

# 2023 Beluga Management Annual Review Meeting Report



Note: This report was prepared by staff of the NMRWB, from a meeting hosted by the NMRWB. However, the views expressed within are not intended to reflect those of the NMRWB nor any other meeting participants. This is an account of the views expressed during the meeting regardless of affiliation, as interpreted by NMRWB staff.

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## Executive Summary

An important piece of the beluga management framework is to conduct an annual review of management over the last year to assess its status and performance and to adjust for the following year. This annual review is generally conducted before the spring beluga hunt, with all co-management partners. The objectives of this meeting are to achieve a common understanding of 2022, to share new knowledge and to improve 2023.

The 2023 annual review took place in Kuujjuaraapik on March 30 and 31. The meeting was divided into 5 sections; 1. An overview of the 2021-2026 management framework, 2. A review of 2022, 3. The status, progress, and effectiveness of the 2021-2026 management system after the 2022 season, 4. The considerations, concerns, and suggestions for the future, and 5. Action planning: changes or adjustments needed. Each organization was given an opportunity to present topics under these five sections, which in turn were followed up with a discussion between all parties present.

A table of action items agreed upon by all parties during the meeting is included in section 5 of this report. The table divides the goals from the meeting into sub-goals and assigns corresponding actions to each organization to complete within the designated timeline.

## Attendance list

Organisation	Name	Position
NMRWB Members	Iola Metuq	Chairperson
	Salamiva Weetaltuk	Makivik Appointee
	Robert Moshenko	DFO Appointee
	Jean-Pierre L. Savard	ECCC Appointee
	Vallee Saunders	Makivik Appointee
	Isaac Masty	Cree Nation Government Appointee for the Joint Zone of Cree / Inuit Overlap Area
Absent Members	Harry Okpik	Makivik Appointee
	Jimmy Akavak	Government of Nunavut Appointee
NMRWB Staff	Tommy Palliser	Executive Director
	Mark Basterfield	Director of Wildlife Management
	Sarah Khan	Wildlife Biologist
	Frankie Jean-Gagnon	Wildlife Biologist
	Noah POV	Wildlife Liaison Officer (Zoom)
	Rynee Kokiapik	Community Research Coordinator
EMRWB Members	Peter Hale	ECCC Appointee
	Elijassie Kavik	Government of Nunavut Appointee
	Reggie Scipio	Grand Council of the Crees Appointee
	Felix Boulanger	Wildlife Biologist
	Stephanie Varty	Wildlife Biologist
	Angela Coxon (day 2)	Executive Director
RNUK	James May	President
	Billy Palliser	Vice-President
	Mikhaela Neelin	Executive Director
	Daniel Oovaut	Treasurer
	Charlie Angutinguak	Secretary
	Joy Aragootak	Wildlife Secretariat Manager
	Jordan Shields	Regional Project Coordinator
DFO	Felix Dionne	Coordinator Aboriginal Fisheries
	Caroline Sauve	Biologist
	Sarah Larochelle	Manager Quebec Region
	Martine Giangioppi	Arctic Region
CTA Chisasibi	Jason Bullfrog	Special Projects Coordinator
CTA Whapmagoostui	Melvin Masty	Local Administrator
KRG	Micheal Cameron	Uumajuit Warden Coordinator
	Salomon Masty	Uumajuit warden
	Qajaq Robinson	Legal Advisor
Makivvik	Laurie Beaupré	Assistant director for DEWR
ECCC	Mark Mills	Biologist and Indigenous liaison specialist

## 1. Overview of the 2021-2026 Management Framework

The 2021-2016 beluga management framework is built on shared goals and objectives of the co-management partners, with the intent to support local and regional conservation efforts of the EHB beluga in the Nunavik Marine Region with the least possible effect on Nunavik Inuit harvesting rights. More specifically, the Goals and objectives are to:

- **Reduce** reliance on Quota / Total Allowable Take as a tool.
- **Create** space for Nunavik Inuit to take back freedoms and livelihoods that were damaged by previous restrictions.
- **Maintain** a stable stock of Eastern Hudson Bay beluga.
- **Support** the RNUK and LNUK in developing and implementing alternative measures of management, enforcement, and accountability in response to overharvesting that is in line with Inuit laws, values and practices, in-line with a community led approach to management.

The current framework comprised five main components. Table 1 below provides details on those components.

**Table 1: Main components of the current management framework**

1. Hudson Strait Seasonal Fall Closures	<ul style="list-style-type: none"> <li>• September 1<sup>st</sup> to October 31<sup>st</sup></li> <li>• Local organizations can open the hunt after October 31<sup>st</sup></li> <li>• <b>A winter closure (December and January) added in the final variation of the decision was removed in 2022</b></li> </ul>
2. Total Allowed Take (TAT)	<ul style="list-style-type: none"> <li>• TAT within the Eastern Hudson Bay Arc Region</li> <li>• TAT applies during the period from May 1<sup>st</sup> to November 30<sup>th</sup></li> <li>• Allocation of the TAT among the LNUKs is done by the RNUK</li> </ul>
3. Closed Areas	<ul style="list-style-type: none"> <li>• Marralik area, Little Whale River and Nastapoka Estuaries</li> <li>• Estuary Hunt plan: Plan submitted to NMRWB for approval by the Board and then the Minister.               <ul style="list-style-type: none"> <li>• Marralik estuary opened to limited hunting:                   <ul style="list-style-type: none"> <li>○ 2021: 3 whales (2 harvested)</li> <li>○ 2022: 3 whales (2 harvested)</li> </ul> </li> </ul> </li> </ul>
4. Reporting and Sampling	<ul style="list-style-type: none"> <li>• Reporting to Uumajuit Wardens of all beluga harvested</li> <li>• Harvesters must take all steps necessary to collect <b>samples</b> from all beluga harvested</li> </ul>
5. Local Management and Hunt Plans	<p>The LNUKs have the authority to develop Local Management and Hunt Plans for their community:</p> <ul style="list-style-type: none"> <li>• Local hunt plans are being developed by LNUKs with the help of the RNUK</li> <li>• Marralik Hunt Camp in 2021, 2022, and likely 2023.</li> <li>• Long Island Hunting Trips/Camp for the last 2 years.</li> </ul>

Another important aspect of the beluga management framework is to conduct an annual review of the management over the last year to assess its status and performance, and to adjust for the following year. This annual review is generally conducted before the spring beluga hunt, with all co-management partners. The objectives of the current meeting are to achieve a common understanding of 2022, to share new knowledge and to improve 2023. The group consensus is that this meeting will **focus on implementation**.

**Desired outcomes for the 2023 beluga management annual review:**

- Common understanding of the 2022 beluga harvest and harvest management
- Sharing of any new knowledge gained
- Discussion and consensus on how to improve beluga management implementation in 2023
- Recommendations to the Boards for changes to the Management system  
⇒Focus on implementation
- Summary report of the meeting

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## Discussion Highlights

Several topics were discussed at the outset of the meeting, after the introductory presentation.

### 1) **Lack of report from 2022 beluga annual review:**

The report was a responsibility of the NMRWB and is an important part of this annual review process. The report was not done due to capacity issues and most of the meeting notes being lost, but a short 1–2-page summary report will be produced alongside this year's 2023 meeting report. Two recommendations had been made at the previous meeting and updates on them were important:

- I. A change in the Management Framework: Removal of the December/January closure of Hudson Strait. The 2022 annual review meeting made it clear that this closure was not desired by most parties for several reasons. **A Public Hearing was held on the issue, and the regulation was removed in early November of 2022.**
- II. A recommendation not to implement carryover of the TAT overharvest: The NMRWB would be providing a recommendation to DFO to not implement the carry-over of overharvest from 2021 to 2022 in the Hudson by Arc, based on the Management System being new and potentially not fully understood by harvesters. In 2021 twenty-seven beluga were harvested in the Arc, from a TAT of twenty. **This recommendation was provided, but the carry-over was still implemented.**

The point was made that the implementation, or not, of the TAT carry-over drastically changes the current image of compliance with the Management System. Not implementing the carry-over would have resulted in the full TAT of twenty beluga being available in 2022 instead of thirteen. The first year of the management system was an adjustment for hunters which led to an overharvest of 7 beluga in the first year. However, since then, communication of the

management plan to the communities has improved, and in 2022 there was a harvest of nineteen beluga (one below the TAT of twenty). With the carry-over from 2021, this is considered 6 beluga overharvested, whereas if the carryover had not been implemented, it would be recorded as one beluga underharvested. These are two very different images of compliance.

## **2) Supporting the three Arc communities**

The RNUK is working on compiling harvest data, organizing the construction of cabins on Long Island, and a beluga IK study.

## **3) Restriction on Beluga hunting directly impacts the hunters, their families, and the communities.**

The Inuit way of life is not getting passed on to the younger generations. Efforts are being made to continue the beluga harvest, such as the Long Island hunts but the current conditions of travel and staying on the island are dangerous. There is a need for cabins and freezers to protect the hunters and the meat from polar bears.

A better transportation method could also be considered for those from Inukjuak to travel to the Long Island Hunt Camp. An example could be, securing major equipment (canoes, outboards, gear) for hunters from Inukjuak to be stored securely in Kuujjuaraapik and have hunters fly into Kuujjuaraapik, passing over the Nastapoka River and Little Whale River Estuaries during the time of summer molting and fall migration, protecting the EHB and preventing any disturbance. This would decrease some of the hunting costs by having higher costs spent up-front. A good hunter management plan will be needed with co-community support.

## **2. Review of 2022**

### **a. DFO report**

#### **i. Harvest data from Uumajuit wardens**

The Uumajuit wardens play a major role in collecting and reporting harvest information that is directly needed for beluga management in Nunavik. They meet weekly to give harvest reports and are essential for tracking overall harvest, and the estimated EHB harvest.

### **Presentation summary:**

- A table summarizing the weekly harvest level could be circulated after the weekly warden meeting to track the progress of the harvest for the 2023-2024 season.
  - The table captures information about the time and location of the harvests and how many animals are harvested.
- There has been activity from visitors of other communities coming to Hudson Strait for hunting.
  - This usually starts during the month of May, with June and the end of November having the highest activity.



- There appears to be little to no harvest in December until the spring hunt begins.
- All harvests at Long Island are not accounted for in the quota.
- The cumulative EHB beluga total for the season is 73.4 whales.
  - Note: This number does not include the Belcher Islands (BEL) stock (see "ii. Harvest Sampling Genetic Results"). With the new genetic information indicating the presence of a BEL stock, and DFO combining the BEL and EHB stocks for management purposes (BEL-EHB), the number would increase the count to 112 whales taken from BEL-EHB.

### **Discussion highlights:**

#### **1) Supporting the wardens to accomplish their responsibilities:**

- I. The wardens need additional help when many hunters from other communities are all going to one community for a hunt, (for example – Quaqtq) especially for communities without a warden.
- II. The wardens are facing challenges that need to be addressed, including being blamed for quotas and receiving threats.
- III. The role of wardens is often misunderstood, although they are doing their best to improve the hunter’s understanding of their responsibilities. More information about their role and responsibilities needs to be communicated to the hunters and to the public.

#### **2) Inuit hunting practices:**

Inuit hunting practices are inherently sustainable; they need to be trusted more and should be better relied on in the management framework.

- I. Inuit should have more power to manage their hunts and resources.
- II. Some communities have a higher harvest in the fall and a lower harvest in the spring: this should be accounted for when analyzing the reported harvest.
- III. Concerns have been expressed about the decline in population despite the current and past quota system. This indicates that a quota-based management system may not efficiently protect beluga. Other outside factors such as harvests outside the NMR should also be monitored in the adjacent regions.

#### **ii. Harvest sampling genetic results**

##### **Presentation summary:**

- A total of 83 samples were received in 2022-2023, and 69 were successfully analyzed.
- The results indicate that 8 EHB belugas were caught in all regions.

- There is a 25% false negative rate, meaning that 1/4 of the samples may be incorrectly classified as non-EHB when they are EHB.
- Based on new genetic analysis, the area previously considered to be 100% EHB belugas is now considered a mix of the Eastern Hudson Bay beluga stock and the newly identified Belcher Island beluga stock.
- Genetics results indicate harvesting beluga in the Spring or in late November will help to avoid harvesting EHB belugas.
- The results are not perfect. New approaches are being developed to present the results differently next year.

### Discussion highlights:

- 1) **Accessibility of information:** The scientific information, including genetics, needs to be made more accessible to hunters and beneficiaries. DFO staff confirmed they are able to provide the information to anyone interested.
- 2) **Sampling kits:** A few issues were raised concerning the sampling kits.
  - i. Some communities need additional sampling kits. DFO and Makivvik have shared responsibilities regarding the preparation and distribution of the kits amongst the communities.
  - ii. The amount given to hunters for providing samples is too low. Participants expressed concerns about the **low pay given** to hunters. The kit with all samples collected is worth 135\$. It was explained that the program was designed to collect tissue from animals already being harvested, and the amount is intended only to compensate for the "add-on" effort involved in taking samples, not to compensate the overall hunting effort.
  - iii. The tooth removal is challenging and takes time. Part of the sampling procedure is to collect a tooth, and hunters spend a lot of time and effort into collecting it. It was reiterated that getting the tooth is an extra job for the hunters, who already spend thousands of dollars hunting. However, the entire tooth is necessary to accurately age the whale. Two options were pointed out if aging the whale remains relevant to the program: 1) back in the 1990s, the whole jaw was collected and sent for analysis. This could be reinstated. 2) Collecting the tooth could be marked as optional.

- iv. An improvement in sampling is needed overall and a comprehensive strategy should be considered on how to improve the sampling with efforts from all co-management partners.
- v. Water sampling when conditions to harvest beluga are too dangerous. A suggestion was made to sample water after hundreds of belugas pass by when conditions are too hazardous to harvest whales. A method to collect water samples is to use an **eDNA kit**. The eDNA process involves taking water samples in areas where animals are or were previously present and then amplifying any mitochondrial DNA collected to determine which population they belong to.

3) **New information - BEL-EHB stock:** This new piece of information on a new BEL-EHB stock led to several conversations and concerns.

Context: The genetic tools initially used by DFO did not provide sufficient information to identify a Belcher Islands stock (BEL). What was previously considered entirely EHB belugas now appears to be both BEL and EHB, and DFO is considering this a "BEL-EHB" management unit. In past analysis, DFO used short sections of DNA to analyze the samples. With improved genetic tools, it is now possible to sequence much longer sections of DNA. It was recently discovered that the Belcher Island beluga do not have the same genetic makeup as the EHB belugas.

The question whether BEL-EHB was a genetic or administrative definition was raised. BEL-EHB is a management unit comprising two distinct stocks with potential overlap. It is defined as a management unit given that there is no data to outline the distribution. DFO has overseen conducting aerial surveys, and the EHB area has been covered during the aerial surveys. The samples collected come from beluga harvested at the shore on the coast of Nunavik or on the Belchers islands, but no one harvests in the middle of the bay. Therefore, delineating the distribution of each stock is impossible without installing GPS tags on whales.

Concerns: Concerns were expressed about sampling, the new genetic results, and the gaps it creates in the information brought in front of co-management partners. This has affected not only the beluga stocks but also Inuit harvesting rights. The legitimacy of the management measures is questionable due to these mistakes.

Science is the pursuit of truth with new results always being added to previous data, but this is a mistake on a management level. **Inuit in Sanikiluaq are harvesting the same management unit as EHB instead of the WHB beluga as previously thought.** As a co-management group, it is not up to a partner to decide what to do with the information, but changes need to be communicated to all partners.

## Relevant Questions:

### **How does DFO know that Sanikiluaq people do not harvest EHB Beluga?**

Most of the samples received from Sanikiluaq were not EHB. However, DFO understands that Sanikiluaq surely harvests some EHB.

### **Where does Sanikiluaq harvest Beluga? Is it in the overlapping area between EHB and WHB? Is there a way to know if BEL beluga are more related to EHB or James Bay beluga? Is there a way to know if they migrate towards James Bay or along those routes?**

Mitochondrial DNA cannot conclude if there is interbreeding within the populations.

### **Is there an intention from DFO to have another designatable unit (DU) for BEL since it is now considered two populations from the same stock?**

This is a subject of debate for the peer review meeting, and the EHB DU is defined as having a geographic

range that matches the BEL geographic range.

### **The genetic reanalysis was presented at the most recent National Marine Mammal Peer Review Committee Meeting (Feb. 2023) for the first time. Is the information going to be equally presented to Nunavut so they can start thinking about what it means on their side?**

This has not yet been presented. It was planned for a community tour but had to be cancelled due to logistic reasons. The discussion focused on genetics, specifically mitochondrial DNA, transferred from the mother to the calf. Nuclear DNA, transferred from both parents, has not been analyzed yet although they are working on ways to get this data.

### **Of the beluga harvested before June 15<sup>th</sup> how many were harvested as part of the Kuujjuaraapik pilot project?**

DFO staff did not have that information.

- 4) **Science and Inuit Knowledge:** The importance of combining scientific knowledge with Inuit knowledge in managing beluga populations, and without claiming that one side holds the truth, was emphasized. There is a need to work together towards equal sharing opportunities and passing on traditions and values to future generations.

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“EHB beluga are declining, even with a quota system to protect them, while beluga in other areas are growing.”

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## **b. RNUK report**

### **Presentation summary:**

- **Community Hunt Plans**
  - Lost the staff member in charge of the hunt plans which has caused a delay in finalizing the plans.
  - A booklet was created for LNUK managers; this will help them create hunt plans.
- **Beluga Sampling Poster**
  - New staff have posters in their offices for a better understanding of the sampling process.
- **Freezer Purchases**
  - Freezers have been purchased for Inukjuak, Umiujaq, Kangirsuk and Aupaluk. One other community already has one.
  - Funded by Makivvik.
- **Beluga Working Group**
  - A forum for discussion and providing recommendations to NMRWB.
  - Writing up terms of reference for everyone to agree on. Still in the drafting phase and going through it with partners.
- **EHB, Kovik and Immilik committees**
  - Working on the TAT allocation for the next season: allocation amongst 3 communities is a very hard task.
  - TAT committees were formed by LNUK members, and the RNUK was getting ideas from these committees regarding a better way to allocate amongst the three communities.

**Note:** It was requested that the sub-committee be properly called “Kuuvik”.

## **c. Uumajuit Warden report**

### **Presentation summary:**

- Joint patrols with DFO officers have resumed after COVID.
- Weekly conference calls with DFO, and NMRWB staff in attendance.
- Filled a warden position in Quaqtac after difficulties conducting interviews during COVID.
- Vacant position in Aupaluk and Kuujuaq.
- The program has improved. There is a lot still to be done and this will take time.

### Discussion highlights:

- 1) **Warden program's enforcement capabilities:** An Uumajuit warden is a multifunctional position with limited enforcement power but close collaboration with DFO officers. Wardens can, and are encouraged to go to the hunters while they are on the hunting grounds.  
\* It was however emphasized that if the wardens feel threatened, they are not the police and must keep themselves safe. When the Uumajuit wardens' staff are threatened, they contact the police. Charges can be pressed against individuals making death threats to the wardens. It is taking time to improve these situations due to the reputation of the warden's position in the past.
- 2) **Sampling responsibilities:** This is not part of the warden's mandate. Still, they work with organizations to distribute sampling kits in some communities.
- 3) **Resources:** The lack of resources provided to Nunavik wardens was emphasized. Nunavik employees should have access to the materials necessary to perform their jobs and not have to use their own vehicles.

### d. NMRWB report

#### Presentation summary:

- Last year, Unaaq's Men Association sent six regular canoes to Long Island for 3 weeks with \$70,000.
  - One canoe was destroyed, due to hunters hunting in areas they are not familiar with and in long, open distances that are dangerous for the hunters themselves to travel in the freighter canoes they can only afford.
- RNUK is working on this project and will receive support from the Board.
- There are plans to send people to Long Island again this year in September or October.
- Another project in Northeast Hudson Bay is being planned to benefit the community of Inukjuak.
  - The plan is to harvest just north of Inukjuak, and North of the East Hudson Bay Arc zone in May and June.
  - They will continue working on this project with RNUK and raise more funds. The goal is to aim for at least 30 belugas for Inukjuak.

## Discussion highlights:

- 1) **The number of beluga harvested at Long Island:** hunters hoped to get as many as ninety belugas when the hunting trip was initially organized. However, despite the abundance of beluga seen there, hunting in open murky water in high winds is difficult and dangerous. It would be difficult to harvest that many [ninety] without hunting on an industrial scale. The area is filled with other species, like Killer Whales, which also limits beluga harvesting.
- 2) **Timing of the hunt:** Mid-September to the beginning of October was suggested as a better time to begin the hunt.

## 3. Status, progress, and effectiveness of the 2021-2026 Beluga management system after the 2022 season

### a. DFO

**Table 2:** Summary of the key components and results for each of the sixteen measures in the management plan.

Measure 1: 5-year plan	
Key components	Results
<ul style="list-style-type: none"> <li>• 5-year plan</li> </ul>	<ul style="list-style-type: none"> <li>• Implemented</li> </ul> <p>2022-2023 is the second year</p>
Measure 2: Management objective of a stable stock of 3400 individuals for the EHB population	
Key components	Results
<ul style="list-style-type: none"> <li>• Objective of a stable population size of 3400 individuals after 5 years</li> <li>• To be maintained by a maximum removal of 58 EHB per year from Science Advice.</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of 2022-2023 have been 73 EHB</li> <li>• Second season with a level of harvest above 58 EHB</li> <li>• Suggestion to develop the timetable and action plan to review the management objective in light of new information to be available.</li> </ul>
Measure 3: Season cycle	
Key components	Results
<ul style="list-style-type: none"> <li>• From Feb 1<sup>st</sup> to Jan. 31<sup>st</sup> the year after.</li> </ul>	<ul style="list-style-type: none"> <li>• Implemented with a Variation order and Notice to hunters.</li> <li>• Consultation on the Notice's content.</li> </ul>
Measure 4: Annual Review	
Key components	Results
<ul style="list-style-type: none"> <li>• Season-end assessment of the previous season based on review of measures and input from co-management partners:               <ul style="list-style-type: none"> <li>• Science information;</li> <li>• DFO, Fisheries management harvest information;</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Implemented: held March 30-31, 2023 in Kuujjuaraapik</li> <li>• Will integrate consideration from DFO that Threshold have been surpassed (Notification made December 4<sup>th</sup>, 2022, compare to November 29<sup>th</sup>, 2021 last year).</li> </ul>

<ul style="list-style-type: none"> <li>• RNUK reports;</li> <li>• KRG Uumajuit Wardens;</li> <li>• Makivvik (NRC) sampling information</li> </ul>	<ul style="list-style-type: none"> <li>• Using the Week by Week 2022 document, we can notice that again this season, a one week total takes causes the threshold to be surpassed.</li> </ul>
<b>Measure 5: Annual closure of Hudson Strait from Sept 1 to October 31</b>	
<b>Key components</b>	<b>Results</b>
<ul style="list-style-type: none"> <li>• Based on Traditional Knowledge of separate migrating groups of Belugas</li> <li>• The hunt would be allowed when all EHB migrations are completed.</li> <li>• LNUK or a delegation thereof will report to the local Uumajuit warden when the EHB beluga have migrated past their community and will ensure that this information is communicated to harvesters.</li> <li>• LNUK by-laws as established under 5.7.2 and 5.7.11 of the NILCA</li> </ul>	<ul style="list-style-type: none"> <li>• Implemented by variation order and notice to hunters</li> <li>• Consultation on the notice</li> <li>• With sufficient information on the notice of closure, the opening has not been advertised by another notice, allowing for an announcement from the LNUK/RNUK as intended in Decisions.</li> <li>• No Protest hunt to report</li> <li>• As indicated on the Week-by-Week document, the migration of all stocks seems to happen later than November 1<sup>st</sup>.</li> <li>• According to Wardens reports, the November 1<sup>st</sup> date is the one hunters are looking for to organize their Fall hunt.</li> <li>• The LNUK determined date doesn't seem to reach the Wardens.</li> </ul>
<b>Measure 6: An annual TAT of 20 beluga in EHB arc zone from May 1 to November 30</b>	
<b>Key components</b>	<b>Results</b>
<ul style="list-style-type: none"> <li>• Reported harvest to the Uumajuit Wardens are compiled and the area is closed when the TAT is reached.</li> <li>• In any given year, the portion of the unused TAT carried over cannot exceed 10 beluga and all harvest surpassing the TAT are deducted from next season TAT.</li> </ul>	<ul style="list-style-type: none"> <li>• An EHB LNUKs committee made allocations during Spring of 2022 RNUK-AGM</li> <li>• DFO not informed of the sharing agreement.</li> <li>• Breakdown of harvest (Overview document) Kuujjuaraapik: 3, Inukjuak: 5 and Umiujaq: 11. Total of 19 on a deducted number of 12.</li> <li>• Application of the deduction for 2023 season: 13 belugas are available.</li> </ul>
<b>Measure 7: Estuary hunt plans management</b>	
<b>Key components</b>	<b>Results</b>
<ul style="list-style-type: none"> <li>• Communities presents a hunt plan to seek Board's approval for a limited hunt.</li> <li>• A form to fill by applicants have been prepared by the Board</li> <li>• Plans in the EHB area must consider that harvest will be deducted from the area TAT and that both EMRWB and NMRWB will have to approve them through joint-decisions process.</li> </ul>	<ul style="list-style-type: none"> <li>• Time period approved for the Mucalic estuary hunt plan was until August 31<sup>st</sup>, 2021.</li> <li>• Important delays for the approval of the plan within the NMRWB and DFO process in 2022.</li> <li>• Approval sequence within DFO have been streamlined by delegation of authority to the RDG to approve plans.</li> <li>• No submission for Little Whale River plans.</li> <li>• 2 harvests made in the Mucalic project and other mode of sampling made as well.</li> </ul>
<b>Science results:</b> <ul style="list-style-type: none"> <li>- Peer review has been held, but the publication is not available at this time for results of the 2022 Ungava Bay survey data. No population estimate is available at this time.</li> </ul>	



<ul style="list-style-type: none"> <li>- Analysis of samples presented in December of 2022.</li> </ul> <p><b>Management considerations:</b></p> <ul style="list-style-type: none"> <li>- Regarding Mucalic estuary hunt plans, it appears important for DFO that the Board’s decision is made with consideration of the soon-to-come published population estimate, and the genetic results of the sampling.</li> <li>- DFO considers that approval process still needs to improve to get decisions in a timely manner, and to offer occasions for sharing information between involved partners.</li> </ul>
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**Measure 8: 100% sampling and reporting**

Key components	Results
<p><i>Reporting:</i></p> <ul style="list-style-type: none"> <li>• Using various source of information from hunters, Uumajuit Wardens reports on harvest made in and by their communities</li> </ul> <p><i>Sampling:</i></p> <ul style="list-style-type: none"> <li>○ Sampling relies on the distribution of samples kits and guidance from NRC in all communities.</li> <li>○ The samples are collected into one package delivered to DFO at the end of the season.</li> </ul>	<p>Reports of 384 harvests.</p> <p>From 384 harvests, NRC received 94 samples:</p> <ul style="list-style-type: none"> <li>• 24.5% sampling rate (24% in 2021)</li> <li>• 2022: 94 samples analyzed</li> <li>• 2021: 88 samples analyzed</li> <li>• 2020: 27 samples analyzed (NRC closed)</li> <li>• 2019: 164 samples analyzed</li> </ul> <p>2022 Initiatives:</p> <ul style="list-style-type: none"> <li>• RNUK poster prepared and shared with all logos</li> <li>• RNUK-NMRWB-Makivik meetings on improving sampling efforts</li> <li>• DFO-Makivik achieved a fall delivery of samples (first of two) allowing for an analysis shared at the December NMRWB meeting.</li> <li>• DFO Science to make community visits to discuss local sampling issues, train on sampling</li> </ul>

**Measure 9: Local planning**

Key components	Results
<ul style="list-style-type: none"> <li>• This role of local actors such as the LNUKs is indicated in the NILCA.</li> <li>• Board decision invites and leaves an important space to local planning, that includes the production of bylaws and local plans by LNUKs.</li> </ul>	<ul style="list-style-type: none"> <li>• Board staff and RNUK have organized training for LNUK to stimulate local planning.</li> <li>• DFO Communications made in line with the intent to value the local role of LNUK: No notice to hunters made for opening the hunt in Hudson Strait in late fall to value their lead.</li> <li>• Co-management partners participated in developing tools supporting local planning like the Hunting Guide, maps and posters.</li> <li>• DFO is not aware of By-Laws made by LNUK and would like to suggest a sharing of information perspective (workshops and other practices).</li> </ul>

**Measure 10: Hunting practices regulations**

Key components	Results
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<b>Provisions of Marine Mammals Regulations maintained as Non quota limitations (NQL):</b>	
<ul style="list-style-type: none"> <li>• No person shall disturb a beluga whale, except when beluga hunting;</li> <li>• No person shall attempt to kill a beluga except in a manner that is designed to kill it quickly;</li> <li>• No person shall hunt for beluga without having on hand the equipment necessary to retrieve it;</li> <li>• No person who kills, or wounds, a beluga shall fail to make a reasonable effort to retrieve it without delay, nor shall he abandon or discard it;</li> <li>• No person who kills a beluga shall waste any edible part of it;</li> <li>• No person shall kill a beluga calf (dark in color and less than 2 m in length), or an adult beluga that is accompanied by a calf;</li> </ul>	
<b>NQLs established by NMRWB and EMRWB</b>	
<i>Consideration for Struck and Lost</i>	<ul style="list-style-type: none"> <li>• 18 Struck and lost reported (+10 compared to 2021)</li> </ul>
<i>Netting</i> <ul style="list-style-type: none"> <li>• Nets shall be removed when not under constant surveillance</li> <li>• Any calves, and females with calves, that have been netted shall be removed from nets whenever it is safe to do so</li> </ul>	<ul style="list-style-type: none"> <li>• No report of harvests made in seal nets</li> <li>• 2 mentions of harvest of a sick animal: <ul style="list-style-type: none"> <li>○ Animals were not counted, nor sampled</li> <li>○ The photos analyzed in 2 days indicated a molting animal, therefore safe to consume</li> <li>○ Suggestion to develop best practices</li> </ul> </li> </ul>
<b>Measure 11: Hunting zones</b>	
<b>Key components</b>	<b>Results</b>
<ul style="list-style-type: none"> <li>• The hunting zones have stayed the same since 2014.</li> </ul>	<ul style="list-style-type: none"> <li>• Newly made maps have been produced with the support of the Avataq institute to get Inuktitut place names of borderline locations.</li> <li>• Criticisms of the Hudson Strait boundaries were heard during public hearings, but these may be better addressed by examining the timing of closure from the West and East end of Hudson Strait Zone.</li> <li>• The Hudson Bay Arc northern boundary needs better input from TK. The boundary is solely based on a simple scientific latitude without proper Inuit input. WHB have been harvested south of the boundary, which was believed to be 100% EHB.</li> </ul>
<b>Measure 12: Harvest threshold</b>	
<b>Key components</b>	<b>Results</b>
<ul style="list-style-type: none"> <li>• From management decisions, the threshold is linked to the upper limit of EHB harvest that maintain a stable stock of 3400 belugas: 58 EHB in total in 2021.</li> </ul>	<ul style="list-style-type: none"> <li>• The threshold was reached in one week by an important harvest End of November: <ul style="list-style-type: none"> <li>○ Complete compilation was made in January of 2023. Total EHB harvest is 73 out of 384 harvests.</li> <li>○ Suggestion to develop the timetable and action plan to review the management objective in light of new information to be available.</li> </ul> </li> <li>• Recent scientific information suggests there is a need for a review of the Threshold, the management objective and zone proportions of EHB to ensure a stable EHB stock.</li> </ul>

<b>Measure 13: Winter closure of HS zone: December 1 to January 31 the year after</b>	
<b>Key components</b>	<b>Results</b>
<ul style="list-style-type: none"> <li>Implemented by Variation order and notice to inform the hunters.</li> <li>Withdrawal of the measure by an accepted decision October 28<sup>th</sup>, 2022.</li> </ul>	<ul style="list-style-type: none"> <li>To deal with possible entrapment situations, DFO suggested to RNUK to develop an entrapment protocol. RNUK preferred to work on it with Makivvik first, and DFO shared examples from Arctic region.</li> <li>Entrapment situation remains of interest and could benefit from a specific protocol (sampling and coordination).</li> <li>No harvest reported after December 1<sup>st</sup>, 2021 and 2022.</li> </ul>
<b>Along with the removal of the measure, Minister letter requested new measures</b>	
<p>Notable suggestions of new measures:</p> <ul style="list-style-type: none"> <li>Public hearings process proposals</li> <li>Minister's letter proposals</li> <li>LNUKs local management proposals</li> </ul>	<ul style="list-style-type: none"> <li>In order to favor a greater capacity for all partners, jointly or in their respective roles, DFO suggests that the partners explore through dedicated workshops a joint effort to share on wildlife management practices. For example, by inviting university scientist, other departments experts for other species, indigenous knowledge holders, etc.</li> </ul>
<p><b>Examples of measures</b></p> <p>Within NMRWB questions during Public Hearings process</p> <ul style="list-style-type: none"> <li>- Entrapment protocol</li> <li>- Increase the number of informed hunters and Nunavik resident and beneficiaries</li> </ul> <p>Within RNUK submission during Public Hearings</p> <ul style="list-style-type: none"> <li>- Closures, but with flexible ways to adjust to local environmental and migration conditions</li> <li>- Entrapment protocol – including local decision level for timely decisions</li> </ul> <p>Within DFO submission during Public Hearings</p> <ul style="list-style-type: none"> <li>- Hunting days limit</li> <li>- Limits on area or sub areas</li> <li>- Mandatory hunting gears and techniques, like the harpoon first rule</li> <li>- Daily limit of harvest for one hunter or family group</li> <li>- Season harvest limit for one hunter</li> <li>- Delaying the opening of seasons to favor a maximal dilution of EHB presence</li> <li>- Limits on the number of boats that harvest together</li> <li>- Limits to the takes made from a single group of belugas</li> <li>- Fall closure in NEHB zone to protect the migration passing through this key area</li> <li>- Limit to the engine size to reduce noise disturbance.</li> <li>- Split, modify or other changes to existing zones</li> </ul> <p>Other suggestions:</p> <ul style="list-style-type: none"> <li>- Expanding the number of tools, guides, information available to LNUKs, Hunters, partners.</li> <li>- The conduct of seal hunt in the Atlantic indicates a higher level of Struck &amp; Lost under bad weather conditions. Best hunting practices could refer to this type of factual information.</li> <li>- In order to favor a greater capacity for all partners, jointly or in their respective roles, DFO suggests that the partners explore through dedicated workshops a joint effort to share on wildlife management practices. For example, by inviting university scientist, other departments experts for other species, indigenous knowledge holders, etc.</li> </ul>	

Measure 14: Boards decision process	
Key components	Results
<ul style="list-style-type: none"> <li>• Season-end assessment of previous season</li> <li>• Consideration for improvements</li> <li>• Assessment of the proper way to address and achieve improvements</li> <li>• Definition of a process to respond new science information.</li> </ul>	<ul style="list-style-type: none"> <li>• The harvest results of an estimated 73 EHB surpasses the DFO Science advice for a stable stock of 58 EHB.</li> <li>• A reduction in EHB removals is needed to address the pessimistic science outlook.</li> </ul>

### Discussion highlights:

- 1) **Decisions sent to the Minister:** Prior to the Minister's final decision, it is important to work together as co-management partners through as many steps as possible. If decisions can be made by partners together, then it will be easier to get the decisions approved by the Minister.
- 2) **Teeth optional for sampling:** Only 24% of the harvested belugas were sampled. If hunters are informed that they can send samples without teeth, then more samples might be obtained this fall.
- 3) **Commercial shipping noise and beluga behavior:** Concerns were raised about commercial shipping noise and its impact on beluga. It was observed that a ship pulling up its anchor many kilometers away caused a group of belugas to swim away so fast that hunters couldn't harpoon them in time. Although very little can be done about commercial shipping, it is worth mentioning that it does have an impact. There are multiple reasons for changes in beluga behavior, such as swimming further offshore and faster than usual, which are not solely caused by Inuit hunters.
- 4) **Measure 7 (estuary hunt plans management):** If RNUK is asked to wait for the hunt plan approval again this year, Makivvik wondered whether DFO would acknowledge that these delays in estuary hunt plan approvals were induced by DFO .
- 5) **Measure 10 (hunting practices regulations):** Makivvik proposed that collaboration with the wildlife disease specialist at the NRC would be beneficial since this work is already ongoing (monitoring of sick animals). Their biologist received funding to streamline how they work with disease and wildlife with the hunters. Their work could be presented to the Board.
- 6) **Struck and Lost numbers:** there was a question about how Struck and Lost (S&L) numbers were collected. The Uumajuit wardens stated that there was a protocol for wardens to report struck and lost, and the hunters were more comfortable reporting now.
- 7) **Observations from Marralik:** It is important to highlight that the first year of the camp yielded a sighting of many whales, but only two were caught. The subsequent year was different, and two whales were caught despite being allocated three. Inuit observations need to be taken into consideration by DFO when estimating populations; Aerial surveys are not enough. An aerial survey two years ago, when numbers were high, would have shown something completely different. Unfortunately, the survey was postponed to this year when the ice impacted the harvest and the beluga whales summering in Ungava Bay.

It would be unfortunate for the Minister to disregard the board's decision when Inuit knowledge suggests that it was a poor year for a survey to be conducted.

## b. NMRWB

**Table 3:** Summary of the pros and cons for the main components of the management plan.

TAT System	
<p><b>Pros:</b></p> <ul style="list-style-type: none"> <li>On paper, harvest in the east Hudson Bay arc has been reasonably close to the conservation goal of 20/year.</li> </ul>	<p><b>Cons:</b></p> <ul style="list-style-type: none"> <li>TAT causes multiple hardships (likely discussed at length elsewhere).</li> <li>Shifting baselines – With evolving understanding of the genetics and stock structures, the TAT advice shifts, and consistency is lost.</li> <li>Questionable whether a TAT actually limits hunting.</li> </ul>
Closed Season (Early Fall)	
<p><b>Pros:</b></p> <ul style="list-style-type: none"> <li>Seems to be well respected by hunters.</li> <li>In theory, seems to be an effective way of reducing EHB harvest during migration.</li> </ul>	<p><b>Cons:</b></p> <ul style="list-style-type: none"> <li>The intention that LNUKs open the hunt when the EHB have passed may be lost in communication, and the hunt is simply starting Nov 1<sup>st</sup>.</li> <li>If the hunt is simply being opened November 1<sup>st</sup>, it may not be effectively limiting EHB harvest.</li> </ul>
Community-Level Management	
<p><b>Pros:</b></p> <ul style="list-style-type: none"> <li>Highly preferred as a management method.</li> <li>Buy-in indicates it is a solution for long term success.</li> <li>Good opportunity for co-management partnerships.</li> </ul>	<p><b>Cons:</b></p> <ul style="list-style-type: none"> <li>Some LNUKs don't see the purpose, or think there is no need, with no TAT.</li> <li>Communication of the intention can be difficult.</li> <li>It can be hard to determine (or enact) measures which will help protect EHB at the local level.</li> </ul>
Estuary Hunt Plans	
<p><b>Pros:</b></p> <ul style="list-style-type: none"> <li>Providing a means to access the estuaries for the purpose of beluga hunts.</li> <li>Has been a key part of providing space for the Marralik project.</li> <li>Leading to information filling a major knowledge gap in Marralik.</li> <li>Transmitting Inuit values and traditions to younger generations.</li> </ul>	<p><b>Cons:</b></p> <ul style="list-style-type: none"> <li>Communities in the east Hudson Bay Arc see less purpose since their hunt is still limited by a TAT.</li> <li>Hunt plan application can be seen as onerous.</li> <li>Requirements of hunt plans seen as excessive by some.</li> </ul>
100% Reporting, Sampling Whenever Possible	
<p><b>Pros:</b></p> <ul style="list-style-type: none"> <li>Reporting program through Uumajuit wardens continues to be effective.</li> </ul>	<p><b>Cons:</b></p> <ul style="list-style-type: none"> <li>Sampling requirements may be unrealistic both for hunters and for science.</li> <li>100% sampling is probably not actually important.</li> </ul>

	Sampling to fill information gaps is likely more important.
<b>Overall</b>	
<p><b>Pros:</b></p> <ul style="list-style-type: none"> <li>• Appreciation of lack of TAT in most of Nunavik.</li> <li>• EHB Harvest level dropped in 2022 for the first time since 2016.</li> <li>• Harvest levels have followed the NMRWB predictions and within what we considered realistic objectives.</li> <li>• Continues to appear to be the best long-term solution.</li> </ul>	<p><b>Cons:</b></p> <ul style="list-style-type: none"> <li>• TAT in the east Hudson Bay arc receives high opposition and is felt to be unfair.</li> <li>• The first year of the management system continued the upward trend set in the previous 5 years.</li> <li>• Not likely to be able to respond to an urgent need to limit EHB harvest.</li> </ul>

### Discussion highlights:

- 1) **Need for beluga research:** more research is suggested for beluga, including their diet, health and migration patterns.
- 2) **Community-level management:** November 1st is a tight timeline for communities like Ivujivik, as the beluga migration has started by the opening date. The next community, Kangiqsujuaq, has mostly opportunistic hunting since they don't go out specifically to hunt beluga. Quaqtaq sees the big migration come later in the month. Concerns were expressed about opening dates, as it may be too late for northeastern Hudson Bay (NEHB) communities. Mid-October would be a more reasonable time for hunters to catch what they need and go home before the dangerous ice freeze up in November. The migration occurs later now and the opening dates in the management plan need to be adjusted accordingly.
- 3) **Inuit harvesting practices:** DFO's numbers show that hunters are not harvesting at a maximum level. Not all hunters go out during migration, and they heed elders' advice to not hunt the first groups that pass. The bigger migrating stock (WHB), passes later and that is when more hunters are out. People wait for better opportunities to catch beluga to feed their families. It is important for management partners to visit the communities to understand the reality of Inuit lives rather than false perceptions of them harvesting all the beluga.
- 4) **Self-determination:** During the current management plan, EHB harvest will continue to decline as Inuit better understand the management needs. There is concern about people in offices in the south having more decision-making power; this makes Inuit uncomfortable. Communities need proper information about the details and tools to understand the management plan better in order to move towards Inuit-led management and overall cooperation.
  - a. The Hudson Bay Arc Boundary needs to be changed, to have TK input as well as more scientific sampling to assess where better to place the boundary.

- b. The Long Island Hunt Camp and Hunter Support Plan will also go a long way towards supporting the community needs. Strategies could be a combination of harvesting more in the Long Island as well as cooperation with some of the communities in the HS, during the lower concentration period of the Spring/Summer, to support community needs of the Hudson Bay communities. Kuujjuaraapik has closer access to Long Island, and having no quota until June 15 can be better exercised to support their needs. The communities of Umiujaq and Inukjuak are the highest risk hunters, therefore, better strategies are needed to not only protect the EHB but to better support the hunters and not leave them to hunt without the same level of consideration and support as the EHB.

## 4. Considerations, Concerns, and Suggestions for the Future

### a. DFO

#### Presentation summary:

- Data from last year's science advisory report (SAR) is available online.
- The current objective of the management plan: maintain a 50% probability of 3,400 EHB belugas over 5-10 years but there is no harvest level that would attain this goal, now that DFO has switched to considering a combination of BEL-EHB for management purposes.
- The current recommendation is 0-20 beluga per year to attain the management objective in 5 years. To reach it in 10 years, the TAT is set at 20 BEL-EHB beluga per year.

#### Discussion highlights:

- 1) **Alternatives to current research methods:** there were inquiries about possible changes to current methods; i) conducting aerial surveys in the fall instead of the summer, around Ivujivik and Digges Island, ii) collecting blood instead of tissue for sampling, iii) GPS trackers on belugas in estuaries, and iv) collecting pieces of fin or skin instead of blubber and teeth. Additionally, there was a suggestion to install cameras or devices underwater for ice monitoring in collaboration with researchers, in a way that does not interfere with hunting.
- 2) **Recommended harvest for Nunavik and Nunavut:** the recommended harvest level is for the BEL-EHB stock, which includes everyone who harvests from that stock. There is a concern that Sanikiluaq is not included in the management plan, and it was stated that Nunavut should be involved in decision-making. Nunavut is harvesting the same whales without participating in the same management system. The neighbouring Nunavut community located in Eastern Hudson Bay can harvest more than the three Nunavik communities in the arc combined, which leads to noncompliance with the plan. **Involving**



**Nunavut in these discussions and the management plan will be another crucial step in the future.**

- 3) **BEL-EHB distinction:** in the future, the proportion from each population using the sampling data will be presented rather than just identifying them as BEL-EHB. It was mentioned that the majority of Belcher Island beluga are harvested in the winter indicating that some may stay to winter in the area or have different migration patterns than the EHB beluga. The model with BEL-EHB that was presented includes all harvests from Sanikiluaq.
- 4) **Impacts of mudslide:** concerns were raised about the massive mudslide in Little Whale River last fall. There were questions regarding the impacts it may have had on the estuary. There were many debris and trees floating out in the bay, and the colour of the water has changed since then. Trees from the mudslide were found in Ivujivik. This was directed to DFO to see if studies can be done to look into the impacts of the mudslide on the beluga and the environment. DFO staff mentioned that there was no study planned at this time and that the MFFP would need data on the conditions before the mudslide; otherwise, it would be difficult to compare.

## **b. Makivvik**

### **i. Future of the harvest sampling program**

#### **Presentation summary:**

- The harvest sampling program aims to obtain knowledge about the beluga population.
  - Makivvik is responsible for this program.
- The hunters fill out forms when they go out hunting, and the samples are sent to the NRC for parts of the analysis and for payment (135\$ for full sample and form filled).
  - The teeth are analyzed at the research center in Kuujjuaq.
- Last year, 94 sampling kits were returned.
  - More communities provided samples compared to previous years.
- The need to improve the sampling was mentioned by the Minister, and to focus on 100% sampling of the harvest.
- **Creating a new database including all sampling data accessible – in progress:** A consultant was hired with Makivvik's funds to read through all the data, organize and create one new and solid database, and to suggest ways of improving the sampling program. Here are the highlights of the work done:
  - Database contains information coming from the following samples: close to 2,000 samples from Hudson Strait, 82 from northeast Hudson Bay, almost 500 from eastern Hudson Bay, 100 from Long Island, and 34 from James Bay.



- Since 1992, 1/3 of the harvested belugas are sampled, and some years it can go as high as 55%.
- Missing information in data received from DFO: the different databases cannot be merged together in one unique database because it contains incomplete information. There are concerns on the use of this information and the genetics data to inform management.
- A full report is available on request.
- **The gaps in beluga management need to be identified to figure out where the investment in time and effort need to be.**
  - Questions this this group need to ask themselves: what are the differences in sampling between communities? How to focus on communities where less samples are provided? Where are the gaps? What are the needs? What information do we actually need from the DNA? Should we increase the price of the samples? Where to put effort and resources to improve sampling?
  - DFO needs to work with co-management partners to answer those questions.
  - Efficient time investment: if the kits were all sent to the research center, it was estimated that about 80-100 days (half of an employee's time) would be needed to analyze all the teeth. The technician would spend a lot of time on this and not be able to work on the many other projects they have. Is the information coming from the tooth justifying this investment?
  - Makivvik is responsible for preparing the sampling kits, sending them to the communities, paying the hunters, receiving back, and sorting the samples, and doing parts of the analysis at the research center in Kuujjuaq. Other organizations need to acknowledge Makivvik's role in the sampling program, avoid overstepping responsibilities, and be careful of the relationship between each other.
  - There is discouragement from organization regarding the lack of communication. Makivvik has a large role in the sampling program, as the hunters do in getting the samples, but they can't get analysed information from DFO when they ask for it.
  - In order to improve the sampling, the relationship between co-management partners need to change.
- **Makivvik has been investing money into supporting hunters: almost 2 million to support hunts over the last two years.** Most of the hunts were for beluga.
  - Makivvik has not refused any requests from the hunters for any projects.
  - Funds are provided and received quickly, it usually takes a week or two to get the funding for a hunt.

### Discussion highlights:

- 1) **Makivvik consultant:** the current database from the consultant's work consists of 3,000 samples and is a good resource. It is suggested that further exploration of the existing data should be conducted. It should be noted that there is a report available for reference, albeit as a working document and not publicly accessible. It is recommended that efforts be focused on reviewing and improving this report before generating additional reports. The document is available to everyone at this meeting.
- 2) **Efforts to increase sampling and gather more data:** the RNUK and Makivvik are working hard to get funding and resources to acquire samples. They emphasized the importance of food security and mentioned that they want to see the number of samples go up.  
It was suggested that DFO should analyze the knowledge gaps in science, and work with Makivvik and the RNUK to improve the sampling program. Another suggestion was the use of satellite tagging to gather beluga distribution data. Makivvik expressed commitment to work on the issue with their research staff.
- 3) **Meeting with Makivvik to maximize resources:** one objective of this meeting could be to plan and coordinate projects in a more efficient manner. This could include having planning meetings to identify types of projects (e.g. construction projects), set the time for operation (e.g. specific months to organize charters) and find external professional support if needed.

### c. RNUK

#### Presentation and corresponding discussion:

- The RNUK has secured funding for a harvest monitoring coordinator and is getting vehicles for that position.
- They are communicating the importance of sampling to the LNUKs.
- They suggest that a one-size-fits-all approach to seasonal closure doesn't work for all communities
  - Exception made for early-mid October in the NEHB zone since the bay is filled with ice in November.
- It was suggested that the use of a crossbow for biopsy sampling be re-evaluated as it was too powerful and could cause harm. Specifically, the dart may not be harmful, but the impact from the float may be painful for the animal. They suggested looking at alternative methods before committing to the program.
  - **Question:** could a .22 rifle be used instead? This will need to be tested first. DFO agreed to discuss and find ways to improve the methodology.
  - **Request:** more training on darting; increase the visibility of darts; make easier the retrievability of darts from murky and rough water.

- The RNUK mentioned the need for more information on the migration of BEL-EHB whales.
  - DFO suggested tagging methods without netting and showed an example of smaller GPS devices that temporarily lodge into whale blubber, but the RNUK was against using this method in the estuaries.
- The RNUK highlighted that it was difficult to allocate the number of beluga whales to be caught this year. Especially since they were given an odd number to divide between communities. The RNUK mentioned a call with the three EHB communities to discuss how to deal with only 13 belugas and the conflict that arises from it.
  - **Suggestion:** equally split the remaining 13 belugas to avoid conflict.
  - **Concern:** some communities exceed their allocated number, not leaving enough for the other communities under the quota.

#### d. Uumajuit wardens

##### Presentation and corresponding discussion:

- The Uumajuit team is working hard to gather information about the harvest, and they are trying to come up with fresh ideas to improve their program.
  - **Suggestion:** having harvest limit breakdowns for each community.
- They have had issues with double reporting.
  - **An example:** in Ivujivik last year, one warden had to deal with hunters from eight communities, which was overwhelming.
    - **Suggestion:** let the wardens decide whether to report for the community where the hunt happened or their home community, and the Board can help with communications to avoid double reporting.

#### e. NMRWB

**Table 4:** Summary of the considerations and suggestions presented by the NMRWB for each component of the management plan that has been brought forward during the meeting.

Components of the management plan	Summary
Information: Sampling	<ul style="list-style-type: none"> <li>• Need to determine what exactly needs to be improved:               <ul style="list-style-type: none"> <li>○ Simply <u>more samples</u> might not be efficient</li> <li>○ <u>Where</u> and <u>When</u> samples are needed should be discussed</li> </ul> </li> <li>i.e.: Target seasons and areas where the least information is available.</li> </ul>
Information: Population Estimates	<ul style="list-style-type: none"> <li>• The most recent aerial survey estimate is a</li> </ul>

	<ul style="list-style-type: none"> <li>big drop - why? <ul style="list-style-type: none"> <li>○ A true drop? Under-estimate? Previous estimates were high?</li> </ul> </li> <li>● Another survey as soon as possible (2024?) should provide needed clarity</li> </ul>
<p><b>Information: Inuit Knowledge and stewardship</b></p>	<ul style="list-style-type: none"> <li>● There is a lack of documented Inuit Knowledge on EHB beluga in general.</li> <li>● Documentation of knowledge and stewardship practices is the most usable by the Board for decision-making.</li> <li>● How do we ensure the Inuit Knowledge most relevant to the NMRWB is available <ul style="list-style-type: none"> <li>○ For these review meetings</li> <li>○ For decision-making</li> </ul> </li> </ul>
<p><b>Information: Population Modeling</b></p>	<ul style="list-style-type: none"> <li>● Can the model be altered to allow inputs from other sources? For example: <ul style="list-style-type: none"> <li>○ Inuit Knowledge reports</li> <li>○ SIKU information</li> <li>○ Other qualitative or quantitative sources</li> </ul> </li> <li>● Recent work on polar bears has used this type of modeling</li> </ul>
<p><b>Information: Beluga Health</b></p>	<ul style="list-style-type: none"> <li>● Much work is done on beluga populations, but little work is done in Nunavik regarding disease, parasites, etc.</li> <li>● There is a very strong DFO + community program on beluga in the western arctic. <ul style="list-style-type: none"> <li>○ Is there appetite for such a program in Nunavik?</li> </ul> </li> <li>● Perhaps as part of DFO's summer 2023 work?</li> </ul>
<p><b>Information: Co-produced Knowledge</b></p>	<ul style="list-style-type: none"> <li>● The best type of information for Co-management decisions</li> <li>● Instead of looking at Science and Indigenous Knowledge, the two methods are woven together to achieve <b><u>Co-Produced Knowledge</u></b>.</li> <li>● There are many examples <ul style="list-style-type: none"> <li>○ Hudson Strait Pilot project, which led</li> </ul> </li> </ul>

	<p>very quickly to management changes.</p> <ul style="list-style-type: none"> <li>○ Scientific methods responding to questions identified through IK.</li> <li>● What could be done to achieve this in beluga research?</li> </ul>
<p>Ungava Bay Stock</p>	<ul style="list-style-type: none"> <li>● <b>Excellent</b> information and outcomes from the Mucalic camp</li> </ul> <p><u>Considerations:</u></p> <ul style="list-style-type: none"> <li>● Using only harvest samples: <ul style="list-style-type: none"> <li>○ Many years to get enough samples to determine genetically if there is evidence of a distinct stock</li> </ul> </li> <li>● Is biopsy sampling a possibility without adding burden to the already full program? <ul style="list-style-type: none"> <li>○ Trained individuals visit the camp, not necessarily part of the camp.</li> </ul> </li> </ul>
<p>EHB Conservation</p>	<p>What to do if it becomes clear the EHB need <b>urgent protection</b>?</p> <ul style="list-style-type: none"> <li>● NMRWB has limited options <ul style="list-style-type: none"> <li>○ Expanded Total Allowable Take does not seem justifiable:</li> <li>○ What other tools could be used? <ul style="list-style-type: none"> <li>▪ Expanded closed seasons?</li> </ul> </li> </ul> </li> <li>● Are there viable <u>Implementation</u> options? i.e. within the current management framework <ul style="list-style-type: none"> <li>○ Voluntary closures</li> <li>○ Voluntary quotas</li> </ul> </li> </ul>
<p>Consideration of Scale</p>	<ul style="list-style-type: none"> <li>● We consider management and conservation of beluga based on <b><u>Stock</u></b>. This is how it was done prior to the existence of the NMR/EMR wildlife boards.</li> <li>● There could be value in considering whether it makes more sense to protect at a different scale.</li> <li>● Something to consider – <b><u>management of the Breeding Population</u></b> instead of stock.</li> </ul> <p>Advantages:</p>

	<ul style="list-style-type: none"> <li>○ Better localization for Inuit to implement “their own management”</li> <li>○ System less confounded by movement or abandonment of estuaries</li> <li>○ Built in Inuit-led risk management</li> </ul> <p>Possible disadvantages</p> <ul style="list-style-type: none"> <li>○ Perception that stocks are being “abandoned”</li> <li>○ Arguably higher risk of localized extinctions</li> </ul> <p>Overall, protection of EHB Stocks would become a matter of <u>communication with users</u>, instead of regulation.</p>
<p>Consideration of Other regions</p>	<p><b><u>Sanikiluaq – Issue with the separation of the management systems</u></b></p> <ul style="list-style-type: none"> <li>● This issue would be dealt with by necessity if management moved to the population level.</li> </ul>

### Discussion highlights:

- 1) **Inuit Qaujimagatuqangit:** using Inuit knowledge is crucial and cannot just be a token gesture. If it is mentioned but not fully integrated, it is not useful.
- 2) **Managing by breeding population instead of stock:** The regulatory decisions would happen at a different scale. Managing at the population level would come with some challenges. It could be perceived as an abandonment of protecting the stocks. It could also lead to complexity in working with other jurisdictions. However, the scale of management would be more at the community level for stocks. The NMRWB, EMRWB and Nunavut Wildlife Management Board are working on a coordinated process for polar bears which could help inform how to achieve population-level management for beluga.
- 3) **Reliability of harvest numbers from Sanikiluaq:** there may have been better reporting in Nunavik, due to the warden program, compared to Sanikiluaq and the representation of harvest numbers may be misleading.
- 4) **Questioning the beluga population estimates:** declining species may just be following their natural movement and abundance cycles. Elders believe that caribou and beluga decline and return in higher abundance but noted that noise pollution from DFO planes and killer whales might be disturbing them. Concerns were raised about the accuracy of the aerial surveys and there was a suggestion to incorporate Indigenous knowledge and the impact of shipping into the models on beluga populations.
- 5) **Furthering beluga research:** suggestion for studies on noise impacting the reproduction cycles of beluga and the impacts of changing water temperatures. The University of Laval was suggested as a partner for marine research.

- 6) **Carryover of the 5 non-EHB beluga:** five beluga harvested in Inukjuak on May 30th counted against the quota but were sampled and analyzed, and none of them were EHB. It was suggested that the EHB had not arrived in that area yet, but it still counted towards the TAT. The RNUK suggested that the five whales be put back in the TAT to bring it up to eighteen, as none of them were designated as EHB whales.
- 7) **Margin of error in genetic analysis:** there is a 25% margin of error in the genetic analysis and DFO indicated that the method would be changed because of this. However, Makivvik suggested that the format be kept the same for future analysis for the sake of consistency.
- 8) **Importance of collaborating on Inuit stewardship:** it is important to ensure that the communities understand the Board's role and collaboration with co-management partners is necessary to achieve this, and make it clear that stewardship is the key to success in the current management system. The board is committed to advancing Inuit stewardship. These discussions are not simply about conserving beluga populations, this management system affects the lives of Inuit across Nunavik, and they should also be prioritized.

## 5. Action planning: Changes or Adjustments Needed

**Table 5:** Summary of the overall goals, sub-goals and their associated actions. Each action is assigned a lead and a timeline

Goals	Sub-goals	Actions	Lead	Timeline
Communication and understanding of the results and discussion of this meeting	—	Make sure to write, finalize and send out a meeting report in a reasonable time after the meeting.	NMRWB staff	Summer 2023
		Resend the meeting report prior to the next annual review	NMRWB Staff	Feb 2024
Beluga Management systems developed for and by Indigenous rights holders, which also fit within the mandates of the Wildlife	Fill in knowledge gaps or answer questions about beluga	IK study in the arc communities	RNUK	2023-2024
		Aerial survey	DFO	ASAP
		Continue to pursue a better understanding of genetics <ul style="list-style-type: none"> <li>● Genetic analysis of stocks and populations through sampling programs, and re-</li> </ul>	Primary: DFO 2nd: Makivvik and RNUK	TBD

Management Boards	organize the program as needed			
	Communicate sampling program practicality <ul style="list-style-type: none"> <li>the whole jaw can be submitted, single tooth is optional</li> </ul>	DFO, Makivvik, and RNUK	2024	
	Belchers island harvest and genetic data available	DFO to inform. NMRWB/EMRWB to include in future decision considerations.	Longer-term	
	Effect of mudslides in estuaries in the southern Arc area	Quebec Gov, KRG, Laval University for research. NMRWB staff to contact.	Initiate contact ASAP	
	Assessment of shipping impacts on beluga	NMRIRB-NMRWB staff to contact in collaboration with DFO	Initiate contact ASAP	
	Explore and develop the idea of biopsy sampling, satellite tagging, Drones, and GPS	DFO	TBD	
	<b>Create space for fully indigenous-developed management by working towards removal of TAT, and working on localized</b>	Communication regarding these intentions, and how they can be achieved	NMRWB and RNUK, DFO willing to be involved	ASAP
		Formation of the implementation working group	RNUK, DFO, Makivvik	TBD
		Develop protocol to harvest and gain knowledge from ice or orca entrapment situations	DFO and RNUK	TBD



	<b>management, while protecting EHB in the meantime</b>	Request non-implementation of the Arc over-run situation in the context that harvesters may have yet to fully understand the system in 2021, harvested below the non-adjusted TAT in 2022, and may have non-EHB beluga in 2022.	NMRWB staff	ASAP after receiving letter from RNUK (likely June 2023)
		Inform Sanikiluaq of BEL-EHB	DFO	ASAP
		Begin discussions between Nunavik and Nunavut regarding the BEL-EHB situation	Makivvik	
	<b>Ensure effectiveness of current management system</b>	General communication about beluga migration patterns and how the current management relies on local efforts to use knowledge of beluga stocks to avoid EHB	NMRWB staff and Chair	Ongoing, and repeating
		Communication regarding the importance of avoiding EHB during fall migration, and encourage later hunting by those communities	NMRWB, RNUK, and DFO <b>WG to take over once established</b>	Ongoing, and repeating
		Consider that the closed season may need to be longer in the future if fall EHB harvest remains high (to track for next year)		TBD
		Communicate to Northeast Hudson Bay communities the importance of avoiding EHB during the fall harvest		TBD
		Consider that the closed season may need to also cover Northeast Hudson Bay if Fall		TBD

		EHB harvest remains high (to track for next year)		
		Re-fit EHB percentages in the various season-zones based on new information	DFO and NMRWB	TBD
		Consider an iterative pilot project for EHB	NMRWB and WG	Commence work in summer 2023, complete before 2024 spring harvest.
		Develop and implement ways of sharing scientific and genetic information which is more understandable and accessible to the general population of Nunavik	DFO with support from other co-management partners	TBD
Strategize support of the 3 arc communities to hunt outside of the Arc area	—	Long Island camp support to the RNUK	RNUK and Makivvik	TBD
		Strategies for Inukjuak hunters going north and in the HS (in other communities)		TBD
Co-management partners are prepared for the next cycle of Board decision making for beluga	—	See all of the knowledge actions	N/A	N/A
		Gather information on scale of management. (i.e. managing populations instead of stocks)	NMRWB	2023-2025
		Explore potential application of template being developed for SH polar bears	NMRWB, EMRWB, legal, NWMB	2024
		Open conversation to relevant jurisdictions	See other actions	

### Discussion highlights:

1. **An additional goal was proposed and stated: “Individuals with shared Cree and Inuit roots have well-understood and established rights in terms of beluga harvesting”.**
  - a. Advised to remove this goal since it is a lengthy process requiring Supreme Court involvement.
  - b. At the present time, legal advice could be sought regarding the rights of these individuals.
2. **RNUK will send a letter of recommendation soon regarding carryover of non-EHB beluga.** The letter will indicate that they want the Board to reconsider the harvest of non-EHB whales being put against the TAT. If the RNUK is asking for a decision it would require the Board process.
  - a. **The shorter-term solution** would be to request to get back those five whales in the TAT in the current year.
  - b. The RNUK suggested having a **phone call early next week with Makivvik, RNUK, Board staff, and DFO management to discuss this decision or variation and how it could inform the RNUK’s letter.**
3. **Impact of shipping activities on marine life, particularly during the migration season.** Legal counsel mentioned that shipping activities are complex and require the planning commission and the impact review board process, and some activities have been exempted from screening.
  - a. There are tools available to put limitations on shipping activities, and shipping companies have to modify their operations if there are whales present in the vicinity of the ship.

### Conclusion

The Beluga Annual Review, held from March 30-31, 2023, was an important meeting producing an up-to-date review of the current beluga management plan that provided a platform for meaningful discussion and action planning for the upcoming year of the plan. Throughout the meeting, co-management partners shared their valuable insights, ideas, and concerns, fostering collaboration and cooperation.

Key goals from the meeting include developing beluga management systems for and by Indigenous rights holders within board mandates, supporting the three Arc communities in hunting outside the Arc area, and preparing co-management partners for the next Board decision cycle regarding beluga. The meeting also highlighted the importance of regular communication and continued engagement among co-management partners. It is crucial that we maintain this level of collaboration and commitment to ensure the successful implementation of the discussed strategies.

Action items and responsibilities have been suggested as outlined in Table 5, each co-management partner can track progress and provide updates as necessary. We look forward to the next review in 2024 to evaluate progress, address any challenges that may arise, and celebrate achievements. Thank you to all participants for their contributions and dedication to our shared goals.