SUBMISSION TO THE
NUNAVUT WILDLIFE MANAGEMENT BOARD
December 2017

FOR

Information: X **Decision:**

Issue: Department of Fisheries and Oceans Canada Updates

Updates:

Marine Mammals:

1) Narwhal:

- The Minister of DFO has accepted the NWMB's decision to approve the full implementation of the Flex-Quota System and Tag Transfer Policy Phase II components of the Integrated Fisheries Management Plan Management Plan) for Narwhal within the Nunavut Settlement Area.
- The Minister of DFO has accepted the NWMB's decision to modify the total allowable harvests for the Somerset Island; East Baffin Island, Jones Sound and Smith Sound Narwhal Stocks. The decision making process to modify Total Allowable Harvest for the Admiralty Inlet and Eclipse Sound Narwhal stocks has been adjourned until the results from the 2016 Arial Survey have been finalised.
- The 2016 Arial survey photographs and results are still be analyzed. A working paper will be presented at the annual National Marine Mammal Peer Review Committee (NMMPRC) meeting November 28–December 1, 2017. The goal is to have the Science Advisory Report finalized for a PART 2 meeting of the NMMPRC in late February 2018

2) Walrus:

- A total of 18 Walrus Sport Hunt licences were issued by DFO for the 2017 season. Coral Harbour (11 hunts), Iqaluit (2 hunts) Hall Beach (4 hunts) and Igloolik (1 hunt).
- The Integrated Fisheries Management Plan (IFMP) for Atlantic Walrus was approved by the NWMB in June 2016, and the decision accepted by the Minister in September 2016.
- At the request of Qikiqtaaluk Wildlife Board, DFO conducted additional consultations with walrus harvesting communities on the walrus IFMP over the winter of 2017. No concerns were identified, and the consultation report has been provided to the NWMB.

- The IFMP is being presented to the NWMB for formal signature. Based on the 2016 NWMB decision, the final IFMP includes the following changes:
    - The IFMP has been updated to exclude the Areas of Equal Use and Occupancy, and the maps have been revised to reflect this;
    - "Nunavut Lands Claims Agreement" has been changed to "Nunavut Agreement";
    - The harvest table has been updated; and
    - An appendix has been added to include the management unit boundary coordinates.

3) Cumberland Sound Beluga:
    - A total of 38 Beluga were reported harvested in Pangnirtung this summer
    - Four biological sampling kits were submitted to DFO from this year's annual subsistence harvest in an effort to obtain genetic evidence of the second group of whales, which is thought to enter Cumberland Sound

4) Bowhead:
    - Due to financial and logistical issues only two of the five selected host communities proceeded with a Bowhead Hunt for 2017.
    - DFO issued Marine Mammal Fishing Licences for Coral Harbour and Kimmirut to conduct a hunt; however, neither community was able to harvest a Bowhead for 2017.
    - Due to scheduling conflicts the Bowhead Working Group meeting scheduled for the first week of October had to be postponed. The new date for the meeting has not been determined.
    - Goals for this meeting were to introduce new members, nominate a co-chair, review progress to date, identify additional items for discussion, and develop a timeline to complete a draft Management Plan for public consultation.

5) Harvest Reporting:
    - DFO office contacted HTOs, requesting harvest updates for beluga, walrus, and narwhal. Reports of total marine mammal hunting mortality (landed + lost) are essential to develop reliable advice on sustainable harvests.
    - DFO urges continued reporting of unusual marine mammal occurrences and events e.g. beached carcass, ice entrapments, etc.
    - Timely and accurate reporting is required under the Fisheries Act, Marine Mammal Regulations, and the Nunavut Agreement. It is strongly recommended that co-management organizations emphasize the importance of harvest reporting and monitoring

Arctic Char:

1) Pangnirtung Fishery
   - A total of 16,508kg was harvested in the Pangnirtung Summer Fishery
   - A total of 51,100kg was harvested in the Cambridge Bay Summer Fishery

2) Pond Inlet Emerging Arctic Char Fishery:
   - The Pond Inlet Exploratory Arctic Char Fishery was licensed on July 28, 2017.
   - A DFO Fisheries Technician participated for a portion of this year's summer sampling
   - The 2017 data and samples have been submitted to DFO and currently in the process of organising and inventorying the data.
   - Five years of data collection has now been accomplished for two waterbodies; Tuapak and Kooluktoo Bay and DFO is currently examining options for ageing these samples.

Greenland Halibut (Turbot):

1) Cumberland Sound Turbot Fishery
   - The open water Cumberland Sound Turbot Management Area licence was issued to the Cumberland Sound Fisheries Limited's vessel the Pijiuja II.
   - The licence is for 50.605mt of Turbot, which is the remainder of the 500mt Total Allowable Harvest after the ice fishery.
   - A total of 9,109kg was reported landed at Pangnirtung Fisheries from nine good days of fishing. Adverse weather conditions caused a delay in the fishing effort

2) Offshore Fishery:
   - A total of 6687.30mt has been harvested in NAFO Division 0A
   - A total of 3007.84mt has been harvested in NAFO Division 0B
   - A total of 860mt has been harvested in the NAFO Division 0B Competitive Fishery
   - DFO is still waiting on offload documents from landings made in Greenland to finalize harvest statistics for 2017
   - Supplementary licence conditions were issued to Arctic Fishery Alliance to conduct experimental fishing for 1000kg of Porcupine Crab in NAFO Division 0B

Northern Shrimp:

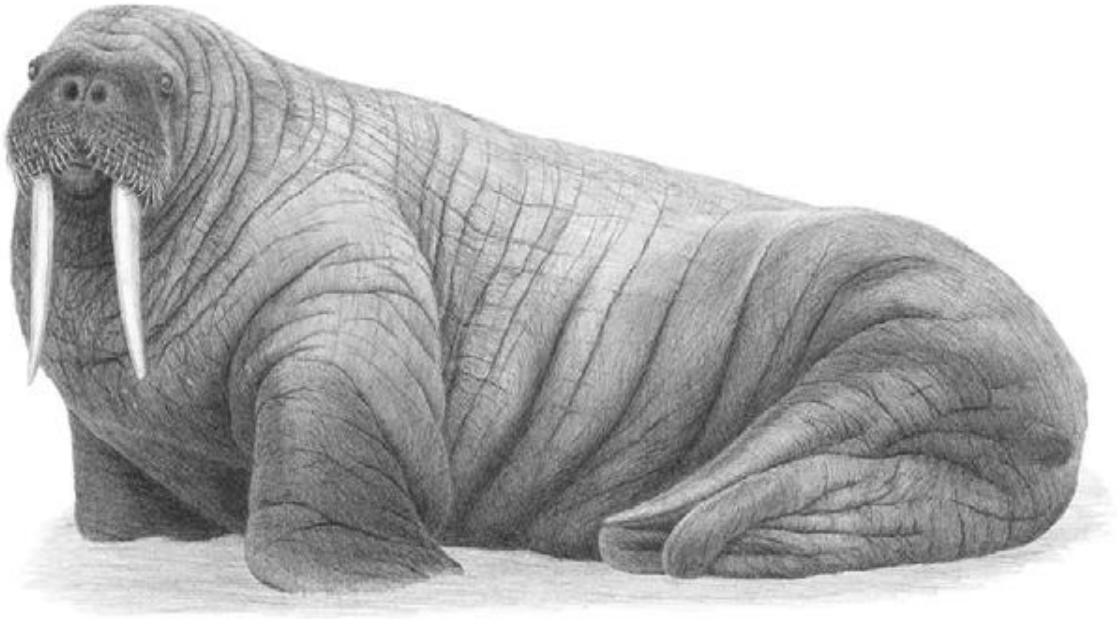
- For Nunavut fishing industry in shrimp fishing areas adjacent to Nunavut:
- A total of 784.33mt has been harvested in Davis Strait East
- A total of 915.641mt has been harvested in Davis Strait West
- A total of 418.295mt has been harvested in Shrimp Fishing Area 1

Prepared by: Central and Arctic Region – Fisheries and Oceans Canada

Date: October 26, 2017

Fisheries and Oceans Canada
Pêches et Océans Canada

Integrated Fisheries Management Plan for Atlantic Walrus (*Odobenus rosmarus rosmarus*) in the Nunavut Settlement Area



Canada

Foreword

The purpose of this Integrated Fisheries Management Plan (IFMP) is to identify the objectives and requirements for the Atlantic walrus (*Odobenus rosmarus rosmarus*) fishery in the Nunavut Settlement Area, and the management measures that will be used to achieve these objectives. This document also serves to communicate the basic information on the fishery and its management to Fisheries and Oceans Canada (DFO) staff, legislated co-management boards, Hunters and Trappers Associations (HTOs), Regional Wildlife Boards (RWOs), Inuit, communities and other stakeholders. This IFMP provides a common understanding of the basic "rules" for the sustainable management of the fisheries resource.

This IFMP is not a legally binding instrument which can form the basis of a legal challenge. The IFMP can be modified at any time and does not fetter the Minister of Fisheries and Oceans' discretionary powers set out in the *Fisheries Act.* The Minister can, for reasons of conservation or for any other valid reasons, modify any provision of the IFMP in accordance with the powers granted pursuant to the *Fisheries Act,* and subject to the relevant terms of the *Nunavut Agreement.*

Where DFO is responsible for implementing obligations for any land claims agreements, the IFMP will be implemented in a manner consistent with these obligations. In the event that an IFMP is inconsistent with obligations under land claims agreements, the provisions of the land claims agreements will prevail to the extent of the inconsistency.

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Dale Nicholson, A/Regional Director General, Central and Arctic Region
Fisheries and Oceans Canada

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Date

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Daniel Shewchuk, A/Chairperson, Nunavut Wildlife Management Board

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Date

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Acronym List

BB- Baffin Bay
BNL- Basic Need Level
CITES- Convention on International Trade in Endangered Species
COSEWIC- Committee on the Status of Endangered Wildlife in Canada
DFO- Department of Fisheries and Oceans
FB- Foxe Basin
HBDS- Hudson Bay- Davis Strait
HTO- Hunters and Trappers Organization
IFMP- Integrated Fisheries Management Plan
IQ- Inuit Qaujimajatuqangit
MMFL- Marine Mammal Fishing Licence
MMR- Marine Mammal Regulations
NA- Nunavut Agreement
NAMMCO- North Atlantic Marine Mammal Commission
NILCA- Nunavik Inuit Land Claim Agreement
NMRWB- Nunavik Marine Regional Wildlife Board
NQL- Non-Quota Limitation
NSA- Nunavut Settlement Area
NTI- Nunavut Tunngavik Incorporated
NWMB- Nunavut Wildlife Management Board
PSLS- Penny Strait- Lancaster Sound
PBR- Potential Biological Removal
RWO- Regional Wildlife Organization
SARA- Species at Risk Act
SEHB- South and East Hudson Bay
TAH- Total Allowable Harvest
TALC- Total Allowable Landed Catch
TEK- Traditional Ecological Knowledge
WJS- West Jones Sound

1. Overview

The following is an Integrated Fisheries Management Plan (IFMP) that will be used to provide direction in the management of Atlantic walrus (*Odobenus rosmarus rosmarus*) stocks in the Nunavut Settlement Area (NSA). Walrus in the *Areas of Equal Use and Occupancy*, as set out in Schedule 40-1 of the *Nunavut Agreement* (NA), will continue to be managed under applicable Acts, Regulations and land claims agreements, and are currently excluded from the management structure identified within this IFMP.

This IFMP was developed and will be implemented by the Government of Canada and co-management organizations through an adaptive co-management process. Working Groups comprised of Hunters and Trappers Organizations (HTO) from Arctic Bay, Grise Fiord, Hall Beach, Igloolik, Pond Inlet and Resolute, Qikiqtaaluk Wildlife Board (QWB), Nunavut Tunngavik Incorporated (NTI), the Nunavut Wildlife Management Board (NWMB) and the Department of Fisheries & Oceans (DFO) were formed to lead the development of the IFMP. The Working Groups have been instrumental in the development of the IFMP.

1.1 History

The walrus is one of the largest members of the seal family with two subspecies recognised. Pacific walrus inhabit the Bering, Chukchi, and Laptev seas. Atlantic walrus inhabit coastal areas of north-eastern Canada, Greenland and Svalbard (NAMMCO 2004).

Walrus have been harvested by Arctic indigenous peoples for thousands of years, providing valuable products such as blubber, bones, tusks and meat. The commercial harvesting of walrus in the 19th and 20th centuries resulted in a rapid decrease of walrus across their Arctic ranges, including the extirpation of the Northwest Atlantic population. By 1928, commercial harvesting of walrus was banned in Canada by the Walrus Protection Regulations. Currently walrus in the NSA are managed under the *Marine Mammal Regulations,* the *Fisheries Act* and the NA.

Walrus are a key species in the Arctic marine food web, are of high economic, social and cultural importance for Inuit, and are iconic to Canadians since they are so easily identified with the Arctic environment.

1.2 Type of Fishery and Participants

Atlantic walrus are primarily harvested by Inuit, and are highly valued as a traditional source of food and other products. The Inuit hunt provides an opportunity to maintain cultural traditions and for experienced hunters to pass on their skills and knowledge to younger generations. Walrus products also provide a secondary source of income for hunters. Walrus ivory is either sold raw, or carved into fine art pieces such as jewelry or sculptures. Some communities engage in a small-scale sport hunt conducted by non-Inuit hunters.

1.3 Location of the Fishery

Atlantic walrus are found across most of Nunavut, with the majority of harvests occurring in eastern Nunavut (Figure 1).

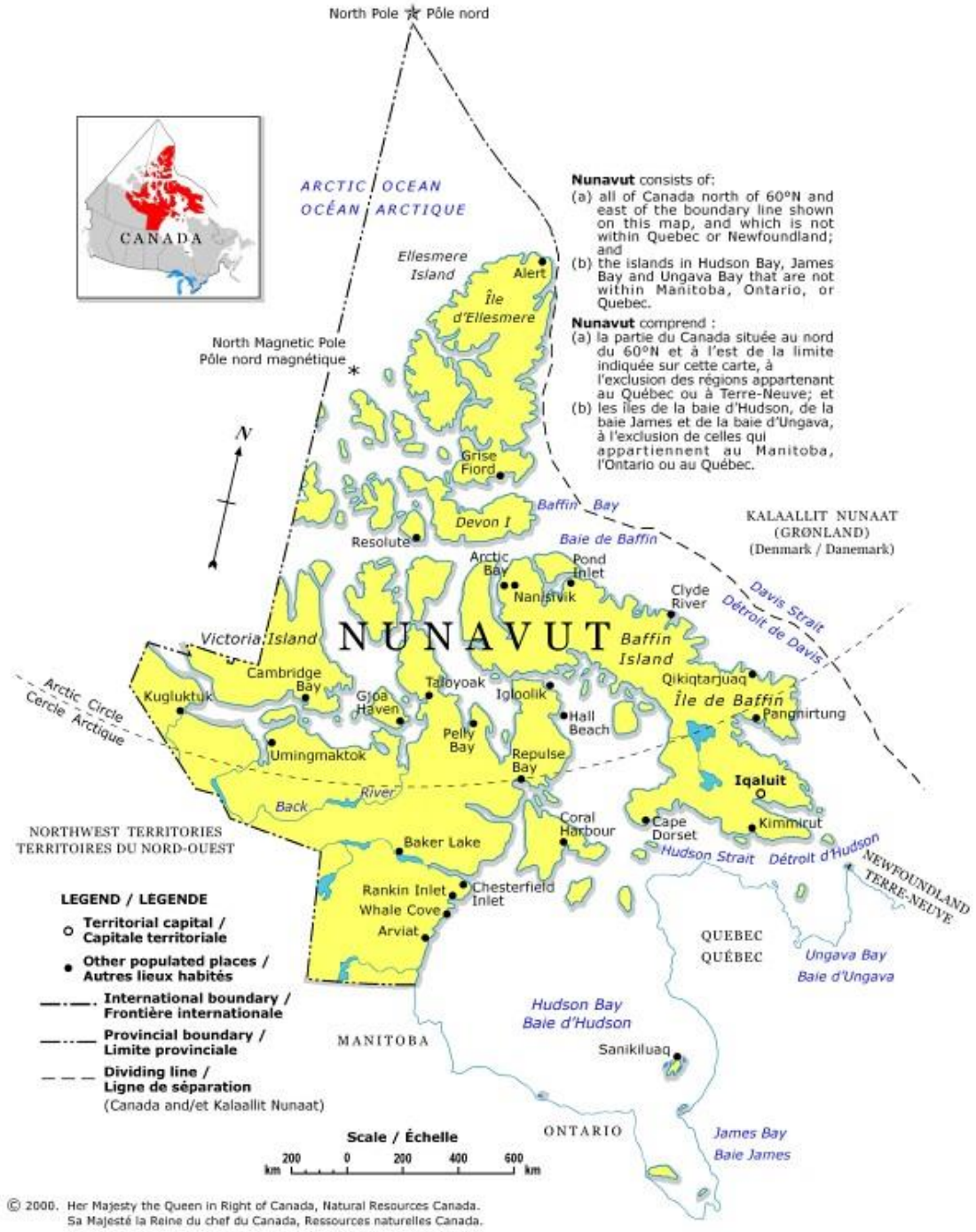

Figure 1. Map of the eastern Canadian Arctic, showing locations mentioned in the text.

1.4 Governance

The walrus fishery in the NSA is co-managed by DFO, the NWMB, RWOs and HTOs, in accordance with the Nunavut Agreement (NA or Agreement), and the *Fisheries Act* and its regulations. Under this co-management regime, the NWMB is the main instrument of wildlife management in the NSA, but the Minister retains authority and ultimate responsibility for wildlife management and conservation of fish, including marine mammals.

Fisheries Act, regulations, and policies

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.* Where there is an inconsistency between the regulations and the Agreement, the Agreement shall prevail to the extent of the inconsistency.

DFO has adopted a Sustainable Fisheries Framework for all Canadian fisheries to ensure that objectives for long-term sustainability, economic prosperity, and improved governance for Canadian fisheries are met. The Sustainable Fisheries Framework contains policies for adopting an ecosystem based approach to fisheries management, including *A Fishery Decision-Making Framework Incorporating the Precautionary Approach*, and *Managing Impacts of Fishing on Benthic Habitat, Communities and Species.* This policy framework applies to the walrus fishery in the Nunavut Settlement Area.

These documents are available on the Internet at:

http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/overview-cadre-eng.htm

Nunavut Agreement

In 1993, Canada settled a comprehensive land claim agreement with the Inuit of the NSA. The NA created priority access and wildlife harvesting rights for Inuit and other Aboriginal groups who traditionally harvested within the NSA.

The NA also created an Institution of Public Government, the NWMB, to share decision making authority with the Federal Government. The NWMB and DFO Minister consider matters relating to the proper management and control of fisheries and the conservation of fish within the NSA. Under this co-management regime, the NWMB is the main instrument of wildlife management, but the Minister retains ultimate responsibility for wildlife management and may accept, reject or vary decisions made by the NWMB with respect to harvesting and other decisions related to the management and protection of wildlife and wildlife habitat.

The NA establishes wildlife management authority for the NWMB including the establishment, modification, and removal of levels of Total Allowable Harvest (TAH) or harvesting in the NSA, as well as Non-Quota Limitations (NQLs) on harvesting such as management units and harvesting seasons. Once a total allowable harvest has been established, the NWMB is also required to strike a Basic Needs Level (BNL), which is the portion of the TAH allocated to Inuit that constitutes the first demand on the TAH. Once established for a stock or population, the TAH replaces the existing regulatory quota.

The NL establishes wildlife management authority for RWOs and HTOs. The powers and functions of the RWOs (NA 5.7.6) include:

- Regulation of harvesting practices and techniques among the members of HTOs in the region, including the use of non-quota limitations.
- Allocation and enforcement of regional basic needs levels and adjusted basic needs levels among HTOs in the region.
- Assignment to any person or body other than an HTO, with or without valuable consideration and conditions, of any portion of regional basic needs levels and adjusted basic needs levels.
- Generally, the management of harvesting among the members of HTOs in the region.

The powers and functions of the HTOs (NA 5.7.3) include:

- Regulation of harvesting practices and techniques among the members, including the use of non-quota limitations.
- Allocation and enforcement of community basic needs levels and adjusted basic needs levels among members.
- Assignment to non-members, with or without valuable consideration and conditions, of any portion of community basic needs levels and adjusted basic needs levels.
- Generally, the management of harvesting among the members.

The NA establishes authority to Nunavut Tunngavik Incorporated (NTI) as the primary Designated Inuit Organizations (DIO) under the Agreement. It is responsible for ensuring that Inuit rights and obligations under the land claim are implemented, including the wildlife management provisions (Article 5) of the NA.

Under the NA, wildlife management and Inuit harvesting are guided by the principles of conservation (NA s.5.1.5).

The Nunavut Agreement is available on the internet at:
https://www.aadnc-aandc.gc.ca/eng/1100100030601/1100100030602

1.5 Fishery Characteristics

In Nunavut, Atlantic walrus are harvested year round. Inuit hunters use a combination of modern equipment, such as snowmobiles, boats with outboard motors, and rifles, as well as traditional sleds, harpoons and floats. Typically, walrus are hunted from boats when they are on ice floes or while they are swimming in open water. In most cases walrus are shot first and then harpooned. Hunters prefer to kill walrus on ice where they are easier to retrieve and process. Animals on the ice are shot from close range with the intention of killing them immediately before they can fall into the water. Loss rates can be high when walrus are killed in deep water because they sink quickly (NAMMCO 2004, COSEWIC 2006). To reduce losses, animals in the water may be harpooned before they are shot, wounded so they can be harpooned before being killed, or killed in shallow water where they can be retrieved with grappling hooks or at low tide (NAMMCO 2004, COSEWIC 2006). Harpooning a walrus is dangerous, since animals must be approached to within 10m and wounded walrus become very aggressive and can capsize canoes or small boats

(COSEWIC 2006). Floats made from seal skin are still heavily used, although hunters are finding that modern floats are more durable.

Some communities conduct walrus sport hunts. Individuals hunting under the authority of a marine mammal fishing licence issued by DFO must travel with local guides approved by the HTO. The licence stipulates when and where the hunt is authorized to take place, by whom, their country of origin, quotas, gear type to be used, as well as any specific conditions related to the hunt, such as the reporting of all hunts to the local DFO office, firearm muzzle velocity requirements, and the total number of strikes allowed. Individual HTOs may also have local by-laws. Licenced sport hunters report harvest information directly to DFO. See section 6 and Appendix 3 for more information on walrus sport hunts.

Table 1. Primary Harvesting Communities of Atlantic Walrus in the Eastern Canadian Arctic

Population	**Stock**	**Nunavut Harvesting Communities**	**Nunavik Harvesting Communities**	**Greenland Harvesting Communities**
High Arctic	Baffin Bay	Grise Fiord		Qaanaaq Avanersuaq
	West Jones Sound	Grise Fiord		
	Penny Strait-Lancaster Sound	Resolute Bay Arctic Bay Pond Inlet		
Central Arctic	Foxe Basin (northern and central Foxe Basin stocks)	Igloolik Hall Beach		
	Hudson Bay-Davis Strait	Clyde River Qikiqtarjuaq Iqaluit Pangnirtung Arviat Cape Dorset Chesterfield Inlet Coral Harbour Kimmirut Rankin Inlet Repulse Bay Whale Cove	Puvirnituq Akulivik Ivujivik Salluit Kangiqsualujjuaq Kuujjuaq Tasiujaq Aupaluk Kangirsuk Quaqtaq Kangiqsujuaq	Sisimiut
Unknown	South and East Hudson Bay	Sanikiluaq	Inukjuak Kuujjuarapik Umiujaq	

(COSEWIC 2006, Stewart 2008a)

1.6 Approval Process

This IFMP has been approved by the Minister of DFO and the NWMB pursuant to section 5.2.34 of the NA. It will be reviewed and amended as necessary in collaboration with co-management organizations to ensure it remains relevant and current with new science, Traditional Ecological Knowledge and Inuit Qaujimajatuqangit.

This IFMP will be translated to Inuktitut and made available from DFO.

2. Stock Assessment, Science and Traditional Knowledge

2.1 Biological Synopsis

The walrus is Canada's largest member of the seal family. It is a large animal with limbs that have developed into flippers, upper canine teeth that develop into long tusks (ivory) at about 2 years of age, and a moustache made of quill-like whiskers. Males and females are about 125 cm long at birth. As adults, males are significantly larger than females (Garlich-Miller & Stewart 1998). Adult males reach up to 1,100 kg in weight and 3.1 m in length and females can reach 800 kg and 2.8 m in length. Walrus can live to 40 years of age, and are considered to be long-lived animals. As walrus have a delayed sexual maturation, fairly low reproductive rates and specialized habitat requirements, they are vulnerable to over-harvesting and sensitive to environmental changes (COSEWIC 2006).

Mating occurs from February to April. Little is known about their reproduction because they mate in the water and in remote areas. Males mature between 7 and 13 years of age and compete intensely for females, defending access to them for up to five days. Females mature between 5 and 10 years of age and give birth on average every three years. Gestation lasts about 11 months and the young nurse for up to 27 months. Expectant mothers move onto land or ice to give birth. Protective care by mothers and the herd assures high calf survival (DFO 2007).

2.2 Ecosystem Interactions

The habitat requirements of the Atlantic walrus are very specific. They need large areas of shallow (100 m or less), open water that support an abundant clam community. In addition, there must be ice or land nearby to ‘haul out’. Moving pack ice is ideal for this purpose; however, in the summer and fall if ice is scarce, large herds congregate and haul out on low, rocky shores with steep subtidal zones. In areas of deeper water without plentiful clams, some walrus will consume seals. These walrus tend to be more aggressive, and are usually solitary or found in smaller groups. Although some hauled out groups of walrus may contain animals of all ages and both sexes, walrus tend to segregate by age and sex during most of the year. It is thought that females and their young return to certain sites more faithfully than do adult males (DFO 2007). Following harvesting by humans, polar bears are thought to be the main predators of walrus, though it is believed they take few animals.

The full effects of climate change on Atlantic walrus are unknown. However, potential effects of a warming climate may include, but are not limited to:

- A reduction in winter and summer ice cover
- A rise in sea level
- An increase in sediment transport
- An increase in the frequency and severity of storms
- An increase in the presence of killer whales in the Arctic.

These may all be important factors for walrus, potentially impacting food supply and/or quality, ecosystem interactions, affecting their ability to access food and appropriate haulout sites, thereby influencing their health, distribution and abundance. These affects could also impact hunters' ability to access walrus.

2.3 Traditional Ecological Knowledge

Traditional Ecological Knowledge (TEK) of walrus throughout Canada's Arctic is extensive. Each community has hunters and elders that have knowledge in areas of distribution, seasonality, migration, birthing areas and haulout sites. Inuit have observed changes with respect to impacts from climate change, past and present disturbances and development/exploration. When shared, this information is considered with scientific knowledge to provide a more robust understanding of walrus distribution, movements and environmental interactions. TEK has also been used in assisting with the delineation of stocks and is used in the design of surveys by DFO Science to estimate population abundance. TEK is used with scientific data and observations to contribute to management decisions, as well as to identify information gaps, areas of uncertainty, and to set research priorities.

TEK has been recorded on unpublished maps, in meetings minutes, documented in a number of different published papers (DFO 2002a, DFO 2012a, NCRI 2014), and through consultations with experienced hunters and community elders.

Inuit Qaujimajatuqangit (IQ) consists of TEK, as well as Inuit beliefs about how the world works, and the values necessary to behave in an ethical manner in human interactions with the animals and the environment. The collaborative approach to developing this IFMP for walrus that includes representatives from HTOs and other co-management organizations has assisted in the inclusion of IQ, such as decision-making through consensus, working together for a common cause, and respect and care for the land, environment and animals (NWMB). This IFMP will allow for the continued inclusion of IQ, TEK and science as it becomes available.

2.4 Stock Delineation

Two populations of walrus have been identified in Canada based on analysis of microsatellite DNA (Shafer et al. 2013): the high Arctic population (comprised of the West Jones Sound, Baffin Bay and Penny Strait-Lancaster Sound stocks) and the central Arctic population (including the north and central Foxe Basin stocks and the Hudson Bay-Davis Strait stocks).

There are a number of factors used in delineating stocks, including ecological factors that determine distribution of walrus (ice cover, polynyas, shallow banks with suitable habitat, migration routes and availability of haulout sites), historical and current distribution, seasonal movements, age and sex composition, catch levels, composition of catches and hunting loss, hunter observations, harvest sites, survey observations, genetic information, satellite tagging data, heavy metal/ organochlorine data, lead isotope ratios and trace elements (Stewart 2008b).

Based on consultations with local communities, stock reassessment by the North Atlantic Marine Mammal Commission (NAMMCO) (2011), and Stewart (2008a), six stocks or management units of Atlantic walrus have been identified for management purposes in the NSA (Figure 2).

These include:

- Baffin Bay- Management Unit AW-01 (shared with Greenland);
- West Jones Sound- Management Unit AW-02;
- Penny Strait-Lancaster Sound- Management Unit AW-03;
- Foxe Basin- Management Unit AW-04;
- Hudson Bay- Davis Strait- Management Unit AW-05 (shared with Nunavik and Greenland);
- South and East Hudson Bay- Management Unit AW-06 (shared with Nunavik).

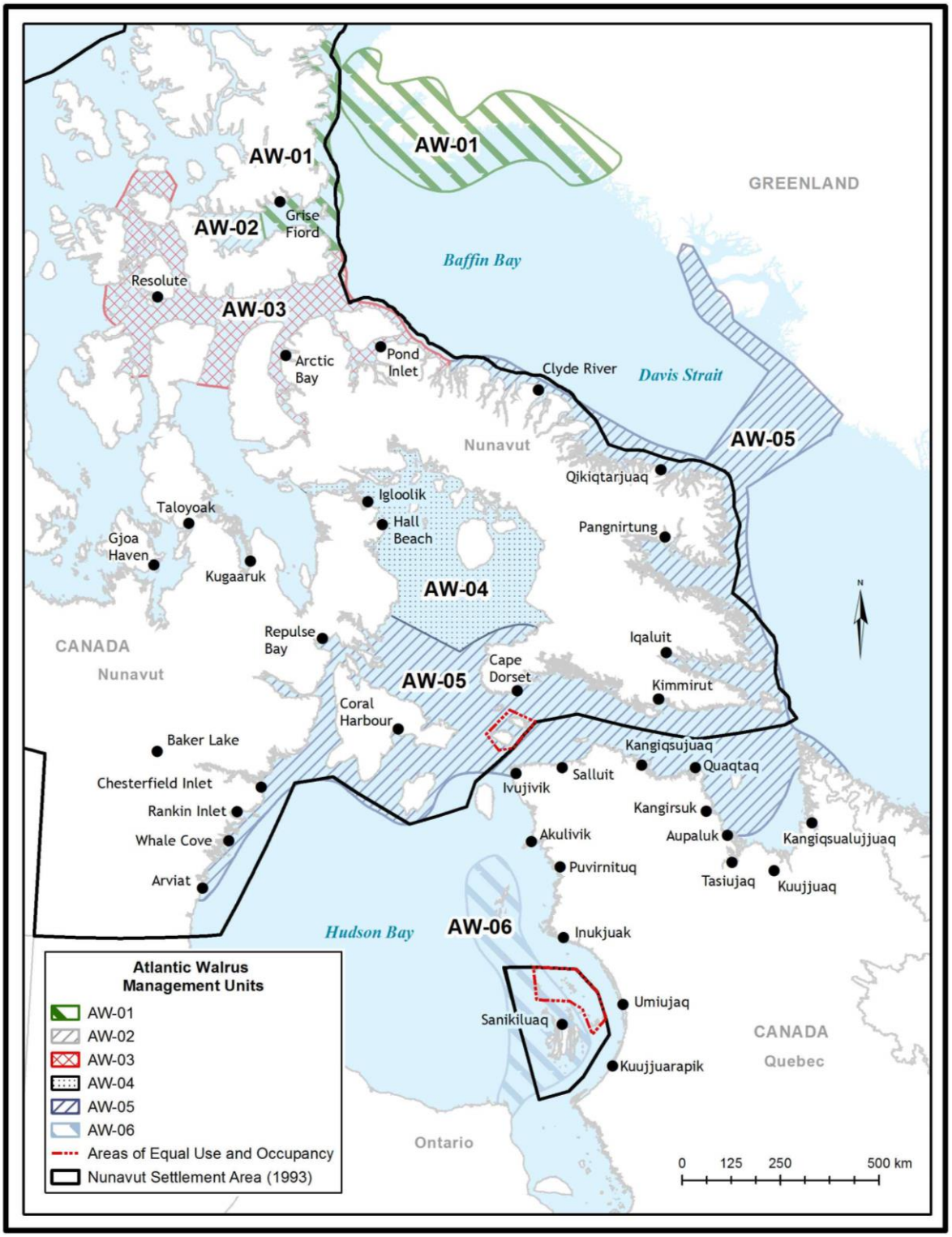

Figure 2. Location of Atlantic walrus management units in the eastern Canadian Arctic and the Nunavut Settlement Area.

Note: This version of the IFMP does not apply to the *Areas of Equal Use and Occupancy* as set out in Schedule 40-1 of the *Nunavut Agreement*.

2.5 Precautionary Approach

A precautionary approach to fisheries management links harvest level recommendations with stock assessment data. Lower harvest levels are recommended when stock assessments are uncertain 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.

In accordance with the *Fisheries Act* and the NA, the best available information guides walrus management decisions made on behalf of the NWMB and the Minister. A management decision to restrict Inuit harvesting shall do so only to the extent necessary to affect a valid conservation purpose; to give effect to the allocation system outlined in the NA; or to provide for public health or public safety (NA s. 5.3.3).

The amount of information available for resource management varies among species and populations. For those species where information on abundance, mortality and reproductive rates may be limited, DFO uses the Potential Biological Removal (PBR) method to estimate the maximum number of animals that may be removed by all human activities without depleting the stock or population (DFO 2012b). This total amount of removals accounted for using PBR would include removals of harvested animals, animals shot at, but not harvested (called struck and lost), as well as losses to ship strikes, net entanglements and any other human activities. The PBR is calculated using a number of biological parameters (Stewart 2008b, Stewart and Hamilton 2013).

In calculating sustainable harvest levels, PBR results are multiplied by a Loss Rate (LR) to obtain Total Allowable Landed Catch (TALC) values. Loss rates represent all indirect human caused mortalities (struck and lost, ship strikes, net entanglements). At this time, only struck and lost rates are considered in the estimate of TALC; however, this may change if more information becomes available.

$$TALC = PBR\ (1- LR)$$

Struck and lost rates are incomplete for walrus and can vary with season, weather, location, hunter experience, hunting technique/equipment, and animal behavior. In Canada, struck and lost rates have been documented to range between 30% and 32% (Orr et. al 1986), although some hunters believe the rates to be as low as 5% (DFO 2002a). Inuit harvesters have noted that loss rates will vary depending on when and how the walrus is harvested. NAMMCO applies a struck and lost rate of 30% for those stocks lacking specific loss rate information (2006).

2.6 Stock Assessment and Trends

Most indicators of trends in stock size are based on distributional changes, differences in physical conditions of the animal, and harvest data. Whenever there is a local decrease in numbers, it may be that the animals have moved to another area, but until increases in other parts

of the range have been clearly documented, the possibility of a reduction in numbers should be considered.

Walrus are widely distributed in the eastern Canadian Arctic, and are most often found in aggregations, or groups, numbering from the tens, to thousands. In order to estimate walrus numbers, aerial surveys are conducted of walrus haulouts. Walrus haulouts are identified based on a number of factors including information from past surveys, existing scientific information, and local traditional knowledge. Data from satellite tags active during surveys are used to adjust the haulout counts to account for animals at sea, and therefore missed by the survey. If no active tags are in the survey area at the time of the survey, data from other walrus studies are used to estimate the numbers of walrus at sea, and determine an abundance estimate. Although aerial surveys combined with satellite telemetry are the standard methods used to estimate abundance of walrus populations across their range, new approaches, such as genetic capture-mark-recapture methods, should be investigated.

The most recent science advisory report on walrus abundance estimates can be found at:
ENGLISH: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2013/2013_034-eng.pdf; and: http://waves-vagues.dfo-mpo.gc.ca/Library/365442.pdf
INUKTITUT: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2013/2013_034-inu.pdf; and http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_007-inu.pdf

Baffin Bay (BB) - Management Unit AW-01

In Canada, the Baffin Bay stock extends from eastern Jones Sound to eastern Ellesmere Island and NW Greenland (Stewart 2008a). Analysis of aerial surveys conducted by DFO and Greenland Institute of Natural Resources in 1999, 2005, and 2009 resulted in population abundance estimates ranging from 1,249 to 1,251 and PBR estimates to range from 10 to 11 walrus (DFO 2013, Stewart et al. 2013a, Stewart and Hamilton 2013). See Figure 2.

West Jones Sound (WJS) - Management Unit AW-02

This stock is separated from the Baffin Bay stock by seasonal distribution and tag movements (Stewart 2008a). Aerial surveys by DFO were conducted between 1998 and 2009, resulting in an abundance estimate ranging from 470 to 503, and PBR estimates ranging from 7 to 17 animals (DFO 2013, Stewart et al. 2013b, Stewart and Hamilton 2013). There was no statistically significant evidence of population change between these surveys and the late 1970s, but there were differences in coverage and walrus distribution may have changed. See Figure 2.

Penny Strait- Lancaster Sound (PS/LS) - Management Unit AW-03

This stock is separated from the Baffin Bay stock by isotope data, and from the West Jones Sound stock by distribution and tag movements (Stewart 2008a). Aerial surveys were conducted between 1998 and 2008 and resulted in an abundance estimate of 727 walrus in 2009 and PBR estimates ranging from 10 to 24 animals (DFO 2013, Stewart et al. 2013b, Stewart and Hamilton 2013). There was no statistically significant evidence of a trend in population numbers when the recent surveys were compared to similar surveys in the late 1970s, although differences in coverage and possible changes in walrus distribution may influence comparisons. See Figure 2.

Foxe Basin (FB) - Management Unit AW-04

Stewart (2008b) delineated the Foxe Basin stock into 2 units: northern Foxe Basin stock and central Foxe Basin stock. In Foxe Basin, the two stocks share an overwintering area and breed as a single unit, but they may occupy different areas in the summer and may be susceptible to different hunting pressures. Lead isotope ratios and trace element profiles from teeth suggest two different stocks, and since isotope ratios are a reflection of the migratory patterns of the animals, they are useful in discriminating management units. Although there is evidence to delineate two stocks in the Foxe Basin area, currently there is not enough information (science or TEK) to visually or geographically separate the stocks within the larger Foxe Basin area. Therefore, until additional information is available to further partition this stock, the management of walrus will continue to occur at the larger Foxe Basin management unit. See Figure 2.

Analysis of surveys conducted in 2010 and 2011 resulted in a range of abundance estimates of 8,153-13,452 and PBR estimates ranging from 211-422 walrus (DFO 2016, Stewart et al. 2013c, Stewart and Hamilton 2013).

Changes in the distribution of walrus within Foxe Basin have been documented by local hunters and researchers, with many haulouts being abandoned on the west coast (Mansfield 1966, Brody 1976, Anderson and Garlich-Miller 1994, DFO 2002a). This may suggest declines in numbers of walrus, habitat availability, or both. Local Inuit have noted that ice conditions have changed in Foxe Basin resulting in a reduction of multiyear ice that walrus use for hauling out on.

Hudson Bay-Davis Strait (HBDS)- Management Unit AW-05

Walrus from the *Hudson Bay-Davis Strait* (HBDS) stock have been distinguished from the other five stocks based on distances, movements, differences in growth patterns, as well as differences in genetics, contaminants, and lead isotope ratios (DFO 2002b, COSEWIC 2006, Stewart 2008a). A comprehensive, systematic survey over the entire geographic area has not occurred for this stock. Currently, due to the limited amount of data over the stock's full range, it is not possible to determine the size or trend of this stock. See Figure 2.

South and East Hudson Bay (SEHB- Management Unit AW-06

The *South and East Hudson Bay* walrus stock was originally delineated by Born et al. (1995) on the basis of distribution, but since then, lead isotope data has provided stronger evidence that supports the differentiation between this stock and the *Hudson Bay-Davis Strait* stock (Stewart 2008a). A complete or comprehensive survey of this stock has not been conducted. Based on a few walrus sightings in a large geographical area over a long period of time, Richard and Campbell (1988) and Born *et al*. (1995) estimated the population size to be a minimum of 410 and 500 animals, respectively (COSEWIC 2006). Currently, due to the limited amount of data, it is not possible to determine the size or trend of this stock. See Figure 2.

Table 2. Abundance Estimates and Potential Biological Removal Levels (PBR) for Atlantic Walrus in the Eastern Canadian Arctic

Population	Stock/Management Unit	Abundance Estimates	PBR
High Arctic	Baffin Bay (BB)/ AW-01	1249-1251	10-11
	West Jones Sound (WJS)/ AW-02	470-503	8-17
	Penny Strait- Lancaster Sound (PS-LS)/ AW-03	623-831	12-24
Central Arctic	Foxe Basin/ AW-04	8,153-13,452	211-422
	Hudson Bay-Davis Strait/ AW-05	No recent estimate.	---
Unknown	South and East Hudson Bay/ AW-06	No recent estimate.	---

(Stewart and Hamilton 2013, DFO 2013, DFO 2016)

PBR represents the total number of animals that can be removed from all human activities while allowing the stock or population to maintain or achieve its optimal sustainable level.

2.7 Research

The following research is required:

- Determine abundance estimates for Hudson Bay-Davis Strait and South and East Hudson Bay stocks;
- Apply new methods to determine walrus abundance, such as genetic capture-mark-recapture;
- Continue to research genetic diversity and stock discrimination;
- Continue to investigate and assess potential threats resulting from human activities (e.g., shipping routes, noise disturbance, tourism);
- Determine the extent of exchange between shared Canada/Greenland stocks;
- Determine changes in habitat availability (pack ice and food); and
- Continue to investigate distribution and abundance of stocks.

3. Social, Cultural and Economic Importance of the Fishery

For centuries, walrus have been used by Inuit as a traditional food source and for supplying important materials for day to day living. Walrus meat is eaten in raw, cooked or fermented (*igunak)* forms by Inuit. Molluscs found in walrus stomachs are considered a delicacy in some Inuit communities (Whitford 2008). Some communities now obtain their walrus meat and tusks from hunters in other communities rather than conduct their own hunts (DFO 2012a).

Historically, walrus products provided materials for numerous necessities required for arctic living such as bones used for carvings, tent poles, and walking sticks, tusks/ ivory used to construct harpoons, toggles, handles, and handicrafts, sinews used for sewing thread, and skin for tents and ropes. The tusk and baculum (penis bone) are valuable economic commodities and provide important sources of cash income, particularly, for the hunting communities. Ivory from

walrus is commonly used for carvings and crafts and is sold both inside and outside the NSA. Although not as much trade occurs with walrus products as some other arctic species, international and domestic trade does still occur, mostly via exporters in southern Canada. International export of walrus products includes carved and un-carved tusks, bones, teeth, skeletons and skulls. International markets for Canadian walrus products include France, India, China, Japan, Korea, Singapore, United States and Australia (Shadbolt et. al 2014).

The walrus sport hunt in some communities can provide a major source of cash income through the hiring of local guides, and sport hunters purchasing various goods and services (food, crafts, and accommodations). Sport hunters are permitted to keep the tusks, baculum and head of the walrus, but the meat remains within the community for community use.

Hunting walrus, especially at traditional summer hunting camps, helps foster interdependence both within and between communities, provides opportunities to share knowledge between generations and community members and strengthens kinship ties and community cohesion. These cultural values are difficult to measure in economic terms but are very important to help maintain the Inuit way of life. The walrus hunt itself, as well as the sharing of the products of the hunt, continues to be of great social, cultural and economic significance to Inuit and the economic value of the meat and the ivory is substantial (COSEWIC 2006).

4. Management Issues

IFMPs are required to cover all aspects of a fishery, in particular, those areas that are related to the sustainability of the target species, ecosystem considerations and monitoring. The following represent the main management issues for the Atlantic walrus in the NSA.

4.1 Fisheries Issues

Abundance Estimates
While recent estimates are available for four of the six walrus stocks or management units, abundance estimates are still required for the Hudson Bay-Davis Strait stock and the South and East Hudson Bay stock. Funding for surveys will be needed to obtain abundance estimates and recommend sustainable harvest levels.

Sustainable Harvest Levels
It is important to ensure the conservation of walrus and that the harvesting of walrus is sustainable. There is growing national and international pressure to demonstrate that walrus are being harvested at sustainable levels. This will require the establishment of sustainable harvest levels for all stocks.

Struck and Lost Rates
Accurate struck and lost rates are important for understanding the impacts of hunting and to maximize sustainable harvest levels. Struck and lost rates vary or are incomplete in the NSA. Determining appropriate struck and lost rates are required in order to estimate sustainable harvest levels.

Hunter Training/ Reducing Loss Rates
Training for harvesters and youth has been identified as an important component for the sustainable management of the walrus fishery. This would include training on the best harvesting techniques, when and where to harvest, hunter safety, preparation and preservation of meat, and how to minimize struck and lost rates. HTOs may develop plans or best management practices that set out practical measures for community hunters to reduce the number of struck and lost walrus while harvesting.

Monitoring and Reporting
Once a TAH/BNL is established for walrus, a method to control removals will be required to ensure walrus harvesting remains within regulated harvest levels.

Timely, accurate reporting of walrus harvesting is essential. Without complete and accurate estimates of local harvesting activity, co-managers must exercise caution when recommending harvest limits so that vital, healthy walrus populations/stocks that are capable of sustaining harvesting needs of Inuit can be maintained. The timeliness of the reporting allows managers to assess the harvest as limits are approached.

Sport Hunt
There is a need for all HTOs that pursue sport hunt opportunities to develop by-laws or guidelines that would identify the community rules or best management practices for the sport hunt.

Ship Traffic/Development/Tourism
There are a number of potential impacts and threats to walrus and walrus habitat resulting from increased development and shipping activities. These could include increased oil spills, ship strikes, disruption of migration, avoidance of ecologically or biologically important areas (e.g. birthing, mating or feeding areas), noise disturbance and the introduction of alien or invasive species through activities such as ballast water exchange. Tourism is increasing in the Arctic and concern with increased disturbance to important walrus areas (e.g. haulouts) has been expressed.

4.2 Oceans and Habitat Considerations

Under the Health of the Oceans Initiative, Ecologically and Biologically Significant Areas (EBSAs) in the Eastern Arctic were identified (DFO 2011). Experts from Canadian federal departments, academics, Inuit organizations and various environmental non-government organizations having expertise in a number of different areas were involved. EBSAs are intended to identify areas that have high ecological or biological significance and are useful in assisting with management decisions.

The EBSAs were evaluated based on set criteria for marine biogeographic regions. Of the 41 EBSAs identified in the Eastern Arctic, 14 included walrus as a component contributing to the EBSA criteria. The ecological functions identified as being important for walrus included known

distribution, presence of haulouts, migration corridors, presence of polynyas, calving areas and feeding grounds.

4.3 National and International Issues

Food Safety
Outbreaks of trichinosis have been reported in Nunavut over the years, most commonly from consuming meat that has been infected with a parasitic worm called *Trichinella nativa*, which lives inside the bodies of walrus and some other birds and mammals. The Government of Nunavut's department of health has responsibilities around food safety within the Nunavut Settlement Area and have established programs to test walrus meat for the parasite that causes the disease. Harvesters are asked to contact their HTO or a Government of Nunavut Environmental Health Officer for additional information on the Nunavut Trichinosis Prevention Program.

COSEWIC and SARA
COSEWIC (Committee on the Status of Endangered Wildlife in Canada) is an independent committee of government and non-government experts that assesses and designates the status of wildlife species that may be in some danger of disappearing from Canada. COSEWIC uses a process based on science, Aboriginal Traditional Knowledge and community knowledge to assess the risk of extinction for wildlife species. Wildlife species that have been designated at risk by COSEWIC may then qualify for legal protection and recovery or management under the Species at Risk Act (SARA).

The Species at Risk Act is a federal Act that was created to prevent Canadian species and their distinct populations from becoming extirpated or extinct, to provide for the recovery of Extirpated, Endangered or Threatened species, and to encourage the management of Special Concern species to prevent them from becoming further at risk. In the case of species listed as Special Concern, a management plan must be created which outlines the actions required to help prevent the species from becoming further at risk. For Extirpated, Endangered and Threatened species, a Recovery Strategy and Action Plan are developed which outline exactly what will be done to help recover the species to a larger, "pre-harm" population size. For Extirpated, Endangered and Threatened species, SARA also provides legal protection of their critical habitats and prevents any harm to the species, except under certain circumstances.

In 2006, COSEWIC designated Atlantic walrus as a species of Special Concern. However, the species is scheduled to be reassessed by COSEWIC and while the 'special concern' designation for a single population of Atlantic walrus could remain, it could be replaced with a higher designation of risk or multiple populations with multiple at risk designations. Once assessed by COSEWIC the Government of Canada will follow an established process to determine whether or not to recommend listing the species under the *Species at Risk Act*. This process includes biological, social and economic assessments of possible listing scenarios, as well as consultation with co-management organizations, stakeholders and interested individuals.

This IFMP could help inform any SARA-compliant documents that would be required if walrus was added to the List of Wildlife Species at Risk on SARA.

CITES

The Atlantic walrus is listed on Appendix III of the Convention on International Trade in Endangered Species (CITES). As such, anyone wishing to export walrus parts or derivatives from Canada must obtain an export permit from the Canadian CITES administration. A non-detriment finding (indicating that levels of export are not detrimental to the survival of the species in the wild) is not required for species on Appendix III of CITES.

In 2009 and 2012 the United States considered submitting a proposal to up-list walrus to Appendix II of CITES based on the lack of information around the management of the species (e.g. sustainable harvest levels) and population species information (e.g. population abundance estimates). If listed on Appendix II of CITES, a non-detrimental finding (NDF) decision from the DFO Scientific Authority would be required to obtain a CITES Export/Re-export permit to export walrus products internationally.

Shared Stocks: Nunavik

Harvesting of the Hudson Bay-Davis Strait and South and East Hudson Bay stocks occurs in both the Nunavut Settlement Area and Nunavik Marine Region. As there are no population abundance estimates for these two stocks, the existing regulatory regime and quotas identified in the *Fisheries Act* and the *Marine Mammal Regulations*, and provisions in the Nunavut Agreement and the Nunavik Inuit Land Claims Agreement would continue to apply.

Shared Stocks: Greenland

Some stocks of Atlantic walrus inhabit and are harvested in both Canadian and Greenland waters. As such, it is important that discussions on management and sustainable harvesting occur between the two countries.

5. Objectives

A number of objectives were established for the walrus fishery. Long term objectives guide the management of the fishery and may be categorized as stock conservation, ecosystem, shared stewardship and social, cultural and economic objectives. Each long term objective is supported by one or more short term objectives. Various co-management organizations may take the lead in developing specific actions to address certain objectives.

Table 3. Long and Short-Term Objectives for the Walrus Fishery in the Nunavut Settlement Area

Objectives	
Long-term:	**Short-term:**
Stock Conservation	
Maintain vital, healthy walrus stocks and populations through sustainable use and effective fishery management consistent with the wildlife harvesting and management provisions under the Nunavut Agreement.	• Improve knowledge of Atlantic walrus biology, abundance and distribution. • Conduct surveys of remaining walrus stocks to obtain abundance estimates. • Use local knowledge/TEK/IQ in aerial survey designs and use local community members in conducting the surveys • Develop training materials for Inuit harvesters to maximize harvest and minimize losses. • Develop communication materials to inform elders, harvesters and community members on research methods, activities and results. • Develop/enhance monitoring program to reduce struck and lost, including an assessment of harvesting methods and equipment, and collection of data on rates of struck and loss.
Take a precautionary approach to fishery decisions for walrus stocks or populations.	• Given uncertainties related to walrus stocks, take a precautionary approach to establishing TAHs and BNLs for each walrus stock or population.
Ecosystem	
Protection of walrus habitat.	• Continue to identify and document traditional ecological knowledge of important walrus habitats. • Investigate and assess threats resulting from human activities (e.g. shipping

	routes, sonar, noise disturbance, and tourism). • Support research into the effects of invasive species on walrus and walrus habitat.
Shared Stewardship	
Promote collaboration, participatory decision-making and shared responsibilities with resource users, co-management organizations and other stakeholders.	• Conduct IFMP evaluations with walrus working groups. • Develop sport hunt guidelines. • Develop appropriate guidelines for activities that could negatively affect walrus Once TAH/BNLs are established for walrus stocks, co-management organizations to implement the shared responsibilities in accordance with land claims agreements, the *Fisheries Act*¸ and its regulations. • Develop and/or participate in more formalized discussions with Greenland on the management of shared stocks.
Social, Cultural and Economic	
Promote traditional Inuit harvesting techniques and practices within communities.	• Develop and/or enhance training programs for inexperienced hunters.
Promote and maintain vital, healthy, walrus populations capable of sustaining harvesting needs.	• Increase awareness of the importance of walrus to public, communities, and stakeholders. • Include IQ in all policies and program development. • Promote territorial health programs aimed at food safety.
Maintain access to international markets for the export of walrus products.	• Demonstrate harvest levels and practices are sustainable. • IFMP in place.
Compliance	
Support effective fisheries management through a defined compliance program.	• Conduct a risk assessment of compliance issues. • Develop a variety of compliance activities and tools to address the identified risks. • Support Communities in the development of by-laws related to walrus or activities that may affect walrus.

6. Access and Allocation

Upon ratification of the NA in 1993, all existing restrictions or quotas on the amount of wildlife that could be harvested within the NSA were retained and deemed to have been established by the NWMB.

6.1 Where a Total Allowable Harvest ***has not*** been established

Unless a TAH has been established, an individual Inuk may harvest up to four (4) walrus in a year without a licence (MMR s. 6(1) (c)), except where community quotas exist (MMR s.26). Annual quotas have been set for the communities of Coral Harbour (60), Sanikiluaq (10), Arctic Bay (10) and Clyde River (20).

6.1.1 Sport Hunt

Marine Mammal Fishing Licences may be issued for non-beneficiaries to participate in walrus sport hunts (MMR s.4) provided there is support from the local HTO and annual approval from the NWMB based on its *Interim NWMB Sport Hunt Policy*. Sport hunters must provide detailed harvest reporting directly to DFO. The full Walrus Sport Hunt Policy can be found in Appendix 3.

6.1.2 Harvest Reporting

Harvest information is provided by Inuit hunters to the HTOs, which is then relayed to DFO (MMR s. 17; *Fisheries Act* s. 61; NA s. 5.7.43). Appendix 1 provides information on annual quotas and landed catch for communities that have harvested walrus. These numbers are not corrected for hunting losses. A Fishery Officer will notify the community and HTO when the quota has been reached and will close the fishery (MMR s. 12, 26).

6.2 Where a Total Allowable Harvest ***has*** been established:

The NWMB is in the process of establishing Total Allowable Harvest (TAH) levels and Basic Needs Levels (BNL) for walrus. In 2013, the Minister of Fisheries and Oceans accepted the NWMB's decision to establish the BNL for beluga, narwhal and walrus in the NSA to be equal to the levels of TAH for those species. Therefore, since the BNL is the first demand on the TAH, Inuit will always have the right to the entire TAH. RWOs and HTOs are responsible for allocating this BNL/TAH, as well as regulating harvesting practices and techniques among their members, including the use of NQLs.

Article 40 of the NA will be considered for other Inuit or aboriginal groups that may demonstrate traditional use of walrus in the NSA.

6.2.1 Total Allowable Harvests

Total Allowable Harvest levels have been established for the following stocks:

Table 4. Total Allowable Harvests established for walrus stocks/management units in the eastern Canadian Arctic

Population	Stock/ Management Unit	Harvesting Community	TAH	Community Harvest Level
High Arctic	Baffin Bay /AW-01	Grise Fiord	To be established	
	West Jones Sound / AW-02	Grise Fiord	To be established	
	Penny Strait- Lancaster Sound /AW-03	Arctic Bay Pond Inlet Resolute	To be established	
Central Arctic	Foxe Basin / AW-04	Hall Beach Igloolik	To be established	

*see Figure 2 for a map of Atlantic walrus by stocks and management units.

6.2.2 Allocation of the TAH:

As identified in the NA, the RWOs will be responsible for allocating annual regional BNL, which in the case of walrus will be the TAH, to their respective community HTOs, regulating their members and fulfilling other wildlife co-management obligations in accordance with the NA. The community HTOs will be responsible for allocating and enforcing the community BNL (community harvest limit) among members, and generally the management of harvesting among members (see Figure 3).

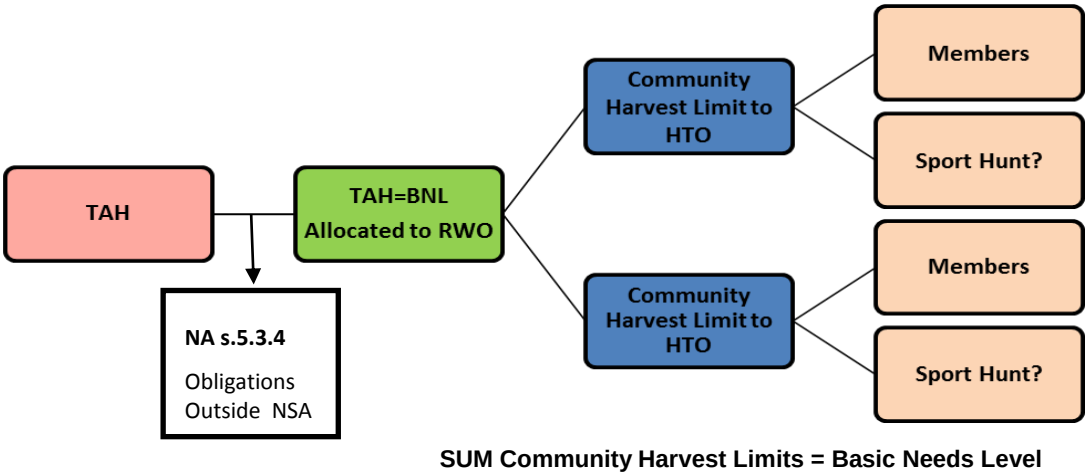

Figure 3. Allocation of the Total Allowable Harvest (TAH) and Basic Needs Level (BNL)

Where a TAH has been established for a walrus management unit, the combined annual community harvest limits for that management unit shall not exceed the TAH.

6.2.3 Sport Hunt

An assignment under section 5.7.34 (b) of the NA is used to authorize walrus sport hunts to a person qualified to harvest walrus under the laws of general application. Under this section, a person authorized to harvest walrus under a licence may be assigned part or all of a share of the total allowable harvest by an Inuk, RWO or HTO. Through the assignment provisions, an Inuk, an HTO or a RWO may assign its share of the TAH to a walrus sport hunt, if so desired, so long as the established annual total allowable harvest for that particular management unit is not exceeded.

An assignment under Article 5 of the NA must be evidenced by documentation containing information on both the assignor, and the assignee. Once the required documentation is received by DFO, the Minister may issue a Walrus Marine Mammal Fishing Licence (MMR s.4). The full Walrus Sport Hunt Policy can be found in Appendix 3.

6.2.4 Post-Harvest Walrus Tag

For management units where a TAH has been established.

The Post-Harvest Walrus Tag is an important management tool for RWOs and HTOs to be able to allocate and account for harvesting among their members. Where a TAH has been established, DFO will issue Post-Harvest Walrus Tag to the RWO and/or HTOs in the amount equal to the annual harvest level for the corresponding management unit. Post-Harvest Walrus Tags will be allocated by the RWO/HTO and will be proof of allocation to a share of one walrus from the walrus TAH for a particular management unit. This forms part of the walrus management system in which RWOs and HTOs decide on community allocations, in the form of community harvest limits.

The Post-Harvest Walrus Tag is not a licence to hunt and will be issued without fee or administrative charge. A Walrus Harvest Tag system will assist in:

- Evidencing a person's authority to harvest/possess wildlife appropriate to the particular Management Unit;
- Regulating the allocation of a share of TAH, including the BNL, as allocated by the RWO and/or HTO;
- Collecting information in relation to harvesting activities;
- Regulating harvesting activities in relation to sport hunt assignment.

6.2.5 Harvest Reporting and Monitoring

Hunters provide information on their hunts to their HTO. HTOs will provide the information to the RWO and DFO in a timely manner. A Fishery Officer will notify the community and HTOs when the harvest level has been reached for a management unit and will close the fishery (MMR s. 12, 26).

- Harvest information must be reported (MMR s. 17; Fisheries Act s. 61; NA s. 5.7.43):

7. Management Measures for the Duration of the Plan

The management measures identified in the IFMP outline the controls or rules adopted for the walrus fishery for the purposes of stock conservation and sustainable management. These measures are based on the *Fisheries Act, the Marine Mammal Regulations* and the NA.

The *Marine Mammal Regulations* (MMR) include provisions related to the hunting, movement, and sale of walrus products. These provisions include requirements for hunters to hunt a walrus in a manner that is designed to kill it quickly, to make reasonable efforts to retrieve a killed or wounded walrus without delay and to have all necessary equipment on hand to retrieve it. Abandoning, discarding or wasting edible parts of walrus is prohibited.

Domestic movement of walrus products requires a DFO Marine Mammal Transportation Licence. Indians or Inuit who land walrus in one jurisdiction and are returning to their home in another jurisdiction are exempted from this requirement. International trade of walrus products requires a CITES) Export/Re-export Permit.

A full list of the management measures can be found in Appendix 2.

8. Shared Stewardship Arrangements

The Atlantic walrus IFMP was initiated and developed by the Foxe Basin Walrus Working Group in 2007 and the High Arctic-Baffin Bay Walrus Working Group in 2009. Participation on the Working Groups includes representatives from each of the HTOs, the Qikiqtaaluk Wildlife Board (co-chair), NTI and DFO. Staff from the NWMB have attended Working Group meetings when possible. The Working Groups invite subject-matter experts to provide additional information in the development of the IFMP as required. This has included representatives from the mining industry and community elders.

The Walrus Working Groups produced Terms of References to help guide the development of the IFMP. Meetings have been held in the communities of Resolute, Grise Fiord, Arctic Bay, Pond Inlet, Hall Beach and Igloolik to obtain the views of elders and community members on issues related to walrus management, including the identification of fishery issues and long and short term objectives for the fishery.

There are a number of different ways that the objectives for the fishery may be achieved, such as the effective implementation of the management measures identified in Appendix 2. Other measures may be initiated by co-management organizations through the development of by-laws or guidelines. Once developed, these would be included as an Appendix of the IFMP.

9. Compliance Plan

The Conservation and Protection program promotes and maintains compliance with legislation and regulations implemented to achieve the conservation and sustainable use of Canada's aquatic resources, and the protection of species at risk, fish habitat and oceans. Conservation and Protection works closely with internal partners to evaluate risks to fish and fish habitat to ensure program delivery meets Departmental objectives.

Fishery Officers monitor fishing and related activities to ensure compliance with the *Fisheries Act* and its regulations as well as several other federal statutes. Fishery Officers investigate violations of these acts and regulations and resolve them by applying various compliance options.

Regional Compliance Program Delivery

Fishery Officers in the Eastern Arctic Area monitor the Atlantic walrus fishery and the trade of Atlantic walrus products for compliance with the MMR which are made pursuant to the *Fisheries Act*. Conservation and Protection works closely with internal and external partners to consult on and or resolve compliance issues.

Fishery Officers promote compliance with regulations by working with user groups (e.g. hunters and buyers) and other stakeholders to better understand the laws. Fishery Officers engage hunters and people involved in the marine mammal trade industry to provide information that increases awareness and helps address compliance and conservation concerns in the Atlantic walrus fishery. Increased education and awareness will help protect the legal market and trade of Atlantic walrus ivory and parts.

Current Compliance Issues

Specific concerns may arise from: failing to follow conditions of licence for the sport hunt, non-reporting or misreporting of harvest, wastage, illegal harvest or illegal trade and exporting of Atlantic walrus ivory and or parts. Patrols have been conducted in Atlantic walrus hunting areas and communities to monitor these concerns.

Compliance Strategy

Conservation and Protection collaborates with internal and external partners to identify and prioritize compliance issues and works with resource managers to address them.

Fishery Officers focus efforts on:

- compliance with legislation, including sport hunt licence conditions;
- tusk traceability / illegal trade of ivory tusks;
- licence inspections.

Operational Activities include:

- Monitoring of Atlantic walrus sport hunts;
- Education of user groups and stakeholders;
- Inspections of Atlantic walrus products from harvest to export;

- Cross reference of harvest data with trade data;
- Liaise with Nunavut Conservation Officers and other territorial or provincial law enforcement agencies.

Table 5. Compliance Focus and Strategies for Atlantic Walrus in the Nunavut Settlement Area

COMPLIANCE FOCUS		
Issue	Regulation	Strategy
Monitor harvest and enforce regulations	MMR: Sections 6, 7, 8, 9, 10, 11, 13, 15, 17, 25 and 26	• Hunt monitoring • Inspections • Licences
Harvest reporting and quota compliance	MMR: Sections 6, 12, 17 and 26 . Fishery (General) Regulations: Sections 6, 7, 9, 11, 15 and 22	• Inspections • Licence cross referencing and issuance • Variation Orders
Tusk traceability	MMR: Sections 15 and 16	• Inspections

10. Performance Review

This Atlantic walrus IFMP was developed through an extensive consultative process including the NWMB, NTI, RWOs, HTOs, walrus hunters and community members. DFO will continue to consult with these groups throughout the life of this IFMP as circumstances require.

Annual post season review sessions will be conducted with co-management organizations and as circumstances require. Progress on achieving the short term objectives and effective implementation of management measures identified in the Plan will be reviewed. Recommendations to improve management of the walrus fishery will be developed to meet the long term objectives of maintaining a sustainable walrus fishery.

References

Anderson, L. E., and J. Garlich-Miller. 1994. Economic analysis of the 1992 and 1993 summer walrus hunts in northern Foxe Basin, Northwest Territories. Canadian Technical Report of Fisheries and Aquatic Sciences 2011: iv + 20 p.

Brody, H. 1976. Inuit land use in North Baffin Island and northern Foxe Basin. Pages 152-171 in M. M. R. Freeman (ed.) Inuit land use and occupancy project, Volume 1: Land use and occupancy. Indian and Northern Affairs, Ottawa.

Born, E.W., Gjertz, I, and Reeves, R.R. 1995. Population Assessment of Atlantic Walrus (*Odobenus rosmarus rosmarus*). Meddelelser Nr. 138. Oslo: Norsk Polar Institute. 100pp.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada). 2006. COSEWIC Assessment and Update Status Report on the Atlantic Walrus (*Odobenus rosmarus rosmarus*) in Canada. Ottawa: COSEWIC.

DFO. 2002a. Proceedings of the RAP Meeting on Atlantic Walrus, 29-30 January, 2002, Navigator Inn, Iqaluit, MU. Canadian Science Advisory Secretariat. Proceedings Series 2002/24.

DFO. 2002b. Atlantic Walrus. Stock Status Report. E5-17, 18, 19, 20.

DFO. 2007. The Atlantic Walrus: a Species at Risk in the Arctic. DFO/2007-1363.

DFO. 2011. Identification of Ecologically and Biologically Significant Areas (EBSA) in the
Canadian Arctic. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2011/055.

DFO. 2012a. Proceedings of the Pre-COSEWIC Peer Review Meeting for Atlantic walrus (*Odobenus rosmarus rosmarus*). February 28 to March 1,2012. CSAS Proceedings series 2012/041.

DFO. 2012b. Applying the Precautionary Approach to Marine Mammal Harvest in Canada. Canadian Science Advisory Secretariat. Research Document 2012/107.

DFO. 2013. Estimates of Abundance and Total Allowable Removals for Atlantic Walrus (*Odobenus rosmarus rosmarus*) in the Canadian Arctic. Canadian Science Advisory Secretariat. Science Advisory Report 2013/034.

DFO. 2016 Estimates of abundance and total allowable removals for Atlantic walrus (*Obodensus rosmarus rosmarus*) in Foxe Basin. DFO Canadian Science Advisory Secretariat. Science Advisory Report 2016/007.

Garlich-Miller, J., and R. E. A. Stewart. 1998. Growth and sexual dimorphism of Atlantic walruses (Odobenus rosmarus rosmarus) in Foxe Basin, Northwest Territories, Canada. Marine Mammal Science 14: 803-818.

Mansfield, A. W. 1966. The walrus in Canada's Arctic. Canadian Geographic Journal 72:88-95.

NAMMCO (North Atlantic Marine Mammal Commission). 2004. Report of the NAMMCO Workshop on Hunting Methods for Seals and Walrus. North Atlantic House Copenhagen, Denmark, 7-9 September 2004.

NAMMCO (North Atlantic Marine Mammal Commission). 2005. Scientific Subcommittee Working Group on the Stock Status of Walruses in the North Atlantic and Adjacent Seas. NAMMCO/15/5.

NAMMCO (North Atlantic Marine Mammal Commission) 2006. Scientific Committee Report of the Thirteenth Meeting, Reine, Norway, 25-27 October 2005. NAMMCO/15/15. Presented at the Fifteenth Meeting of the Council, 14-16 March 2006, Selfoss, Iceland.

NAMMCO (North Atlantic Marine Mammal Commission) 2011. Annual Report 2010.North Atlantic Marine Mammal Commission, Tromso, Norway, 501 pp.

NCRI (Nunavut Coastal Resource Inventory). 2014. Foxe Basin Walrus. http://www.nwmb.com/inu/public-hearings-meetings/inulimaanik-tuharahuaknik/2015-2/public-hearing-to-consider-the-establishment-of-a-management-unit-and-total-allowable-harvest-for-foxe-basin-walrus/submissions-1/4978-government-of-nunavut-department-of-environment-submission-to-the-nwmb-public-hearing-to-consider-the-establishment-of-a-management-unit-and-total-allowable-harvest-for-foxe-basin-walrus-december-17-2014-eng/file.

NWMB (Nunavut Wildlife Management Board). Inuit Qaujimajatuqangit (IQ) Program and Database. http://www.nwmb.com/en/home/97-english/sidebars/current-initiatives/109-iq-program-and-database.

Orr, J.R., B. Renooy, and L. Dahlke. 1986. Information from Hunts and Surveys of Walrus (*Odobenus rosmarus*) in Northern Foxe Basin, Northwest Territories, 1982-1984. Canadian Manuscript Report of Fisheries and Aquatic Sciences No. 1899.

Shadbolt, T., Arnbom, T. and Cooper, E. W. T. 2014. *Hauling Out: International Trade and Management of Walrus. TRAFFIC and WWF-Canada. Vancouver, B.C.*

Shafer A, Davis CS, Coltman DW, and Stewart REA. 2013. Microsatellite assessment of walrus (*Odobenus rosmarus rosmarus*) stocks in Canada. NAMMCO.

Stewart, R.E.A. 2008a. Redefining Walrus Stocks in Canada. *Arctic* 61:292-398.

Stewart, R.E.A. 2008b. Can We Calculate Total Allowable Harvests for Walrus Using Potential Biological Removal? Canadian Science Advisory Secretariat Research Document 2008/025.

Stewart, R.E.A., Born, E.W., Dietz, R., Heide-Jørgensen, M.P., Rigét, FF., Laidre, K., Villum Jensen, Knutsen, L.Ø., Fossette, S. and Dunn, J.B. 2013a. Abundance of Atlantic walrus in western Nares Strait, Baffin Bay stock, during summer. NAMMCO Sci. Publ. X: xx-xx.

Stewart Robert EA, Born, Erik W., Dunn, J Blair, Koski, William R., and Ryan, Anna K. 2013b. Use of Multiple Methods to Estimate Walrus (Odobenus rosmarus rosmarus) Abundance in the Penny Strait-Lancaster Sound and West Jones Sound Stocks, Canada. NAMMCO Scientific Publications. doi: http://dx.doi.org/10.7557/3.2608.

Stewart, R.E.A., Hamilton, J.W., and Dunn, J.B. 2013c. Results of Foxe Basin walrus (Odobenus rosmarus rosmarus) surveys: 2010-2011. DFO Can. Sci. Advis. Sec. Res. Doc. 2013/017. iv + 12 p.

Stewart, R.E.A and Jason Hamilton. 2013. Estimating total allowable removals for walrus (*Odobenus rosmarus rosmarus*) in Nunavut using the potential biological removal approach. CSAS Research Document 2013/031.

Whitford, Jacques. 2008. Socioeconomic Analysis for Atlantic Walrus. Prepared for Fisheries and Oceans Canada, Central and Arctic Region.

Glossary of Terms

Abundance: Number of individuals in a stock or a population.

Basic Needs Level (BNL): Means the level of harvesting by Inuit identified in Sections 5.6.19 to 5.6.25 of the Nunavut Agreement.

Committee on the Status of Endangered Wildlife in Canada (COSEWIC): Committee of experts that assess and designate the conservation status of species that may be at risk in Canada.

Convention on International Trade in Endangered Species (CITES): An international agreement to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

Harvest Limit: A maximum number of walrus permitted to be landed by a community or from a stock/ management unit in a given time period.

Inuit Qaujimajatuqangit: Is a body of knowledge and unique cultural insights of Inuit into the workings of nature, humans and animals.

Marine Mammal Regulations (SOR/93-56): Federal regulations under the *Fisheries Act* that govern the management and control of fishing for marine mammals and related activities in Canada or in Canadian fisheries waters.

Marine Mammal Fishing Licence: Licence required to fish for marine mammals under the Marine Mammal Regulations (s. 5).

Marine Mammal Transport Licence (MMTL): Licence required for transport of marine mammal parts and products from one province (or territory) to another.

Non-quota Limitation (NQL): Means a limitation of any kind, except a total allowable harvest, and may include a limitation on season of harvest, sex of wildlife, size of wildlife, age of wildlife or method of harvest.

Population: A reproductively isolated group of animals, sharing a habitat.

Potential Biological Removal (PBR): A statistical method currently used by DFO Science to provide recommendations on sustainable harvest levels.

Precautionary Approach (PA): Applying caution to management actions when scientific knowledge is uncertain and not relying on the absence of adequate scientific information as a reason to postpone action to avoid serious harm to wildlife stocks or their ecosystems.

Quota: The number of walrus that can be harvested by a community, as set out in Column 1, Section 26, or by an individual, as per Section 6. (1)(c) of the *Marine Mammal Regulations*.

Species at Risk Act (SARA): The Canadian Act to prevent wildlife species from becoming extinct and secure the necessary actions for their protection and recovery in Canada.

Stock: Refers to a resource management unit. For walrus, it refers to a geographically segregated group of animals that are subject to hunting.

Total Allowable Harvest (TAH): For a stock or population this means an amount of wildlife able to be lawfully harvested as established by the NWMB pursuant to Sections 5.6.16 to 5.6.18 of the NA.

Total Allowable Landed Catch (TALC): A sustainable harvest level recommendation for a stock or population developed by applying an estimate of harvest loss rates as a correction factor in the PBR calculation.

Traditional Ecological Knowledge (TEK): A cumulative body of knowledge handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Inuit hold traditional knowledge on walrus.

Appendix 1. Landed Catch (Subsistence Harvest and Licenced Sport Hunts) of Walrus in Nunavut 2000-2016

Area of Harvest (Stock and Management Unit)	Quota ¥		2000/01		2001/02		2002/03		2003/04		2004/05		2005/06		2006/07		2007/08		2008/09		2009/10		2010/11		2011/12		2012/13		2013/14		2014/15		2015/16		2016/17	
	Settle-ment	Individ-ual	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb	Sp	Sb
Hudson Bay- Davis Strait (AW-05)																																		
Clyde River	20		--	0	--	1	--	0	--	0	--	2	--	NR	--	1	--	0	--	NR	--	NR	--	NR	--	0	--	0	--	0	--	0	--	3		0
Qikiqtarjuaq		4	--	0	0	1	--	33	--	1	--	0	0	NR	NR	9	--	6	--	NR	--	NR	--	6	--	5	--	10	--	0	--	0	--	7		4
Pangnirtung		4	--	15	--	19	--	9	--	15	--	NR	--	NR	--	15	--	NR	--	10	0	NR	--	NR	--	NA	--	7	--	0	--	4	--	NR		25
Iqaluit		4	--	19	--	7	--	1	--	1	--	NR	--	10	--	9	--	11	--	NR	--	14	--	14	--	14	--	19	--	6	--	1	--	11		10
Kimmirut		4	--	0	--	0	--	4	--	7	0	4	--	6	NR	2	--	NR	--	NR	--	NR	--	7	--	0	--	1	--	0	--	2	--	2		3
Chesterfeild In.		4	--	4	--	NR	--	NR	--	4	--	3	--	3	--	0	--	2	--	0	--	NR	--	NR	--	7	--	4	--	0	--	15	--	9		5
Cape Dorset		4	0	46	1	10	0	5	--	1	0	NR	0	6	NR	25	--	NR	--	NR	--	NR	--	1	--	2	0	0	0	0	0	0	--	0		2
Coral Harbour	60		0	1	2	NR	2	28	--	10	--	NR	2	15	3	15	NR	4	4	NR	9	6	8	NR	4	7	3	12	7	15	7	15	7	20	9	42
Repulse Bay		4	--	1	--	NR	0	20	--	NR	--	3	--	6	--	6	--	12	--	NR	--	4	--	NR	--	0	--	5	--	0	--	0		12		12
Arviat		4	--	1	--	NR	--	3	--	5	--	NR	--	1	--	0	--	0	--	NR	--	NR	0	0	--	0	--	0	--	0	--	0		0		1
Rankin Inlet		4	--	7	--	NR	--	12	--	2	--	2	--	3	--	13	--	6	NR	3	--	6	--	2	--	4	--	6	--	0	--	0		15		2
Whale Cove		4	--	0	--	NR	--	1	--	NR	--	NR	--	NR	--	0	--	0	--	NR	--	NR	--	0	--	0	--	0	--	0	--	0		0		0
TOTALS			**0**	**94**	**3**	**38**	**2**	**116**	**0**	**46**	**0**	**14**	**2**	**50**	**3**	**95**	**0**	**41**	**4**	**13**	**9**	**30**	**8**	**30**	**4**	**39**	**3**	**64**	**7**	**21**	**7**	**37**	**7**	**79**	**9**	**106**
Total Reported Harvest (Sp + Sb)				**94**		**41**		**118**		**46**		**14**		**52**		**98**		**41**		**17**		**39**		**38**		**43**		**67**		**28**		**44**		**86**		**115**
Baffin Bay (AW-01) and West Jones Sound (AW-02)																																		
Grise Fiord		4	--	4	--	2	--	3	--	7	--	5	--	2	--	5	--	4	NR	NR	--	7	--	2	--	4	--	NR	--	0	--	16		1		**0**
TOTALS			**0**	**4**	**0**	**2**	**0**	**3**	**0**	**7**	**0**	**5**	**0**	**2**	**0**	**5**	**0**	**4**	**0**	**0**	**0**	**7**	**0**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**1**	**0**	**0**
Penny Strait - Lancaster Sound (AW-03)																																		
Arctic Bay	10		--	2	--	2	--	0	--	0	--	1	--	NR	--	0	--	1	--	NR	--	0	--	1	--	0	--	0	--	0	--	0		0		0
Resolute Bay		4	--	0	--	NR	--	1	--	6	--	4	--	1	--	0	--	1	--	NR	--	2	--	3	0	2	--	2	--	0	--	1		0		0
Pond Inlet		4	--	5	--	3	--	0	--	1	--	0	--	1	--	0	--	0	--	NR	--	NR	--	3	--	0	--	NR	--	0	--	0		1		1
TOTALS			**0**	**7**	**0**	**5**	**0**	**1**	**0**	**7**	**0**	**5**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**7**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**
Foxe Basin (AW-04)																																		
Hall Beach		4	1	87	0	40	4	1	1	87	NR	66	3	75	4	100	--	35	--	33	NR	70	0	75	2	33	1	107	10	NR	2	92	11	36	6	110
Igloolik		4	6	168	12	40	10	NR	14	97	10	NR	12	100	2	184	NR	54		74	--	89	--	141	6	95	4	107	0	NR	0	9	--	NR		129
TOTALS			**7**	**255**	**12**	**80**	**14**	**1**	**15**	**184**	**10**	**66**	**15**	**175**	**6**	**284**	**0**	**89**	**0**	**107**	**0**	**159**	**0**	**216**	**8**	**128**	**5**	**214**	**10**	**0**	**2**	**101**	**11**	**36**	**6**	**239**
Total Reported Harvest (Sp + Sb)				**262**		**92**		**15**		**199**		**76**		**190**		**290**		**89**		**107**		**159**		**216**		**136**		**219**		**10**		**103**		**47**		**245**
Southand East Hudson Bay (AW-05)																																		
Sanikiluaq	10		--	1	--	0	--	15	--	3	--	NR	--	NR	--	2	--	NR	--	0	--	2	--	2	--	2	--	3	--	0	--	0		1		0
TOTALS			**0**	**1**	**0**	**0**	**0**	**15**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
Kitikmeot Region																																		
Bathurst Inlet		4																										NR		NR		NR		NR		NR
Cambridge Bay		4																										0		0		0		0		0
Gjoa Haven		4																										0		0		0		NR		NR
Kugaaruk		4																										0		0		0		0		3
Kugluktuk		4																										0		0		0		0		0
Taloyoak		4																										0		0		0		0		0
Umingmaktok		4																										0		0		NR		NR		NR
TOTALS			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
NU Reported Totals			**7**	**361**	**15**	**125**	**16**	**136**	**15**	**247**	**10**	**90**	**17**	**229**	**9**	**386**	**0**	**136**	**4**	**120**	**9**	**200**	**8**	**257**	**12**	**175**	**8**	**283**	**17**	**21**	**9**	**155**	**18**	**118**	**15**	**346**
NU Total Reported Harvest (Sp + Sb)				**368**		**140**		**152**		**262**		**100**		**246**		**395**		**136**		**124**		**209**		**265**		**187**		**291**		**38**		**164**		**136**		**361**
Salluit ~																**14**		**24**		**17**	--	**7**	--	**14**		**11**	**0**	**NR**	**0**	**NR**	**0**	**NR**	**0**	**NR**	**0**	**NR**

~ The Nunavik community of Salluit conducts licensed sport hunts within the Area of Equal Use and Occupancy described in S. 40 of the Nunavut Land Claims Agreement.
Salluit's sport hunts are licenced by the Eastern Arctic Area office.

(Legend on following page)

Legend:

¥	see Marine Mammal Regulations (SOR/93-56) S. 6 (1)(c), S. 6 (2)(c), and S. 26.
Sp	Licensed Sport Harvest - a regulated sport hunt is conducted in some Nunavut communities. The NWMB reviews walrus sport hunt applications annually, and transmits its approval decisions to DFO. Approved sport hunts are conducted under DFO license and landings are reported to the DFO Eastern Arctic Area Office, Iqaluit. In cases where sport hunts were approved but not conducted, the landings are reported as '0'. 'NR' if information has not yet been received
Sb	Subsistence Harvest - 'NR' indicates the community has not reported its subsistence walrus harvest. DFO compiles information on subsistence walrus harvests by telephone calls to community Hunters and Trappers Organizations, or the local Government of Nunavut Wildlife Officers.
'-- '	Community does not conduct sport hunts
Notes	
	Cresswell Bay is associated to Resolute Bay - there used to be hunt camps there
	Pangnirtung Subsistence harvest 2001 was originally reported as 19 +/- 1; this value was replaced with the average (19)
	Coral Harbour Subsistence harvest 2002 was originally reported as 25-30; this value was replaced with the average (28).
	Coral Harbour Subsistence harvest 2009 was originally reported as 5-6; this value was replaced with the average (6).
	Qikiqtarjuaq Subsistence harvest 2010 was orginally reported as 5-6; the value was replaced with the average (6).
	Hall Beach Subsistence harvest 2010 was orginally reported as 70-80; the value was replaced with average (75).
	Qikiqtarjuaq Subsistence harvest 2011 was orginally reported as 4-5; the value was replaced with average (5).
	Hall Beach Subsistence harvest 2011 was originally reported as 30-35; the value was replaved with average (33).
	Igloolik HTA implemented a two year moratorium on walrus sport hunts and tourism. Decision was made November 30, 2007.
Harvest season runs from April 1 to March 31	

Appendix 2. Overview of Current Management Measures for the Atlantic Walrus Fishery in the Nunavut Settlement Area

Management Measure	Applicable Legislation/ Regulation
Harvest Levels	• Unless a TAH is in place, an Inuk may, without a licence, fish for food, social or ceremonial purposes for four (4) walrus in a year except where community quotas exist (Coral Harbour (60), Sanikiluaq (10), Arctic Bay (10) and Clyde River (20)). (MMR, s. 6 and 26). • Where a TAH has been established, annual harvest may not exceed the total allowable harvest level established for a particular management unit.
Monitoring and Reporting	• Harvest information must be reported (MMR s. 17; Fisheries Act s. 61; and the NA s. 5.7.43). • When the quota or total allowable harvest level is reached, the community will be notified and the fishery will be closed (MMR s. 12 and 26).
Licences	• The Minister may issue a marine mammal fishing licence (MMR s. 4). • The Minister may issue a licence for certain activities such as for tagging (satellite tracking), live capture, biopsies (MMR s. 11).
Post-Harvest Walrus Tag	• Where a TAH has been established, DFO will issue Post-Harvest Walrus Tags to the RWO and/or HTOs in the amount equal to the annual harvest level for the corresponding management unit. These tags will be issued without fee or administrative charge and are not to be considered a licence to hunt.
Humane Harvesting	• Hunters shall only kill a walrus in a manner that is designed to kill it quickly (MMR s. 8). • No person shall disturb a walrus except when hunting for walrus (MMR s. 7).
Reducing Loss Rates	• Hunters must have all necessary equipment on hand to retrieve a hunted walrus (MMR s. 9). • Hunters that kill or wound a walrus must make all reasonable efforts to retrieve it without delay, must not abandon or discard it, or waste any edible part of a walrus (MMR s. 10). • Hunters are to use a rifle or shotgun with the following restrictions: a) a rifle and non-full metal jacketed ammunition that produce a muzzle energy of not less than 1,500 foot pounds; or b) a shotgun and rifled slugs that produce a muzzle energy of

	not less than 1,500 foot pounds (MMR s. 25).
Sale and Transportation	• A Marine Mammal Transportation Licence is required to transport walrus or walrus parts from one province to another (MMR s. 16). • A CITES Export Permit is required to transport walrus products outside of Canada.
Habitat/Ecosystem Protection	• *Fisheries* Act s. 35: prohibits any person from carrying on any work, undertaking or activity that results in serious harm to walrus that are part of a commercial, recreational or Aboriginal fishery, unless authorized by the Minister.

Appendix 3. Walrus Sport Hunt Policy in the Nunavut Settlement Area

A. Where a Total Allowable Harvest has been established for a walrus stock or population

Where the Nunavut Wildlife Management Board (NWMB) and the Minister of Fisheries and Oceans Canada (DFO) establish a total allowable harvest (TAH) for a stock or population of walrus in the Nunavut Settlement Area (NSA), the assignment provisions of the Nunavut Agreement (NA) shall be used to assign part or all of the TAH to a walrus sport hunt.

In 2013, the Minister of DFO 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. As per the NA, Hunters and Trappers Organizations (HTO) and Regional Wildlife Organizations (RWOs) are responsible for allocating their community's and regional TAH to their members and the assignment to non-members (e.g. walrus sport hunt) (s. 5.7.3 and 5.7.6).

An assignment under section 5.7.34 (b) of the NA is used to authorize walrus sport hunts to a person qualified to harvest walrus under the laws of general application, so long as the established annual total allowable harvest for that particular management unit is not exceeded.

Under sections 5 and 6 of the Marine Mammal Regulations, no person other than an Indian, Inuk, or beneficiary, may fish for walrus except under the authority of a licence.

If an HTO wishes to assign part or all of a share of their community's allocation of the TAH for walrus sport hunting purposes, the following process will be undertaken to obtain a valid Marine Mammal Fishing Licence prior to engaging in walrus hunting activities:

The HTO will:

1. Complete and submit the Sport Hunt Application package to DFO.

2. Upon receiving the completed documents and payment of fee, the Minister of DFO may issue a Marine Mammal Fishing Licence for walrus pursuant to section 4(1) of the Marine Mammal Regulations.

3. All conditions identified on the Marine Mammal Fishing Licence must be followed by the assignee (sport hunter). The Marine Mammal Regulations (MMR) include provisions related to the hunting, movement, and sale of walrus products. These provisions include requirements for hunters to report on harvesting activities, to collect biological samples, to hunt in a manner that is designed to kill the walrus quickly, to make reasonable efforts to retrieve a killed or wounded walrus without delay and to have all necessary equipment on hand to retrieve it. Abandoning, discarding or wasting edible parts of walrus is prohibited.

4. Any HTO by-laws that are in place governing walrus hunting will also be followed by the assignee (sport hunter).

5. A DFO Marine Mammal Transportation Licence is required to transport walrus or walrus parts from one province to another (MMR s. 16(1)). These are free and available from a DFO Fishery Officer or from the community's local Conservation Officer.

6. Anyone wishing to export walrus parts or derivatives from Canada must obtain an export permit from the Canadian CITES administration. These permits can take several weeks to obtain. For more information, contact the DFO CITES Permitting Officer at: (888) 641-6464.

B. Where a TAH <u>has not</u> been established for a walrus stock or population

Each year the Nunavut Wildlife Management Board (NWMB) requests applications (Request to Conduct Walrus Sport Hunts) from communities and individuals for walrus sport hunts. These applications are reviewed by the NWMB according to its Interim Policy for Walrus Sport Hunts. Decisions of the NWMB are forwarded to the Minister of Fisheries & Oceans Canada (DFO). If approved, and upon payment of fee, the Minister will provide the applicant with a Marine Mammal Fishing Licence under section 4(1) of the Marine Mammal Regulations. The process is detailed in the steps below:

1. Request to conduct walrus sport hunt:

Each fall, the NWMB seeks applications from individuals and communities who wish to conduct walrus sport hunts for the following walrus harvesting season (April 1-March 31). Applicants are required to submit a completed "Request to Conduct Walrus Sport Hunt" form that includes information on the hunt plan, outfitter information, a safety plan, and evidence of support from the local HTO.

2. NWMB review of applications:

The NWMB reviews the Requests to Conduct Walrus Sport Hunts against its Interim Policy for Walrus Sport Hunts. This Policy seeks to consider conservation concerns, health and safety, humane harvesting and minimization of waste, and long-term economic, social and cultural interests of Inuit harvesters, in making sport hunt decisions.

3. NWMB decision to DFO:

Decisions of the NWMB in relation to the walrus sport hunt are forwarded to the Minister of DFO as per the NA. Additional conditions may be included with the NWMB decision, such as the assignment of each walrus to a sport hunter is made in writing and that individuals applying for walrus sport hunts obtain written support from their local HTO.

4. DFO review:

The decisions of the NWMB are forwarded to the Minister of DFO for review. If approved, DFO will notify successful applicants. Upon receiving the completed "Assignment Document", "Hunter Information Sheet", and payment of fee, the Minister of DFO will issue a Marine Mammal Fishing Licence for walrus pursuant to section 4(1) of the Marine Mammal Regulations.

5. Marine Mammal Fishing Licence:

All conditions identified on a Marine Mammal Fishing Licence must be followed. Such conditions include: when and where the hunt is authorized to take place, by whom, their country of origin, quotas, gear type to be used, as well as any specific conditions related to the hunt, such as the reporting of all hunts to the local DFO office, firearm muzzle velocity requirements, the total number of strikes allowed, as well as biological sampling requirements.

6. Any HTO by-laws that are in place governing walrus hunting should be followed by the sport hunter.

7. A DFO Marine Mammal Transportation Licence is required to transport walrus or walrus parts from one province to another (MMR s. 16(1)). These are free and available from a DFO Fishery Officer or from a local Conservation Officer.

8. Anyone wishing to export walrus parts or derivatives from Canada must obtain an export permit from the Canadian CITES administration. These permits can take several weeks to obtain. For more information, contact the DFO CITES Permitting Officer at: (888) 641-6464.

Appendix 4. Geographic coordinates of boundaries for Atlantic walrus stocks within the Nunavut Settlement Area.

Population	Stock/ Management Unit	Point	x (Longitude)	y (Latitude)
Marine waters enclosed by the following coordinates:				
High Arctic	**Baffin Bay** AW-01	1	-54.24297530150	74.03754489970
		2	-54.24297530150	74.03754489970
		3	-54.24297530150	74.03754489970
		4	-54.24297530150	74.03754489970
		5	-54.24297530150	74.03754489970
		6	-54.24297530150	74.03754489970
		7	-54.24297530150	74.03754489970
		8	-54.24297530150	74.03754489970
	West Jones Sound AW-02	1	-84.96233489570	75.30730634850
		2	-84.96233489570	75.30730634850
		3	-84.96233489570	75.30730634850
		4	-84.96233489570	75.30730634850
		5	-84.96233489570	75.30730634850
		6	-84.96233489570	75.30730634850
		7	-84.96233489570	75.30730634850
		8	-84.96233489570	75.30730634850
	Penny Strait – Lancaster Sound AW-03	1	-73.49375430420	71.86979037450
		2	-73.49375430420	71.86979037450
		3	-73.49375430420	71.86979037450
		4	-73.49375430420	71.86979037450
		5	-73.49375430420	71.86979037450
		6	-73.49375430420	71.86979037450
		7	-73.49375430420	71.86979037450
		8	-73.49375430420	71.86979037450
		9	-73.49375430420	71.86979037450
		10	-73.49375430420	71.86979037450
		11	-73.49375430420	71.86979037450
Central Arctic	**Foxe Basin** AW-04	1	-70.57925897140	67.49418275430
		2	-70.57925897140	67.49418275430
		3	-70.57925897140	67.49418275430
		4	-70.57925897140	67.49418275430
		5	-70.57925897140	67.49418275430
		6	-70.57925897140	67.49418275430
		7	-70.57925897140	67.49418275430
		8	-70.57925897140	67.49418275430
	Hudson Bay – Davis Strait AW-05	1	-54.20362912320	71.39690545840
		2	-54.20362912320	71.39690545840
		3	-54.20362912320	71.39690545840

Population	Stock/ Management Unit	Point	x (Longitude)	y (Latitude)
		4	-54.20362912320	71.39690545840
		5	-54.20362912320	71.39690545840
		6	-54.20362912320	71.39690545840
		7	-54.20362912320	71.39690545840
		8	-54.20362912320	71.39690545840
Unknown	**South and East Hudson Bay** AW-06	1	-79.90028974730	60.68356082350
		2	-79.90028974730	60.68356082350
		3	-79.90028974730	60.68356082350
		4	-79.90028974730	60.68356082350
		5	-79.90028974730	60.68356082350
		6	-79.90028974730	60.68356082350
		7	-79.90028974730	60.68356082350
		8	-79.90028974730	60.68356082350
		9	-79.90028974730	60.68356082350
		10	-79.90028974730	60.68356082350