Baffinland

May 10, 2022

Kaviq Kaluraq
Chairperson
Nunavut Impact Review Board
Sent via Email: info@nirb.ca

Dear Madame Chair;

Further to the letters sent to the Nunavut Impact Review Board (**NIRB**) on May 6, 2022 by the Mittimatalik Hunters and Trappers Organization (**MHTO**) and Oceans North (**ON**), Baffinland Iron Mines Corporation is writing to provide additional context and correct several misrepresentations included in those correspondences.

Contrary to the claims in the MHTO letter, Baffinland publicly disclosed the 2021 aerial survey results in the 2021 Annual Report, and the full draft 2021 aerial survey results were provided to members of the Marine Environment Working Group (**MEWG**), including the MHTO, ON and NIRB on April 3, 2022.

At this time Baffinland has not made any final decisions with respect to the start of shipping in 2022, and does not plan to do so until after the upcoming June 2022 MEWG meeting is complete and Baffinland has carried out related consultations to finalize the 2022 Narwhal Adaptive Management Response Plan (**2022 NAMRP**). This follows a similar process and timing undertaken last year prior to the 2021 shipping season.

1. **A summary of the results of the draft 2021 aerial narwhal survey is part of the 2021 Annual NIRB Report, and this information has been publicly available since March 31, 2022.**

Baffinland included a summary of the results of the draft 2021 aerial narwhal survey in the 2021 Annual NIRB Report, which is publicly available on the NIRB registry (see NIRB Registry No. 338435 - 338468 at NIRB File No. 08MN053 under the heading "Annual Report" and subheading "Annual Report") as well as Baffinland's document portal (see https://www.baffinland.com/media-centre/document-portal/).

Numerous references, both generally and specifically, to the draft 2021 narwhal aerial survey results are found throughout the 2021 Annual Report. Specifically, the numbers related to the aerial survey results are found in the section of the 2021 Annual Report which reports on Baffinland's compliance performance on Project Certificate Condition No. 101 (see excerpt from page 316 below):

> For the Leg 2 surveys, narwhal summer stock abundance was calculated for the Eclipse Sound stock, Admiralty Inlet stock, and the combined Eclipse Sound and Admiralty Inlet stock. The narwhal abundance estimate for the combined Eclipse Sound and Admiralty Inlet stock during the 2021 open-water season (Leg 2) was 75,177 individuals based on aerial surveys completed on 19 to 21 August 2021. This estimate is statistically higher than the abundance calculated during the

previous DFO survey conducted in 2013 (45,532 narwhal), 2019 (38,677), and 2020 (36,044). **For the Eclipse Sound stock alone, the narwhal abundance estimate during the 2021 open-water season was 2,595 individuals based on aerial surveys conducted on 20 to 21 August 2021**. The 2021 estimate for the Eclipse Sound stock alone is statistically lower than the 2016 DFO estimate of 12,039, the 2013 abundance estimate of 10,489, the 2019 abundance estimate of 9,931, and the 2020 abundance estimate of 5,018.

For additional quotes directly from the report, please see Appendix A to this letter.

2. **Baffinland provided a copy of the 2021 draft Marine Mammal Aerial Survey Report on April 3, 2022 to all members of the MEWG, which includes the MHTO, ON and NIRB staff. A MEWG meeting was held to discuss any preliminary comments on May 3, 2022, and a further MEWG meeting is already scheduled for June 2022. This follows established MEWG practice.**

Baffinland released its draft 2021 Marine Mammal Aerial Survey Report to the MEWG on April 3, 2022 and requested comments back by May 15, 2022 in order for final reports to consider member's feedback. This is the same collaborative and transparent practice Baffinland has implemented in response to Working Group members feedback and that was followed prior to the 2021 shipping season.

Baffinland has already held a meeting with the MEWG (May 3, 2022) to discuss their initial reviews of the 2021 Annual Report to the NIRB, as well as the draft 2021 Marine Mammal Aerial Survey Report. No substantive comments on the draft 2021 Marine Mammal Aerial Survey Report were shared by MEWG members, which includes the MHTO and ON.

Baffinland acknowledges feedback received during last week's MEWG meeting from the MHTO and QIA consultants, as well as Parks Canada with respect to the timing of the release of final reports. Baffinland recognizes that other project proponents in Nunavut file final technical reports together with their Annual NIRB Reports and Baffinland also follows this practice with respect to many of its technical monitoring reports (freshwater, atmospheric, geotechnical etc.). However, participants in the Mary River Terrestrial Environment Working Group (**TEWG**) and MEWG have previously expressed concerns with this practice and that they wished to have an opportunity to comment and collaborate prior to the final filing of our marine and terrestrial reports with NIRB. Given the enormous volume of data that is collected through our summer monitoring programs, it is not possible to generate any drafts on these topics earlier than April each year. As a result, Baffinland routinely releases marine and terrestrial technical reports in draft for comment to the TEWG and MEWG members (which, again for emphasis includes NIRB and the MHTO), considers comments on the drafts, and finalizes the reports by taking into account the comments received in the final technical reports filed on the NIRB public registry and posted to Baffinland's own public document portal. In order to ensure the public is made aware of key conclusions while the working group collaboration is ongoing, Baffinland also includes reference to key findings in its annual reports (as it has done in this case).

The practice of releasing draft technical reports to the TEWG and MEWG is designed to directly respond to working group member feedback, enhance collaboration and transparency, and increase the overall quality of the reports. Given the directly conflicting comments and preferences among TEWG and MEWG

members that are now being expressed on this topic, there may be a need to seek final direction from NIRB on how best to proceed.

3. **A holistic review of the data from the 2021 shipping season does not conclude that the relatively lower numbers of narwhal observed in Eclipse Sound in 2021 is Project-related.**

Baffinland recognizes the concerns with respect to the 2021 narwhal observations in Eclipse Sound. However, a holistic review of the data from the 2021 shipping season does not conclude that the relatively lower numbers of narwhal observed in Eclipse Sound in 2021 is Project-related. Elimination of early season ice-breaking in 2021 further reduced residual uncertainty that Project shipping is the primary driver of the observed change in narwhal abundance in Eclipse Sound.

A review of available Inuit knowledge and scientific monitoring data supports the conclusion that Admiralty Inlet and Eclipse Sound narwhal stocks may actually represent a single stock with the natural exchange of animals between the two putative summering areas. Another factor could be that narwhal migratory routes and summering areas have been influenced by environmental factors, such as changing ice conditions and/or prey/predator dynamics. This is further supported by recorded harvest levels in the spring at the Pond Inlet floe edge, which suggest that few narwhal were present at the floe edge waiting to migrate into Eclipse Sound in the months before Project shipping began. However, it is noted that Pond Inlet harvesters were able to fulfill their entire summer quota by the fall while shipping was ongoing.

4. **Baffinland is currently undertaking the advance planning that would be necessary to ship through ice during the 2022 shipping season, and following consultation Baffinland will issue an updated Narwhal Adaptive Management Response Plan, which will include a final determination on the scope of 2022 shipping season activities and applicable mitigations.**

As stated in the 2021 Annual Report Main Body at page 10:

> Based on 2021 monitoring and the need to initiate planning for the 2022 shipping season, it is Baffinland's intention to resume icebreaking in 2022 concurrent with additional monitoring in the form of a spring narwhal tagging program, which will fill gaps on narwhal behavioural responses to icebreaking. Baffinland will carry out focused consultations with key parties on 2022 shipping activities and monitoring plans, all of which will be summarized to the NIRB in the 2022 Marine Shipping and Vessel Management Report. Baffinland will also engage DFO to understand what, if any, regional studies that could be planned in the near future that may provide greater insights into narwhal migratory behaviour, environmental conditions affecting regional narwhal abundance distribution, and/or to re-examine the classification of Eclipse Sound and Admiralty Inlet narwhal as distinct stocks. To be clear, such regional studies would be complemented by Baffinland's Project effects monitoring.

Baffinland is currently undertaking the advance planning necessary to be in a position to carry out icebreaking/ice management in July 2022 (should it be required after July 15 based on ice conditions).

However, it is important for all parties to understand that no final decision has been made by Baffinland at this time to proceed with icebreaking in the 2022 shipping season.

Baffinland worked with interested parties, including the MHTO, the Hamlet of Pond Inlet, DFO and other members of the MEWG to develop a Narwhal Adaptive Management Response Plan prior to the 2021 shipping season and we have committed to update that plan prior to the 2022 shipping season. For reference, a summary of key activities and dates that contributed to the development of the 2021 Narwhal Adaptive Management Response Plan are provided here:

| Milestone | 2021 Date | Anticipated 2022 Dates |
|---|---|---|
| Aerial Survey Program Results Released [Note a preliminary summary was released in advance of the Annual Report in 2021 because the Annual Report was not available until April 30] | April 8, 2021 | March 31 to April 3, 2022 |
| Interested Parties Submit Comments on the 2020 Aerial Survey Program | May 17, 2021 | Requested for May 15, 2022 |
| Baffinland Responds to Comments Submitted by Interested Parties | June 4, 2021 | TBD Based on Timing and Volume of Comment Submissions |
| Baffinland Engages MEWG Members (collectively and individually) as well as the Hamlet of Pond Inlet | April 9 to July 12, 2021 | Ongoing |
| Baffinland submits Marine Shipping and Vessel Management Report, including Narwhal Adaptive Management Response Plan | July 14, 2021 | TBD Based on Submission of Comments and Engagement Outcomes |

In 2022, in addition to the engagement with the MEWG, which was initiated first through the sharing of draft marine monitoring program report, Baffinland and Golder have also requested a workshop with the MHTO to develop a remote narwhal tagging program to be implemented at the beginning of the shipping season, with the intent to gain a greater understanding of how narwhal and ore carriers interact while shipping through the ice. We have also been requesting dates to hold the end of shipping season meeting with the MHTO since the fall of 2021, which has not yet been met with a response. The results of all this engagements will influence our 2022 marine monitoring programs, as well as our 2022 Narwhal Adaptive Management Response Plan.

In summary, Baffinland is following the same collaborative process in 2022 that was followed in 2021 to develop and meaningfully consult on a Narwhal Adaptive Management Response Plan. All mitigation and monitoring proposals brought forward in the ongoing engagement process will be given full consideration (including those outlined in the MHTO and ON letters), and following the conclusions of engagements, Baffinland will present its planned shipping activities and proposed 2022 shipping mitigations in writing to the NIRB.

5. **Additional information is available to inform narwhal abundance estimates in the North Baffin region, and it may be highly inappropriate to draw conclusions about the "Eclipse Sound stock". The 2021 aerial surveys confirm overall regional population abundance is stable if not higher than when aerial surveys in Eclipse Sound were undertaken. Recent IQ collected and issued by the Qikiqtaaluk Wildlife Board suggests that there is no Eclipse Sound summering narwhal stock and narwhal should be characterized as a holistic regional population.**

As referenced above in Section 3 of this letter, the 2021 draft Marine Mammal Aerial Survey Report proposed that science and available IQ support the notion that there is considerable exchange between the Eclipse Sound and Admiralty Inlet summer stocks of narwhal, and since the combined population is stable, the decreases in Eclipse Sound are most likely reflective of a natural exchange between the two stock areas, or that animals are finding more favourable ecological conditions en route to Admiralty Inlet due to changing ice conditions, prey availability and/or predation pressure, all of which are known to be influenced by a rapidly changing climate in the Arctic.

As noted in the 2021 Annual Report excerpts above, questions have been raised by Qikiqtani Region Hunters and Trappers Organizations (**HTO**s) as to whether there is an "Eclipse Sound summering stock" at all. In recent (March 2022) submissions to the Nunavut Wildlife Management Board (**NWMB**) on the matter of narwhal hunting tag management by HTOs, the Qikiqtaaluk Wildlife Board (**QWB**) (which is comprised of the MHTO Chair as well as all other HTO Chairs in the region) presented IQ that concludes there are no distinct regional stocks and the Northern and Eastern Baffin Island (**NEBI**) narwhal population should be treated as a single population:

> In January 2020 Eric Ootoovak, then Chairperson of the Mittimatalik HTO, told DFO scientists and managers repeatedly and emphatically that "there are no summer stocks" during a survey planning workshop in Winnipeg. Eric was referring to three hypothetical summer stocks delineated by DFO in the above-mentioned 2013 science-based management plan. According to IQ, the three summer stocks of narwhal do not actually exist in reality within the waters of NEBI!
>
> In January 2020, DFO could not provide the needed evidence showing multi-year fidelity of narwhal to any one of the three hypothetical parts of NEBI waters. DFO offered no clear methods or plans to obtain the required information (C. Watt, DFO, Winnipeg, pers. com.). DFO's telemetry data shows that narwhal may move from one area to other areas in the same open-water season in which they were tagged within and beyond NEBI waters.
>
> At that 2020 workshop, delegates from all six HTOs agreed that DFO's 2013 hypothetical summer-stock management system was not supported by Inuit Qaujimajatuqangit, and unduly restricted harvesting by Inuit in contravention of sections 5.3.3 and 5.6.50 of the Nunavut Agreement." [emphasis added]

The March 2022 QWB submissions also provided the following conclusions about the narwhal in the waters of NEBI:

> … based on generations-old, up-to date, peer-reviewed Inuit Qaujimajatuqangit:

- Narwhal move freely throughout the NEBI area. Their distributions and abundances change across NEBI waters between years, showing that individual narwhal do not always return to the same specific areas within NEBI waters every year.
- Narwhal also move freely and widely from day to day, from week to week and from month to month in NEBI waters, and their local distributions and abundances change accordingly. Groups of narwhal are seen moving out of and into major inlets and sounds, and among various smaller fiords and bays, throughout the open-water period.
- In spring, narwhal arrive at various areas in NEBI waters at varying times each year, depending on the development of open water within variable patterns at the floe edges, leads in the ice in various areas, and ice break-up into summer. These patterns and their timing vary from year to year, and can affect the abundance and distributions of narwhal across NEBI waters into August and September.
- Throughout the open-water period, narwhal move as needed for their biological needs like birthing and mating, as well as in response to environmental factors like changing food concentrations, killer whales, and ships. Narwhal also probably move in response to factors largely unknown to humans.
- Underwater sounds are probably important factors that influence the real-world, real-time distributions and abundances of the narwhal because narwhal can hear other narwhal, other whales, predators, ships and other sources of sound across very long distances.
- Inuit manage their harvesting in real time as narwhal move throughout the open-water season because the movements, distributions and abundances of NEBI narwhal cannot be predicted accurately months in advance.

For the convenience of the NIRB as well as reviewers, we have attached the March 2022 QWB submissions to the NWMB to this letter as Appendix B, and this information is also available on the NWMB registry at the following link: https://www.nwmb.com/en/public-hearings-a-meetings/meetings/regular-meetings/2022/rm-001-2022-march-9-2022/english-19.

Baffinland acknowledges that the referenced IQ was submitted specifically for the QWB submission. We look forward to discussing and better understanding this submission to help incorporate IQ in our final NAMRP.

**6. Overall narwhal harvesting in Pond Inlet continues to be above average, including 2021.**

In their Closing Written Statement on the NIRB's Assessment of Baffinland's Phase 2 Development Proposal, the Government of Nunavut indicated that during the 2021-2022 harvesting year a total of 152 tags were issued to Pond Inlet (137 for Summer, and 15 for the Fall/Spring), with the entire summer quota of 137 narwhal successfully harvested and reported to the GN Wildlife Office. Based on information provided to Baffinland by community members as well as social media reporting, the majority of the summer quota of narwhal were harvested in waters directly adjacent to Pond Inlet following the completion of the Small Craft Harbour construction activities. Baffinland also acknowledges that this time

period coincides with when narwhal would be migrating back towards the Baffin Bay area for overwintering.

Since the development of the Food Security Assessment for the Phase 2 Proposal, Baffinland has been tracking the annual issuance of narwhal harvest tags to help inform a better understanding of the number of narwhal that are being reported as harvested and available for consumption in Pond Inlet. As presented in the table below, based on 21 years of available harvest and population data for Pond Inlet, an above average number of narwhal have been harvested on a nominal and per capita basis in 6 of the 7 years Project shipping has occurred.

| Year | Pond Inlet Population | Narwhal Harvest | Per Capita Narwhal Harvest |
|---|---|---|---|
| 2001 | 1,282 | 65 | 0.051 |
| 2002 | 1,307 | 63 | 0.048 |
| 2003 | 1,341 | 67 | 0.050 |
| 2004 | 1,358 | 65 | 0.048 |
| 2005 | 1,375 | 62 | 0.045 |
| 2006 | 1,369 | 88 | 0.064 |
| 2007 | 1,383 | 65 | 0.047 |
| 2008 | 1,400 | 73 | 0.052 |
| 2009 | 1,,453 | 44 | 0.030 |
| 2010 | 1,482 | 62 | 0.042 |
| 2011 | 1,533 | 112 | 0.073 |
| 2012 | 1,544 | 97 | 0.063 |
| 2013 | 1,579 | 147 | 0.093 |
| 2014 | 1,613 | 135 | 0.084 |
| 2015 | 1,639 | 190 | 0.116 |
| 2016 | 1,663 | 118 | 0.071 |
| 2017 | 1,790 | 159 | 0.089 |
| 2018 | 1,784 | 64 | 0.036 |
| 2019 | 1,809 | 184 | 0.102 |
| 2020 | 1,835 | 140* | 0.076 |
| 2021 | 1,862 | 152* | 0.082 |
| | **Average** | **102** | **0.065** |

*Still subject to final verification by DFO.
**Baffinland shipping commenced in 2015 (shaded values).

Baffinland provides supports to harvesters through the Mary River Inuit Impact Benefits Agreement including important dedicated articles for the Wildlife Compensation Fund, Harvesters Enabling Program, Wildlife Monitoring Program, and Marine Research Equipment. Baffinland also maintains the Tasiuqtiit Working Group Agreement with the Hamlet of Pond Inlet and MHTO, which provides direct compensation for each vessel required to deliver more than 4.2 Mtpa.

In closing, Baffinland is pleased to provide the additional clarifying information set out in this letter, and is happy to provide any follow up that is necessary. As we have continually suggested, we again reiterate

that we are open to meeting in person or by phone with the MHTO on these or any other matters at any time.

Yours truly,

Megan Lord-Hoyle

Megan Lord-Hoyle
VP Sustainable Development

Cc. Olayuk Akesuk, QIA
Aluki Kotierk, NTI
Lori Idlout, MP, Nunavut
Hon. Dan Vandal, Minister of Northern Affairs
Hon. Steven Guibeault, Minister of Environment and Climate Change
Hon. Joyce Murray, Minister of Fisheries and Oceans
Hon. Johnathan Wilkinson, Minister of Natural Resources
Hon. Omar Alghabra, Minister of Transport
David Qajaaq Qamaniq, Chairperson, MHTO
Members of Marine Environmental Working Group

# Appendix A

Relevant Annual Report Excerpts

**Main Body (see NIRB Registry No. 338435):**

Popular Summary, page 9-10:

> "Results from the open water narwhal aerial survey indicate that narwhal abundance in Eclipse Sound was statistically lower in 2021 than previous years (i.e. 2013, 2016, 2019 and 2020), while the combined narwhal abundance in Eclipse Sound and Admiralty Inlet was statistically higher in 2021 to that observed in previous years (2013, 2019 and 2020)… A holistic review of the data from the 2021 shipping season does not conclude that the relatively lower numbers of narwhal observed in Eclipse Sound in 2021 is Project-related. Elimination of early season ice-breaking in 2021 further reduced residual uncertainty in that Project shipping is the primary driver of the observed change in narwhal abundance in Eclipse Sound.
>
> A review of available Inuit knowledge and scientific monitoring data supports that the Admiralty Inlet and Eclipse Sound narwhal stocks may actually represent a single stock with natural exchange of animals between the two putative summering areas. Another factor could be that narwhal migratory routes and summering areas have been influenced by environmental factors, such as changing ice conditions and/or prey/predator dynamics. This is further supported by recorded harvest levels in the spring at the Pond Inlet floe edge, which suggest that few narwhal were present at the floe edge at this time waiting to migrate into Eclipse Sound in the months before Project shipping began. However, it is noted that Pond Inlet harvesters were able to fulfill their entire summer quota by the fall."

Section 4, "Performance on PC Conditions", page 306:

> "In 2020 and 2021, there was a statistically significant decrease in the abundance of the Eclipse Sound narwhal stock compared to previous survey years (2013, 2016 and 2019) (Golder, 2022e). However, the combined narwhal abundance in Eclipse Sound and Admiralty Inlet was shown to be similar in 2020 to that observed in previous survey years (2013 and 2019); and was statistically higher in 2021 than in previous survey years (2013, 2019 and 2020) (Golder, 2022e). A review of available Inuit knowledge and scientific monitoring data supports that the Admiralty Inlet and Eclipse Sound stock may actually be one stock that shift between summering areas. Another factor could be that narwhal migratory routes and summering areas have been influenced by environmental factors, such as ice condition and prey/predator dynamic."

Section 4, "Performance on PC Conditions", page 315:

> "In 2021, marine mammal aerial surveys were conducted in the North Baffin during the early shoulder season (July), the peak open-water season (August), and at the end of the shipping season (October) as part of the 2021 Marine Mammal Aerial Survey Program (MMASP). Three different types of marine mammal aerial surveys were performed in 2021. A reconnaissance survey was initially run during the early shoulder season (Leg 1) to collect data on the presence/absence and distribution of marine mammals in the RSA relative to available ice conditions at that time of year and prior to the start of shipping activities. A systematic aerial-based transect survey was then conducted during the open-water season (Leg 2) to obtain

abundance estimates of the Eclipse Sound and Admiralty Inlet narwhal summer stocks. A visual clearance survey (Leg 3) was also conducted during the fall shoulder season to confirm that no narwhal entrapment events occurred in the RSA following completion of Baffinland's 2021 shipping operations along the Northern Shipping Route. A letter of support for the 2021 MMASP was requested from the MHTO and Arctic Bay HTO. DFO and other MEWG members were actively consulted on the study design and data collection methods during 2021 MEWG meetings (Appendix C.1). Input and recommendations provided by these parties were incorporated into the program. Detailed methodology and analytical procedures of the 2021 MMASP are presented in Golder (2022e)."

Section 4, "Performance on PC Conditions", page 316 (also repeated at page 357):

"A total of nine different species of marine mammals were observed during the 2021 aerial surveys: narwhal, bowhead whale, beluga whale, killer whale, ringed seal, harp seal, bearded seal, walrus, and polar bear.

At the beginning of Leg 1 surveys open water was present in the north Navy Board Inlet, Milne Inlet and Pond Inlet strata and by the end of Leg 1 open water was present throughout the RSA. Results from the 2021 Leg 1 survey indicated low narwhal numbers prior to the first vessel transit into the RSA. By the time of the first ore carrier transit in the RSA on 26 July 2021, narwhal relative abundance appeared to have increased and their distribution had moved to be primarily concentrated in Koluktoo Bay and Tremblay Sound and remained concentrated in those areas for the duration of the Leg 1 program. Detailed results for Leg 1 are presented in Golder (2022e).

For the Leg 2 surveys, narwhal summer stock abundance was calculated for the Eclipse Sound stock, Admiralty Inlet stock, and the combined Eclipse Sound and Admiralty Inlet stock. The narwhal abundance estimate for the combined Eclipse Sound and Admiralty Inlet stock during the 2021 open-water season (Leg 2) was 75,177 individuals and statistically higher than the abundance calculated during the previous DFO survey conducted in August 2013, 2019, and 2020. For Eclipse Sound stock alone, the narwhal abundance estimate was 2,595 narwhal, which is statistically lower than the 2016 DFO estimate. The 2021 abundance estimate is also statistically lower than the 2013, 2019, and 2020 abundance estimates. For the Admiralty Inlet stock alone, the narwhal abundance estimate was 72,582 narwhal and was statistically higher than the abundance calculated of the 2013 DFO estimate, and the 2019 and 2020 Baffinland estimates. Detailed results for Leg 2 are presented in Golder (2022e).

Given the ice conditions during the Leg 3 surveys (almost none), the low numbers and location of confirmed narwhal observations (east of Pond Inlet travelling toward Baffin Bay), and input from the community members who participated in the clearance aerial surveys, there was no concern regarding the risk of entrapment of narwhal caused by the Project at the end of the 2021 shipping season. Detailed results for Leg 3 are presented in Golder (2022e).

Results from the 2021 aerial survey indicate that: i) narwhal abundance in Eclipse Sound was statistically lower in 2021 than observed in previous years when aerial surveys were conducted

(i.e., 2013, 2016, 2019 and 2020), and ii) the combined narwhal abundance in Eclipse Sound and Admiralty Inlet was statistically higher in 2021 to what was observed in previous years (2013, 2019 and 2020). These results suggest a displacement or shift of a portion of the Eclipse Sound stock to the Admiralty Inlet summering ground during the summer of 2021. They also suggest there is potentially more summer movement between neighbouring summer stocks (i.e., Admiralty Inlet, Somerset Island, and/or East Baffin Island) than previously thought."

# Appendix B

QWB Submission to the NWMB

**SUBMISSION TO THE**

**NUNAVUT WILDLIFE MANAGEMENT BOARD (NWMB)**

**Regular Meeting No. RM 001-2022**

**FOR**

**Information: ☐** **Decision: ☒**

**Issue:** ***Establishment of an Inuit System of Narwhal Management in the Waters of Northern and Eastern Baffin Island, 2022***

**Background:**

*Assertion of Primacy of Inuit Systems of Wildlife Management Decisions in Nunavut*

In December 2020, the Qikiqtaaluk Wildlife Board (QWB) adopted the legal position to assert that the Nunavut Agreement, a constitutionally protected treaty between the Inuit of Nunavut and the Crown of Canada, intended to provide primacy to Inuit Systems of Wildlife Management with respect to decision-making processes and outcomes regarding wildlife and wildlife harvesting by Inuit. This primacy extends to Inuit Qaujimajatuqangit (IQ) because IQ is the basis for Inuit Systems of Wildlife Management. In this context, "primacy" refers to what comes first and remains most important. Inuit Systems of Wildlife Management are specifically recognized in sub-section 5.1.2(e) of the Nunavut Agreement. Several other sections of Article 5 of the Nunavut Agreement point out the special rights and roles that Inuit have in wildlife management and harvesting in Nunavut. Science and scientific systems of wildlife management are not specifically recognized or mentioned in Article 5 of the Nunavut Agreement.

More specifically, the QWB asserts that any wildlife management plan, recommendation or measure established or implemented by the NWMB or Fisheries and Oceans Canada (DFO) must give primacy to Inuit rights, Inuit Systems of Wildlife Management, and Inuit Qaujimajatuqangit. Such a view is supported by the Nunavut Agreement and the United Nations Declaration on the Rights of Indigenous Peoples.

*Summary of Applicable Inuit Qaujimajatuqangit about Narwhal in the Waters of Northern and Eastern Baffin Island*

In 2018, the QWB Executive and the Hunters and Trappers Organizations (HTOs) learned that DFO did not plan to review and revise the 2013 Integrated Fisheries Management Plan for Narwhal in the near future. As a result, the QWB Executive and HTOs began discussing improvements to narwhal management in the waters of Northern and Eastern Baffin Island (NEBI) based on Inuit Qaujimajatuqangit (IQ) and began developing the Inuit System of Narwhal Management, initially proposed to the NWMB in May 2020.

IQ about NEBI narwhal is far too extensive to describe fully here. IQ is orally transmitted among Inuit in every community, covering knowledge collected by many past generations to the current day across all waters that community members collectively and regularly travelled almost every day from the floe fledge in spring to the end of the fall migration of the narwhal. Harvesters, elders, youth, women and men all have roles in the IQ system and collectively share their knowledge within and between communities. The HTOs develop the best consensus-based decisions in keeping with IQ principles and practices, and Inuit Systems of Wildlife Management among affected Inuit communities, largely as Inuit have always done since time immemorial.

In January 2020 Eric Ootoovak, then Chairperson of the Mittimatalik HTO, told DFO scientists and managers repeatedly and emphatically that “there are no summer stocks” during a survey planning workshop in Winnipeg. Eric was referring to three hypothetical summer stocks delineated by DFO in the above-mentioned 2013 science-based management plan. According to IQ, the three summer stocks of narwhal do not actually exist in reality within the waters of NEBI!

In January 2020, DFO could not provide the needed evidence showing multi-year fidelity of narwhal to any one of the three hypothetical parts of NEBI waters. DFO offered no clear methods or plans to obtain the required information (C. Watt, DFO, Winnipeg, pers. com.). DFO’s telemetry data shows that narwhal may move from one area to other areas in the same open-water season in which they were tagged within and beyond NEBI waters.

At that 2020 workshop, delegates from all six HTOs agreed that DFO‘s 2013 hypothetical summer-stock management system was not supported by Inuit Qaujimajatuqangit, and unduly restricted harvesting by Inuit in contravention of sections 5.3.3 and 5.6.50 of the Nunavut Agreement.

Below are some conclusions about the narwhal in NEBI waters based on generations-old, up-to-date, peer-reviewed Inuit Qaujimajatuqangit:

- Narwhal move freely throughout the NEBI area (see Appendix A). Their distributions and abundances change across NEBI waters between years, showing that individual narwhal do not always return to the same specific areas within NEBI waters every year.
- Narwhal also move freely and widely from day to day, from week to week and from month to month in NEBI waters, and their local distributions and abundances change accordingly. Groups of narwhal are seen moving out of and into major inlets and sounds, and among various smaller fiords and bays, throughout the open-water period.
- In spring, narwhal arrive at various areas in NEBI waters at varying times each year, depending on the development of open water within variable patterns at the floe edges, leads in the ice in various areas, and ice break-up into summer. These patterns and their timing vary from year to year, and can affect the abundance and distributions of narwhal across NEBI waters into August and September.
- Throughout the open-water period, narwhal move as needed for their biological needs like birthing and mating, as well as in response to environmental factors like changing food concentrations, killer whales, and ships. Narwhal also probably move in response to factors largely unknown to humans.
- Underwater sounds are probably important factors that influence the real-world, real-time distributions and abundances of the narwhal because narwhal can hear other narwhal, other whales, predators, ships and other sources of sound across very long distances.
- Inuit manage their harvesting in real time as narwhal move throughout the open-water season because the movements, distributions and abundances of NEBI narwhal cannot be predicted accurately months in advance.

In the opinion of the QWB, the following proposed Inuit System of Narwhal Management for the waters of NEBI is based on strong evidence from generations of up-date IQ. It will enable Inuit to better manage their harvesting of NEBI narwhal, so they can effective conservation this very important species and resource.

Further, the QWB and affected HTOs conclude that the following proposed Inuit System of Narwhal Management for the waters of NEBI is strongly and legally supported by the Nunavut

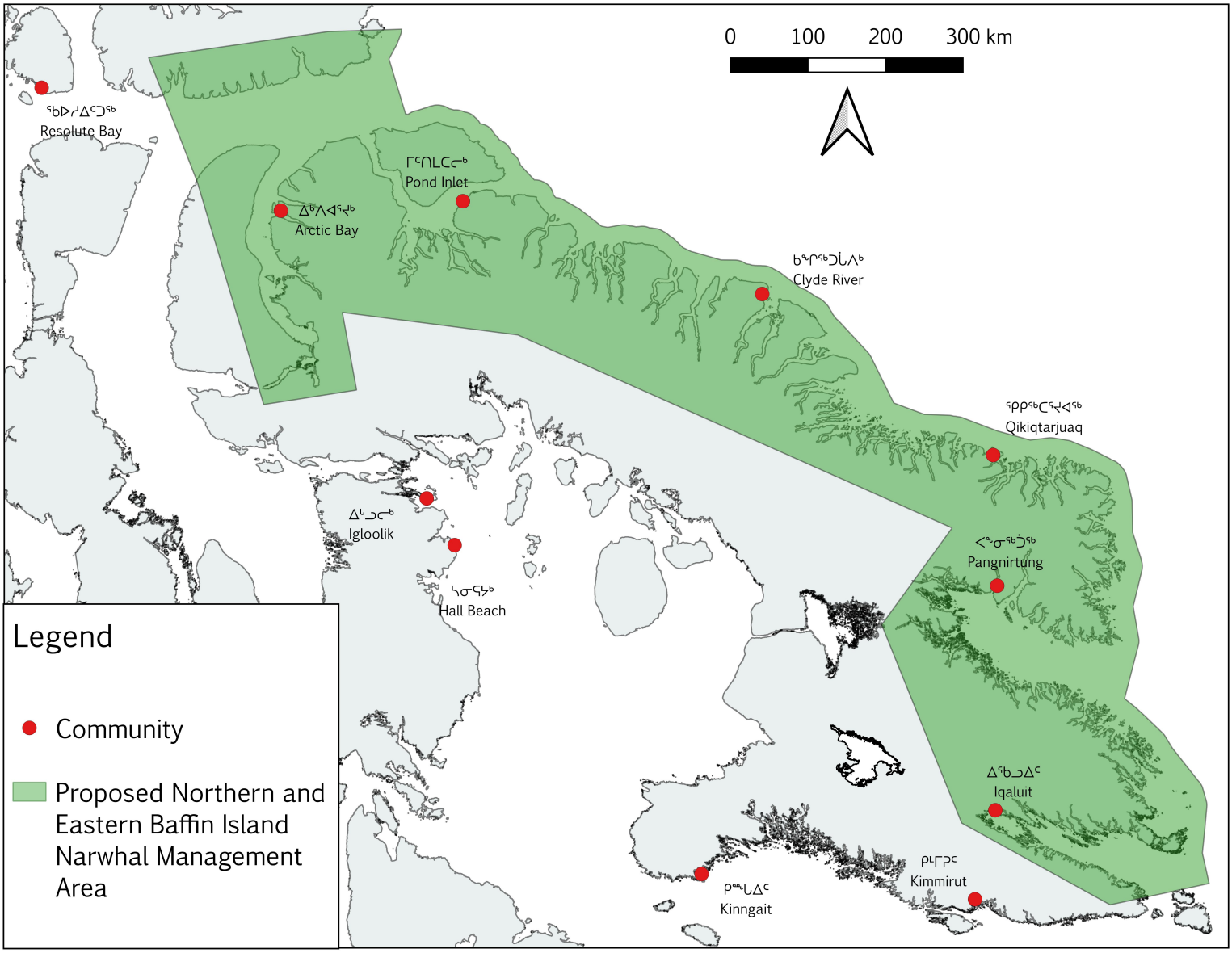
Agreement, including but not limited to the following sections: 5.1.2 (e), (g) and (h), 5.1.3 (a)(v) and (b) (iii) and (v), 5.1.4, 5.3.3 (a), 5.6.50, 5.7.3 and 5.7.6.

**Recommendations:**

1. The QWB and six affected HTOs of Arctic Bay, Pond Inlet, Clyde River, Qikiqtarjuaq, Pangnirtung and Iqaluit make the following recommendations for decision by the NWMB to implement an Inuit System of Narwhal Management in the waters of Northern and Eastern Baffin Island (NEBI) in accordance with sections 5.1.2 and 5.2.33 of the Nunavut Agreement:
    a) Delineate only one narwhal management unit in the waters of NEBI in accordance with Inuit Qaujimajatuqangit, as per the map and boundary points described in Appendix A;
    b) Amalgamate and total the current TAHs and BNLs for Admiralty Inlet, Eclipse Sound and East Baffin Island into a single annual TAH and BNL for narwhal in the proposed NEBI narwhal management unit of the six communities (see Appendix B);
    c) Continue the current annual inter-regional allocation of the BNL for Somerset Island narwhal to be harvested by Inuit in Arctic Bay (i.e., 51) and Pond Inlet (i.e., 53), to avoid impacts on allocations to other HTOs in the Kitikmeot and Qikiqtaaluk Regions;
    d) Establish only one annual season for management of narwhal in the waters of NEBI; and enable the issuance of “all-season” tags (valid from April 1 to March 31, inclusive) annually by DFO to the six affected HTOs;
    e) Enable the QWB to allocate the proposed NEBI BNLs among the six affected HTOs, and any future changes in the BNLs, among the six HTOs, based on IQ and other information, as per clauses 5.1.2(e) and (h), and 5.7.6. of the Nunavut Agreement;
    f) Continue to carry-forward unused allocated tags from one year to the next for each HTO;
    g) Support the QWB’s and HTOs’ jurisdictions to establish by-laws to govern how the BNLs, including carry-forward tags, may be allocated, how narwhal may be harvested, and generally how narwhal harvesting may be managed among the six HTOs under section 5.7.6 of the Nunavut Agreement, and locally near each of the six communities under section 5.7.3 of the Nunavut Agreement.
2. This proposal was developed by the QWB in close consultation with the six affected HTOs, and all six HTOs have supported the proposal. Therefore, the QWB waives the need for a Public Hearing by the NWMB, of course at the NWMB’s discretion.
3. To facilitate initial implementation of this proposal in 2022-23, the NWMB may prefer to approve interim implementation for a period of 1-5 years with subsequent reviews, at the NWMB’s discretion
4. The NWMB could encourage the creation of a forum whereby the QWB, the HTOs, DFO and other co-management partners may exchange information on IQ, science and harvest management strategies and methods related to NEBI narwhal on an as-needed basis, at the NWMB’s discretion.

**Prepared by:** Michael Ferguson, Qikiqtaaluk Wildlife Board

**Date prepared:** February 1, 2022


0
100
200
300 km
ᖃᐅᔨᓴᖅ
Resolute Bay
ᑎᑎᒪᒐᓪ
Pond Inlet
ᐃᖅᐱᐊᖅᓱᒃ
Arctic Bay
ᑲᖏᕐᖃᑐᒻᒪᖅ
Clyde River
ᖁᑭᕐᒥᑦᔪᐊᖅ
Qikiqtarjuaq
ᐃᓚᒋᓪ
Igloolik
ᓴᓂᕆᖅ
Hall Beach
ᐸᖏᓂᖅᑐᖅ
Pangnirtung
ᐃᖅᓗᐃᑦ
Iqaluit
ᑭᙵᐅᕐᖏᑦ
Kinngait
ᑭᒥᕈᑦ
Kimmirut
Legend
Community
Proposed Northern and Eastern Baffin Island Narwhal Management Area

ᐅᓗᓇᐃᖅᓯᕐᓂ 2.1. ᑭᖏᑦᑎᑦ ᓴᖅᑭᑕᐅᔪᒪᔪᑦ ᐅᐊᖅᓇᖏᓂᓂ ᐊᐦᒪ ᑲᓇᖅᓇᖏᓂᓂ ᖃᑭᖅᑕᒍᔭᕐᓂ ᐃᒪᖏᓂᓂ ᖃᐅᓚᖏᓐᓄᑦ ᒥᐊᓂᖅᓯᐅᑉᐳᓂᓚᓂᓗ, ᑲᖅᓇᐊᐦᓗ 2022

| ID | ᖃᐅᓚᖏᓐ ᓇᒻᖅᓂᖅᑎᑦ | ᓇᓗᓇᐃᔾᑎᖅᑐ | ᓄᓇᖅᐱᐊᒥ ᑐᑭᒧᑦ | ᓄᓇᖅᐱᐊᒥ ᓴᓂᒧᑦ |
|---|---|---|---|---|
| 1 | NEBI | 1 | -90 | 75 |
| 1 | NEBI | 2 | -81.8 | 75 |
| 1 | NEBI | 3* | -78.633 | 74.833 |
| 1 | NEBI | 4* | -64.267 | 61.833 |
| 1 | NEBI | 5 | -66.75 | 62.133 |
| 1 | NEBI | 6 | -69.416 | 63.75 |
| 1 | NEBI | 7 | -69.3 | 66.3 |
| 1 | NEBI | 8 | -66.167 | 67 |
| 1 | NEBI | 9 | -77.333 | 71 |
| 1 | NEBI | 10 | -83.467 | 71.733 |
| 1 | NEBI | 11 | -83.467 | 70.8 |
| 1 | NEBI | 12 | -86.85 | 70.8 |
| 1 | NEBI | 13 | -88.4 | 73.5 |

* ᓇᓗᓇᐃᖅᓯᔪᑎᓄᑦ ᐅᓴᐅᑎᖏᓂᑦ 3-ᒥᑦ 4-ᓗᑦ, ᑭᖏᑕᑭᖏᓂᑦ ᒪᓕᒃᓯᒪᔪᑦ ᓄᓇᕐᔪ ᓄᓇᕋᔭᑎᖏᓕ ᑭᖏᑕᕋᔭᑎᖏᓐᓂᒃ.

Table 2.1. Points for a Proposed Boundary of the Northern and Eastern Baffin Island Narwhal Management Area, January 2022

| ID | Stock Name | Point Number | Longitude | Latitude |
|---|---|---|---|---|
| 1 | NEBI | 1 | -90 | 75 |
| 1 | NEBI | 2 | -81.8 | 75 |
| 1 | NEBI | 3* | -78.583 | 74.833 |
| 1 | NEBI | 4* | -64.267 | 61.833 |
| 1 | NEBI | 5 | -66.75 | 62.133 |
| 1 | NEBI | 6 | -69.416 | 63.75 |
| 1 | NEBI | 7 | -69.3 | 66.3 |
| 1 | NEBI | 8 | -66.167 | 67 |
| 1 | NEBI | 9 | -77.333 | 71 |
| 1 | NEBI | 10 | -83.467 | 71.733 |
| 1 | NEBI | 11 | -83.467 | 70.8 |
| 1 | NEBI | 12 | -86.85 | 70.8 |
| 1 | NEBI | 13 | -88.4 | 73.5 |

* From Point Numbers 3 to 4, the proposed border follows the boundary of the Nunavut Settlement Area.

# Comments on DFO's Published Science Advice and Harvest Data:

## Reconciliation of Narwhal Management with Inuit

Michael A.D. Ferguson

Qikiqtaaluk Wildlife Board

# When Should Telemetry Studies and Surveys Happen? [1 of 4]

- DFO Science uses surveys to estimate narwhal populations, from which they then recommend Total Allowable Harvests (TAHs) to the NWMB and the Minister.
- Telemetry studies provide information about the diving behaviour of narwhal, in order to generalize estimates of narwhal at the surface to include the potential abundance of diving narwhal, and then estimate the whole population.
- Both types of studies impact the number of narwhal that Inuit may be allowed to harvest.

# When Should Telemetry Studies and Surveys Happen? [2 of 4]

- Because both surveys and telemetry studies directly impact Inuit harvesting, they should both be done during the same period of time.
- DFO reports state that July 24/25 – August 24 is the best time to do surveys.
- Watt and Hall (2018) wrote that July 24 – August 24 "represent[s] the residency time of narwhals in the summering region" (if residency occurs).
- It is logical that telemetry studies should be done during that same period.

# When Should Telemetry Studies and Surveys Happen? [3 of 4]

- If telemetry data does not cover at least half of the survey period, then the data would have little value for estimating population size and the TAH.
- In 2012, telemetry data from all 5 narwhal covered less than half of the survey period (19-38%).
- In 2016, all 5 more tagged narwhal again covered less than half of the survey period (0-22%).
- In 2018, both tagged narwhal again covered less than half of the survey period (22%).
- Telemetry data in these years has minimal value for determining Inuit harvest levels.

# When Should Telemetry Studies and Surveys Happen? [4 of 4]

- 2017 was a mixed bag!
- 7 tagged narwhal provided data for more than half of the survey period (65-81%).
- 2 tagged narwhal provided data for less than half of the survey period (32-42%).
- And 9 tagged narwhal did not provide any data for the survey period (0%).
- Diving telemetry data for estimating population size and TAH should be used when the data were collected during the survey period, ideally in the same year as each survey.

# Can Telemetry Data Really Detect Mixing of Narwhal between Areas?

- Not if they are tagged in only one part of one small management area, and in only one area in the same year!
- When narwhal mix, they move between any of the areas in any direction. The rate of mixing may not be equal in all directions. They do not do the same things every year.
- DFO has not tagged narwhal in all three areas each year, especially East Baffin, ignoring IQ!
- DFO has not tagged narwhal in all parts of any area in any year!

# Are Tagged Tremblay Sound Narwhal Representative of All Eclipse Sound Narwhal? [1 of 3]

- IQ tells us that narwhal are always moving during summer, including during July 24 – August 24. Survey and harvest data supports this (more later).
- In other words, IQ tells us that DFO's hypothesized narwhal summer residency period is **NOT** real!
- Inuit and their ancestors have been on Baffin Island for an estimated 3,500 years or more.
- Ferguson et al (1997, 1998) documented accurate and detailed recall by Inuit of information about caribou dating back 80-100 years.
- It is likely that Inuit knowledge about narwhal has similar accuracy, detail and longevity.

# Are Tagged Tremblay Sound Narwhal Representative of All Eclipse Sound Narwhal? [2 of 3]

- Is it likely that DFO Scientists in Winnipeg know true basic information about narwhal movements and distributions that Inuit have never heard of?
- As mentioned, IQ indicates that narwhal in different parts of Eclipse Sound (ES) tend to move in different directions, but not always.
- In 2017, DFO tagged only 7 out of perhaps 12,000 narwhal in ES for most of the survey period (i.e., 0.06%)! Can only 7 show behaviors of all 12,000?
- 7 at one site, compared to probably 1,000s of narwhal observed by Inuit across most of ES in 2017. Is Science or IQ more likely to be reliable?

# Are Tagged Tremblay Sound Narwhal Representative of All Eclipse Sound Narwhal? [3 of 3]

- None of the narwhal tagged during 2012 - 2018 were tagged in Eclipse Sound on or about July 24.
- Two tagged narwhal moved from the mouth of Navy Board Inlet into Admiralty Inlet in about 16 hours during August 7-8, 2017.
- Narwhal could move much farther in the 7 – 29 days before tagging during summer survey period.
- I suggest that not all narwhal tagged during 2012-2018 represent ES narwhal because DFO cannot know if any of tagged narwhal were in Eclipse Sound, Admiralty Inlet or East Baffin at the start of the summer survey period.

# Does Tagging Data or IQ Better Reflect the Years that Any Given TAH May Be in Place?

- Telemetry tags usually monitor narwhal movement for only part of a year, and very rarely for a full year or more.
- In January 2020, DFO offered no clear methods or plans to obtain the required information (C. Watt, DFO, pers. com.) to address multi-year fidelity or infidelity of narwhal to so-called summer stocks.
- During the same workshop in Winnipeg, Eric Ootoovak of Pond Inlet repeatedly told DFO staff that “summer stocks do not exit.”
- Eric, other HTO reps and the QWB initiated their first consultations with DFO in January 2020.

# More 2016 Eclipse Sound Survey Results

- Total Abundance Estimate: 12,000
- 2020 TAH recommendation: 117
- However, changes occurred during 2016 Summer Survey Period, based on Surface Estimates (below). Telemetry data exists from only one of 6 parts of ES. Abundance in that one area changed the least of four re-surveyed areas.

| August | Navy Board | Pond Inlet | Eclipse Sound | Milne Inlet | Tremblay Sound | Koluktoo Bay |
|---|---|---|---|---|---|---|
| 7-10 | 0 | 0 | 1,924 | 853 | 407 | 602 |
| 21 | ? | ? | 85 | 1,257 | 525 | 884 |
| Change | ? | ? | -96% | +47% | +29% | +47% |

# Do Such Changes within the Survey Period Occur Elsewhere? Based on IQ and Science, Yes!

## 2010 Survey Results for Admiralty Inlet

- Two repeated surveys with some differences in survey coverage.
- August 7-8, 2010 Estimate: 24,398
- August 10-11, 2010 Estimate: 13,729
- Change in only 4 days: -10,699 (-44%)
- Explanation: “sampling variation related to survey coverage, sea state and animal movement”
- TAH was based on the average: 233
- Change may have been real, or caused by survey methods.
- Such issues impact Inuit harvesting. How were QWB and the HTOs consulted? Did DFO reveal the change?

# Do Such Abundance Changes between Surveys Occur over Large Areas and between Years? Based on IQ and Science, Yes!

Lou Kamermans, Senior Director of Sustainable Development
Baffinland Iron Mines Corporation

Reference No. 1663724-285-TM-Rev1-48000
7 April 2021

**Table 2: Historical Abundance Estimates for Eclipse Sound and Admiralty Inlet Narwhal Summer Stocks**

| Stock | Year | Abundance | CV | 95% CI | Source |
|---|---|---|---|---|---|
| Eclipse Sound | 2013 | 10,489 | 0.24 | 6,342–17,347 | Doniol-Valcroze et al. 2015 |
| Eclipse Sound | 2016 | 12,039 | 0.23 | 7,768–18,660 | Marcoux et al. 2019 |
| Eclipse Sound | 2019 | 9,931 | 0.05 | 9,009–10,946 | Golder 2020 |
| Eclipse Sound | 2020 | 5,018 | 0.03 | 4,736 – 5,317 | Golder 2021a |
| Admiralty Inlet | 2013 | 35,043 | 0.42 | 14,188-86,553 | Doniol-Valcroze et al. 2015 |
| Admiralty Inlet | 2019 | 28,746 | 0.15 | 21,545-38,354 | Golder 2020 |
| Admiralty Inlet | 2020 | 31,026 | 0.14 | 23,406-41,126 | Golder 2021a |
| Eclipse & Admiralty | 2013 | 45,532 | 0.33 | 22,440–92,384 | Doniol-Valcroze et al. 2015 |
| Eclipse & Admiralty | 2019 | 38,771 | 0.12 | 30,667–49,016 | Golder 2020 |
| Eclipse & Admiralty | 2020 | 36,044 | 0.12 | 28,267–45,961 | Golder 2021a |

# Does the Resident Summer Stock Hypothesis Enable Consistent Summer Harvesting?

- If narwhal actually return to the same specific areas each summer, then Inuit should be able to find those places, and harvest consistent numbers of narwhal in those places each summer.
- Such a harvest strategy based on resident summer stocks should result in more consistent harvests during summer year after year compared to any other season for each community.
- There should be less variation in community harvest numbers between years during summer than during any other season.

# Do Annual Harvests Support the Summer Stock Hypothesis or Inuit Qaujimajatuqangit?

- NWMB and DFO manage Inuit narwhal harvesting, not narwhal movements and distributions.
- Somerset Island and Northern Hudson Bay narwhal are harvested mainly by 8-11 communities each, with RWOs allocating harvest among Inuit, and without any summer seasons.
- Admiralty Inlet, Eclipse Sound and East Baffin narwhal are harvested by mainly 1-2 communities each that have summer seasons and allocations to Inuit effectively imposed by DFO.
- Are NEBI narwhal really so very different from SI & NHB narwhal? Inuit KNOW that they are not!

# Seasons of NEBI Narwhal

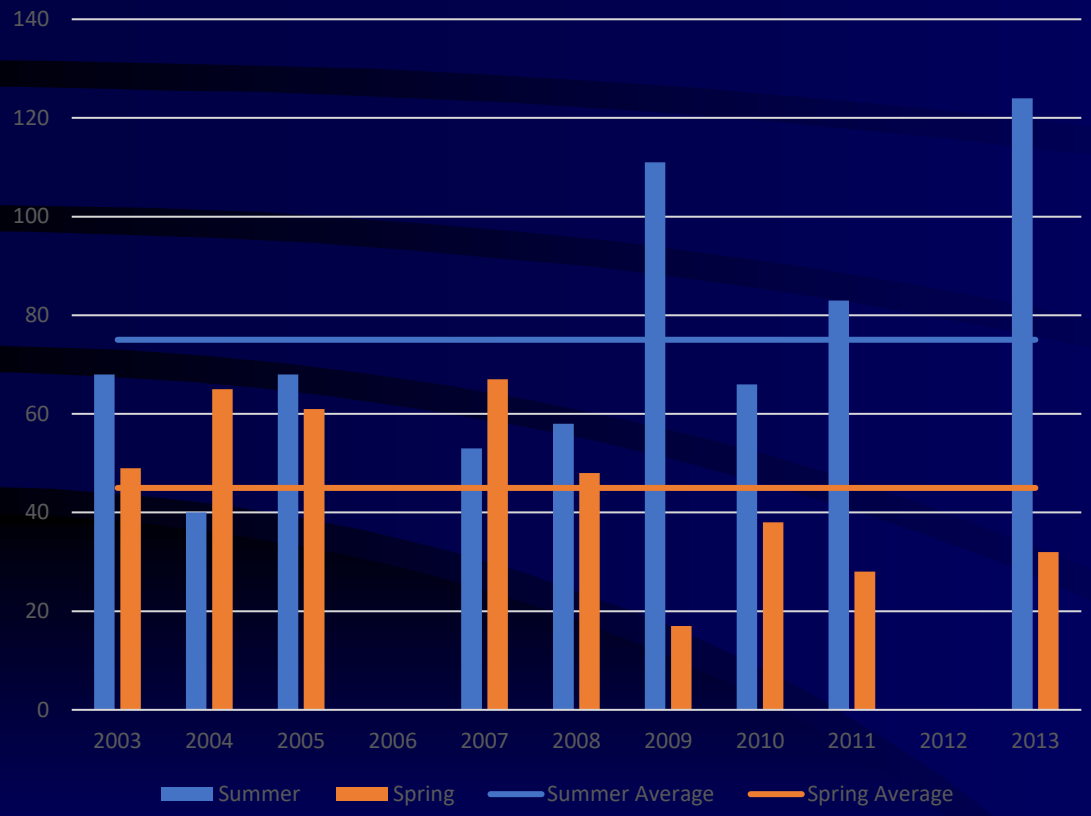
- Watt and Hall (2018) defined harvest seasons for narwhal. I went through the detailed harvest records for Arctic Bay, Pond Inlet, Clyde River and Qikiqtarjuaq from 2003 to 2013. I refined the dates for the spring and fall harvests, but I did not change DFO's summer dates.
- Spring: May 2 – July 23
- Summer: July 24 – August 24
- Fall: August 24 – November 4
- Qikiqtarjuaq and Clyde River usually started harvesting in July, with little harvesting in spring and summer. They harvested latest into the fall.

# Simple Hypothetical Example of Assessing Variation in Harvest Numbers between Seasons

| Season | Annual Seasonal Harvest | | | Average Seasonal Harvest | Coefficient of Variation |
|---|---|---|---|---|---|
| | 2030 | 2032 | 2033 | | |
| Summer | 39 | 41 | 40 | 40 | 2 |
| Spring | 70 | 5 | 45 | 40 | 67 |

- The Coefficient of Variation can tell us in which season harvests are most consistent, and in which season harvests differ most between years.
- In the above example, harvests would be very consistent in Summer, while harvests in Spring are over 30 x more variable than in Summer.

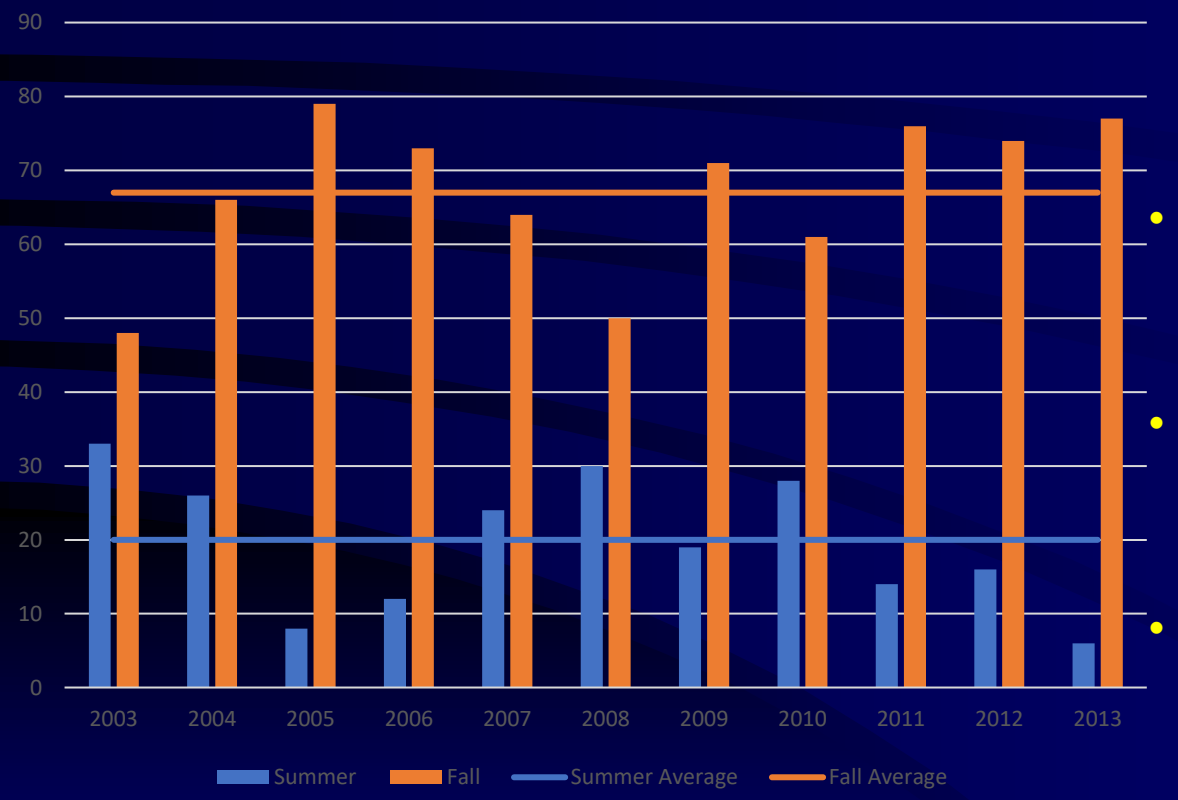
# Summer (blue) and Spring (orange) Harvests, 2003-2013 Arctic Bay




- Arctic Bay may not have had enough tags in summer in 2006 and 2012, and very rarely in fall.
- Coefficient of Variation was 34 in Summer, and 37 in Spring.
- Harvest Variation in Summer and Spring were similar.
- **No evidence in harvest data for greater residency of so-called summer stock.**

Data from: Watt, C.A. and Hall, P. 2018. Catch statistics for narwhal (*Monodon monoceros*) in Canada from 1970-2015. Can. Tech. Rep. Fish, Aquat. Sci. 3270: 290 p.

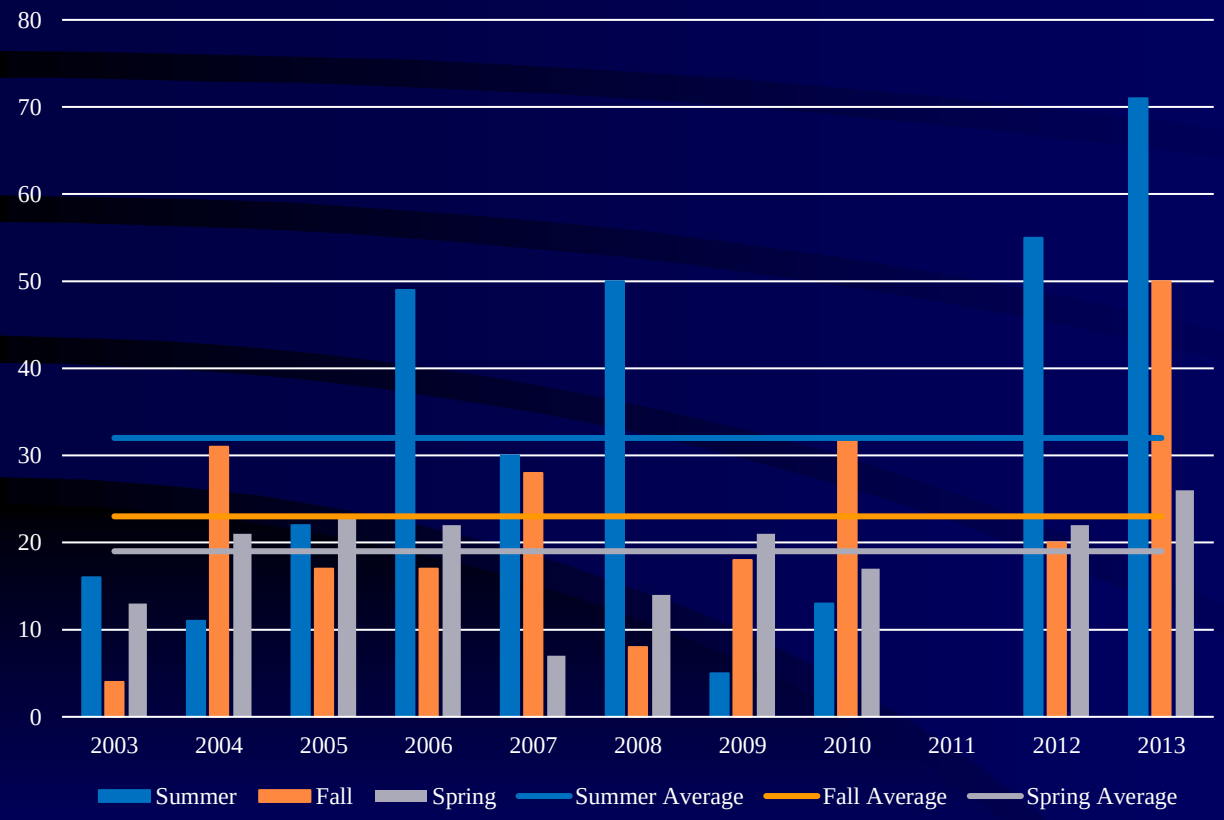
# Summer (blue) and Fall (orange) Harvests, 2003-2013 Qikiqtarjuaq




- Qikiqtarjuaq appeared to have enough tags in all years in summer and fall.
- Coefficient of Variation was 44 in Summer, and 15 in Fall.
- Harvest Variation in Summer about 3 x greater that in Fall.
- **No evidence in harvest data for residency of so-called summer stock.**

Data from: Watt, C.A. and Hall, P. 2018. Catch statistics for narwhal (*Monodon monoceros*) in Canada from 1970-2015. Can. Tech. Rep. Fish, Aquat. Sci. 3270: 290 p.

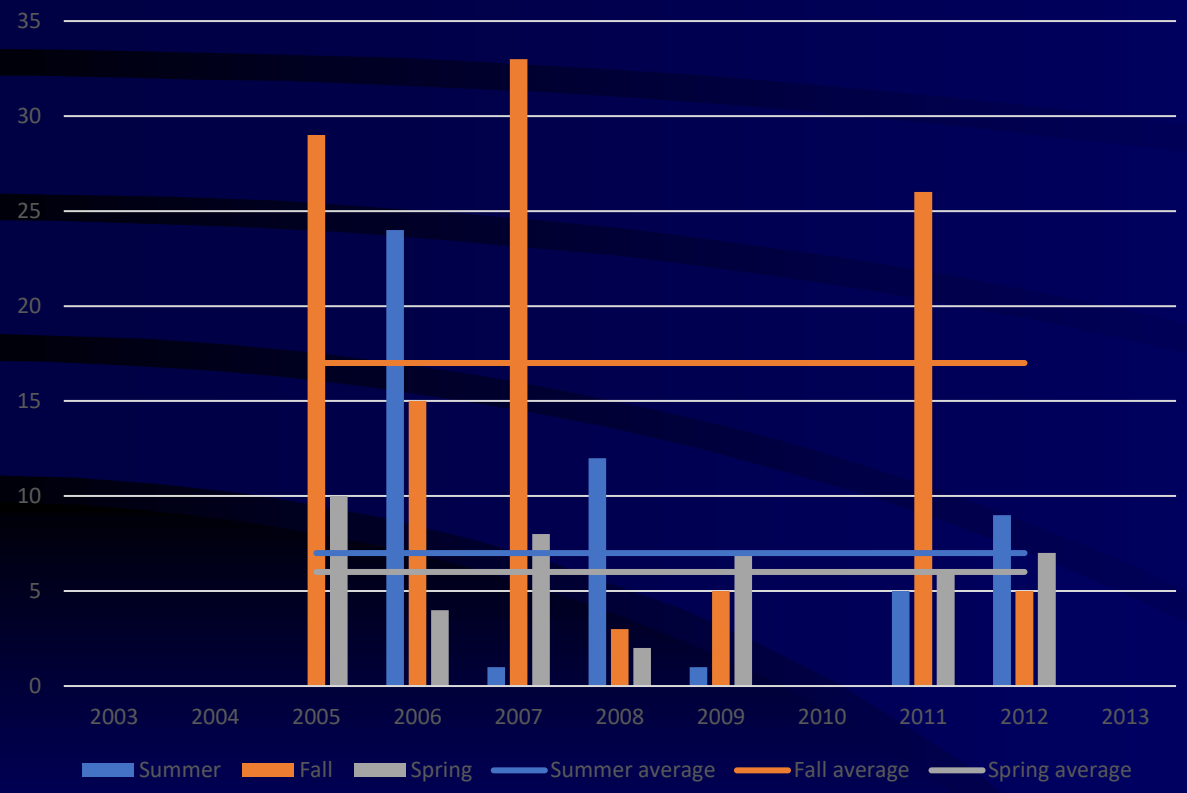
# Summer (blue), Fall (orange) and Spring (grey) Harvests, 2003-2013 Pond Inlet




- Pond Inlet may not have had enough tags in 2011, but usually had enough in all 3 seasons.
- Coefficient of Variation was 67 in Summer, 55 in Fall and 29 in Spring.
- Harvest Variation in Summer was greater than in both Fall and Spring.
- **No evidence in harvest data for residency of so-called summer stock.**

Data from: Watt, C.A. and Hall, P. 2018. Catch statistics for narwhal (*Monodon monoceros*) in Canada from 1970-2015. Can. Tech. Rep. Fish, Aquat. Sci. 3270: 290 p.

# Summer (blue), Fall (orange) and Spring (grey) Harvests, 2003-2013 Clyde River




- Clyde River may not have had enough tags in 2003, 2004, 2010 and 2013.
- Variation was 114 in Summer, 69 in Fall and 41 in Spring.
- Harvest Variation in Summer was greater than in both Fall and Spring.
- **No evidence in harvest data for residency of so-called summer stock.**

Data from: Watt, C.A. and Hall, P. 2018. Catch statistics for narwhal (*Monodon monoceros*) in Canada from 1970-2015. Can. Tech. Rep. Fish, Aquat. Sci. 3270: 290 p.

# “There are No Summer Stocks!”

- Summer management of harvesting is neither efficient nor effective for any of the 4 communities because of harvest variation in summer is as high or higher than other seasons.
- NEBI HTOs tried to make summer-stock harvest management work for 8 years, but just can’t!
- Eric Ootoovak told DFO several times in January 2020 that “there are no summer stocks”.
- The harvest data and surveys show that Inuit have been right! IQ is true, and Inuit Systems work!
- Will DFO reconcile with Inuit, and support Inuit Systems of NEBI narwhal management for at least a comparable period of 8 years, by May 2022?