completed. A reasonable schedule, a time line in which all parties have to report, and have the file complete would allow a smoother process. Currently we all play the waiting game, we all should have a schedule due dates or a time line. So we can actually get them done.
9. 8.1.1
 - We do not like the idea of being able to harvest just the cub, if a cub will be harvested the mother always needs to be harvested first. We should not be able to harvest a cub alone. We like the idea that is here, but we are so connected to the way Inuit have taught us to hunt over the many years and I think we do not take young animals away from their mothers.
 - if tags are not allowed to be carried over, then we feel we should not be credited negative numbers. We can get unused tags from previous year then we should not be docked any tags from the next year to balance the previous year. It's not fair, we should be able to carry over unused tags.
 - if the closing date is June 30 then shouldn't the opening be next day July 1 as it says in the wild life act. Why do we then wait till October to have tags allocated to communities?

Scientific knowledge really needs to be updated to allow an increase in TAH.
10. 8.2.2
 - Inventory studies every 10 years is way too long to be waiting. Our last inventory study was in 1997...it is now the end of 2015 and our managements plan for polar bear is still affected by a study that was done in 1997. Inventory studies need to happen every 5 years.
 - Inuit have taken part in other studies but they are dropped off while the scientists do their part, the Inuit then never really takes part in anything. Inuit need to be there and take part for the entire process. Inuit should not just ride and be dropped off while they begin to work.
 - a polar bear can easily be worth over \$10, 000.00 a compensation of \$1,000.00 is too small. Depending on distance of hunt \$1,000.00 may not even cover the cost of hunt (gas ammunition food supply etc.)
 - Baffin Bay needs to have a study done, when will this happen. We have been waiting too long.
 - we are interested in comparing management plans with Greenland, we like to go see their HTO and learn how different or how similar our management plans are. We would like to find out how hunts are managed.



Nattivak Hunters & Trappers Organization

Nunavut Wildlife Management Board (NWMB)
Iqaluit, Nunavut
X0A 0H0

October 30, 2015

To Whom It May Concern

RE: **Polar Bear Management Plan**

On behalf of Board of Directors of Nattivak Hunters & Trappers in Qikiqtarjuaq, the Board have reviewed, discussed the Polar Bear Management Plan (PBMP) and have supported the documents.

All In Favour. *Nunavut Polar Bear Management Plan, Summary of Community Consultation and Qikiqtarjuaq Bear Management and Deterrence Plan (Draft) Oct. 2015*

Should you have any questions, concerns & or comments, you can contact the Chairperson of Nattivak HTO during regular business hours at (867) 927-8836

With Regards,

Harry Alookie

Chairperson of Nattivak HTO



၂၀၁၅ ခုနှစ်၊ ဇူလိုင်လ ၃၀

[illegible]

ደብዳቤ ትረፍ ማረጋገጫ ልካል

P.O. Box 174
SANIKILUAQ, NUNAVUT
X0A 0W0

Telephone (867) 266-8709 fax (867) 266-8131
Email – sanihta@qiniq.com

Sanikiluaq Hunters & Trappers Association

Memo

To: NWMB
From: Jobie Meeko - Chairman
Date: October 30, 2015
Re: Nunavut Polar Bear Co-Management Plan

Good morning, the Sanikiluaq Hunters & Trappers went through the draft document, the board do not have much to say about, but glad that IQ will be part of decision making within the plan.

One question is (7.8.1 Defence of life and property kills), will there be a funding available to HTO for cleaning and drying the hide.

Regards,



Jobie Meeko, Chairman

cc. QWB



Taloyoak
ᑕᑭᑦᑲᑦᑲᑦ
Taloyoak

KRWB | PO Box 104 Kugaaruk NU | X0B 1K0 | t.867.769.1007 | f.867.769.1009 | www.niws.ca
ᑕᑦᑲᓄᐅᑦ ᑎᑖᑦᑳᑦ 104 ᑭᓂᑏᒃᑱᑦ | X0B 1K0 | ᔨᑦᑲᑊᑕ.867.769.1007 | ᑯᑦᑲᓄᐅᑦ.867.769.1009
KRWB-kut | Titigagaqvia 104 Kugaaruk NU X0B 1K0 | hivayauta 867.769.1007 | faxkut 867.769.1009





Taloyoak
ᑕᑭᑦᑲᑦᑲᑦ
Taloyoak

Simon Qingnaqtuq
Chairperson

OCT 23 2015

Nunavut Wildlife Management Board
1104D IKALUKTUUIAK DRIVE
PO BOX 1379
IQALUIT NU X0A 0H0

Email: receptionist@nwmb.com

Public Hearing Nunavut Polar Bear Co-Management Plan

The Government of the Northwest Territories (GNWT) would like to thank the Nunavut Wildlife Management Board (NWMB) for the opportunity to comment on the draft Nunavut Polar Bear Management Plan. The GNWT is currently involved in the development of a Management Plan for polar bears in the Inuvialuit Settlement Area and appreciates the efforts that went into the Nunavut plan.

The GNWT shares management authority for two subpopulations (Northern Beaufort Sea and Viscount Melville Sound) with Nunavut and it is important we continue to collaborate and coordinate management of this important species. The GNWT is very interested in continuing to work collaboratively with Nunavut to manage harvest and determine management objectives for the shared populations. The GNWT supports continuing to work with the users under the agreement that exists between the Inuvialuit and Inuit of the western portion of the Kitikmeot but also feels direct government to government communication on shared management issues is important.

We also offer the following specific suggestions for revisions to the plan:

- On page 8 of the plan, "Southern Beaufort (SB)" should be replaced with "Northern Beaufort (NB)" in the list of Nunavut subpopulations.
- After extensive consultation, the GNWT changed the boundary between the SB and NB Sea subpopulations and asks that Figure 1 (page 9) be adjusted accordingly.
- The table in Appendix A should include the year of the Polar Bear Technical Committee table used and if the table is from 2014 or later, the data for NB and SB should reflect the boundary change.

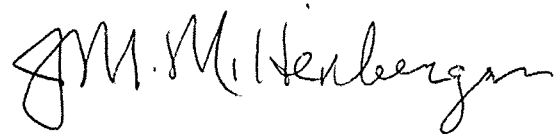
.../2



- Appendix B XI and B XII could benefit from a bit more detail and it is our understanding the Inuvialuit co-management partners proposed some changes, which we support. These subpopulation and status summaries will also need to reflect the adjusted population estimates that would be in the updated version of Appendix A.
- Finally, Appendix F seems to be missing the NB harvest and we suggest a change to the title to better reflect the table contents as this appears to be harvest quotas by sex not harvest data. Identifying the actual season these numbers represent, rather than listing them as "current harvest" may also add clarity.

We look forward to continued collaboration on polar bear conservation.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Michael Miltenberger". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

J. Michael Miltenberger

- c. Drikus Gissing, Wildlife Director, DOE GN
Lynda Yonge Director, Wildlife, ENR, GNWT
Dan Lindsay, Director Fish and Wildlife, DOE YG
Larry Carpenter, Chair WMAC (NWT)
Patrick Gruben, Chair IGC
Lindsay Staples, Chair WMAC (North Slope)



World Wildlife Fund Canada
318 Creekside Village
PO Box 1750
Iqaluit, Nunavut, X0A 0H0
(867) 222-1276 | wwf.ca

WWF-ᑲᑲᑕ
318 ᑔᓄᑦᑲᑦᑕᑦᑕᑦᑕᑦ
ᑎᑎᑦᑲᑦᑔᑦᑕᑦ 1750
ᑔᑦᑕᑦᑕᑦ, ᑲᑲᑦ. X0A 0H0
(867) 222-1276 | wwf.ca

October 30th, 2015

Attn: Ben Kovic
Chairperson, Nunavut Wildlife Management Board

RE: Comments on the Proposed Nunavut Polar Bear Co-Management Plan

Dear Mr. Kovic,

On behalf of WWF-Canada, thank you for the opportunity to submit comments on the Nunavut Polar Bear Proposed co-management Plan under the Nunavut Wildlife Management Board (NWMB) Written Hearing Process.

At WWF, we recognize the difficulty associated with drafting a management plan for such a wide-ranging species with multiple subpopulations with varying conservation outlooks. Few species elicit as wide of a variety of viewpoints on the status, management goals, and future projections as polar bears, compounding the difficulty of drafting a management plan that represents the diverse viewpoints of Nunavummiut and ensures the long-term persistence of the species. It is with these considerations in mind that we submit comments on the proposed co-management plan, under the following sections:

- a) Managing human-polar bear conflict in Nunavut communities
- b) Minimizing ambiguity in adaptive management techniques and goals outlined in the proposed co-management plan
- c) Addressing the lack of a balanced approach in the proposed co-management plan between the scientific and IQ understanding of the effects of climate change on polar bears
- d) Increasing alignment of the proposed co-management plan with other federal and international polar bear management plans

a) Managing human-polar bear conflict in Nunavut communities

WWF has a long history in engaging in human-wildlife conflict issues around the planet, with specific emphasis on human-polar bear conflict in Canada, the United States, Greenland, and Russia. In Nunavut, WWF Canada, in collaboration with the hamlet of Arviat, operates a polar bear patrol program that has greatly reduced the number of problem polar bears killed in defense of life and property in the community, increasing public safety and ensuring that the vast majority of the harvest remains available for hunters (Figure 1).

This proposed co-management plan proposes for an increase in total allowable harvest (TAH) or adjustments to the sex ratio of the harvest in areas where the co-existence threshold has been reached. There are however a full suite of measures that should be put into place to manage increased conflict, as demonstrated by the success of the polar bear patrol program in Arviat. Indeed, if the objectives listed in section 8.4 *People and bears (Inuuilly Nanuillu) and objectives* are fully implemented, increases in TAH to lessen human-polar bear conflict may not be necessary. Before increasing TAH and managing populations for decline, WWF is in support of the Government of Nunavut (GN) investing in waste management initiatives, providing secure food containers, polar bear deterrents, and polar bear patrol programs including training and employing local people in communities experiencing higher levels of conflict.

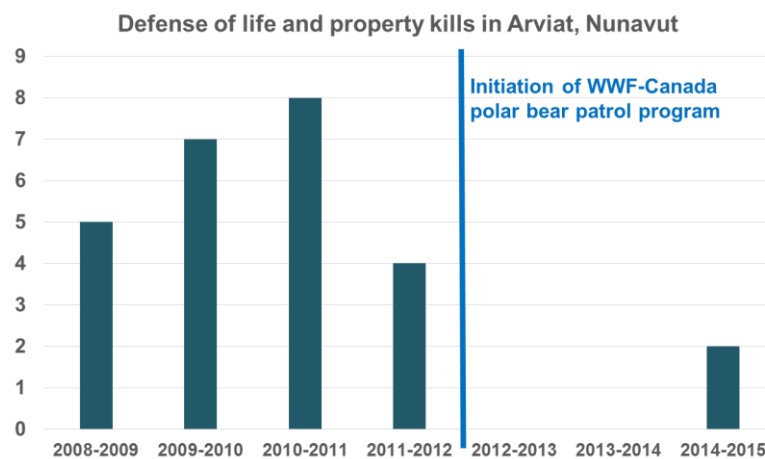


Figure 1 Number of defense of life and property kills in the Hamlet of Nunavut directly before and after the initiation of the polar bear patrol program.

We would also suggest adding under section 8.5.3 *Sharing information and knowledge* that the GN should continue to contribute to the PBHIMS system, and work with the human-bear conflict subcommittee of the Range States as well as outside organizations to quantify and characterize successful polar bear deterrent measures through community research programs.

b) Minimizing ambiguity in adaptive management techniques and goals outlined in the proposed co-management plan

In the proposed co-management plan, it is noted that “If the TAH is increased, appropriate monitoring must be conducted as a follow-up to measure the success of the management action” (page 19). The scope, scale, and timing of this ‘appropriate monitoring’ is undefined, and no funding parameters are noted. No details are provided on the specific management goals for decline, and no evidence is provided to indicate that increased harvest at specific scales will achieve the desired impact on human-polar bear conflict rates. Further, the language surrounding adjustments to the sex ratio of the harvest and the implications of such changes on TAH are unclear, and warrant explicit explanation in the plan. Clarification is also required on the evidence threshold and magnitude of increase required in a population before management for population decline is possibly implemented (i.e. what qualifies as “new information” listed in section 9 *Implementation of the plan?*).

We also note a lack of timelines and measureable outcomes for the listed *Objectives* under section 8 *Management plan objectives*, and in *Appendix C*. This plan should assign deliverable dates and measurable outcomes whenever possible on which the review committee can assess the effectiveness of the plan during their annual and seven-year review processes. Bounding objectives with timelines will also help to link management actions directly with their intended outcomes.

c) Addressing the lack of a balanced approach in the proposed co-management plan between the scientific and IQ understanding of the effects of climate change on polar bears

The proposed co-management plan successfully outlines the polar bear IQ of many Nunavut communities, but there is a lack of scientific information on polar bears provided. This is most noticeable in section 7.3.1 *Climate change*, where the suite of knowledge from decades of scientific studies on the ecological link between polar bears, climate, and sea ice is not mentioned (e.g. Derocher et al., 2004; Laidre et al., 2008; Molnár et al., 2010, Rode et al., 2010, Stirling and Derocher, 2012; Atwood et al., 2015). By not giving consideration to the scientific understanding of polar bears the opportunity to develop an integrated co-management plan based on both IQ and science is weakened.

Without in-text references or a reference list, it is unclear what body of information informed the drafting of this plan, and which information was not included. A record of the community consultation record for the drafting of this plan is also lacking, as are the affiliations of the drafting authors. Including information on these points would include the transparency of this plan, and allow for a better understanding of the rationale informing the management objectives.

d) Increasing alignment of the proposed co-management plan with other federal and international polar bear management plans

The management objectives and information base in this proposed co-management plan are not fully aligned with those governing two other highly relevant plans, the delayed Species at Risk Act (SARA) national polar bear management plan, and the Circumpolar Action Plan (CAP) for polar bears recently adopted by the Range States. We encourage increased collaboration between the GN, the NWMB, and the Canadian Wildlife Service (CWS) in ensuring that this proposed co-management plan is compliant with the objectives of SARA and the CAP, so that national and international polar bear management actions are aligned and effective.

Concluding remarks

There is an opportunity for this plan to be informed by the best available IQ and scientific information to allow responsible polar bear management that meets the needs of Nunavummiut. Additional consideration of human-polar bear conflict reduction measures is required to ensure the full suite of management options have been considered before managing populations for decline. Further details are required into the specific adaptive management strategies that will be employed in various conservation scenarios, as well as details on specific monitoring efforts that will follow decisions to manage subpopulations for decline. This proposed co-management plan should also better reflect the current state of scientific knowledge of climate change, sea ice, and polar bears, presented as complementary information and in some cases in contrast to IQ for broader consideration.

Once again, we would like to like to thank the NWMB for considering the comments provided.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Laforest', with a stylized, cursive script.

Brandon Laforest
Senior Specialist, Arctic Species and Ecosystem
WWF-Canada

References cited

- Atwood, T.C., Marcot, B.G., Douglas, D.C., Amstrup, S.C., Rode, K.D., Durner, G.M., and Bromaghin, J.F. 2015. Evaluating and ranking threats to the long-term persistence of polar bears: U.S. Geological Survey Open-File Report 2014-1254. 114p.
- Derocher, A.E., Lunn, N.J., and Stirling, I. 2004. Polar bears in a warming climate. *Integrative Comparative Biology*. 44:163-176.
- Laidre K.L., Stirling, I., Lowry, L.F., Wiig, Ø., Heide-Jørgensen, M.P. and Ferguson, S.H. 2008. Quantifying the sensitivity of arctic marine mammals to climate-induced habitat change. *Ecological Applications* 18(2):S97-125.
- Molnár, P. K., Derocher, A. E., Thiemann, G. W., and Lewis, M. A. 2010. Predicting survival, reproduction and abundance of polar bears under climate change. *Biological Conservation* 143:1612–1622.
- Rode, K. D., Amstrup, S. C., and Regehr, E. V. 2010. Reduced body size and cub recruitment in polar bears associated with sea ice decline. *Ecological Applications* 20:768–82.
- Stirling, I., and Derocher, A.E. 2012. Effects of climate warming on polar bears: a review of the evidence. *Global Change Biology* 18:2694–2706.



OCT 30 2015

Mr. Ben Kovic
Chairperson of the Nunavut Wildlife Management Board
P.O. Box 1379
Iqaluit, Nunavut
X0A 0H0

Dear Mr. Kovic:

I am writing in response to your correspondence of September 4, 2015 to the Honourable Leona Aglukkaq, Minister of the Environment in which you invite interested organizations or persons to file written response submissions and supporting documentation concerning the proposed Nunavut Polar Bear Co-Management Plan by no later than 1700 h Eastern Time on October 30, 2015.

Detailed comments on the proposed Nunavut Polar Bear Co-management Plan (the Nunavut Plan) are enclosed together with supporting documentation. Below I provide more general comments on the Nunavut Plan's relationship to the federal *Species at Risk Act* (SARA) management plan and the implications for adoption of the Nunavut Plan, followed by comments on key sections of the Plan.

Relationship between the Nunavut Plan and the SARA Management Plan

The Background section of the Nunavut Plan states that it will form part of the SARA management plan. The polar bear was listed on Schedule 1 as a species of special concern in 2011. As such, the Minister of Environment Canada must post the management plan for the polar bear on the Species at Risk Registry. The SARA management plan for the polar bear is part of the Environment Canada's 3-year posting plan to address overdue recovery documents, and is scheduled for posting in 2016-2017.

Environment Canada has discussed preparation of the SARA management plan with the provinces and territories on several occasions. Since 2011, the polar bear management agencies have agreed that the SARA management plan should be composed of the approved National Polar Bear Conservation Strategy, along with the provincial, territorial and Nunatsiavut government management plans for the polar bear. The SARA management plan will also reflect input from the wildlife management boards and directly affected Aboriginal peoples. The SARA polar bear management plan will

.../2



be an action-oriented document that identifies conservation measures needed to ensure that polar bear does not become threatened or endangered under SARA. Key elements of the SARA management plan include: species biology and needs, threats assessment and description, management objectives, broad strategies and conservation measures, and measures of progress.

In order for this approach to work, the provincial and territorial management plans must meet certain criteria under SARA. As it stands, this Nunavut Plan would require changes and additions in order for it to be adopted in the SARA management plan. In particular, under Section 69 of SARA (adoption of an existing management plan), the adopted plan must include adequate measures for the conservation of the species. Although Appendix C does identify some conservation measures, it is not central to the document and is prefaced by a statement that these directions "...are not to imply actions that will be undertaken." The Nunavut Plan should clearly identify conservation measures that address threats to the species. Harvest management may be the primary management strategy for polar bear in Nunavut, but conservation measures to address other threats and knowledge gaps should be articulated in the document given that the intent is to incorporate it into the SARA management plan. Furthermore, articulating how threats will be addressed in the Nunavut Plan will help strengthen Canada's ability to communicate internationally about why polar bear's current status under the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) should be maintained. This is particularly important in the lead-up to the next CITES Conference of the Parties in September 2016, where a ban on commercial trade may be proposed by the United States.

Comments on Key Sections of the Nunavut Plan

Section 2. Guiding Principles

In reading the Nunavut Plan it is evident that it is intended to be responsive to new information and changing conditions. With this in mind, we propose the addition of the following principle:

Polar bear management in Nunavut should be adaptive and able to respond in a timely manner to new information and changing conditions.

Section 3. Goals of the Nunavut Plan

The goal of the Plan should be consistent throughout the document; currently there are a number of goals stated throughout. We suggest that an overarching goal

for the Plan be articulated in this section. It could be worded along the lines of:

To maintain a healthy and self-sustaining population of polar bears throughout Nunavut for current and future generations while allowing a sustainable harvest.

The other ideas presented in this section of the Nunavut Plan are already captured by the guiding principles and could therefore be deleted.

Section 6. Polar Bear Co-Management in Nunavut

In the past, each Hunter and Trapper Organization (HTO) signed a Memorandum of Understanding (MOU) with the Nunavut Government thereby committing them to undertake specific actions such as reporting polar bear kills and providing samples. Given that this Plan is to replace the MOUs, and contains harvest management and harvest monitoring objectives, how will it be implemented? Will the HTOs continue to have the roles and responsibilities they had previously under the MOUs?

This section recognizes the important role of Nunavut organizations such as Nunavut Tunngavik Inc. and the Nunavut Wildlife Management Board but fails to make any reference to Environment Canada or the Parks Canada Agency. There are significant federal land holdings and measures underway in the National Parks, National Wildlife Areas (NWA) and Migratory Bird Sanctuaries (MBS) to protect important polar bear habitat and minimize the impact of human-polar bear interactions on the population.

Section 7. Threats

This section currently presents polar bear conservation issues and challenges together. It is recommended that the threats assessment and description of the threats be separate from the challenges. The challenges should be presented in another section of the document. It is very important that the Nunavut Plan provide a thorough assessment and description of the threats. If possible, the threats should be presented in order of importance.

Section 8.2.2 Research

This section makes reference to compensation for damage to a hide or meat as a result of research activities and addresses the situation where a bear is killed in or during polar bear research activities by the Department of the Environment. It states that if a bear is killed it will receive a tag from the nearest community and that community will be

paid \$5,000 in compensation. The proposed Plan then states that the HTOs are encouraged to work out compensation packages with other researchers or companies that may be forced to destroy a bear in defense of life and property when the community reviews the research or development permits.

It would be useful if the Plan referred to the Environment Canada Impact and Benefits Agreement with Nunavut (Inuit Impact And Benefit Agreement-In-Principle For National Wildlife Areas And Migratory Bird Sanctuaries In The Nunavut Settlement Area) that compensates Inuit for emergency, accidental or illegal kills of bears in NWA and MBS. It stipulates that if, as the result of an emergency, an accident or illegal activity, a polar bear or a grizzly bear is killed in a NWA or MBS, or during travel to or from an NWA or MBS, the Canadian Wildlife Service of Environment Canada shall pay compensation to the HTO in the affected community for the tag or credit allocated for a bear. The current level of compensation is five thousand dollars (\$5,000) for each polar bear tag or credit forfeited by the community as a result of the bear kill, or in the case of grizzly bears, for each bear killed, within the specified time periods. It would be appropriate if this Agreement were referenced in the management plan.

Proposed new section: Actions Already Completed or Underway

The above heading is not in the proposed Plan but we think it would be beneficial for the reader if there was such a section. A lot of work related to the management and conservation of polar bears has already taken place or is ongoing. It would be helpful to have a high-level summary of existing initiatives. This is another element of the Nunavut Plan which if added would support Canada's ability to explain the current management system for polar bear in the CITES context.

Section 10. Plan Duration and Review

The proposed Plan states that it will direct management and improve the involvement and engagement of Inuit for seven years. After seven years, the objectives in the Plan will be reviewed with respect to the progress made. Where objectives have not been met, additional actions and new timelines may be identified.

Given the time and cost involved in producing a new Plan, and the pace at which actions will be undertaken and the effects of conservation and measures become evident, it is proposed that consideration be given to making it a 10 year plan with a review after 5 years.

The Plan states that an annual review on the Plan's specific progress and actions will be conducted by a committee composed of a representative staff member from each of

the co-management partners. While an annual review would be very useful, a less frequent review cycle may suffice. Under the federal SARA we monitor implementation of the federal management plan and assess its implementation every five years until its objectives have been achieved.

Review of the Plan would be more easily facilitated if it contained clearly articulated actions for each objective together with a timeline and output/outcome.

References

The document would benefit from having some key references to provide the reader with the source of the information.

In closing, I would like to commend the Nunavut Department of Environment for its effort to develop a polar bear management plan for the territory. With some revisions, I am hopeful that the Plan will satisfy the needs of the territory and also allow for incorporation into the national SARA management plan. I wish the Nunavut Wildlife Management Board well in completing its difficult work and finalizing a decision regarding this proposed Plan. I look forward to learning of the outcome of this written hearing.

Sincerely,

A handwritten signature in blue ink that reads "Sue Milburn-Hopwood". The signature is written in a cursive, flowing style.

Sue Milburn-Hopwood
Director General
Canadian Wildlife Service
Environmental Stewardship Branch

Encl.

- 1) Detailed EC comments table
- 2) 2015 PBTC Assessment (referenced in EC comments table)

Reference	Comment
p.1, para.1	The opening sentence refers to management being conducted at the territorial and provincial level. Please add text about role at national/federal level (e.g., SARA, CITES, Migratory Birds Convention Act).
p.5, para.1	It is important that this plan clearly state that conservation is a goal, and that it note that not all subpopulations are increasing across Canada or even across Nunavut. There should be some recognition of environmental changes. Finally, the term “over-abundance” implies a judgment, suggest replacing with “increased populations” (or equivalent) when it’s appropriate to do so. This term should be replaced throughout the document (e.g. page 11, paragraph 3 also).
p. 5, para. 2	The various possible reasons for an increase in human-bear interactions should be added; it is not accurate to point to only one possible cause. Increased interactions could also be due to changes in the distribution of bears from being on sea-ice to being on land for longer periods, and also a change in Inuit settlement away from a primarily nomadic lifestyle to one with established communities and therefore an increase in attractants for bears.
p. 5, para. 2	It would be helpful for the reader if the document were to provide a definition of carrying capacity and the evidence indicating that it has been reached in some areas, as noted. This is a poorly understood concept as it relates to polar bears and data are lacking overall.
p.6, para.1	It is recommended to replace Denmark with Greenland as Greenland is responsible for its natural resources and is the relevant party to the <i>Agreement on the Conservation of Polar Bears</i> .
p.6, para.1	Please correct typo - the agreement is not the “ <i>International Agreement on the Conservation of Polar Bears and their habitat</i> ” (delete the words “international” and “and their habitat”). It needs to be made more explicit that the “existing polar bear management regime” is not referring to the 1973 Agreement.
p.6, para.2	As per the above, the point that “...polar bears have increased in numbers over the last 50 years”, should be qualified. Some subpopulations have undoubtedly increased over the last 50 years, but the status of subpopulations across Canada, even across Nunavut, varies – some have increased, some have declined. It’s also important to keep in mind that early global population estimates were extremely poor due to a lack of data and many assumptions. It was not until research began in the 1970s that there was enough information to be able to say approximately how many polar bears are in Canada or the world. Comparing the previously poor estimates with the newer ones is not recommended. Same sentence: what “environmental changes” are polar bear expected to be highly adaptable to? What evidence/data/information sources are/is

	being cited here?
p.6, para.3	Since the plan makes frequent reference to managing at the subpopulation level it may be beneficial to add the following principle, "Polar bear will be managed at the subpopulation level, and their status will be assessed regularly to ensure that information is available for timely conservation, and towards long-term sustainability." This is taken from the <i>National Polar Bear Conservation Strategy for Canada</i> which was approved by the Nunavut Wildlife Management Board in September 2011.
p.6, last bullet	This is an important guiding principle and Nunavut should be commended on its inclusion.
p.7, 2nd bullet	Could be deleted because presumably this is covered by the first bullet where viable and healthy subpopulations will be maintained. It is also covered in guiding principle number 4.
p.7, last bullet	This is not really a goal but rather part of the management process. This point is covered in guiding principles number 1 and 2 therefore we suggest removing it.
p.7, 4.1 Status	Would be useful to include year for status under SARA (2011) and IUCN (2008). We also suggest the document indicate that the polar bear is not listed as a species at risk under the Nunavut Wildlife Act.
p.8, para.1	It's recommended to use "seasonal fidelity" rather than "seasonal commitment". Is this statement based solely upon scientific data? What does IQ say about movement of bears? It is advised to include information from both scientific and IQ studies wherever possible throughout the document.
p.8, para.3	Please correct - It is Viscount Melville Sound not Viscount Melville. The Southern Beaufort Sea subpopulation does not occur within Nunavut. "Southern Beaufort Sea" should be changed to "Northern Beaufort Sea", which is missing in the list of 12 Nunavut subpopulations.
p.8, para.5	Pregnant females in both Western Hudson Bay and Southern Hudson Bay are denning prior to significant snowfall – in neither subpopulation do females dig maternity dens in snowbanks.
p. 9, Figure 1	Please update the map to show the new NB – SB subpopulation boundary. Several names in the figure legend need to be updated (Viscount Melville Sound not Viscount Melville, Northern Beaufort Sea not Northern Beaufort, Southern Beaufort Sea not Southern Beaufort).
p.9, para. 1	Both science and IQ have documented predation by wolves – this is another opportunity to show agreement between the two knowledge sources. There is mention of "different challenges" associated with the different polar bear life stages – please provide examples.
p. 10, para. 4	Please replace wording "energetic marvels" with more neutral terminology, such as 'well-adapted'.
p.10, para.5	Consider rewording to state that they can spend the majority of their lives offshore.
p.10,para.6	Suggest adding "Nunavut" before "Wildlife Act"

p.11, para.2	It is important that the plan reflect the latest data from the 2015 PBTC status table (provided). The recent trends for the subpopulations can be summarized as follows: 3 uncertain, 1 likely decline, 4 likely stable, 2 stable, and 2 likely increase thus one third of Nunavut subpopulations are either data deficient or in decline.
p.11-12, Sect.5.3	The role of the Government of Nunavut is unclear in this section. It is suggested that the 3 rd paragraph on page 12 starting “The Nunavut Wildlife...” be moved to follow paragraph 1 and that it be expanded to describe the role of the Department of Environment and the fact that the Act also addresses compliance and enforcement. The following change is suggested to clarify that it is Article 5 that defines roles: In Nunavut, wildlife is managed according to Article 5 of the Nunavut Land Claims Agreement. Article 5 sets out the creation of the Nunavut Wildlife Management Board (NWMB), which is the primary instrument of wildlife management in Nunavut. Article 5 defines the roles of the NWMB, government, Hunters and Trappers Organizations (HTOs), and Regional Wildlife Organizations (RWOs).
p.12, para.1	Since this document was written the Range States have adopted the Circumpolar Action Plan: Circumpolar Conservation Strategy for the Polar Bear. This Plan was adopted in September 2015. You may wish to update this section accordingly and provide some details on the 10 year plan.
p.12, para.2	Suggest stating that the Nunavut plan, in part or in whole, is intended to form part of the SARA management plan along with other provincial and territorial plans. There may also be federal additions or the exclusion of sections from provincial/territorial plans that are not required in the federal plan.
p.12, para.3	Reference is made to the Memoranda of Understanding (MOUs) for all 12 subpopulations. The document states that these MOUs will be replaced with this management plan. It would be helpful to provide the reader with additional detail on how and when this will occur.
p.12-13, Sect. 6	6.2 NWMB: This paragraph states that the NWMB’s role consists of setting Total Allowable Harvest rates (TAH) and Non-Quota Limitations as well as approving management plans. 6.4 HTOs: It would be helpful to define “non-quota limitations” and to describe their role related to sport hunts 6.5 GN-DOE: This paragraph has a high level sentence that states that the Minister of Environment retains the ultimate authority over wildlife management in Nunavut as per the NLCA. It goes on to say that DOE staff make management recommendations to the NWMB for decision. For national and international audiences it is important that additional text be provided which explains what retention of ultimate authority over wildlife management in Nunavut means in practice. As written, the paragraph conveys that the NWMB makes the decisions on wildlife

	management based on input from DOE staff members. It is suggested that the wording of the NLCA be quoted rather than paraphrased so that the authority of the GN-DOE and its Minister are clear. This would be beneficial for this section as well as the others throughout section 6. It is critical that roles regarding management and quotas are clear. This section could be expanded to make reference to the Parks Canada Agency and Environment Canada. The following text is provided as a suggestion: Under the federal <i>Species at Risk Act</i> (SARA), Environment Canada is responsible for completing a national management plan for polar bears. The Government of Canada has responsibilities for the management of listed species such as polar bears where they occur on federal land. The Government of Canada is responsible for managing polar bears and their habitat on federal lands under the jurisdiction of the federal Minister of Environment (National Wildlife Areas and Migratory Bird Sanctuaries) and Minister responsible for the Parks Canada Agency (National Parks, National Park Reserves and National Historic Sites). The Government of Canada contributes to scientific knowledge of polar bears through research and helps to coordinate polar bear management across the country. Canada signs international agreements on behalf of all jurisdictions and has responsibilities to coordinate international management actions for polar bears, with the advice of the co-management boards and jurisdictions. It is therefore involved in international polar bear management fora including the Convention on International Trade in Endangered Species (CITES) and the 1973 <i>Agreement on the Conservation of Polar Bears</i>. Polar bears are listed under Schedule I of the <i>Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act</i> (WAPPRIITA), which is the legislation through which Canada meets its international obligation under CITES. Environment Canada's Enforcement Branch - Wildlife Enforcement Directorate is responsible for enforcing laws that protect and conserve migratory birds, and protect habitats and endangered species under federal mandate.
p.13, Sect. 7	Were other issues (e.g., disease, hybridization) considered and dismissed as being of little importance at this time? If so, perhaps this could be indicated.
p.13, para.4	If this management plan is to be SARA compliant, the plan must refer to the threats facing the polar bear. Typically a SARA management plan includes a threat assessment to identify the spectrum of potential threats to the species at the population-level, and to their habitat. In so doing, only present and future (within a 10-year timeframe) threats are considered. Discussion of the threats in this manner will enable the

	prioritization of recommended management and other actions to prevent the polar bear from becoming threatened or endangered. Each sub-population may have a similar suite of threats, but they may differ in order of importance from one subpopulation to another. EC staff can, upon request, provide more guidance on how this could be done. It is suggested that this section be sub-divided into “Threats” and “Challenges,” so that the suite of threats is discussed first, followed by the challenges. The conservation issues and challenges associated with industrial activity are very different than those associated with tourism. The issues associated with shipping are also very different than those related to mining or oil and gas extraction. It is suggested that the grouping of the issues (threats) be re-considered and that discussion of the threats be done in the order of importance.
p.14, para.2	Increased human activity is also due to increasing population size in the North (both increasing Indigenous populations and settlement of non-Indigenous people).
p.14, para.5	Consider qualifying the statement that climate change is affecting both terrestrial and marine environment, but the impact on polar bears is not clear at this time. Certainly the impact will vary both in space and time, but there is a wealth of literature focused on the impact of climate change on polar bears. This statement is not accurate as written.
p. 15, para. 2	“bird sanctuaries” should be replaced with “Migratory Bird Sanctuaries”.
p. 15, Sect.7	7.4 Population boundaries, 7.6 Inter-jurisdictional considerations, 7.7 International trade, and 7.8 Harvest coordination are topics that do not fit well under conservation issues that the polar bear faces like the other topics in this section (industrial activity and tourism, pollution/contaminants, and habitat alteration (climate change)). As stated previously it may be best to sub-divide the “Conservation Issues and Challenges” section into “Threats” and “Challenges”.
p.15, para.3	Please clarify. As written, this text seems contradictory to that on page 8 which notes bears do not wander throughout the Arctic and show seasonal fidelity to specific regions. Note that researchers also believe that bears travel between subpopulations (e.g., Hudson Bay complex), although they are not likely to travel great distances (e.g., from Davis Strait to the Northern Beaufort Sea).
p. 15, para. 5	As stated earlier, consider wording to reflect that some subpopulations have increased due to a variety of reasons not just “thanks to more rigid harvest monitoring and controls...”
p. 15, para. 5	The sentence pertaining to the application of DLP kills to the quota is not clear: “However, they do not increase the overall harvest because they are not added to the existing harvest”. Suggest wording along the lines of

	“a higher number DLP kills means that fewer bears available for harvest”
p. 16, para. 1	Note: While Inuit have certainly been caching food in traditional meat caches for centuries, they were not traditionally located within such a restricted geographic area as they are now (i.e. within or nearby communities), which will serve as a heightened attractant for bears.
p. 17, Sect.7.7	Specific edits are proposed to improve the text on CITES: The following wording is suggested (given the assumption that the primary goal is sustainable harvest; the international trade options are a benefit not the driver): As of 2015, the international export of polar bears from Canada is considered non-detrimental (with the exception of export of bears harvested from the Baffin Bay subpopulation). Significant efforts have been made towards ensuring sustainable harvest by all stakeholders to support a finding of non-detriment. The following text should be moved down as shown here: “Given the shared jurisdiction for wildlife in Canada, coordination among provincial and territorial jurisdictions is also required to ensure that total removal by all jurisdictions from shared subpopulations is sustainable and defensible at the national and international level. The ongoing domestic and international export of polar bear parts, such as hides, depends on sound harvest reporting and sustainable harvest levels. These rules must apply to all jurisdictions if they are to be successful. Ensuring strict reporting of all mortality and maintaining adequate harvest records should be a benchmark for all jurisdictions. In Nunavut, this is currently done, and export from Nunavut continues as the result of the combined efforts of stakeholders. Communities have unanimously supported sustainable harvest decisions as integral to a finding of non-detriment because international trade is an important component of community economic development. The CITES Appendix II listing has a positive impact on conservation efforts in that the economic benefit from international trade provides an/another incentive to support management, particularly abundant subpopulations.”
p.17, Sect. 7.8	Consideration should be given to adding back into this plan the Enforcement section found in previous drafts. It might be beneficial to broaden this section. If the title were changed to “Regulating and Coordinating the Harvest”, it could also explain the issues of sport hunts, compliance promotion and enforcement.
p. 18, para. 3	As noted earlier, an increasing number of interactions between humans and bears could be caused for various reasons. Similarly, an increasing Inuit population throughout Nunavut could also have an impact on seal numbers, waterfowl, etc., so consideration should be given to qualifying/rewording this statement.

p.19, para.5/6	Please clarify and expand this section so it is clear what management actions would be taken in each scenario. Note that the scenario of a stable population is missing and should be added. In this situation if the objective is to maintain the population at the current level presumably the action would be to maintain the current harvest conditions unless there is evidence of declining body condition, recruitment etc. Please also explain what actions would be taken if science and <i>Inuit Qaujimagatuqangitare</i> are not in agreement. It is noteworthy that the management action includes the word ‘may’; in other words in the case of a declining population, there “may” be no reduction in TAH. In such a situation, if the objective is to increase or maintain the population, then the necessary actions will be a reduction in the TAH. Where there is an increase in a population and the objective is to decrease or maintain the population, another action could be to eliminate the need for a sex selective harvest and maintain the TAH.
p.19, para.9	In line with the comment above, it is crucial to explain how sex-selective harvest will be managed under each scenario. It is also important to explain that switching to a 1:1 sex ratio of the harvest will almost certainly mean a reduction in TAH, so this is not consistent with the goal of maximizing the sustainable harvest. This needs to be explicitly stated.
p. 19, para.9	As written, it would appear that some subpopulations could end up with one or more communities adopting an equal sex ration harvest while others may continue to use the sex-selective harvest approach, which would result in an unmanageable situation. Unless it can be demonstrated to be workable, a sex-selective harvest, or a non-sex-selective harvest regime, should be established for the entire subpopulation, not on a community-by-community basis.
p.20, para.1	Appendix D is the current flexible quota system, not a revised one. It should be clarified which system will be used for each subpopulation, and explain any revisions.
p.20, Sect.8.1.2	Given that the text in this section includes harvest reporting, it is suggested that the heading be changed to “Harvest Monitoring and Reporting” Environment Canada has been working in collaboration with the Nunavut Department of Environment on an initiative entitled, “Three-Pronged Approach to Sampling, Testing & Tracking for Enforcement and Conservation Purposes”. It is suggested that the following text (or similar) be added to reflect this work: Polar Bears are listed under Schedule I of the <i>Wild Animal and Plant</i>

	<i>Protection and Regulation of International and Interprovincial Trade Act</i> (WAPPRIITA), which is the legislation through which Canada meets its international obligations under the <i>Convention on International Trade in Endangered Species of Wild Fauna and Flora</i> (CITES). This ensures that trade is strictly regulated so that it remains legal, sustainable, and traceable. The sustainable harvest and trade of polar bears and derivative products is permitted and may contribute to the livelihood of Northern communities who depend on polar bears for sustenance. By contrast, poaching and illegal wildlife trafficking can have a negative impact on polar bear populations. Environment Canada is leading an initiative to test and track legally-harvested polar bears across the country, which will be done in collaboration with conservation officers in relevant jurisdictions. The following three methods will be used: DNA testing, Stable isotope analysis, and Pit-tagging (insertion of microchips into the hides). Co-management partners of the Nunavut government are committed to conducting scientific sampling of polar bears immediately following their harvest (either obtained from currently-required samples or from the larger hide, for DNA testing and Stable isotope analysis), and to further assist in the tracking of specimens (through Pit tagging and input to a centralized database), thereby ensuring that trade remains viable. These initiatives will support compliance efforts, contributing to continued protection of the species.
p.21, bullet 10	For greater consistency between the points, it may be desirable to add the text from bullet 10 starting with "...where needed and supported by communities..." to bullet 6.
p.21, para.2	Suggest replacing "objectives" with "actions" to avoid confusion with previous use of the word
p.21, para.3	While important to collect harvest statistics, it may be useful to include wording noting that samples collected from harvest need to be analyzed and reported on in a timely manner to further aid management decisions.
p.22, para.2	Suggest rewording line on compensation so it reads "by the appropriate government authority" to reflect that sometimes this will be Government of Nunavut and other times it may be Government of Canada (if the bear is killed in a national wildlife area, etc.)
p.22, para.4	Suggest adding National Wildlife Areas
p.23, Section 8.5.2	It would be beneficial to provide a list of the relevant agreements
p.24,	4 th bullet: The following edit is proposed to clarify roles, recognizing that

para.2	Nunavut is responsible for implementing the plan and the others have an interest in its implementation: Continue to improve coordination between different levels of government and partners. Environment Canada, Parks Canada Agency, the Nunavut Department of Environment, RWOs and HTOs all have a role and an interest in implementation of this plan.
p.24, para.5	As noted before, the adoption of a non-sex selective harvest system would require reductions in TAH levels that are currently maximizing harvest opportunities. This needs to be clearly communicated.
p.24, Sect.9	In order for this plan to be adopted in the SARA Management Plan, it is important that Appendix C be expanded so that it is a clear commitment to action. Specifically, the table should be expanded upon so that for each action, there is an indication of the objective(s) being addressed, the priority of the action, the threats addressed, the participating agencies and the timeframe. This is not a difficult task and would further serve to evaluate the performance of the plan (section 10).
p. 25, para. 1	It is suggested that all of the plan's objectives be consolidated into a table and be referenced in the Plan Review Section. How will an annual review of the plan's progress and actions be carried out?
Appendix A	It is suggested that the latest PBTC table be used and that the date of the table (2015) be stated, given that this plan will be in place for several years. A copy of the latest PBTC assessment is provided, together with this document, for your reference. It is suggested that text be added to the Appendix which indicates that the table is updated annually and made available to the general public. It is suggested that Appendix A include data from the 2015 table and the following: Population estimate, +/- SE or 95% CI, Year of Population estimate, Historic trend, Recent trend, Local and/or TEK assessment, and that Appendix B refer to that information.
Appendix B	The information in this Appendix will quickly become out of date. To avoid confusion it is suggested that a link to a website with this information be added, so readers can easily access the latest information. If the Appendix is not deleted, edits below should be considered: In the subpopulation recommendations part for each subpopulation, "review management objective and TAH when a new inventory study is complete" is included but the Brief History part does not always mention if and when a new inventory is planned. Therefore, it is suggested that either the planned new inventory is mentioned in the brief history for each subpopulation and/or a sentence is added at the beginning of Appendix B

	that states that the inventory schedule for the subpopulations is presented in Appendix E. The TAH for M'Clintock Channel needs to be corrected to 12. Question regarding Davis Strait: 32 is noted for Nunavik – is this based on a voluntary limit or other agreement? Otherwise, it is not accurate to put a limit. In each subpopulation description, “Science” refers to the Status column in the old PBTC table information provided in Annex A. PBTC no longer has a Status column. When it did, presumably, the status was solely based on science information (did not include local/TEK info) and presumably that is why the word science is used. If the 2015 PBTC table were used, “science” would still be appropriate to use for “recent trend,” for example, because recent trend is based on population estimates from science papers (and sometimes other lines of evidence if necessary). However, the other lines of evidence do not include local/TEK. It is all science. The brief history text for Western Hudson Bay is confusing and would benefit from being re-written: The subpopulation was estimated to be 1,194 in 1987 and 935 in 2004. Before 1998, the subpopulation had apparently remained the same, indicating that DOE research, conducted using aerial surveys in 2011, provided a new estimate of 1,030 bears. However, this estimate and the previous one have overlapping confidence intervals, suggesting no change, although techniques of past research projects differed. The science status does not agree with the most recent PBTC status table in some of the subpopulations. As an example, Davis Strait is likely increased (historic trend) and likely increased (recent trend); management plan shows a science status of ‘not reduced’.
Appendix C	The Appendix outlines potential actions where additional effort should be directed. It states that these are directions for co-management partners and are not to imply actions that will be undertaken. It then goes on to say that they are a starting point for further discussion and collaboration. As stated, there are no timelines or commitments to ensure that they are completed within the 7 year life of the Plan. In order for this Plan to be consistent with SARA, there should be a commitment to specific actions and the associated timeline of each. The Bowhead Whale Management Plan (http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/mp_baleine_boreale_bowhead_0214_e.pdf) is a good example of an implementation schedule for specific actions to address the objectives. Environment Canada is willing to assist with completion of this table and indicate where it is already, or could in

	the future, participate. The Parks Canada Agency could also likely contribute in this regard.
p. 34, last line Appendix C	See p. 24, Sect.9 comment above. Suggest using "Environment Canada" after "...such as Parks Canada..." rather than "Canadian Wildlife Service"
Appendix D	As per the comment above, the Plan needs to be clear on how it will be decided when the current sex-selective system would be used, vs the 1:1 ratio, and what would be the effects on TAH. The Appendix describes the current flexible quota system that was developed a number of years ago. The new management plan proposes a 1:1 sex ratio in situations where communities want it. It is suggested that this Appendix be modified to explain the implications of moving to a non-sex-selective harvest in terms of the TAH and credits for subsequent years.
Appendix E	As noted, we recommend a change on page 21 so that section is consistent with the wording here regarding population inventories. It is good to see this information included here.
Appendix F	The title of the section should be revised so that the year the information is from is clear. If the table is from 2014 or newer, the voluntary agreement for Southern Hudson Bay should be added.

2015 Polar Bear Technical Committee Status Table Terms

1. Purpose

Under its Terms of Reference, the Polar Bear Technical Committee (PBTC) is to provide an annual report to the Polar Bear Administrative Committee (PBAC) on the status of each of Canada's 13 sub-populations of polar bears that is based upon the best available scientific information and Traditional Ecological Knowledge.

This document defines the various terms used in the Status Table and the basis on which the status of each sub-population was assessed by the PBTC in February 2014.

2. Definitions

2.1. Population estimate

The most recent estimate of abundance reviewed and accepted by the PBTC.

2.2. Historic Trend

Historic trend is the PBTC's assessment of changes in abundance that a sub-population may have experienced since the signing of the international *Agreement on the Conservation of Polar Bears* (1973), which led to current management practices and research. The most recent population estimate and the first comparable documented historic estimate are examined. If a direct comparison of abundance estimates cannot be made or there is only a single estimate of abundance, other lines of evidence may be used in this assessment.

2.3. Recent Trend (15 Years Ago to Present)

Recent trend is the PBTC's assessment of the direction of abundance over the last 15 years. The objective of this assessment is to inform the PBAC as to whether a sub-population has increased, decreased, or remained stable. Recent trend is assessed by comparing the most recent population estimate to the previous population estimate. If a direct comparison of population estimates cannot be made or is not applicable, other lines of evidence such as population viability analyses, productivity indicators, and recent harvest pressure may be used to infer any changes in recent abundance.

2.4. Local and/or TEK assessment

This column represents known documented traditional ecological knowledge or Inuit Qaujimajatuqangit on the status of each of the polar bear subpopulations.

2.5. Future Trend (Present to 10 Years into the Future)

Future trend is the PBTC's assessment of the anticipated direction of abundance. The objective of this assessment is to inform the PBAC as to whether a sub-population is likely to increase, decrease, or remain stable over the next 10 years. Multiple lines of evidence including but not limited to population estimates, population viability analyses, productivity indicators, harvest pressure, and traditional ecological knowledge may be used in this assessment.

3. Appendix 1 – Assessment

3.1. Steps to Assess Historic Trend

1. Compare current population estimate with the first documented and comparable historic population estimate. When a current estimate is directly comparable to an historic estimate, a designation without any qualifier (i.e. reduced, stable, or increased) may be used.
2. If the current estimate is not directly comparable to an historic estimate because of differences in study area, or methods, a comparison may be made but any assessment of changes in abundance are inferred. In this case, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).
3. When population estimates cannot be compared, other lines of evidence such as the most recent population attributes of the sub-population (e.g. age structure) may be used to infer changes in the abundance of the sub-population. This does not include TEK. Again, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).
4. When there is insufficient information or lack of confidence in available information to make an assessment of change in abundance, the sub-population is assessed as uncertain.
5. Additional text is provided in the comments section of the status table. It includes listing items such as major threats and other lines of evidence that may have been used.

3.2. Status Designations

Reduced	Current population estimate is statistically significantly lower than historic population estimate
Stable	Current population estimate is not different from historic population estimate
Increased	Current population estimate is statistically significantly higher than historic population estimate
Likely Reduced	Current or inferred current population abundance is lower than historic or inferred historic population abundance
Likely Stable	Current or inferred current population abundance is not different from historic or inferred historic population abundance
Likely Increased	Current or inferred current population abundance is higher than historic or inferred historic population abundance
Uncertain	Insufficient information or lack of confidence in available information to make an assessment

4. Appendix 2 – Recent Trend Assessment

4.1. Steps to Assess Recent Trend

1. Compare current population estimate with previous population estimate assuming current population estimate is appropriately recent. When a current estimate is directly comparable to its previous population estimate, a designation without any qualifier is made (i.e. reduced, stable, or increased).
2. If the current estimate is not directly comparable to its previous population estimate because of differences in study area, methods, or is outdated, and cannot be updated by PVA, a comparison may be made but any assessment of changes in recent population abundance are inferred and a qualifier is required (i.e. likely reduced, likely stable, or likely increased).
3. When population estimates cannot be compared or are not applicable to assess recent trend, other lines of evidence such as the most recent population attributes of the sub-population (e.g. age distribution) may be used to infer any changes in the abundance of the sub-population. This does not include TEK. Again, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).
4. When there is insufficient information or lack of confidence in available information to make an assessment of changes in population abundance, the sub-population is assessed as uncertain.
5. Additional text is provided in the comments section of the status table. It includes listing items such as major threats and other lines of evidence that may have been used.

4.2. Recent Trend Designations

Decline	Current population estimate is statistically significantly lower than previous population estimate
Stable	Current population estimate is not different from previous population estimate
Increase	Current population estimate is statistically significantly higher than previous population estimate
Likely Decline	Current or inferred current population abundance is lower than previous or inferred previous population abundance
Likely Stable	Current or inferred current population abundance is not different from previous or inferred previous population abundance
Likely Increase	Current or inferred current population abundance is higher than previous or inferred previous population abundance
Uncertain	Insufficient information or lack of confidence in available information to make an assessment

4. Appendix 2 – Recent Trend Assessment

4.3. Steps to Assess Future Trend

1. Compare current population estimate with future population estimate but not exclusive to a population viability analysis (PVA). PVAs are considered in the assessment as long as the data derived vital rates used to generate the simulations are not older than 15 years. In all these cases, a qualifier is required (i.e. likely reduced, likely stable, or likely increased).
2. In addition to PVAs, other lines of evidence (e.g. body condition, litter size, sea ice trend, TEK) may be used to predict future trend of a sub-population.
3. When there is contradictory evidence, insufficient information or lack of confidence in available information to make an assessment of future changes in population abundance, the sub-population is assessed as uncertain.
4. Additional text is provided in the comments section of the status table. It includes listing items such as major threats and other lines of evidence that may have been used.

4.4. Future Trend Designations

Likely Decline	Future population abundance predicted to be lower than current population abundance
Likely Stable	Future population abundance predicted not to be different from current population abundance
Likely Increase	Future population abundance predicted to be higher than current population abundance
Uncertain	Contradictory evidence, insufficient information, or lack of confidence in available information to make an assessment.

Subpopulation	Estimate	±2 SE or 95% CI	Year of Population Estimate	Method	Historic Trend	Local and/or TEK assessment	Recent trend	Future trend	Historic annual removal (5 yr mean)	Historic annual removal (3 yr mean)	Historical annual removals (last year)	Potential Maximum Removals (last year)	Comments/Vulnerabilities/Habitat	Jurisdiction	Subpopulation
Baffin Bay	2,074	1542-2606	1997 ¹	M/R	likely reduced	stable ²	likely decline ³	uncertain ⁴	141	137	137	133 (NU:65+GL:68)	currently being reassessed, high harvest, decline in sea ice, increased shipping	NU, GL	Baffin Bay
Davis Strait	2,158	1833-2542	2007 ⁵	M/R	likely increased	increased ⁶	likely increase ⁷	likely decline ⁸	104	118	126	QC + 75 (NU:61+NL:12+GL:2)	based upon 2007 survey information, high harvest; decline in sea ice;	NU, QC, NFLD & Lab, GL	Davis Strait
Foxe Basin	2,580	2093-3180	2009-10 ⁹	A	stable	increased ¹⁰	stable ¹¹	likely stable ¹²	106	104	93	QC + 94	long term decline in sea ice; potential for increased shipping for mineral extraction	NU, QC	Foxe Basin
Gulf of Boothia	1,592	870-2314	2000 ¹³	M/R	likely stable	increasing ¹⁴	likely stable ¹⁵	likely stable ¹⁶	58	63	52	66	Current and projected habitat change may affect productivity of ecosystem. Subpopulation has high vital rates and low harvest.	NU	Gulf of Boothia
Kane Basin	164	94-234	1997 ¹⁷	M/R	likely reduced	increasing ¹⁸	uncertain ¹⁹	uncertain ²⁰	13	12	5	11 (NU:5+GL:6)	currently being reassessed, likely a sink population connected with Baffin Bay, small population, decline in sea ice;	NU, GL	Kane Basin
Lancaster Sound	2,541	1759-3323	1995-7 ²¹	M/R	likely stable	increasing ²²	uncertain ²³	uncertain ²⁴	85	90	85	85	historic sex-skewed harvest, habitat decline, potential for increased shipping for mineral extraction	NU	Lancaster Sound
M'Clintock Channel	284	166-402	2000 ²⁵	M/R	likely reduced	stable ²⁶	likely increase ²⁷	uncertain ²⁸	3	3	3	3	increasing oil/gas development; loss of multi-year ice; currently being reassessed	NU	M'Clintock Channel
Northern Beaufort Sea	1291*	n/a	2006 ²⁹	M/R	likely stable	stable ³⁰	likely stable ³¹	likely stable ³²	39	45	40	77 (NU:6 + NWT:71)	TEK study ongoing; increasing oil/gas development; decline in sea ice;	NU, NWT	Northern Beaufort Sea
Norwegian Bay	203	115-291	1997 ³³	M/R	uncertain	stable ³⁴	uncertain ³⁵	uncertain ³⁶	2	2	3	4	small, isolated population	NU	Norwegian Bay
Southern Beaufort Sea	1215*	n/a	2006 ³⁷	M/R	uncertain	stable ³⁸	likely decline ³⁹	likely decline ⁴⁰	41	42	23	56 (US:35 + NWT:21)	Bromaghin et al. 2015 under review by Polar Bear Technical Committee; annual variability in ice conditions results in changes in density; bears are shifting to NB because of ice conditions; TK study completed; potential for oil/gas development	US, YK, NWT	Southern Beaufort Sea
Southern Hudson Bay	951	662-1366	2012 ⁴¹	A	stable	stable James Bay; increased in East Hudson Bay ⁴²	stable ⁴³	uncertain ⁴⁴	62	49	38	60 (NU:25 + QC:30 + ON:5)	Uncertain due to contradictory lines of evidence: large declines of body condition, declines in survival rates yet no change in abundance. TEK indicates winter body condition has not changed, TEK indicates that reproductive rates have improved, TEK and science indicate changes in sea ice, ice free season increased by 28 days between 1980-2009. recent high harvest, habitat decline; decline of permafrost-based denning habitat; revised voluntary harvest agreement of 45 to take effect in 2014-2015	NU, QC, ON	Southern Hudson Bay
Viscount Melville Sound	161	93-229	1992 ⁴⁵	M/R	likely reduced	increased ⁴⁶	likely stable ⁴⁷	uncertain ⁴⁸	5	6	6	7	currently being reassessed	NU, NWT	Viscount Melville
Western Hudson Bay	1030	754-1406	2011 ⁴⁹	A	likely reduced	increased ⁵⁰	likely stable ⁵¹	likely decline ⁵²	23	27	29	24 + Manitoba	sea ice decline; harvest; declines in body condition and lower productivity compared to adjacent Foxe Basin and South Hudson Bay subpopulations; historic decline in abundance from late 1980s through late 1990s linked to reduced survival due to timing of sea ice breakup; recent analysis indicated relative stability in subpopulation from 2001-2010, a period during which there was no significant trend in sea ice freeze up or breakup; continued linkage between female survival and sea-ice conditions.	MB, NU	Western Hudson Bay

Notes

M/R – Physical Mark Recapture Survey

A - Aerial survey

n/a - not available

* The revised estimates for NB and SB is the result of management boundary change. It is based on a USGS analysis.

2015 PBTC Status Table Footnotes

1. Taylor et al. 2005

2. Dowsley 2005a; Dowsley 2005b; Dowsley 2007; Dowsley and Taylor 2006; Nunavut Wildlife Management Board (NWMB) Public Hearing minutes and

submissions for April 2008, September 2009;

3. Combined harvested considered unsustainable: Taylor et al. 2005 plus simulations in PBSC 14 and 15 proceedings suggest abundance of 1,546 in 2004
4. Vital rates for Riskman PVA are 18 years old; TEK indicates population is stable; there is current research and ongoing assessment
5. Peacock et al. 2013
6. Kotierk 2010a, 2010b
7. Peacock et al. 2013; Stirling 1980.
8. The impact of a TAH increase on the population has not been modeled; predicted trend after survey was completed at harvest levels in 2007 was considered stable (Peacock et al. 2013); NMMB Davis Strait public hearing submissions May 16-17, 2011
9. Government of Nunavut (GN) final report 2012
10. Sahanatten pers com. 7 Feb 2013; Dyck pers com. 7 Feb 2013; Canadian Wildlife Service Nunavut consultation report 2009
11. GN report 2012; Atkinson et al. 2010; Taylor et al. 2006; Taylor and Lee 1995
12. No signs of deteriorating body condition or litter size (GN report 2012)
13. Taylor et al. 2009
14. Keith et al. 2005; Canadian Wildlife Service Nunavut consultation report 2009
15. For the period 2000–2015, assuming all sources of removals in the population sum to 74 bears/yr, the population can be expected to persist at a stable population size (Taylor et al. 2009)
16. Hunters in area reporting ice conditions have improved productivity, harvest levels remain stable (Dyck pers com. 2013)
17. Taylor et al. 2008
18. Canadian Wildlife Service Nunavut consultation report 2009
19. Population simulations of existing data suggest that only a very small quota (<2) may be sustained for this subpopulation (Taylor et al. 2008).
20. Vital rates for PVA are 17 years old, current research and ongoing assessment
21. Schwinsburg et al. 1980; Taylor et al. 2006; Taylor et al. 2008
22. Canadian Wildlife Service Nunavut consultation report 2009
23. For the period 1997-2012, the population would be expected to be stable under the historical harvest regimen (1993-97). At the current mean harvest rate of 78 bears/yr (2002-2006), we estimate that the population is more likely to decline than to increase (Taylor et al. 2008).
24. Vital rates for Riskman PVA are 16 years old
25. Taylor et al. 2006
26. Inuit report that bears are moving to neighbouring areas throughout the region. (Keith et al. 2005; CWS Nunavut consultation report 2009)
27. Likely an increase based on quantitative assessment of growth rate (Taylor et al. 2006)
28. Vital rates for PVA are 14 years old; several research planning consultations has been completed; further consultations ongoing.
29. Griswold et al., unpublished; Stirling et al. 2011
30. Pokiak pers. comm. 7 Feb 2013; Carpenter pers com. 7 Feb 2013
31. Population size used for management was historically adjusted to 1,200 due to bias in in population estimate (Amstrup et al. 2005; Stirling et al. 2011).
32. Durner et al. 2009; Stirling et al. 2011, and TEK (Joint Secretariat, unpublished) indicate stable population and habitat conditions may improve in short-term
33. Taylor et al. 2006; Taylor et al. 2008
34. Canadian Wildlife Service Nunavut consultation report 2009
35. Vital rates for Riskman PVA are 17 years old and vital rates were substituted from other populations (Taylor et al 2008); no recent work in the area
36. Vital rates for Riskman PVA are 17 years old and vital rates were substituted from other populations (Taylor et al. 2008)
37. Griswold et al., unpublished; USGS 2010
38. Pokiak pers com. 7 Feb 2013; Carpenter pers com. 7 Feb 2013
39. Population estimate is lower but not statistically different from previous population estimates (Amstrup et al. 1986; Regehr et al. 2006).
Quotas were based on the understanding that the total harvest of independent females would not exceed the modelled sustainable maximum of 1.5% of the population (Taylor et al. 1987) and that a 2:1 ratio of males to females would be maintained in the total quota harvested (Stirling 2002)
40. Based on sea ice declines (Durner et al 2009), changes in body conditions measured in Alaska (Rode et al. 2010) and modelling (Regehr et al. 2010)
Estimated risk of future decline is based on vital rates estimated from 2001-2006 data used in demographic models that incorporate sea ice forecasts.
41. Obbard et al. 2013
42. NMRWB Public Hearing Inukjuak February 2014
43. Based on comparison with previous subpopulation estimates (Obbard et al. 2013; Obbard 2008; Kolenosky 1994).
44. Body condition decline, vital rate declines and changes in ice conditions; Inuit observations show no decline in body condition or abundance (Obbard pers com. 2014, Obbard et al. 2013, NMRWB, unpublished)
45. Taylor et al. 2002
46. Canadian Wildlife Service Nunavut consultation report 2009; community consultations in 2012 and 2013
47. Harvest managed for population growth since last survey including a 5 year moratorium; comparable litter size in 2012 (GNWT unpublished)
48. Vital rates for Riskman PVA are 22 years old; population reassessment currently in process
49. Stapleton et al. 2014
50. Canadian Wildlife Service Nunavut consultation report 2009; Kotierk 2012, NMMB Public Hearing minutes 2005; Tyrrell 2006
51. Lunn et al. 2014 Unpublished Report
52. Based on body condition, abundance estimates, reduced reproductive productivity, and changes in ice conditions (Stirling and Parkinson 2006, Stapleton et al. 2014, Lunn pers com.)



Nunavut Field Unit
P.O. Box 278
Iqaluit, NU X0A 0H0

October 6, 2015

Ben Kovic
Chairperson
Nunavut Wildlife Management Board
P.O. Box 1379
Iqaluit, NU X0A 0H0

Re: NWMB Written Hearing concerning the Nunavut Polar Bear Co-Management Plan

Mr. Chairperson,

This letter is in response to the September 4th, 2015 invitation for submissions to the written hearing of the Nunavut Wildlife Management Board concerning the proposed Nunavut Polar Bear Co-Management Plan.

There are several reasons why polar bear co-management in Nunavut is of importance to Parks Canada and why the inclusion of Parks Canada in the development of territorial plans and polar bear management in the territory is of importance.

Conservation of endemic species and their habitat for future generations of Canadians is a key part of Parks Canada's mandate:

"On behalf of the people of Canada, we protect and present nationally significant examples of Canada's natural and cultural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations."

In support of this mandate, Parks Canada cooperatively manages five national parks in Nunavut that are located within the range of polar bears. These national parks include 110,000 square kilometers of land and marine areas spread across

four subpopulations and the Arctic Basin. The Nunavut national parks protect areas of important denning habitat and movement corridors for polar bears.

Parks Canada also plays an important role in developing opportunities for responsible tourism in the territory and managing the risk of polar bear encounters for visitors and all park users. For this reason, Parks Canada works closely with other government departments, non-government organizations, outfitters, and communities to develop and deliver bear safety programs that are informed by Inuit knowledge and that reduce bear/human encounters.

Finally, in addition to Parks Canada's role as a land manager and tourism/safety partner in Nunavut, Parks Canada also has a role nationally in implementing the *Species at Risk Act* and working closely with Environment Canada to ensure that this legislation is upheld in national parks. As a Species of Special Concern, polar bears require a National Management Plan, in which Parks Canada will play a supporting role to Environment Canada in developing and ensuring that the plan can be implemented in national parks across the country.

For these reasons, we hope that the attached comments (Appendix 1) on the Nunavut Polar Bear Co-management Plan are welcomed and considered to the extent possible. We look forward to working with the Nunavut Wildlife Management Board, Government of Nunavut, Environment Canada, and all co-management partners to manage polar bears for their long-term conservation and enjoyment by Inuit and all Canadians.

Sincerely,



Jenna Boon
Field Unit Superintendent

Appendix 1 - Parks Canada comments on the Nunavut Polar Bear Co-management Plan

Prepared by: Andrew Maher, Resource Conservation Manager, Nunavut Field Unit, Parks Canada Agency

Date: Oct. 8, 2015

General Comments

The Government of Nunavut deserves credit in creation of this management plan because its development has been inclusive of communities and their knowledge and perspectives. There are, however, issues related to the content of the management plan that may open it to criticism with other jurisdictions within and outside of Canada, and may ultimately make the management of polar bears more challenging in Nunavut:

Inadequate representation of research

The plan does a good job of describing the knowledge and concerns of the communities but it is lacking a summary of the significant body of research that has occurred for polar bear in Nunavut. Both Inuit knowledge and academic literature used to inform this plan require much better referencing so that the plan can withstand public scrutiny.

Insufficient discussion of threats

The "Conservation Issues and Challenges" section does a poor job of describing and discussing the threats for polar bears. This is most acute in the section on climate change which is recognized internationally as the most significant threat to polar bears and referenced significantly in agreements between jurisdictions. The lack of discussion or reference to climate change and the impacts on polar bears throughout this document sets it apart from other plans and agreements on the species.

Of specific concern to Parks Canada is the grouping of industrial activity and tourism into one brief subsection. Granted that both can have conservation concerns associated with them and can contribute to cumulative impacts on bears, the scale and the impact of these concerns at present time are so different that they deserve individual treatment in the document. Large industrial projects and their associated activities have the potential to impact bears throughout and across a subpopulation or even to impact several subpopulations, whereas tourism activities at present limited in specific areas with impacts on individual bears or small areas of a subpopulation.

Missed Opportunity for Collaboration

Environment Canada and Parks Canada are mentioned infrequently and with great brevity in this document as partners in the conservation of the species. As significant land managers in Nunavut, both Parks Canada and Environment Canada (Canadian Wildlife Service) manage large areas within the territory which includes important denning sites and movement corridors. Furthermore, both

organizations have a role to play nationally in the conservation of the species and since the hope is that this plan can become a part of a National Management Plan under SARA, the lack of inclusion in the process of developing the plan and mention in the document itself will make this more challenging. Although there does not appear to be any direct conflict between the plan and the mandate of Parks Canada, the lack of details in Appendix C with regards to actions to support the plan may make it difficult to dedicate resources to assist in its implementation, or at very least it does not lend itself well to an integrated management approach for the species across jurisdictions/boundaries.

Management for status quo

Appendices A and B summarize the state of subpopulations using what appears to be an out of date Polar Bear Technical Committee (PBTC) Status Table and does not include the detailed definitions associated with the PBTC status table which help the reader interpret the terms used. It is paramount that the most recent and complete table is used in this plan. Furthermore, there is no discussion how the status and trend of subpopulations have influenced the approach taken in this plan to manage all subpopulations in Nunavut to maintain the current abundance. The reasoning behind managing the subpopulations for maintenance and not growth especially for reduced or data deficient ratings of status or declining or data deficient trend is required since this approach will be scrutinized by other jurisdictions.

Summary

Although there do not appear to be any direct conflicts between this plan and the mandate of Parks Canada or our ability to manage the national parks in Nunavut, we are concerned about the impact this plan could have on Canada's reputation as leaders in polar bear conservation. Furthermore, in order for this plan to become adopted to form part of a SARA National Management Plan for polar bears in Nunavut, we suggest improvements in the discussion of threats, clarity of action items, and balance of knowledge sources will be required. Additional detailed comments are provided in the table below (Table 1).

Table 1. Detailed Comments:

Page	Paragraph	Line	Comment
1	3	2	There is no definition of stakeholder in the document. It is not clear here or elsewhere in the document if OGDs are considered stakeholders, partners, or something else.
2	1	1	It is not clear why EC and PCA are not considered co-management partners. Both manage lands in Nunavut of importance to polar bears and have a role in implementing the SARA.

Page	Paragraph	Line	Comment
5	1	10-13	Where are the references to support the idea that maintenance or reduction of populations may be required? Where is the references on detrimental impacts of polar bear overabundance on the ecosystem or the evidence of overabundance?
5	2	15	Again, references to the source of these statements would be useful given that they contradict.
5-6			Introduction – The language in this section is overly divisive. A more collaborative language and working together to change perceptions may be more productive in advancing the goals of the plan.
12			Section 6 – No mention of the role of federal departments (PCA/EC/others). Although the role in not necessarily as co-management partners, this is a missed opportunity for these departments to see themselves in this plan.
13	4		Industrial activity and tourism should be separated into two subsections due to their scale and impact.
15	2	3	This statement is true, and reinforces the need to include managers of protected areas in the development of this plan.
24	Bullet 4		This is point should also be reflected in the “within Nunavut” section since PCA and CWS both are land managers in the territory.
26			This appears to be an old version of the PBTC table and it does not include the definitions which are required to interpret the table.
27-33			All sub-populations will be managed to maintain current population abundance. Does this mean maintain all current TAHs? Is this approach supported by the significant research program in place? Should this be the approach for data deficient bears if a precautionary approach is listed in the guiding principles of the plan?
33	Appendix C		Overall this section lacks timelines and details to ensure they are completed within the life of this plan. Reference to the contributors to specific actions would be useful as well. This will likely be required for a future National Management Plan under SARA.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial data. This section also covers the various methods used to collect and verify data, including direct observation and interviews with staff members. The goal is to provide a comprehensive overview of the current state of the organization's financial health.

In the second part, the focus shifts to the analysis of the collected data. This involves identifying trends, patterns, and potential areas of concern. The author highlights the need for a systematic approach to data analysis, one that allows for the identification of both strengths and weaknesses. This section also discusses the importance of regular reporting and communication with stakeholders to keep them informed of the organization's financial performance.

The third part of the document addresses the challenges faced by the organization in maintaining accurate records. It identifies common pitfalls, such as incomplete data collection and inconsistent reporting, and offers practical solutions to overcome these issues. The author stresses the importance of training staff members on proper data collection techniques and the need for a clear, standardized reporting process.

Finally, the document concludes with a series of recommendations for improving the organization's financial management. These include implementing a robust data collection system, establishing a regular reporting schedule, and fostering a culture of transparency and accountability. The author believes that these steps are essential for ensuring the long-term success and sustainability of the organization.

The following table provides a summary of the key findings from the data analysis. It shows the total revenue for each quarter, the average monthly expenses, and the resulting profit margin. The data indicates a steady increase in revenue over the past year, but also highlights a corresponding increase in expenses, which has led to a slight decrease in the profit margin. This suggests that while the organization is growing, it is also facing increasing costs, which may be due to inflation or other external factors.

Overall, the document provides a detailed and thorough analysis of the organization's financial performance. It identifies the strengths and weaknesses of the current financial management system and offers practical recommendations for improvement. The author believes that these findings will be valuable to the organization's leadership and will help them make informed decisions about the future of the organization.



ወደባቸው ፍጥነት ለማሳደግ ለሚችሉ
በጥንቃቄነት 278
አካል፣ ወደባቸው XOA oHo

ጥቅም 6, 2015

ለግልጽ
አካል፣ ወደባቸው
ወደባቸው ለማሳደግ ለሚችሉ
በጥንቃቄነት 1379
አካል፣ ወደባቸው XOA oHo

ለሚገኝበት: ለማሳደግ ለሚችሉ በጥንቃቄነት ለሚገኝበት ወደባቸው
ወደባቸው ለማሳደግ ለሚችሉ ለሚገኝበት

አካል፣ ወደባቸው,

ርዕሰ ጉዞው የሚገኝበት ወደባቸው ለማሳደግ ለሚችሉ ለሚገኝበት 4, 2015
ወደባቸው ለማሳደግ ለሚችሉ በጥንቃቄነት ወደባቸው ለማሳደግ ለሚችሉ
ለሚገኝበት ወደባቸው ወደባቸው ለማሳደግ ለሚችሉ ለሚገኝበት

ወደባቸው ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ ወደባቸው
ለሚገኝበት ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ
ለሚገኝበት ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ
ለሚገኝበት ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ

ለሚገኝበት ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ
ለሚገኝበት ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ

“የሚገኝበት ወደባቸው ለማሳደግ ለሚችሉ ለሚገኝበት ለማሳደግ ለሚችሉ
ወደባቸው ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ
ወደባቸው ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ
ወደባቸው ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ
ወደባቸው ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ

ለሚገኝበት ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ
ለሚገኝበት ለማሳደግ ለሚችሉ ወደባቸው ለማሳደግ ለሚችሉ

$$L^{\infty} \Lambda L^q \supset L^{\infty} \Lambda L^q \sigma^c \subset$$

$L^{\infty} \hookrightarrow L^4 \hookrightarrow L^2 \hookrightarrow L^1$

[illegible][illegible][illegible]

ፊክሽን	ክሊኒካል ምርመራ	ሰነድ	ፕላን
			ለፍቅር ወይም ለሌላ ምርመራ ለሚደረግበት ሰዓት ማሳሰቢያ
13	4		ለጥጥር ወይም ለሌላ ምርመራ ለሚደረግበት ሰዓት ማሳሰቢያ
15	2	3	ፎቶ ምርመራ ለሚደረግበት ሰዓት ማሳሰቢያ
24	ፍቅር 4		ፎቶ ምርመራ ለሚደረግበት ሰዓት ማሳሰቢያ
26			ፎቶ ምርመራ ለሚደረግበት ሰዓት ማሳሰቢያ
27-33			ፎቶ ምርመራ ለሚደረግበት ሰዓት ማሳሰቢያ
33	ክሊኒካል ምርመራ		ፎቶ ምርመራ ለሚደረግበት ሰዓት ማሳሰቢያ



April 13th 2017

Aluki Kotierk
President of Nunavut
Tunngavik Inc

Stanley Adjuk
Chairperson of the
Kivalliq Wildlife Board

Jobie Tukkiapik
President of Makivik
Corporation

Re: Public Hearing of the Nunavut Wildlife Management Board concerning the revised *Nunavut Polar Bear Co-Management Plan*

Box 1379
Iqaluit, NU X0A 0H0
 (867) 975-7300
 (888) 421-9832

replacing the current *Polar Bear Memorandum of Understanding* as the guiding document for polar bear management in the Nunavut Settlement Area.

In June of 2015, the Department submitted a *Proposal for Decision* to the NWMB for approval of the original Plan. The Board held a written public hearing in the fall of 2015, and subsequently decided to adjourn that hearing in order to permit the Department to carefully review the submissions received, and to consider revisions to the original Plan based upon its review.

The Department subsequently reviewed those written submissions, undertook and completed a number of revisions, and then conducted further consultations with relevant Inuit organizations during October and November of 2016. The result of that process is the revised Plan, submitted to the NWMB on February 2nd 2017. At the Board's March 2017 quarterly meeting, the NWMB decided to resume the *Nunavut Polar Bear Co-Management Plan* hearing process as an in-person public hearing.

3. Results of pre-hearing teleconferences

The NWMB has held two pre-hearing teleconferences concerning its planned resumption of the hearing process – one on February 15th, shortly after receiving the revised Plan, and the other on March 30th, following its quarterly meeting.

At the February 15th call, all participants¹ indicated that they would support whatever hearing format (written or in-person) the Board decided upon, and that they intended to participate in the hearing process.

At the March 30th call, attendees provided their views on a draft hearing agenda prepared by the NWMB.² Subject to proposed minor changes (since accepted by the Board), all participants agreed to the timelines and most other details set out in the hearing agenda, which is attached to this correspondence as Appendix A. The agreed-upon timelines for party submissions and resulting questions and answers during the three day hearing are as follows:

- ❖ Nunavut Department of Environment: 3 hours and 55 minutes;
- ❖ Nunavut Tunngavik Inc.: 2 hours;
- ❖ The Qikiqtaaluk Region (Regional Wildlife Organization and Hunters and Trappers Organizations): 3 hours and 15 minutes;

¹ In attendance were representatives of Nunavut Tunngavik Inc., the Kitikmeot Regional Wildlife Board, the Qikiqtaaluk Wildlife Board, the Arviat Hunters and Trappers Association (on behalf of the Kivalliq Wildlife Board), the Department, Environment and Climate Change Canada, Parks Canada, and the World Wildlife Fund Canada.

² In attendance were representatives of Nunavut Tunngavik Inc., the Kitikmeot Regional Wildlife Board, the Qikiqtaaluk Wildlife Board, the Kivalliq Wildlife Board, the Department, Environment and Climate Change Canada and the Polar Bear Administrative Committee. The NWMB will soon be issuing to all participants – under separate cover - a summary record of the pre-hearing teleconference.

- ❖ The Kivalliq Region (Regional Wildlife Organization and Hunters and Trappers Organizations): 3 hours and 15 minutes;
- ❖ The Kitikmeot Region (Regional Wildlife Organization and Hunters and Trappers Organizations): 3 hours and 15 minutes;
- ❖ Qaujimaniliit: 2 hours;
- ❖ Makivik Corporation: 1 hour;
- ❖ World Wildlife Fund Canada: 1 hour;
- ❖ Environment and Climate Change Canada and Parks Canada: 1 hour and 30 minutes; and
- ❖ Members of the public: 45 minutes.

4. Dates and location of the hearing

The “*Nunavut Wildlife Management Board Public Hearing to Consider the Government of Nunavut’s Polar Bear Co-Management Plan*” will take place over three (3) days - June 6th, 7th and 8th 2017 - in Iqaluit at the Cadet Hall. Day 1 begins at 9:00 am. The rest of the daily schedules are set out in the attached hearing agenda. Please note that the NWMB reserves the right to modify details of the agenda, including the daily schedules.

5. NWMB funding for attendance by representatives of Inuit harvesters

The Board is prepared to pay travel and accommodation costs for attendance by up to six (6) representatives from each region (consisting of Distinguished Elders/Qaujimaniliit and representatives of the Regional Wildlife Organization and/or Hunters and Trappers Organizations) – for a total of eighteen (18) participants in total. Selection of those representatives will be decided by the Regional Wildlife Organizations. Unfortunately, the NWMB has no further funding assistance available.

6. Best available information and NWMB Hearing Rules

Copies of the Department’s *Proposal for Decision* (Appendix B) and the NWMB Hearing Rules (Appendix C) are attached to this letter. These - and a number of additional documents comprising the best available information to date – including the revised Plan are also available for download from the NWMB’s online hearing registry (found at www.nwmb.com), or by contacting the Board at the following address:

NUNAVUT WILDLIFE MANAGEMENT BOARD
 1106 Ikaluktuutiak Road, Allavvik Bldg., 3rd Floor
 P.O. Box 1379, Iqaluit, NU, X0A 0H0
 Phone: (867) 975-7300
 Fax: (888) 421-9832
 E-Mail: tsataa@nwmb.com

7. Invitation and instructions to provide written submissions

Through this letter, the NWMB is extending an invitation to your department or organization to provide written submissions and supporting documentations³ in response to the Department's *Proposal for Decision*. **All written materials must be filed with the NWMB – in English, Inuktitut and Inuinnaqtun – by no later than 5:00 p.m. (Iqaluit Time) on May 19th 2017.** The requirement for translation does not apply to supporting documentation over ten (10) pages in length, as long as each supporting document that is not translated is accompanied by a concise, translated summary (English, Inuktitut and Inuinnaqtun) at least two (2) pages in length.

In addition, the Board is extending an invitation to your department or organization to attend the hearing as a party entitled to make oral submissions, and to ask and answer questions of the other parties. **In order to help ensure a fair and efficient hearing, the NWMB requires that a qualified representative of your department or organization confirm in writing – by no later than 5:00 p.m. (Iqaluit Time) on May 19th 2017 – attendance by your department or organization as a party at the public hearing.**

Subject to relevant confidentiality or privacy concerns, all submissions and supporting documentation will be placed on the NWMB's website/hearing registry, and will be available for download shortly after they are filed with the Board.

Please take careful note that, unless persuasive written and translated reasons are provided to the NWMB for late filing, the Board will not consider materials for this hearing that are not filed on time.

Materials may be filed with the Board in person, by courier or by mail. They must be clearly marked as pertaining to the *NWMB Public Hearing on the Polar Bear Co-Management Plan*. Delivery of the materials may also be made through fax or electronic transmission, but only if your department or organization confirms by phone with the NWMB – **by no later than the filing deadline** – that a complete and legible copy of the transmission has been received by the Board. Materials are deemed to have been filed on the actual day of receipt by the NWMB.

Please keep in mind that the more thorough, reliable and persuasive supporting evidence and justifications are for your submissions, the more weight they will be given by the NWMB in the *Nunavut Agreement* decision-making process.

If you require further information, please do not hesitate to visit the NWMB website or to contact the Board directly.

³ "Supporting documentation" refers to one or more studies, articles, opinions or other documents separate from a person's or organization's written submission, filed as additional evidence and/or argument in support of that person's or organization's submission.

Yours sincerely,



Dan Shewchuk
A/Chairperson of the
Nunavut Wildlife Management Board

Attachments (3)

- c.c. Drikus Gissing, Director of Wildlife, Nunavut Department of Environment;
Paul Irrgaut, Director of Wildlife, Nunavut Tunngavik Inc.;
Jason Mikki, Executive Director, Qikiqtaaluk Wildlife Board;
Ema Qaggutaq, Regional Coordinator, Kitikmeot Regional Wildlife Board;
Qovik Netser, Regional Coordinator, Kivalliq Wildlife Board;
Adamie Delisle Alaku, Executive Vice President, Makivik Corporation;
Lisa Pirie-Dominix, Acting Head of Eastern Arctic, Canadian Wildlife Service,
Environment and Climate Change Canada;
Caroline Ladanowski, Director, Wildlife Management and Regulatory Affairs
Division, Canadian Wildlife Service, Environment and Climate Change Canada;
Jenna Boon, Nunavut Field Unit Superintendent, Parks Canada Agency; and
Paul Crowley, Vice-President Arctic, World Wildlife Fund Canada;



NOTICE OF NUNAVUT WILDLIFE MANAGEMENT BOARD IN PERSON PUBLIC HEARING

Notice is provided on April 14th 2017 that the Nunavut Wildlife Management Board (NWMB or Board) will be conducting an in-person public hearing to consider the Government of Nunavut-Department of Environment's *Proposal for Decision* to the Board (Proposal). The Government of Nunavut- Department of Environment is seeking approval of the revised Nunavut Polar Bear Co-management Plan. The Proposal and additional documents relevant to the hearing are available for download from the NWMB's website (www.nwmb.com), or by contacting the NWMB at the coordinates set out at the end of this notice.

The filing of submissions to be considered at the hearing:

The hearing is scheduled to take place June 6th-8th, 2017 in Iqaluit, Nunavut at the Cadet Hall. The hearing will take place from 9:00 AM to 5:00 PM each day. In addition, the NWMB will also hold evening sessions from 7:00 PM to 9:00 PM. The NWMB is inviting interested organizations or persons, including any member of the public, to file written response submissions and supporting documentation concerning the Proposal by no later than **5:00 p.m. Iqaluit time on May 19th 2017**. Unless persuasive written reasons are provided for late filing, the Board will not consider materials for this hearing that are not filed on time.

The Board will make publicly available all of the written materials filed with them, subject to relevant confidentiality or privacy concerns.

To file submissions or obtain more information, including with respect to submissions and supporting documentation from others, additional relevant documents, the rules applying to the hearing, and attendance as a member of the public or as a party to the hearing, please contact the NWMB:

NUNAVUT WILDLIFE MANAGEMENT BOARD

P.O. Box 1379, Iqaluit, NU X0A 0H0

Phone: (867) 975-7300

Fax: (888) 421-9832

Email: receptionist@nwmb.com

Website: www.nwmb.com



Aᓃᕐᑖᔭᕋᕈᕆ ᐅᒪᕐᑖᕐᑐ ᔫᕐᑲᔨᑎᑦᑏ ᔫᓂᑦᑖᕋᕇᑦ ᔫᕉᑖᑦᑏᕐᑖ ᔫᓄᔭᕐ ᕐᑲᔭᒪᕊᕗᕐᑖᑦ ᔫᒻᒪᕗ ᕐᑲᔭᕐᑖᑦᑎᒻᒸᕐ ᕐᑲᔭᒪᕊᕐᑖ

Tammaqtailinahuarnirit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
Conserving wildlife through the application of Inuit Qaujima-jatuqangit and scientific knowledge

April 13th 2017

Drikus Gissing
Director of Wildlife
Government of Nunavut –
Department of Environment

Caroline Ladanowski
Director
Environment and Climate
Change Canada

Paul Inngaut
Director of Wildlife and
Environment
Nunavut Tunngavik
Incorporated

Ema Qaggutaq
Regional Coordinator
Kitikmeot Regional Wildlife
Board

Jason Mikki
Executive Director
Qikiqtaaluk Wildlife Board

**Qovik Netser
Regional Coordinator
Kivalliq Wildlife Board**

Jenna Boon
Nunavut Field Unit
Superintendent
Parks Canada Agency

Paul Crowley
Vice-President Arctic
World Wildlife Fund Canada

Adamie Delisle Alaku
Executive Vice President
Makivik Corporation

Christine Cleghorn
Co-Chair
Polar Bear Administrative
Committee

Dear Colleagues:

Re: Summary of NWMB's Pre-hearing Teleconference on the draft agenda for the public hearing on the *Nunavut Polar Bear Co-management Plan*

On March 30th 2017, the Nunavut Wildlife Management Board (NWMB or Board) held a pre-hearing teleconference on the draft agenda for the public hearing on the *Nunavut Polar Bear Co-management Plan* (Plan). In attendance at the teleconference were delegates from the three Regional Wildlife Organizations, Nunavut Tunngavik Incorporated (NTI), Government of Nunavut – Department of Environment (GN-DOE), the Polar Bear Administrative Committee and Environment and Climate Change Canada (ECCC). The purpose of the teleconference was to discuss the draft agenda that was sent out on March 29th 2017.

At the March 30th teleconference, the NWMB heard concerns from the Qikiqtaaluk Wildlife Board (QWB) and from NTI about NWMB's limited funding assistance (travel and accommodation costs) for (6) six representatives from each of the (3) three Nunavut Regions. The NWMB explained that it has a modest operating budget to carry out its many duties and responsibilities assigned under the *Nunavut Agreement*, and that such duties and responsibilities do not include the payment of costs for party representatives to attend an

NWMB hearing. Nevertheless, the Board was able to secure sufficient funding to finance the attendance of 18 regional delegates in total.

The Kivalliq Wildlife Board and the Kitikmeot Regional Wildlife Board expressed concerns about the multi-day layover that would be required for delegates traveling from the west. The GN-DOE suggested that one solution would be to hold the hearing in Yellowknife. However, while the Yellowknife option would reduce the multi-day layover for western Nunavut delegates, it would also result in a comparable multi-day layover for delegates from the east. All things considered, in the NWMB's view, Iqaluit (the capital of Nunavut) is a more appropriate location to hold the hearing than Yellowknife (the capital of the Northwest Territories).

There were also suggestions to change the dates of the hearing so as to reduce the multi-day layover for delegates traveling from the Nunavut western regions. In response, the hearing dates have now been moved to June 6-8 at the Cadet Hall in Iqaluit, which should reduce the multi-day layover.

The QWB and NTI also expressed concern that the proposed 3-day timeline in June is too short for the hearing. The NWMB responded that a 3-day hearing has historically been sufficient for Proposals similar in scope to the Plan.¹ In addition, the Board explained that, if the hearing did not take place in June, it would likely be delayed for several months.

ECCC and QWB requested that the World Wildlife Fund and the Makivik Corporation, respectively, have separate time-slots on the agenda. Those requests have been accommodated in the new agenda, which is attached to this correspondence.

At the end of the call, the NWMB summarized the call and stated that it understood there to be a consensus among the call participants on the 3-day duration of the hearing, as well as on the agenda's proposed timelines for party submissions and resulting questions and answers. None of the teleconference delegates expressed any disagreement, and no further questions or concerns were raised.

Yours sincerely,



Jason Akearok
Executive Director of the
Nunavut Wildlife Management Board

¹ For example, the 2010 Hearing to list Polar Bear as a species of special concern under the *Species at Risk Act*, and the 2012 *Narwhal Integrated Fisheries Management Plan* Hearing. The complete Hearing Registry for both hearings can be found at the nwmb.com website.

March 23rd, 2017

Honourable Catherine
McKenna
Minister of Environment
and Climate Change
Canada

Honourable Joe
Savikataaq
Minister of Environment
Government of Nunavut

Aluki Kotierk
President of Nunavut
Tunngavik Inc.

Joe Ashevak
Chairperson of the
Kitikmeot Regional Wildlife
Board

James Qillaq
Chairperson of the
Qikiqtaaluk Wildlife Board

Stanley Adjuk
Chairperson of the
Kivalliq Wildlife Board

David Miller
President and CEO
World Wildlife Fund
Canada

Christine Cleghorn and
Caroline Ladanowski
Chairpersons of the Polar
Bear Administrative
Committee

Adamie Delisle Alaku
Executive Vice President
Makivik Corporation

Dear Colleagues:

**Re: Notification of a Nunavut Wildlife Management Board pre-hearing
teleconference concerning the Government of Nunavut's proposed Nunavut Polar
Bear Co-Management Plan**

The Nunavut Wildlife Management Board (NWMB or Board) has scheduled a pre-hearing teleconference in response to a Request for NWMB decision (Proposal) regarding the Nunavut Polar Bear Co-Management Plan. The Proposal was submitted by the Government of Nunavut –Department of Environment on February 2nd, 2017 (attached).

The NWMB reviewed the Proposal during its March 2017 quarterly meeting in Iqaluit and decided to hold an in-person public hearing on the matter.

A hearing of this size presents several logistical challenges, as such the Board would like to discuss proposed dates and timelines for the in-person hearing with hearing parties during a **pre-hearing teleconference**. This will ensure that the Board receives the best available scientific knowledge and Inuit Qaujimajatuqangit during the allotted

time for the hearing. The pre-hearing teleconference will focus on the following four points:

1. The Board has the financial resources to pay for eighteen (18) delegates across Nunavut (including Hunters and Trappers Organization representatives and Qaujimaniliit) to attend the hearing. Each Regional Wildlife Organization will be asked to select six (6) representatives to attend the hearing.
2. The Board has decided that the hearing will be three (3) days in length.
3. The Board is proposing that the first day of the hearing be set aside for the Government of Nunavut's Proposal for Decision and the subsequent question period from hearing parties, as it is expected that there will be several questions for the Government of Nunavut from the hearing parties. Should the Government of Nunavut's time end earlier than expected, the Board will proceed with other hearing parties if time permits.
4. Given the large number of hearing parties, the Board is proposing that each region of Nunavut (Qikiqtaaluk, Kitikmeot and Kivalliq) be given a time on the agenda to jointly present their submissions. Therefore the Board is recommending that the Regional Wildlife Organizations work together with their chosen delegates on their oral submissions to ensure that all relevant information is presented in the time given.

A draft agenda will be provided to those attending the pre-hearing teleconference on Tuesday, March 28th, 2017.

The pre-hearing teleconference has been scheduled to take place on **Thursday, March 30th, 2017 at 3:00 p.m. (Eastern Time)**. For those representatives in Iqaluit the NWMB will be hosting the teleconference in its Boardroom. The dial-in information is the following:

Teleconference number: 1-877-733-5390

Conference ID: 4231582642

The NWMB requests that you provide **confirmation of attendance** at the pre-hearing conference **by no later than Tuesday-March 28th, 2017 at 5:00 p.m. (Eastern Time)**. Please also inform the Board at that time if you require translation services for the call. For logistical reasons, the Board recommends participation in the call by no more than two representatives from each agency.

If you require further information, please do not hesitate to contact the NWMB.

Sincerely,

Daniel Shewchuk
Acting Chairperson of the
Nunavut Wildlife Management Board

c.c. Drikus Gissing, Director of Wildlife, Government of Nunavut, Department of Environment;
Paul Irngaut, Director of Wildlife, Nunavut Tunngavik Incorporated;
Lisa Pirie, Acting Head of Eastern Arctic, Environment and Climate Change Canada, Canadian Wildlife Service;
Ema Qaggutaq, Regional Coordinator, Kitikmeot Region Wildlife Board;
Qovik Netser, Regional Coordinator, Kivalliq Wildlife Board;
Jason Mikki, Executive Director, Qikiqtaaluk Wildlife Board;
Peter Kydd, Acting Resource Conservation Manager, Parks Canada;
Paul Crowley, Vice President, Arctic, WWF-Canada.

Enclosures (1)



ᐱᓗᑦᕛᕛᕐᓂᑦᑲ ᐅᒪᑦᓂᑲ ᑦᑭᑦᑎᕈᓗᓗ ᑦᕛᑦᕈᕈᕋᕐᕐ ᕛᑦᕛᕐ ᑦᑲᐅᐱᓂᓗᑦᑲᕐᕐ ᑦᕈᓗᓗ ᑦᑲᐅᐱᕐᕈᓴᓴᓴᓴᓴᓴ ᑦᑲᐅᐱᓂᕐᕐ
Tammaqtailinahuerniriit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
Conserving wildlife through the application of Inuit Qaujimagatuqangit and scientific knowledge

Honourable Catherine McKenna
Minister of Environment and Climate Change
Canada

Honourable Joe
Savikataaq
Minister of Environment
Government of Nunavut

Aluki Kotierk
President of Nunavut
Tunngavik Inc

Simon Qingnaqtuq
Chairperson of the
Kitikmeot Regional Wildlife
Board

James Qillaq
Chairperson of the
Qikiqtaaluk Wildlife Board

Stanley Adjuk
Chairperson of the
Kivalliq Wildlife Board

David Miller
President and CEO
World Wildlife Fund
Canada

**Marsha Branigan and
Gregor Gilbert**
Chairpersons of the Polar
Bear Technical Committee

**Christine Cleghorn and
Caroline Ladanowski
Chairpersons of the Polar
Bear Administrative
Committee**

Re: Notification of a Nunavut Wildlife Management Board pre-hearing teleconference concerning the Government of Nunavut's proposed Nunavut Polar Bear Co-Management Plan

The Nunavut Wildlife Management Board (NWMB or Board) has scheduled a pre-hearing teleconference in response to a Request for NWMB decision (Proposal) regarding the Nunavut Polar Bear Co-Management Plan. The Proposal was submitted by the Government of Nunavut –Department of Environment on June 9th, 2015 (attached)

The NWMB reviewed the Proposal during its September 2015 quarterly meeting in Iqaluit and decided to hold a written public hearing on the matter. The NWMB received several submissions from hearing parties concerning the draft management plan.

During an In-Camera meeting (007-2015) on December 2nd, 2015, the Board reviewed the submissions received during the written hearing and passed the following resolution:

RESOLVED that the NWMB adjourn the written public hearing to consider the Government of Nunavut – Department of Environment's proposed Nunavut Polar Bear Co-Management Plan.

FURTHER RESOLVED that the NWMB write to the Government of Nunavut Minister of Environment, indicating that – based upon an initial review of the submissions received – the draft Nunavut Polar Bear Co-Management Plan appears to require further development, and recommending that the Department of Environment carefully review the comments made by hearing parties, and decide whether changes are required to improve the draft plan prior to resuming the hearing and commencing the Nunavut Land Claims Agreement Article 5 decision-making process.

On February 3rd, 2017, the NWMB received a new draft of the Nunavut Polar Bear Co-Management Plan from the Government of Nunavut-Department of Environment-for consideration (attached). The NWMB is organizing a pre-hearing teleconference with hearing parties. The pre-hearing teleconference will focus on the follow points:

- the positions of the parties with respect to the Proposal;
- the appropriate type and extent of the hearing given the circumstances (i.e. in-person hearing or written hearing); and
- timing/scheduling considerations of the NWMB and parties (e.g. submission deadlines, potential location of an in-person hearing).

The pre-hearing teleconference has been scheduled to take place on Wednesday, February 15th, 2017 at 3:00 p.m. (Eastern Time). For those representatives in Iqaluit, the NWMB will be hosting the teleconference in its Boardroom. The dial-in information is the following:

Teleconference number: 1-877-733-5390

Conference ID: 4231582642

The NWMB requests that you provide **confirmation of attendance** at the pre-hearing conference **by no later than Monday February 13th 2017 at 5:00 p.m. (Eastern Time).** Please also inform the Board at that time if you require translation services for the call. For logistical reasons, the Board recommends participation in the call by no more than two representatives from each agency.

The NWMB is hopeful that the outcome of the pre-hearing conference will be a consensus position on how to move forward. That position will then be put forth before the Board for their consideration.

If you require further information, please do not hesitate to contact the NWMB.

Sincerely,



Daniel Shewchuk
Acting Chairperson of the
Nunavut Wildlife Management Board

c.c. Drikus Gissing, Director of Wildlife, Government of Nunavut, Department of Environment;
Paul Irngaut, Director of Wildlife, Nunavut Tunngavik Incorporated;
Lisa Pirie, Acting Head of Eastern Arctic, Environment and Climate Change Canada, Canadian Wildlife Service;
Ema Qaggutaq, Regional Coordinator, Kitikmeot East Regional Wildlife Board
Eva Ayalik, Regional Coordinator, Kitikmeot West Regional Wildlife Board
Qovik Netser, Regional Coordinator, Kivalliq Wildlife Board
Jason Mikki, Executive Director, Qikiqtaaluk Wildlife Board

Enclosures (2)

September 4th, 2015

Honourable Johnny Mike
Minister of Environment
Government of Nunavut

Honourable
Leona Aglukkaq
Minister of Environment
Government of Canada

Cathy Towntongie
President
Nunavut Tunngavik Inc.

Stanley Adjuk
Chairperson
Kivalliq Wildlife Board

Chairperson (Vacant)
Kitikmeot Regional Wildlife
Board

James Qillaq
Chairperson
Qikiqtaaluk Wildlife Board

Marsha Branigan and
Gregor Gilbert
Chairpersons
Polar Bear Technical
Committee

Dag Vongraven
Chairperson
IUCN Polar Bear Specialist
Group

Drikus Gissling
Chairperson
Polar Bear Administrative
Committee

David Miller
President and CEO
World Wildlife Fund
Canada

All Nunavut Hunters and
Trappers Organizations

Dear Colleagues:

Re: Written hearing of the Nunavut Wildlife Management Board concerning the proposed Nunavut Polar Bear Co-Management Plan

The Nunavut Wildlife Management Board (NWMB or Board) will be conducting a written public hearing to consider the Government of Nunavut-Department of Environment's proposal for NWMB decision (Proposal) requesting the approval of the Nunavut Polar Bear Co-Management Plan. A copy of the Proposal is attached to this letter.

A written public hearing is one in which all submissions are filed in writing, and the hearing does not have an oral component.

Background

On June 9th, 2015 the NWMB received a request from the Government of Nunavut-Department of Environment to approve the proposed Nunavut Polar Bear Co-Management Plan. The Government of Nunavut worked cooperatively with co-management partners to develop this plan. If approved this plan will replace the current

Memoranda of Understanding which were developed in 2004 and signed by all Regional Wildlife Organizations and Hunters and Trappers Organizations.

After reviewing the Proposal during its In-camera meeting on June 10th, 2015, the NWMB decided to hold a written hearing on this matter.

The filing of submissions:

The NWMB is inviting interested organizations or persons, including any member of the public, to file written response submissions and supporting documentation concerning the Proposal by no later than **5:00 p.m. Iqaluit time on October 30th 2015**. **Unless persuasive written reasons are provided to the Board for late filing, the NWMB will not consider materials for this hearing that are not filed on time.**

The hearing rules and a number of documents comprising the best available information to date are available for download from the NWMB's website (www.nwmb.com) or by contacting the NWMB at the following coordinates:

NUNAVUT WILDLIFE MANAGEMENT BOARD
3rd Floor, Ikaluktuutiak Drive
P.O. Box 1379, Iqaluit, NU, X0A 0H0
Phone: (867) 975-7300
Fax: (888) 421-9832
E-Mail: receptionist@nwmb.com

Submissions and their supporting documentation may be filed with the Board in person, by courier or by mail. They should be clearly marked as pertaining to the *NWMB Written Hearing concerning the Nunavut Polar Bear Co-Management Plan*. All submissions must be submitted in both English and Inuktitut. Delivery of the materials may also be made through fax or electronic transmission, but only if your department or organization confirms by phone with the NWMB - prior to the filing deadline - that a complete and legible copy of the transmission has been received by the Board. Materials are deemed to have been filed on the actual day of receipt by the NWMB.

Subject to relevant confidentiality or privacy concerns, all submissions and supporting documentation will be placed on the NWMB's website and will be publicly available for download. Please keep in mind that the more thorough, reliable and persuasive submissions and supporting documentation are, the more weight they will be given by the NWMB in the *Nunavut Land Claims Agreement* decision-making process.

If you require further information, please do not hesitate to visit the NWMB website or to contact the Board directly.

Sincerely,

Ben Kovic,
Chairperson of the
Nunavut Wildlife Management Board

c.c. Paul Irngaut, Director of Wildlife, Nunavut Tunngavik Inc.;
Drikus Gissing, Director of Wildlife, Government of Nunavut, Department of Environment;
Lisa Pirie, A/Head of Eastern Arctic Section, Canadian Wildlife Service;
Jenna Boon, Nunavut Field Unit Superintendent, Parks Canada Agency;
Paul Crowley, Director, Arctic Program, World Wildlife Fund Canada;
Ema Qaggutaq, Kitikmeot Coordinator, Kitikmeot Regional Wildlife Board;
Jackie Price, Coordinator, Research Planning, Qikiqtaaluk Wildlife Board;
Jason Mikki, Qikiqtaaluk Regional Coordinator, Qikiqtaaluk Wildlife Board; and
Leah Muckpah, Kivalliq Coordinator, Kivalliq Wildlife Board.



NOTICE OF NUNAVUT WILDLIFE MANAGEMENT BOARD WRITTEN HEARING

Notice is provided on September 4th 2015 that the Nunavut Wildlife Management Board (NWMB or Board) will be conducting a written public hearing to consider a Government of Nunavut – Department of Environment *Proposal for NWMB Decision* (Proposal). The Government of Nunavut is seeking a decision on the proposed Nunavut Polar Bear Co-Management Plan. The Proposal and additional documents relevant to the hearing are available for download from the NWMB's website (www.nwmb.com), or by contacting the NWMB at the coordinates set out at the end of this notice.

The filing of submissions:

The NWMB is inviting interested organizations or persons, including any member of the public, to file written response submissions and supporting documentation concerning the Proposal by no later than **5:00 p.m. Iqaluit time on October 30th 2015**. Unless persuasive written reasons are provided to the Board for late filing, the NWMB will not consider materials for this hearing that are not filed on time. The NWMB will make publicly available all of the written materials filed with it, subject to relevant confidentiality or privacy concerns.

How to obtain more information:

To receive more information about filing or obtaining submissions or the rules applying to the written public hearing, please contact the NWMB:

NUNAVUT WILDLIFE MANAGEMENT BOARD
P.O. Box 1379, Iqaluit, NU X0A 0H0
Phone: (867) 975-7300
Fax: (888) 421-9832
Email: receptionist@nwmb.com
Website: www.nwmb.com