**SUBMISSION TO THE**

**NUNAVUT WILDLIFE MANAGEMENT BOARD**

**FOR**

**Information:** **Decision: X**

**Issue: REQUEST FOR DECISION to Establish a Total Allowable Harvest, Basic Needs Level and a Management Unit Boundary for the Atlantic Walrus Stocks in Foxe Basin, Nunavut**

## Background

Governance of the walrus fishery

The walrus (*Odobenus rosmarus rosmarus*) fishery in the Nunavut Settlement Area (NSA) is co-managed by the Department of Fisheries and Oceans (DFO), the Nunavut Wildlife Management Board (NWMB), Regional Wildlife Organizations (RWOs), and Hunter and Trapper Organizations (HTOs), in accordance with the Nunavut Land Claims Agreement (NLCA or Agreement), the *Fisheries Act* and its regulations, and in some communities, by local community hunt plans. The NWMB is the main instrument of wildlife management in the NSA, but the Minister of DFO retains ultimate authority and responsibility for wildlife management and conservation of fish, including marine mammals.

Within Canada, the walrus fishery is regulated by the *Fisheries Act* (R.S., 1985, c. F-14) and regulations made pursuant to it, including the *Fishery (General) Regulations* and the *Marine Mammal Regulations (*MMR). Where an inconsistency or conflict exists between these statutes and the NLCA, the Agreement prevails to the extent of the inconsistency or conflict. Pursuant to subsection 6. (1)(c) of the MMRs, an Inuk may, without a licence, fish for food, social or ceremonial purposes for four (4) walrus annually, except where community quotas exist. At this time, annual quotas exist for the communities of Coral Harbour (60), Sanikiluaq (10), Arctic Bay (10) and Clyde River (20).

A limited walrus sport hunt occurs in some communities. Each year, the NWMB calls for applications from communities interested in conducting walrus sport hunts. The Board reviews the applications that are supported by the applicable HTO and evaluates them against its *Interim Policy for Walrus Sport Hunts*. The NWMB then forwards its decision(s) to the DFO Minister. Once approved according to the process outlined in the NLCA, walrus sport hunts are authorized by Marine Mammal Fishing Licences issued pursuant to MMR s. 4 and the formal assignment of rights from a NLCA beneficiary to a non-Inuit hunter.

Consistent with the *Fisheries Act* and the NLCA, the best available information on the conservation status of walrus stocks and populations guides management decisions.

DFO Science activities in support of walrus management

DFO maintains an active scientific research program, aimed at an increased understanding of walrus population processes (e.g. seasonal distribution, movements, habitat use, diet analysis), environmental factors that influence walrus distribution and numbers, and the role of walrus in marine ecosystems.

DFO stock assessment research objectives are to maintain walrus population health and diversity, and support sustainable walrus hunts. These objectives are achieved by developing methods to minimize the uncertainty associated with population abundance estimates, understanding effects of harvest and changing environmental conditions, and predicting future trends in abundance under various scenarios.

A precautionary approach to fisheries management links harvest recommendations with the relative quality of stock assessment data. Lower harvest levels are recommended when stock assessments are uncertain (i.e. data poor), to avoid serious harm to fish or marine mammal stocks or their ecosystem. A lack of stock assessment data should not be used as a reason to postpone (or fail to take) management actions. This approach is widely accepted as an essential part of sustainable fisheries management. However, DFO science will conduct research to increase the understanding of walrus stocks (i.e., data rich) so that modeling of risk will allow future recommendation of harvest levels with less uncertainty.

Currently, walrus abundance estimates are derived from aerial surveys flown over known summering aggregations. Through periods of August and September of 2010 and 2011 a project was undertaken to enumerate walrus in Foxe Basin. Satellite-linked radio transmitters were deployed in 2010 (11) and 2011 (23) prior to concurrent boat and aerial surveys. Based on previous observation and close consultation with the Hall Beach HTA and the Igloolik HTO, surveys were designed to observe the maximum number of walrus on land. The surveys attempted to include all known and suspected walrus haulout sites in Foxe Basin, along with most of the coastline and islands. Survey crews collected digital imagery of walrus on land and in the water. These images were used for counting and generation of a Minimum Counted Population (MCP). The most recent abundance estimates for the Foxe Basin stocks have been used to recommend sustainable harvest levels (DFO 2013)(TAB 1).

Development of an Integrated Fisheries Management Plan and Community Consultations

An Integrated Fisheries Management Plan (IFMP or Management Plan) for any stock or group of stocks provides information that is important for the management of a fishery. It describes the scientific and local knowledge available for the fishery as well as gaps in

knowledge. It summarizes the most important management objectives and management measures that are needed or that have been agreed to. The intention of putting the information about a fishery in this one document is to have a common understanding of the "basic rules" for the sustainable management of a particular fishery. However, this document is meant to be a living document and able to be adapted annually as understanding of management issues changes.

Within the NSA, Management Plans are developed collaboratively by an advisory committee, or working group, composed of representatives from DFO and co-management organizations with fisheries management responsibilities. The advisory committee recommends management objectives and management measures for a given fishery. The advisory committee also considers feedback received during public consultation with resource users and other stakeholders.

Two Walrus Working Groups, one for each of the High Arctic and Foxe Basin stocks, were established to initiate the development of a Management Plan for Atlantic walrus in the NSA. Each Working Group was made up of members of local HTOs (Arctic Bay, Grise Fiord, Hall Beach, Igloolik, Pond Inlet, and Resolute Bay), RWO, Nunavut Tunngavik Incorporated (NTI), NWMB and DFO. Between 2007 and 2013, eight walrus working group meetings were held to develop the Management Plan (see TAB 2 for a history of the Walrus Working Groups). In February and March 2011, community consultations were held in Hall Beach, Igloolik, Pond Inlet, Arctic Bay, Resolute Bay and Grise Fiord to share research results, determine community support for the development of a walrus Management Plan and determine the most important walrus management issues. Through these meetings, agreement was reached to develop a walrus Management Plan, the format of the Management Plan, the important management issues and objectives to be included, and the important research goals. As a result of the Walrus Working Group meetings and community consultations, a draft Management Plan was developed in November 2013.

A consultation process was undertaken to obtain the views of Inuit, co-management organizations, interested stakeholders and the general public on the draft Management Plan. Public consultations had both an in-person and a written component:

- Changes to the current walrus management regime are proposed for five walrus stocks where there is new science advice. In-person consultations were held May 28-June 4, 2014 in Igloolik, Hall Beach and Pond Inlet. Due to inclement weather, consultations planned for Resolute Bay, Grise Fiord and Arctic Bay did not occur. Alternative arrangements to obtain the views from these communities will be made for the fall of 2014.
- There are no changes currently being proposed to the walrus management regime for the South and East Hudson Bay or the Hudson Bay-Davis Strait stocks, as there is no recent science advice for these stocks. Therefore, a written consultation process was used for the remaining walrus harvesting communities in Nunavut, along with other interested stakeholders and the general public.

Consultations focused on the following main areas:

- The need to improve walrus management;
- The draft Integrated Fisheries Management Plan;
- The proposed walrus Management Units
- The proposed changes to walrus management where there is science advice, in particular, the establishment of Total Allowable Harvest (TAH) levels and operational procedures to implement the proposed changes such as harvest reporting and walrus harvest tags;
- Seek the views and comments from Inuit harvesters and community members on walrus management;
- Relationship-building and continued engagement between DFO and Inuit communities.

During the in-person consultations, two presentations were provided to each community (TAB 3; TAB 4). The first presentation was for HTO board members, and the second presentation was for the community members. Participants in all meetings were encouraged to share their views, provide comment, express concerns, and share expertise. Community members and the HTOs were encouraged to review and provide comments on the draft Management Plan. Copies of the draft Management Plan and the presentations were provided to the HTOs.

Written consultation packages were provided to Nunavut walrus harvesting communities where no changes are currently being proposed to the management of walrus (TAB 5; TAB 6). Consultation material was provided via mail and email that included a summary of the draft Management Plan and a questionnaire to obtain their views on specific issues. A web site that included the consultation material was established and information on how to access that website was provided to communities involved in both the written and in-person consultation process.

To date, the response from communities (either during the in-person or written consultation process) has been positive with regards to the development of a walrus Management Plan, but consensus was not reached on some of the proposed changes (e.g. recommended sustainable harvest levels). A summary of the community consultations specific to the proposed Foxe Basin management unit is provided in TAB 7.

The Walrus Working Group has been moving forward with developing the IFMP for the NWMB's review and decision, which would include requests to establish TAHs for all walrus stocks where there is sufficient information to do so, along with the necessary non-quota limitation decisions to implement the proposed IFMP. However, based on recent DFO science advice and reported landed catch data, there may be conservation concerns with the sustainability of current harvest levels for the Foxe Basin stocks. Therefore, DFO is initiating the process to establish a TAH for the Foxe Basin management unit independently of the other walrus management decisions (TAB 8). The remaining Requests for Decisions, including approval of the IFMP for Atlantic

walrus in the NSA and the associated quota and non-quota limitation decisions, will proceed as outlined in Appendix 2 of TAB 8.

Basic Needs Level – narwhal, walrus and beluga

On June 12, 2013, the DFO Minister accepted the NWMB's decision to establish the basic needs levels (BNL) for beluga, narwhal and walrus in the NSA to be equal to the levels of total allowable harvest (TAH) established or modified by the NWMB (TAB 9; TAB 10).

## Proposed Changes in Foxe Basin Walrus Management

The proposed changes to the existing Foxe Basin walrus management regime fall into two areas: managing walrus harvests by stock delineation and grouping; and further harmonizing walrus management with the NLCA. The following paragraphs describe DFO's justification for the specific decisions requested of the NWMB (pages 10-11).

**Managing walrus harvests by stock delineation and grouping:**

There are two known walrus populations in the eastern Canadian Arctic; the high Arctic population and the central Arctic population. This separation is based on genetic and geographical separation. Within each population, stocks[1] are delineated based on a number of factors such as genetic, trace elements and survey information, as well as local traditional knowledge.

The High Arctic population is comprised of three stocks: the Baffin Bay stock, shared with Greenland, the West Jones Sound stock and the Penny Strait-Lancaster Sound stock. There is a well-established genetic subdivision between the High Arctic population and the Central Arctic population, with a low long-term rate of genetic exchange between the two populations.

The Central Arctic population is comprised of three stocks: the Hudson Bay-Davis Strait stock, shared with Greenland and Nunavik, the northern Foxe Basin stock, and the central Foxe Basin stock. The two Foxe Basin stocks have been combined into one management unit for stock assessment, because they breed as a single unit, occupy and are harvested in the same geographical area, do not differ genetically, and are not distinguishable visually during surveys, for stock assessment purposes, the two stocks have been combined into one management unit.

Lastly, the South and East Hudson Bay walrus stock is shared with Nunavik. It is not known whether the South and East Hudson Bay stock is genetically separate from the

[1] A stock may be considered a segment of a population that may be impacted by human activities, such that overall population productivity could be affected.

central Arctic population and therefore would represent a third population, or if there is enough genetic similarity that it is a separate stock within the Central Arctic population.

By managing at a stock level rather than the population level, it will help to conserve walrus, reduce the potential for local depletions of stocks, and promote the conservation and genetic diversity that may result from adaptation to local conditions. This will help communities ensure that there are local walrus stocks to harvest in the future.

At NWMB Regular Meeting No. 63, conducted April 11, 2010 in Iqaluit, DFO recommended that the walrus fishery be managed based on known summering stock aggregations (TAB 11). An update was provided on the development of an Integrated Fisheries Management Plan for Atlantic walrus in the Nunavut Settlement Area based on these stock aggregations, including combining the north and central Foxe Basin stocks. The grouping of the two Foxe Basin stocks into one management unit was supported by the Foxe Basin Walrus Working Group.

During community consultations in Igloolik and Hall Beach on May 29-30, 2014, maps identifying the proposed Management Unit for Foxe Basin were presented and discussed (Appendix 2). There was general agreement that the southern Foxe Basin boundary in the stock delineation map should be extended further south and traditional knowledge should be used in the determination. Using the information received during written and in-person consultations, along with community knowledge of walrus in Foxe Basin and Hudson Strait (TAB 12), a geographic boundary for the Foxe Basin Management Unit (AW-04) is being proposed, as identified in Appendix 1. This boundary reflects stock delineations, local community knowledge, and information on current and historic hunt locations (TAB 13).

## Further Harmonization of Walrus Management with the NLCA

### Establish a Total Allowable Harvest (TAH) and Basic Needs Level (BNL) for Atlantic Walrus Management Unit AW-04

Proposed changes to the current management regime include the establishment of TAH and BNL by the NWMB for stocks and populations where there is sufficient information to do so, thus replacing existing regulatory quotas on walrus, pursuant to the Board's authority under NLCA s.5.6.16 and 5.2.33(d).

The NWMB has previously requested information from DFO with which to use in establishing TAH for walrus; at that time, there was no updated information to provide to the NWMB (TAB 14).

Walrus abundance estimates are derived from aerial surveys flown over known summering areas. The most recent abundance estimates for the Foxe Basin walrus stocks are summarized in Table 1. Two abundance estimates are provided: 10, 379 and 13, 452; the higher estimate assumes that satellite tagging data from a single haul-out

were representative of all other remaining haul-outs in Foxe Basin. However, it is not possible to test this assumption with current information (TAB 1).

DFO Science has adopted the Potential Biological Removal (PBR) method to provide sustainable harvest advice for data-poor stocks or populations as part of the Precautionary Approach. The PBR method estimates the total number of animals that can be removed from all human sources without depleting the stock or population. For walrus, this would include the total number of landed walrus, those animals struck but lost, as well as walrus removed from other human activities, such as ship strikes or net entanglements.

In recommending sustainable harvest levels, other human removals are first subtracted from the PBR estimate to determine the Total Allowable Landed Catch (TALC) value.

TALC = PBR – (struck and lost + ship strikes + net entanglements)

To date, most human-caused walrus mortalities result from hunt landings and hunt losses.There are currently no stock specific struck and lost rates for any Canadian walrus stocks. Recognizing that some losses do occur when hunting marine mammals, a range of struck and lost rates was established to calculate the TALC for the proposed Foxe Basin Management Unit AW-04. This range was based on struck and lost rates previously used by DFO (30%) and on struck and lost rates used by other jurisdictions involved in Atlantic walrus management (e.g. Greenland and the North Atlantic Marine Mammal Commission (NAMMCO)) (TAB 15):

- 15% struck and lost rate[2].
- 23% struck and lost rate[3].
- 30% struck and lost rate[4].

There was no consensus reached during community consultations in May 2014 on an appropriate struck and lost rate to use in recommending sustainable harvest levels. In general, Foxe Basin hunters believe the struck and lost rates to be low for the communities of Igloolik and Hall Beach.

[2] Greenland has applied an average 15% struck and lost rate for North Water and West Greenland stocks based on hunter reporting. This struck and lost rate is used in combination with other regulations to reduce struck and lost (e.g. walrus can only be harvested by full-time harvesters and walrus must be harpooned before they are shot).
[3] 23% based on an overall loss rate for eastern Greenland provided by NAMCCO (Born et al. 1995).
[4] 30% used previously by DFO, and used by NAMMCO when stock-specific struck and lost rates are unknown.

Table 1 presents DFO's walrus abundance estimates and sustainable harvest advice for the proposed Foxe Basin Management Unit AW-04. Sustainable harvest advice is presented as Total Allowable Landed Catch (TALC) recommendations associated with the range of struck and lost rates.

**Table 1. Walrus abundance estimates, Potential Biological Removals (PBRs) or Total Allowable Removals (TARs) and Total Allowable Landed Catch (TALC) for the Foxe Basin stocks**

| **Stocks** | **Survey year** | **Abundance estimate highest adjusted** | **PBR/ TAR highest adjusted** | **TALC Range of struck and lost rates** | | |
|---|---|---|---|---|---|---|
| | | | | 15% | 23% | 30% |
| Northern Foxe Basin and central Foxe Basin | 2011 | 10, 379 (13, 452)* | 135 (166)* | 115 (141)* | 104 (128)* | 95 (116)* |

* assumes that satellite tagging data from a single haul-out were representative of all other remaining haul-outs in Foxe Basin.

## DFO Recommendations:

Taking into consideration the information shared during the May 2014 community consultations, DFO would recommend using the higher abundance estimate and corresponding PBR in the TALC calculation.

As DFO has previously applied a 30% struck and lost rate in recommending sustainable harvest levels for walrus stocks in the eastern Canadian Arctic, NAMMCO advises using a 30% struck and lost rate where there is no stock-specific struck and lost information, and there is no struck and lost rates for any Canadian walrus stock, it is recommended that a 30% struck and lost rate be applied to the proposed Foxe Basin Management Unit AW-04. This respects the precautionary approach to fisheries management and the principles of conservation as identified in the NLCA.

DFO recommends that the NWMB establish a TAH of 116 for proposed Foxe Basin Management Unit AW-04.

## Role of HTOs and RWOs in Walrus Management

One of the major reasons for proposing changes to the existing walrus management regime is to further harmonize walrus management with the provisions of the NLCA.

RWOs and HTOs have the authority to allocate and enforce regional and community basic needs levels and adjusted basic needs levels pursuant to NLCA s.5.7.6(b) and s.5.7.3(b) respectively. Once the NWMB establishes TAH and BNL for a stock/ population, the RWO makes BNL allocation decisions (in the form of Community Harvest Limits) within their region. Communities which harvest from the same management unit would receive a Community Harvest Limit from the RWO. Each HTO

would then allocate its Community Harvest Limit amongst its members and among uses (e.g. sport hunt).

**Additional management measures to address current walrus management issues and strengthen co-management of the fishery***:*

*Measures to close fisheries when harvest allocations are reached (Decisions 4 and 5).*

*Measures to effectively monitor walrus landings (Decision 6 (a), (b) and (c)).* Timely and accurate information on landings, including struck and lost rates, is required to ensure that harvest limits within the Management Unit are not exceeded. Information on struck and lost rates is required to confirm that appropriate rates are being used in the calculation of TALC to ensure harvests are being maximized.

# Decisions requested from the NWMB related to the walrus management system in Foxe Basin, Nunavut

1. **Establish a Management Unit boundary for the Foxe Basin walrus stocks- pursuant to NLCA s. 5.6.48 and 5.2.33(k)**

A map and corresponding geographical co-ordinates for the proposed AW-04 boundary are identified in Appendix 1.

2. **Establish a Total Allowable Harvest (TAH) for the Foxe Basin Walrus Management Unit AW-04 -pursuant to NLCA s.5.6.16 and 5.2.33 (d).**

DFO recommends that a TAH of 116 be established for the Foxe Basin Management Unit AW-04; based on the highest adjusted population abundance estimate and a 30% struck and lost rate, as identified in Table 1.

3. **Establish a Basic Needs Level for the Foxe Basin walrus stock unit.**

As per the NWMB's February 12, 2013 decision, accepted by the Minister of DFO on June 12, 2013, the BNL established for walrus in the NSA will be equal to the levels of TAH established or modified by the NWMB- from time to time and as circumstances require- for walrus in the NSA.

4. **Where a Total Allowable Harvest (TAH) has been established for a walrus stock or population, the annual harvest shall not exceed the TAH.**

5. **Once a Community Harvest Limit, as established annually by the Regional Wildlife Organization (RWO), has been reached for a particular community, no further walrus hunting is allowed, unless approved by the RWO.**

## Provision of Information

6. **Harvest reporting is required by the Regional Wildlife Organizations (RWO) and Hunter and Trappers Organizations (HTO) annually:**

    a. HTO to notify RWO and DFO when their Community Harvest Limits are reached.

b. RWO to notify DFO when the sum of the Community Harvest Limits is reached in Management Unit AW-04 within their Region.

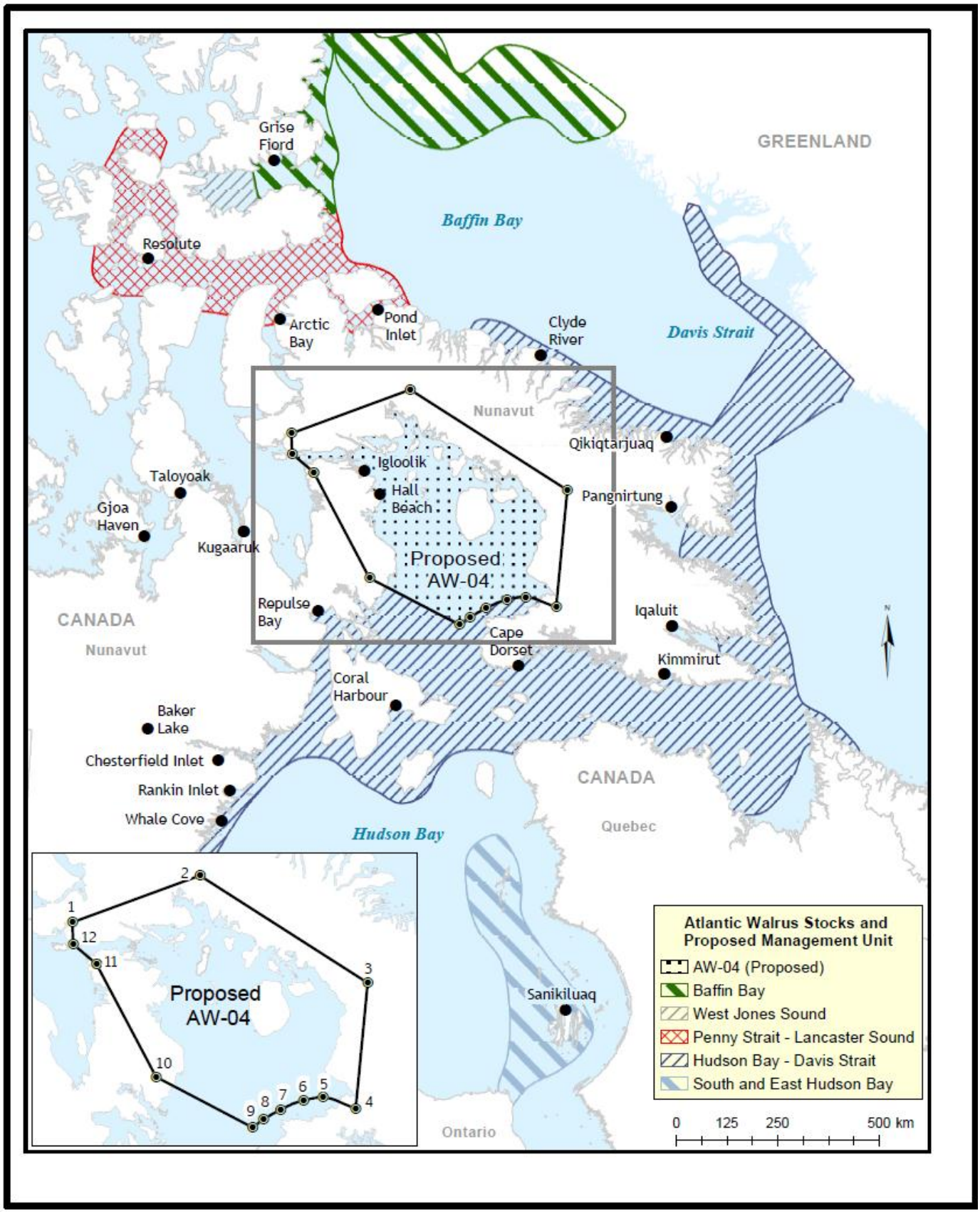
c. HTO to notify DFO of the struck and lost rates associated with the previous year's walrus hunt.

**Submitted by:**

Resource Management
Central & Arctic Region
Fisheries & Oceans Canada

**Date:** August 11, 2014

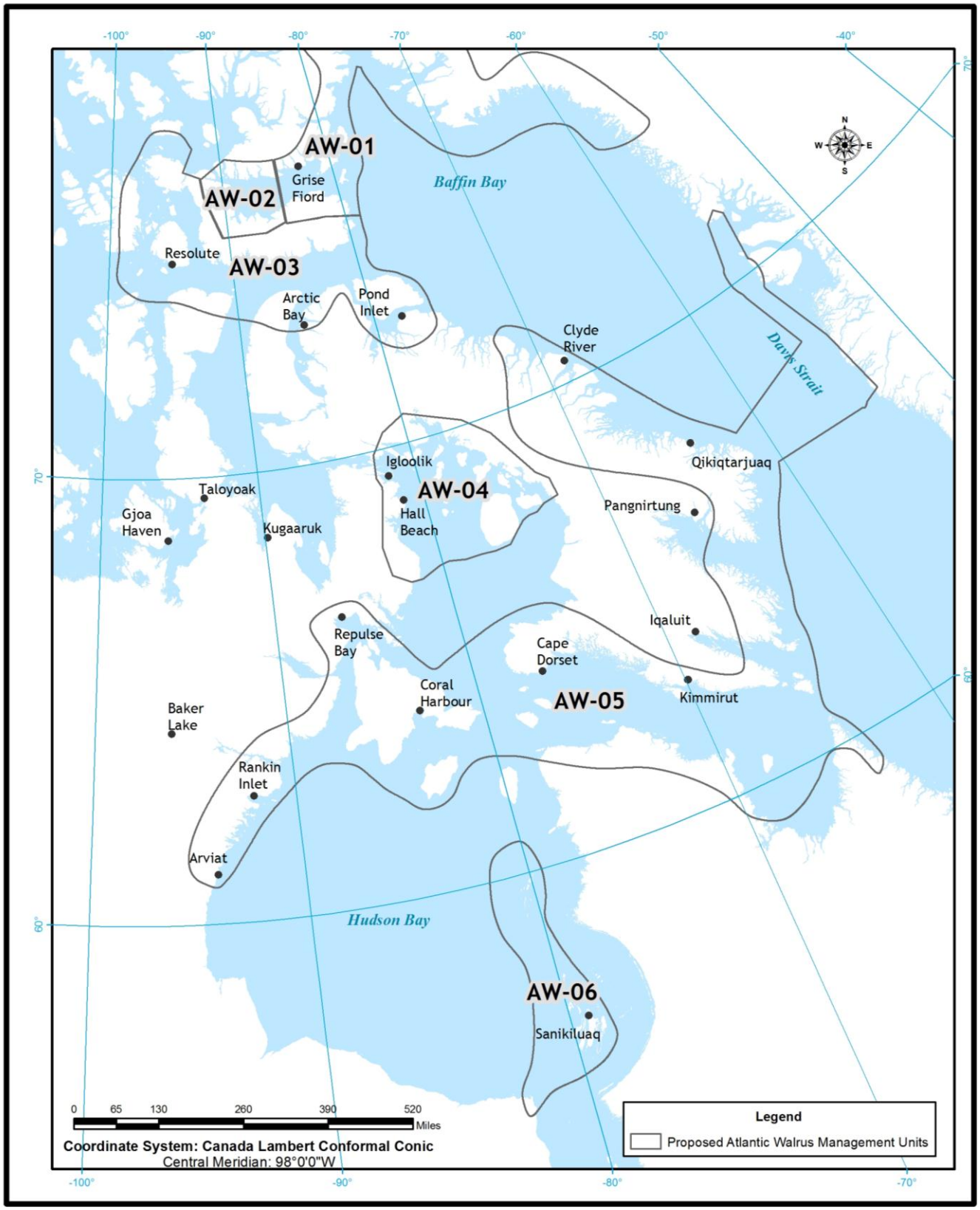
**Appendix 1. Proposed Boundary for Foxe Basin Walrus Management Unit AW-04 within the Nunavut Settlement Area.**



| Geographical Description of AW-04<br>Marine waters enclosed by the following coordinates: | | | | |
|---|---|---|---|---|
| Id | Lat | Long | Formatted | shape |
| 1 | 70.52386 | -85.90198 | 70° 31' N and -85° 54' W | straight |
| 2 | 70.81665 | -77.498177 | 70° 48' N and -77° 29' W | straight |
| 3 | 67.49418 | -70.579259 | 67° 29' N and -70° 34' W | straight to 4 |
| 4 | 65.17014 | -73.658949 | 65° 10' N and -73° 39' W | straight to 5 |
| 5 | 65.62752 | -74.997915 | 65° 37' N and -74° 59' W | on a curve |
| 6 | 65.70404 | -76.002025 | 65° 42' N and -76° 0' W | on a curve |
| 7 | 65.6765 | -77.241508 | 65° 40' N and -77° 14' W | on a curve |
| 8 | 65.58762 | -78.213727 | 65° 35' N and -78° 12' W | on a curve |
| 9 | 65.49462 | -78.857321 | 65° 29' N and -78° 51' W | straight to 10 |
| 10 | 67.02784 | -83.014426 | 67° 1' N and -83° 0' W | straight |
| 11 | 69.58751 | -84.958066 | 69° 35' N and -84° 57' W | straight |
| 12 | 70.07476 | -86.088171 | 70° 4' N and -86° 5' W | straight |

| **Population** | **Stock** | **Management Unit** | **Nunavut Harvesting Community** | **Nunavik Harvesting Community** | **International Harvesting Community** |
|---|---|---|---|---|---|
| Central Arctic | Northern Foxe Basin<br>Central Foxe Basin | AW-04 | Igloolik<br>Hall Beach | ------ | ------ |

# APPENDIX 2: Proposed Management Units Presented During 2014 Community Consultations




Map 1: Management Units based on Stock Delineations

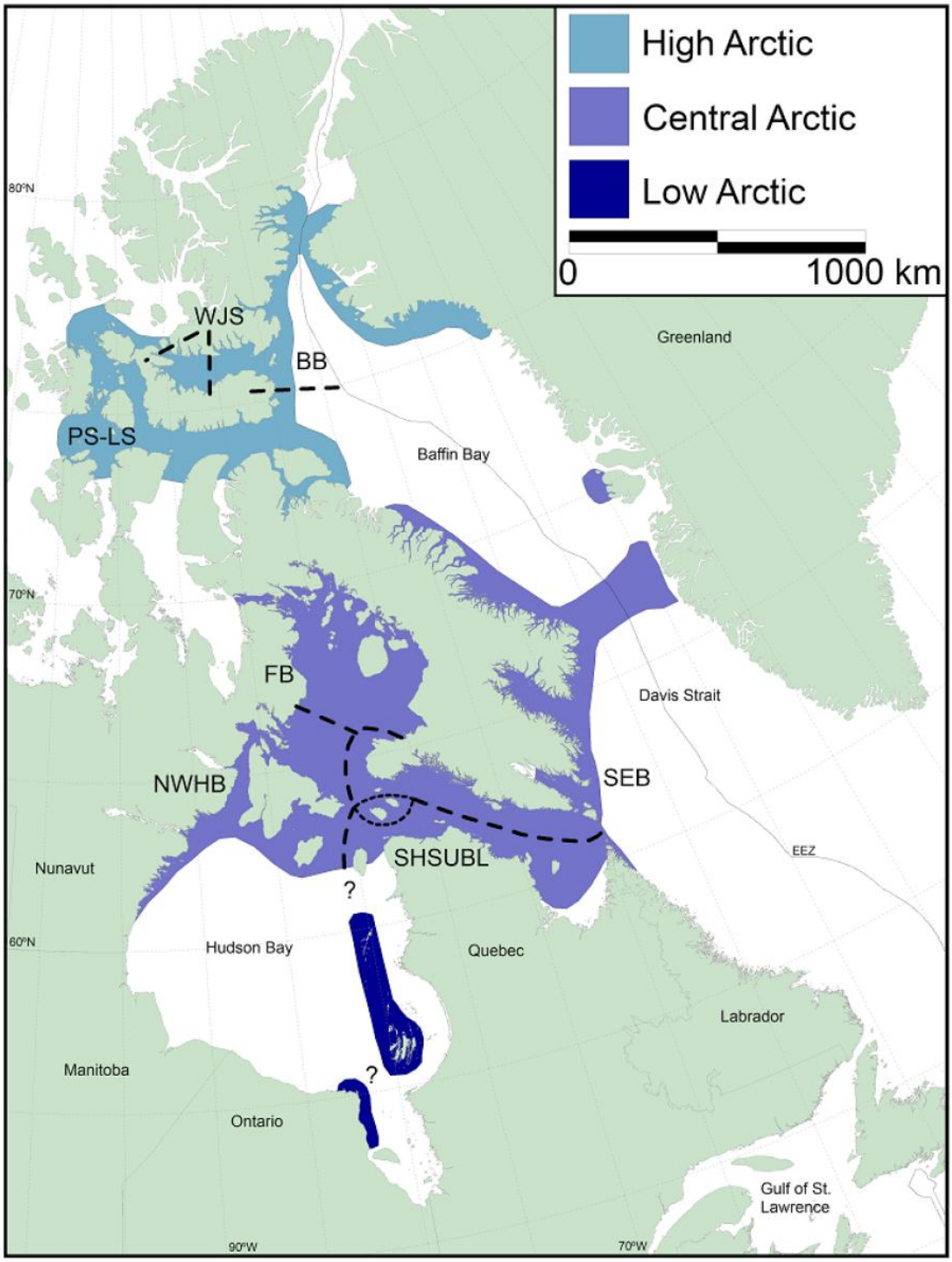



**Figure 4. Approximate distributions of the Atlantic walrus populations in Canada. Walrus management stocks within these populations include: BB = Baffin Bay, FB = Foxe Basin, NWHB = North and West Hudson Bay, PS-LW = Pnny Strait-Lancaster Sound, SEB = South and East Baffin, and SHSUBL = South Hudson Strait-Ungava Bay-Labrador, and WJS = West Jones Sound. Question marks (?) indicate uncertainty with respect to distributions and/or movements.**

Stewart, B., and Higdon, J. (authors of draft COSEWIC Status Report on Atlantic Walrus in Canada – draft report in preparation 2014)

MAP 2: Proposed Management Units based on draft COSEWIC Status Report (in preparation)