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# Greenland halibut - Northwest Atlantic Fisheries Organization Subarea 0

## Foreword

The purpose of this Integrated Fishery Management Plan (IFMP)



[Greenland halibut - Northwest Atlantic Fisheries Organization Subarea 0](#)  
(PDF (Portable Document Format), 2.6 MB (MegaByte))



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) is to identify the main objectives and requirements for the Greenland Halibut fishery in Northwest Atlantic Fisheries Organization Subarea 0, as well as 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 and other stakeholders. This [IFMP \(Integrated Fisheries Management Plan\)](#) provides a common understanding of the basic “rules” for the sustainable management of the fisheries resource.



Greenland halibut  
(*Reinhardtius hippoglossoides*)

This [IFMP \(Integrated Fisheries Management Plan\)](#) 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's 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*.

Where DFO is responsible for implementing obligations under land claims agreements, the IFMP (Integrated Fisheries Management Plan) 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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# 1. Overview of the fishery

Greenland Halibut (*Reinhardtius hippoglossoides*) are a deep water fish commonly referred to as Turbot in Canada. Based on available evidence, Greenland Halibut comprise a single population throughout the Northwest Atlantic, although some data suggest Greenland Halibut found in the Gulf of St. Lawrence are a separate population. However, for management purposes this large Greenland Halibut population is divided into smaller stock assessment units, one of which is the Northwest Atlantic Fisheries Organization

(NAFO) Subarea 0+Division 1A (offshore) and Divisions 1B-F shared between Canada and Greenland. The Canadian portion of this stock is Subarea 0. A map showing [NAFO \(Northwest Atlantic Fisheries Organization\)](#) Subareas and Divisions relevant to the Greenland Halibut fishery can be found in [Appendix 5, Figure 1](#).

## 1.1 Location of the fishery

The Greenland Halibut fishery addressed by this Integrated Fishery Management Plan (IFMP) occurs in Subarea 0. Subarea 0 is divided into a northern region, Division 0A (Baffin Bay) which extends from 78°10'N to 66°15'N, and a southern region, Division 0B (Davis Strait) which extends from 66°15'N to 61°00'N. Fishing occurs outside the Nunavut Settlement Area (NSA) with the exception of the inshore allocation in Division 0A. The boundary between Division 0A and Division 0B coincides with a natural oceanographic boundary between marine ecoregions (Powles *et al.* 2004) consisting of a colder High Arctic water mass to the north and a warmer North Atlantic water mass to the south. Fishing primarily occurs along the Baffin Island and Greenland shelf slopes in waters 800-1,500m deep.

## 1.2 Type of fishery

The Subarea 0 fishery is a commercial fishery with the exception of that portion of Division 0A which falls within the [NSA \(Nunavut Settlement Area\)](#). In this area there is an exploratory fishery with a quota for Nunavut inshore fisheries development.

## 1.3 Historical development of the fishery

### 1.3.1 Division 0B

Fishing began in the mid-1960s in what is now called Division 0B by foreign fleets. Since the ratification of the "Third Convention of the Law of the Sea" in 1977, Canada has exercised its 200 nautical mile fisheries jurisdiction. The Canadian Greenland Halibut commercial fishery began in Division 0B in 1981. At this time most of the Canadian quota was allocated to foreign countries (i.e. Union of Soviet Socialist Republics, German Democratic Republic, Faroe Islands, Norway, and Japan). These foreign allocations were steadily reduced until they were eliminated in 1992. In 1988, the Inuit of what is now Nunavut received an inshore allocation of 100 tonnes (t). During the 1990s, with the collapse of most major groundfish resources in the Northwest Atlantic, Greenland Halibut became the most significant groundfish fishery in the region (Bowering 1999). Meanwhile, the Greenland Halibut stock began to decline in biomass and shift in age structure (Bowering *et al.* 1995, in Morgan and Bowering 1997). In 1994, based on the first detailed assessment of the Subarea 0+Division 1A (offshore) and Divisions 1B-F Greenland Halibut stock (Atkinson *et al.* 1994, cited in Bowering 1999), the [NAFO \(Northwest Atlantic Fisheries Organization\)](#) Scientific Council recommended the Total Allowable Catch (TAC) be reduced significantly from 25,000 t to 11,000t. Canada's [TAC \(Total Allowable Catch\)](#) for Subarea 0 (which consisted only of a Division 0B fishery at that time) dropped from 12,500 t to 5,500 t; in 2001 it was assigned to Division 0B, following the expansion of

the fishery into Divisions 0A and 1A and the establishment of a separate quota for the northern area (see below). The Division 0B TAC remained at 5,500 t until 2010, when it was increased to 7,000 t based on results of scientific surveys. In 2017, the Division 0B TAC increased to 7,575 t for the 2017 and 2018 fishing seasons. Subsequent TAC increases in 0B have been implemented by the Minister and can be found at the following [website](#).

Beginning in 1986, a winter, through-ice longline fishery was developed in the innermost portion of Cumberland Sound. Declining catches throughout the 1990s were due mainly to deteriorating ice conditions that limited safe access. Over the years catches have varied from less than 100 t to 500 t, depending on ice conditions and effort. In 2004, the [NAFO \(Northwest Atlantic Fisheries Organization\)](#) Scientific Council recommended a separate stock management area be established for the traditional winter fishing grounds for Greenland Halibut in the inner portion of Cumberland Sound. In February 2005, the Nunavut Wildlife Management Board (NWMB) and Minister of Fisheries and Oceans Canada (Minister) established a Total Allowable Harvest of 500 t for Greenland Halibut which could be fished at any time of the year in the new Cumberland Sound Turbot Management Area. This 500 t is separate from the existing Division 0B quota. This fishery was converted from exploratory to commercial in 2008. A small inshore summer fishery was conducted in Cumberland Sound from 2009 to 2011 and again in 2018. This [IFMP \(Integrated Fisheries Management Plan\)](#) excludes the Cumberland Sound Turbot Management Area, for which a separate IFMP is being developed.

### 1.3.2 Division 0A

Before 1996 there was no Greenland Halibut commercial fishery in Division 0A. From 1996 to 2000 an effort based exploratory fishery was granted to Nunavut interests in Division 0A. These harvests were not counted against the Canadian Subarea 0 [TAC \(Total Allowable Catch\)](#) of 5,500 t. In 2000, the [NAFO \(Northwest Atlantic Fisheries Organization\)](#) Scientific Council recommended an additional TAC for Division 0A and the offshore area of Division 1A and, as a result, in 2001 Canada established an exploratory fishery quota of 3,500 t in Division 0A. Since 2001, the quota for Division 0A has increased several times based on data from surveys initiated by Canada and Greenland in both Divisions 0A and 1AB and subsequent favorable stock assessments. From 2001 to 2004 the use of foreign vessels by Nunavut fishing interests was approved to assist in the development of the Division 0A fishery. By 2004, foreign vessels were no longer in use. In 2006, a quota increase of 2,500 t was established for Division 0A and reserved entirely for Nunavut interests. The exploratory fishery of Division 0A was converted to commercial status in 2007 with the exception of the portion of Division 0A that falls within the [NSA \(Nunavut Settlement Area\)](#). In accordance with the decision making process set out in the *Nunavut Agreement (NA)*, 100 t of the Division 0A quota increase was designated for fisheries development within the NSA in 2008 and has been maintained at this level in subsequent years. Including the 100 t designated for fishing within the NSA, the quota for the offshore was 6,500 t from 2008-2013, increased to 8000 t in 2014, and increased to 8,575 t for the 2017 and 2018 fishing seasons. Subsequent TAC increases in 0A have been implemented by the Minister and can be found at the following [website](#).

Harvestable quantities of Greenland Halibut in the inshore may exist in deep water channels connected to offshore waters. Hunters and Trappers Organizations adjacent to these deep water areas have conducted exploratory fisheries over the years in Eclipse Sound, Scott Inlet and Sam Ford Fjord, Kingnelling Fjord, Makiak, Coronation and Kangert Fjords.

## 1.4 Participants

### 1.4.1 Division 0A

Division 0A access and allocation has been provided exclusively to Nunavut interests. The [NWMB Allocation Policy for Commercial Marine Fisheries](#) assists the [NWMB \(Nunavut Wildlife Management Board\)](#) in making individual sub-allocation recommendations for Nunavut enterprises to the Minister for consideration. Successful Nunavut allocation recipients are provided access to the fishery. Nunavut owned vessels are used to exploit this quota however vessel charters and harvest arrangements with southern based Canadian fishing companies are commonly used. Allocation information is publicly available and is provided upon request. Inquiries can be sent to the following email: [info@dfo-mpo.gc.ca](mailto:info@dfo-mpo.gc.ca).

### 1.4.2 Division 0B

At its inception in 1981, most of the Greenland Halibut Division 0B quota was allocated to foreign countries. Over the years, foreign allocations were reduced steadily and eliminated by 1992. By 1998 the use of foreign vessels was eliminated, all vessels in the Division 0B fishery were Canadian owned, stabilized enterprise allocations were formed, the current mix of allocation types (i.e. Enterprise, Special and Competitive) was established, and a fishery management plan was approved. In 2000, the competitive quotas for groundfish licence holders (900 t for fixed gear and 600 t for mobile gear) were limited to historical participants from Nova Scotia and Newfoundland. In 2008, the mobile gear competitive quota was converted to Enterprise Allocations at share levels agreed to amongst fleet members. In 2009, Nunavut interests acquired access to the Division 0B fixed gear competitive fishery. Participants include interests from Nunavut, Nunavik, Labrador, Newfoundland and Nova Scotia. Allocation information is publicly available and is provided upon request. Inquiries can be sent to the following email: [info@dfo-mpo.gc.ca](mailto:info@dfo-mpo.gc.ca).

## 1.5 Fishery characteristics

### 1.5.1 Division 0A

The Division 0A fishery operates on the calendar year as an enterprise allocation type fishery among Nunavut interests as approved by the Minister. There are no gear specific fleets in this fishery. Both mobile and fixed gear vessels are used and vessels are typically greater than 28m (92') in length due to the harsh environment and location of this fishery. All vessels used in the offshore are outfitted with freezing at sea capabilities.

The Division 0A fishing season is dictated by the presence of sea ice but typically begins in June and ends in November. There is an overall fishing pattern based on season and gear type. The larger trawl vessels usually start in the north as the ice begins to clear. They approach this area by travelling along the ice free Greenland coast and move across northern Baffin Bay into Canadian waters. These vessels then retreat southwards down the Baffin coast in the fall as new sea ice begins to form. The smaller fixed gear vessels tend to concentrate in the southern portion of Division 0A however fishing has occurred by both mobile and fixed gear vessels as high as 72°N latitude.

Offshore catches are taken using either bottom otter trawl (single and twin trawl) or bottom set fixed gear (longline, gillnet). Specifically for fixed gear in the offshore, bottom set gillnets have been used almost exclusively since their introduction in 2004. Since about 2015 the gillnets have had bait bags, usually filled with squid, tied at regular intervals along the ground line. Inshore exploratory fishery catches are taken with fixed gear (longline, gillnet or pot). The average number of vessels operating in Division 0A between 2014 and 2018 was 10. The number of vessels using mobile gear varied between 2 and 4 while the number of vessels using fixed gear varied between 5 and 9 during these years. In addition, during this time frame 59% and 41% of the Division 0A quota was taken by mobile gear and fixed gear respectively. Lack of infrastructure (i.e. port facilities) in the North presents landing constraints. As a result, catches are regularly offloaded in Greenland ports. Documentation related to the offloading in Greenland are set out in license conditions. When offloading in Canada, vessels must adhere to the Fish Landing Procedures listed in their licence conditions. Offloading of fish in Canadian ports may only be carried out in the presence of a dockside observer, who will verify the weight, species and product form of all fish being offloaded. See [Appendix 3](#) for landing procedures in Canada and Greenland.

## 1.5.2 Division 0B

The Division 0B fishery operates on the calendar year. There is a mix of different fleets and allocations in the Division 0B fishery however, the majority of the quota is managed via Enterprise Allocations and Special Allocations which are permitted to use specified vessel sizes and gears. In the offshore, both mobile (single and twin bottom otter trawl configurations) and fixed (longline or gillnet) gear vessels are used and all have freezing at sea capabilities. The following fleets currently participate:

- Vessels 19.8m to 30.48 m Length Over All (LOA) Using Fixed Gear;
- Vessels Greater than 30.48 m LOA (Length Over All) Using Fixed Gear or Mobile Gear; and
- Vessels Greater than 30.48 m LOA Using Fixed Gear (Scandinavian Longline Fleet).

The fishing season is dependent on ice conditions and usually starts in May and finishes at the end of November.

A 900 t competitive quota is accessible to three fixed gear fleets:

- Vessels Less than 19.8m LOA Using Fixed Gear;
- Vessels 19.8m to 30.48 m LOA Using Fixed Gear; and
- Vessels Greater than 30.48 m LOA Using Fixed Gear (Scandinavian Longline Fleet).

Vessels use bottom set longlines or gillnets, with baited gillnets introduced in approximately 2015. Most vessels have freezing at sea capabilities, while some smaller vessels still operating as wet fish vessels. Historically the fishery has opened within the first or second week of June and ends when the quota is reached.

On average between 2014 and 2018, there were 18 vessels fishing in Division 0B each year. During these years, the number of mobile gear vessels ranged between 4 and 7, while the number of fixed gear vessels ranged between 10 and 16. During these years, 56% of the Division 0B quota was taken by mobile gear and 44% by fixed gear. Lack of infrastructure (i.e. port facilities) in the North presents landing constraints. As a result, catches are regularly offloaded in Greenland ports. Documentation related to the offloading in Greenland are set out in license conditions. When offloading in Canada, vessels must adhere to the Fish Landing Procedures listed in their licence conditions. Offloading of fish in Canadian ports may only be carried out in the presence of a dockside observer, who will verify the weight, species and product form of all fish being offloaded. See [Appendix 3](#) for landing procedures in Canada and Greenland.

## 1.6 Governance

Canada and Denmark (on behalf of Greenland) request the NAFO (Northwest Atlantic Fisheries Organization) Scientific Council to conduct the stock assessment for the Subarea 0+Division 1A (offshore) and Divisions 1B-F stock area, including recommendations on TACs for Division 0A+1AB in the north and Divisions 0B+1C-F in the south. Canada retains management authority for stocks in Subarea 0, while Greenland retains management authority for stocks in Subarea 1.

Canada's *Fisheries Act*, the *Fishery (General) Regulations*, and the *Atlantic Fishery Regulations, 1985* made thereunder, as well as the *Oceans Act* and the *Species at Risk Act (SARA)*, are the main pieces of federal legislation under which the Subarea 0 Greenland Halibut fishery is managed. The powers granted pursuant to these Acts and Regulations permit the Minister to specify licence conditions related to vessel type, gear, species and catch limits, incidental catch, fishing restrictions, information reporting, vessel monitoring system, *SARA* (Species at Risk Act) listed species, etc. The *Fisheries Act* provides the Minister ultimate responsibility for the management of marine fisheries. The *Fish Inspection Act* and *Fish Inspection Regulations* govern processing operations aboard vessels.

The Subarea 0 Greenland Halibut fishery is managed consistent with the *NA* and the *Nunavik Inuit Land Claims Agreement (NILCA)*. These Agreements are treaties within the meaning of section 35 of the *Constitution Act, 1982* and set out a co-management system for wildlife/resource management. While Government retains ultimate responsibility for wildlife management within and outside respective settlement areas, the Agreements, among other things, set out the harvesting rights of the beneficiaries to the respective Agreements, provide for the establishment of wildlife management structures, set out the role of those structures and cooperative management processes, and contain provisions related to defined waters outside of the settlement areas. The *NA* sets out procedural and substantive requirements on the Minister related to the management of the Subarea 0 fishery, and sets out the role of the *NWMB* (Nunavut Wildlife Management Board). The *NILCA* also imposes requirements on the Minister related to

commercial harvesting in the Southern Davis Strait Zone (which in general terms refers to NAFO (Northwest Atlantic Fisheries Organization) Division 0B). Key provisions of the *NA* and *NILCA* related to the management of this fishery are provided in Appendix 1.

Fisheries and Oceans Canada (DFO) has developed a national Sustainable Fisheries Framework to ensure Canadian fisheries are conducted in a manner which supports conservation and sustainable use.

Policies contained within the Sustainable Fisheries Framework promote a precautionary and ecosystem-based approach to fisheries management, and include A Fishery Decision-making Framework Incorporating the Precautionary Approach, Policy on Managing Bycatch, and Managing Impacts of Fishing on Benthic Habitat, Communities and Species. This policy framework applies to the Subarea 0 Greenland Halibut fishery.

## 1.7 Approval process

This IFMP (Integrated Fisheries Management Plan) applies to the Subarea 0 Greenland Halibut fishery in waters both inside and outside the NSA (Nunavut Settlement Area). The *NA* sets out a co-management system for decisions related to the management of this fishery. The NWMB (Nunavut Wildlife Management Board), in exercising its roles and responsibilities as set out in the *NA*, provides fisheries management decisions (inside the NSA) and recommendations (outside the NSA) to the Minister for decision, following processes set out in the *NA*. NWMB decisions/ recommendations, as approved by the Minister, are incorporated into the IFMP.

In addition to working with co-management organizations, the management of the Subarea 0 Greenland Halibut fishery is done in collaboration with fishery participants and other stakeholders. Meetings with co-management organizations and stakeholders are held to review current management measures, discuss management issues, and provide management recommendations. The main multi-stakeholder forum for consultation is the Eastern Arctic Groundfish Stakeholder Advisory Committee (EAGSAC) (Terms of Reference are found in Appendix 6). The EAGSAC will provide advice to DFO on management and policy issues affecting Subarea 0. The IFMP (Integrated Fisheries Management Plan) is approved by the Minister or his/her designate.

## 2. Stock assessment, science, and traditional knowledge

### 2.1 Biological synopsis

Greenland Halibut belong to the order Pleuronectiformes, a group of flat, bilaterally asymmetrical fish. They live in the cold northern waters of the Pacific and Atlantic Oceans.

Greenland Halibut of the Northwest Atlantic are highly migratory; fish tagged and released in Davis Strait, Baffin Bay, and the fjords of southwestern and eastern Greenland have moved south to the northern slopes of the Grand Bank of Newfoundland and as far east as Denmark Strait (between Greenland and Iceland) (Boje 2002a). Tagging conducted in more recent years (2007 and 2009) demonstrate mixing within the Divisions of Subarea 0 and 1 (Jørgensen and Treble unpublished data).

This movement ensures genetic mixing and prevents genetic separation into distinct populations (Arthur and Albert 1993; Vis *et al.* 1997; Roy 2014). The Northwest Atlantic population extends south from Baffin Bay to the waters off the continental slope of Labrador and outer Grand Banks east of Newfoundland, east into Greenland waters and Denmark Strait (Boje 2002a), and possibly to Icelandic and Norwegian waters (Vis *et al.* 1997). Divisions 0A and 0B Greenland Halibut are part of this much larger population.

Greenland Halibut in the fjords of northwestern Greenland appear to be resident in these fjords, and once they have migrated from offshore nursery areas to the fjords, they do not intermingle with fish in the offshore or more southerly fjords (Boje 2002a). Evidence from a smaller tagging study conducted in Cumberland Sound suggested that a similar resident stock may exist there (Treble 2003). In 2004 N.A.F.O. (Northwest Atlantic Fisheries Organization) Scientific Council reviewed the information available and concluded that Greenland Halibut in the Cumberland Sound traditional winter fishing grounds do not move beyond these grounds. They recommended the establishment of a separate management unit for Greenland Halibut in the inner portion of Cumberland Sound.

The Baffin Bay-Davis Strait Greenland Halibut stock is thought to originate primarily in the deep-water (800-2000m) spawning grounds in Davis Strait near the submarine ridge between Baffin Island and Greenland (Boje 2002a, Bowering 1999), from about 67°N to south of Flemish Pass off Newfoundland (Boje 2002b). Greenland Halibut spawning does not show a clear seasonality, and peak spawning does not coincide year after year (Boje 2002b). Gundersen *et al.* (2010) observed that percent mature and the gonadal-somatic index suggest that spawning in the Davis Strait peaks during February to March. Females produce relatively few, heavily yolked eggs (6,100-188,400 eggs/female) that result in large larvae with high survival rates. However, histological studies conducted by Rideout *et al.* (2012) for Greenland Halibut sampled from the Northwest Atlantic, including Division 0A, found evidence that support work done in the Northeast Atlantic by Kennedy *et al.* (2011). These studies described an uncommon oocyte development pattern for Greenland Halibut where two simultaneous groups of developing oocytes occur in the ovary, the larger group developing for the upcoming spawning season and the smaller group developing for next year. This phenomenon could have implications for the estimation of Greenland Halibut reproductive potential (Kennedy *et al.* 2015).

The proportion of females found in spawning condition in catches or in surveys is greater in Davis Strait than in Baffin Bay (Harris *et al.* 2009, Simonsen and Gundersen 2005). Several theories as to why this occurs have been suggested: 1) Greenland Halibut conduct spawning migrations from Baffin Bay to Davis Strait; 2) there is local spawning in Baffin Bay with an extended adolescent phase and/or multi-year maturation cycle that might explain the large proportion of fish classed as immature; and 3) a majority of fish in Baffin Bay never enter a spawning phase due to a lack of energy surplus caused by harsh environmental conditions (Simonsen and Gundersen 2005).

Once spawning occurs, eggs and then larvae drift for up to four months before they metamorphose into the bottom-dwelling life stage (Boje 2002b). Eggs and larvae originating in the Davis Strait spawning grounds are thought to drift with the currents along the coast of West Greenland and then westwards, until larvae settle on the Greenland and Baffin Island shelves (Templeman 1973, in Boje 2002b). These relatively shallow waters (<400m) in Baffin Bay (up to at least 72° 30' N) and Davis Strait are considered nursery areas where fish are thought to spend the first few years of their lives (Jørgensen 2013). Larger

fish are found at greater depths and it is believed that the fish migrate off the banks into deeper waters, i.e. eastward into the fjords of Northwest Greenland and south and westward into Baffin Bay and Davis Strait (Jørgensen 1997 and 2013).

Greenland Halibut size at maturity varies widely over space and time (Morgan and Bowering 1997). Length of females at 50% maturity was measured at 69cm for fish caught in the 1993 Division 0B deep-water gillnet fishery (Morgan and Bowering 1997). Data from research surveys in Division 0B showed that the length at 50% maturity for females was 62cm in 2000 and 67cm in 2001 (Morgan and Treble 2006). Surveys in Division 0A showed a significant decline in 50% maturity from 80cm or greater in 1999 and 2004 to 67cm in 2006 and 73cm in 2008 (Harris *et al.* 2009). As with previous maturity studies in Division 0A, Harris *et al.* (2009) confirm that very few of the fish collected in Division 0A surveys are mature.

Ages have not been available for Subarea 0+Division 1A (offshore) and Divisions 1B-F Greenland Halibut for many years due to the lack of an accurate and precise age determination method. Research has been ongoing and two methods have recently been recommended for this species; the thin-section of the left otolith and the frozen whole right otolith method (ICES 2017). Validation results from studies conducted on samples from Subarea 0 support the thin-section method that typically produces age estimates around 20 years or more for 70 cm fish. However, precision is still very low for these methods and the ICES (International Council for the Exploration of the Sea) 2016 workshop recommended that the assessments use either an ageing error matrix (AEM) or a growth curve to account for the uncertainty in the age estimation.

## 2.2 Ecosystem interactions

Greenland Halibut feed on a variety of species during their lives. Orr and Bowering (1997) found that individual size was the most important variable related to species composition in the diet, followed by depth and latitude. Small fish (<20cm) feed on small pelagic crustaceans, while intermediate-sized fish (about 20-60cm) feed mainly on a variety of small fish, squid and northern shrimp (Pandalidae) wherever these are abundant. Larger Greenland Halibut (>60cm) feed mostly on other fish, preferring larger species such as redfish (*Sebastes* spp.) and grenadiers (Macrouridae) (Orr and Bowering 1997, Dwyer *et al.* 2010).

Cod (*Gadus morhua*) and other species eat Greenland Halibut larvae, while cod and larger Greenland Halibut eat young Greenland Halibut. The Greenland Shark (*Somniosus microcephalus*) and Narwhal (*Monodon monoceros*) are considered to be the main predators of adult Greenland Halibut in Baffin Bay and Davis Strait (Lairdre *et al.* 2004). Hooded Seals (*Cystophors cristata*), Ringed Seals (*Phoca hispida*), and Beluga Whales (*Delphinapterus leucas*) are also important predators of adult Greenland Halibut (Crawford 1992). Scientists working in Greenlandic waters have noticed the periodic disappearance of Greenland Halibut often coincides with increased sightings of Beluga Whales, and the occasional appearance of whales into the fjords is often followed by reduced catches of Greenland Halibut. Values of natural mortality used in stock assessment calculations for North American stocks of Greenland Halibut have varied between 0.10 (Ernst and Bormann 1987, in Crawford 1992) and 0.20 (Darby *et al.* 2004). This equates to 10-20% of the population per year.

Environmental conditions are warmer on the west coast of Greenland compared to the east coast of Baffin Island. Moreover, bottom temperatures in Division 0A are normally at or near 0°C, which is three to four degrees cooler than bottom temperatures at similar depths in Division 0B (Treble 2002 and Treble 2011). The relationship between environmental conditions and Greenland Halibut growth and reproduction is not fully understood, but the greater densities of Greenland Halibut on the shelf and in fjords of Northwest Greenland suggest oceanographic conditions may be more favourable there.

Fish species found in Baffin Bay and Davis Strait have been examined using data collected during multi-species bottom trawl surveys (Jørgensen *et al.* 2005, 2011). Greenland Halibut are common throughout Subarea 0 but the mix of fish species found in Division 0A and Division 0B are different. These differences may be partially attributable to environmental conditions such as depth and temperature. The nature and impact of climate change on the marine ecosystem in this area is unknown.

## 2.3 Traditional ecological knowledge

Inuit and fisher Traditional Ecological Knowledge (TEK) is an important component of fisheries management and is used with scientific knowledge for effective fisheries decision-making. DFO routinely consults resource users on a wide range of topics (e.g. management issues, stock assessment studies, quotas, management measures) and incorporates their views and traditional knowledge in the development of scientific research and fishery management plans. While Inuit did not traditionally fish Greenland Halibut, Inuit fishers as well as other users have knowledge of the resource. For example, Inuit have experience in the Cumberland Sound inshore fishery which can contribute to our understanding in areas such as climate change, sea ice patterns, and fish movements. TEK can contribute to an understanding of long-term changes in environments that ultimately affect the management of Greenland Halibut in Subarea 0.

## 2.4 Stock assessment

Biomass and abundance indices, length frequency distribution and catch-per-unit-effort (CPUE) are currently used in the stock assessment and development of subsequent recommendations from the [NAFO \(Northwest Atlantic Fisheries Organization\) Scientific Council on TACs](#). Age data has not been available due to a lack of accuracy and precision in Greenland Halibut age determination methods. Current stock assessment information for Greenland Halibut in NAFO Subarea 0 + Division 1A (offshore), and Divisions 1B-F can be found on the NAFO website at the following [link](#).

## 2.5 Stock scenarios

Information used by the [NAFO \(Northwest Atlantic Fisheries Organization\) Scientific Council](#) to assess stock biomass and abundance indices is provided by a fishery-independent survey, catch size structure from both the fishery and science surveys and fishery CPUE (Catch-per-Unit-Effort) indices. The survey catches primarily juvenile fish (large/mature Greenland Halibut are able to avoid the survey gear) therefore it is difficult to determine spawning stock biomass or estimate mortality using available data.

Attempts to model the stock using either age based or production models have not been successful. In general, the lack of an assessment model and precise estimates of Greenland Halibut age and growth makes predicting the impact of fishing effort on future stock status difficult (Morgan and Bowering 1997).

## 2.6 Precautionary approach

The Fishery Decision-Making Framework Incorporating the Precautionary Approach applies to fish stocks that are the targets of a commercial, recreational, or subsistence fishery. It may be applied more broadly to other stocks, if necessary, or as circumstances warrant.

The Framework requires that a harvest strategy be incorporated into respective fishery management plans to keep the removal rate moderate when the stock status is healthy, promote rebuilding when stock status is low, and ensure a low risk of serious or irreversible harm to the stock. It also requires a rebuilding plan when a stock reaches low levels. In general, the precautionary approach in fisheries management is about being cautious when scientific knowledge is uncertain, and not using the absence of adequate scientific information as a reason to postpone action or failure to take action to avoid serious harm to fish stocks or their ecosystem. This approach is widely accepted as an essential part of sustainable fisheries management (DFO 2006a).

A precautionary approach to the management of the Subarea 0 Greenland Halibut fishery, consistent with the basic tenants set out in the Framework, is applied. Priority is given to monitoring the stock and establishing a data time series to support management decisions. Biomass, abundance and recruitment indices are used to indicate stock status. Scientific uncertainty is quantified by including standard errors for these indices. This approach is based on biological criteria established by Science and peer reviewed by the NAFO (Northwest Atlantic Fisheries Organization) Scientific Council. Scientific uncertainty and uncertainty related to the implementation of management measures are explicitly considered when evaluating stock status and making management decisions. The application of a precautionary approach to this fishery is done in concert with fishers, co-management organizations and other stakeholders through the Integrated Fishery Management Plan process.

For the Greenland Halibut stock in Subarea 0+Division 1A offshore and Division 1B-1F, age-based or production models are not available for estimation of precautionary reference points. However, in 2014, the NAFO (Northwest Atlantic Fisheries Organization) Scientific Council applied methods developed for data-limited stocks and set a preliminary proxy for  $B_{lim}$  as 30% of the mean combined survey biomass for 1999 to 2012 for Divisions 1CD and 0A-South surveys combined (45,617mt). The biomass index has been well above  $B_{lim}$  since 2014 .

## 2.7 Research

Research is critical to provide information needed for the sustainable management of Greenland Halibut. Fishery independent multi-species surveys are an important part of this research and provide the data required to establish biomass and abundance indices, size/age structure and recruitment of Greenland Halibut, as well as information on other species caught during the survey. Offshore surveys are expensive and therefore DFO has collaborated with NWMB (Nunavut Wildlife Management Board),

Nunavut fishing enterprises, the Government of Nunavut, Nunavut Tunngavik Inc., Makivik Inc. and the Greenland Institute of Natural Resources (GINR) since 1999 to ensure the surveys were completed. Greenland Halibut as well as other commercial and non-commercial species are sampled for abundance, weight and other biological parameters. Temperature, depth, salinity, and conductivity (CTD) data have also been collected at each fishing station since 2007. In addition, oceanographic sampling stations (fluorescence and CTD data) were established along three transects in Division 0A in 2004. Sampling of oceanographic parameters allow the differentiation of cold arctic polar water and warmer Atlantic water at different depths, and can be useful in understanding the distribution, growth and reproduction of Greenland Halibut.

Science gaps will be addressed on a priority basis in order to achieve ecosystem-based management of the Greenland Halibut fishery.

### 3. Economic, social and cultural importance of the fishery

The Subarea 0 Greenland Halibut fishery adds significant economic value to Northern communities. The landed value average for Nunavut Enterprises from 2011-2017 was around \$90 million per year. The fishery is also considered to be the most lucrative Atlantic groundfish fishery with the largest Greenland Halibut TAC (Total Allowable Catch) in domestic waters. [Appendix 4, Table 5](#) provides an overview of the significance of Greenland Halibut in terms of exports during 2011-16.

In Division 0A, during 2011–2017, average Greenland Halibut landings were 7,252 t generating an average landed value of \$47 million. In Division 0B, during 2011–2017, average Greenland Halibut landings were 7,041 t generating an average landed value of \$43 million. Of the average landings of 7,041 t, Central and Arctic Region (C&A) accounted for 46% and Newfoundland and Labrador Region (N&L) for 54%. [Table 6 in Appendix 4](#) provides annual landings and landed value the time period 2011-2017.

Harvesters in this fishery are at a relatively competitive disadvantage due to the high cost structure of operating in a remote and challenging environment. In the absence of fishery specific information to properly assess the economic viability of the Greenland Halibut fishery, several useful indicators are worth tracking to focus on the trends in recent years. These include, but are not restricted to, landings and landed values, external variables affecting income from the fishery (e.g., exchange rate), cost of operations (e.g. price of fuel, interest rate), Gross Domestic Products of importing countries, and changing market environments. Trends in these variables partly explain the current economic viability of the Greenland Halibut fishery. [Appendix 4](#) contains a detailed discussion of these trends for the period 2006-16.

Finally, eco-certification of a fishery from one of the international certification bodies, which is being driven by retailers and the food service sector, has gained significant momentum and become much more mainstream (The United Nations Environment Program, 2009). Meeting these increasing buyer preferences imposes additional costs on harvesters. As of December 2019, the SA0 GHF fishery has obtained Marine Stewardship Council sustainability certification.

## 4. Management issues

### 4.1 Fisheries issues

The following issues have been raised by stakeholders or identified by DFO and will be addressed through the IFMP (Integrated Fisheries Management Plan) process:

#### **Scientific Knowledge:**

The multi-species surveys are the main basis for Greenland Halibut stock assessment and TAC (Total Allowable Catch) recommendations. Given their multi-species nature, these surveys also provide data on other bottom dwelling species, benthic habitat and oceanographic conditions, as well as a means for obtaining samples for future study (e.g. genetic and biodiversity research and monitoring). Specific studies on Greenland Halibut are required to delineate stocks and understand reproduction, age determination, recruitment and migration. As well, ecosystem research is necessary to better predict stock trends and understand the impacts of fishing on sensitive benthic areas, other species, and the ecosystem in general. Surveys and research need to continue to support management decisions and resource conservation.

#### **Implementation of a precautionary approach:**

There are a number of scientific data limitations which preclude the use of standard biomass and harvest metrics to determine reference points and stock status for the Subarea 0 Greenland Halibut stock. However, biomass, abundance and recruitment indices are used to indicate the status of this stock. As outlined in the *Fishery Decision-Making Framework Incorporating the Precautionary Approach*, in cases where insufficient stock-specific information is available, different approaches may be used to provide guidance for management and assessment of stock sustainability.

The International Council for the Exploration of the Sea (ICES) has developed an approach and guidance for stocks with either limited knowledge of their biology or lack of data on their exploitation (ICES 2012a and 2012b). ICES categorized these stocks into a hierarchy based on the type of data available and, in the context of the precautionary approach, identified methodologies that could provide quantitative advice for the stocks given the information available. In 2014 the ICES, Category 3 approach was applied by the NAFO (Northwest Atlantic Fisheries Organization) Scientific Council to define a lower reference, *Blim*.

#### **Size distribution of catch:**

Fish size composition of catches in Subarea 0 varies depending on gear type and NAFO (Northwest Atlantic Fisheries Organization) Division. The fishery was primarily a trawl based fishery when it began in the mid-1960s; currently a mix of both fixed gear and mobile gear types are used in the fishery. Trawls catch primarily small, immature fish, whereas gillnets catch larger fish with a mix of immature and mature status. Science assessments continue to show the stock is healthy with stable or increasing trends in recruitment, biomass and abundance indices. These trends suggest the level of exploitation and harvesting approach have been effective to date.

Some stakeholders have identified a desire to monitor the harvest of large mature females and reduce catches of small immature fish. Under DFO's Procedures for Monitoring and Control of Small Fish Catches and Incidental Catches in Atlantic Groundfish Fisheries, designated areas may be closed when

the number of undersized fish reaches or exceeds 15% of the catch. DFO will continue to closely monitor biological indices and the size distribution of the catch, and will take action as needed to ensure sustainability of the resource.

#### **Mitigation of impacts on sensitive benthic areas:**

Bottom contact fishing gear is used in the Greenland Halibut fishery and these gears are known to impact benthic habitat, communities, and species. Further implementation of DFO's Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas in the Subarea 0 Greenland Halibut fishery may be required. As referenced in [Section 4.3.2.](#), there has been significant collaboration between DFO, industry, NGOs and other stakeholders on the protection of sensitive benthic areas.

#### **Bycatch management:**

Improvements are needed in bycatch management, including reporting on both retained and released bycatch species (including non-fish species such as marine mammals and seabirds). Effective solutions to specific bycatch issues will continue to be developed in collaboration with harvesters as outlined in [Section 4.3.2.](#) Efforts will focus on, but are not limited to, the following species:

**Table 1: The subarea 0 Greenland halibut fishery bycatch species.**

SARA (Species at Risk Act) Listed	Threatened: Northern Wolffish - Spotted Wolffish Special Concern: Atlantic Wolffish
COSEWIC (Committee on the Endangered Wildlife in Canada) Assessed	Endangered: Roundnose Grenadier Threatened: Deepwater Redfish Special Concern: Thorny Skate - Narwhal - Northern Bottlenose Whale
Under Fishing Moratorium	Roughhead Grenadier
Ecologically Vulnerable (see definition under 4.2)	Arctic Skate - Black Dogfish - Greenland Shark Birds (Northern Fulmar)
Potential commercial interest	American Plaice - Atlantic Halibut - Porcupine Crab
Marine Mammals	Sperm Whale, Seals (Harp, Hooded and Gray), Long-Finned Pilot Whale

Greenland Halibut may also be caught as bycatch in other marine fisheries. In Baffin Bay and Davis Strait, the only other offshore commercial marine fishery is the Northern and Striped Shrimp bottom otter trawl fishery. In Division 0A (i.e. Shrimp management unit 1), total weight of Greenland Halibut incidentally caught has averaged 5.73mt/year from 2005-2014 with 95% of the catch between 5-38 cm based on At-sea Observer data with 100% coverage (Siferd 2010, Walkusz pers. com.). In Division 0B (i.e. the Davis Strait management units), total weight of Greenland Halibut incidentally caught has averaged 7.05 mt/year from 2005-2014 with 95% of the catch between 5-44 cm based on At-sea Observer data with 100% coverage (Siferd 2010, W. Walkusz pers. com.).

#### **Reporting:**

Issues exist with the accuracy of information reported to DFO including discard amounts, bycatch amounts, and landings. Timeliness of reporting has also been an issue in some cases, particularly during

the Division 0B Competitive fishery. This information is used to monitor quotas and effectiveness of management measures. It is also essential for demonstrating sustainable harvesting and fish harvested are legal, reported and regulated. Concerted efforts are required by all licence holders to provide timely, accurate and complete information as outlined in licence conditions. DFO will continue to work with industry and, where applicable, international counterparts to improve reporting in the Greenland Halibut fishery.

**Fishery monitoring:**

Fishery monitoring means observing and understanding the fishery and its dynamics. Monitoring is carried out by harvesters, third party At-sea Observers designated by DFO, dockside monitors (in Canada) and DFO staff. Both the level and pattern (e.g., random, targeted) of monitoring, as well as affordability and practicality of implementation, need to be considered when designing a monitoring program so results can be extrapolated legitimately to the operation of the entire fishery. A variety of tools and best practices are used to meet fishery monitoring requirements. New approaches and technologies are being considered and tested. In collaboration with fishery participants, DFO will assess the risks and management requirements of the Subarea 0 Greenland Halibut fishery, review the efficiency of the current fishery monitoring and reporting program, and make changes as required to support sustainable harvesting practices.

**Fishery modernization:**

DFO continues to implement a number of changes aimed at modernizing fisheries management to ensure Canada's fisheries are sustainable, prosperous and competitive for years to come. In addition, the establishment of individual quota shares for participants of the Division 0B competitive fishery could increase stability and predictability in resource allocations among harvesters, facilitate more strategic business planning and fishery monitoring for longer-term sustainability of the resource. These transitions will require cooperation by all parties.

**Compliance:**

Conservation and Protection (C&P) is developing a risk-based enforcement plan to better identify the most significant compliance risks/issues in this fishery. There are a number of ongoing compliance issues in this fishery as outlined in [Section 9](#) of this Plan. C&P continues to work with industry representatives as well as vessel captains to address compliance issues.

**Performance review:**

Progress on achieving the short term objectives in [Table 2](#) and effective implementation of management measures identified in the Plan will be reviewed annually. Recommendations to improve management of the fishery will be developed to meet the long term objectives of maintaining a sustainable fishery.

## 4.2 Depleted species concerns

Subarea 0 contains several depleted species which have either been listed under [SARA](#), assessed by the Committee on the Status of Endangered Wildlife in Canada ([COSEWIC](#)) and awaiting [SARA](#) listing, or are under a DFO moratorium. For species that are listed as Threatened or Endangered under [SARA](#) Schedule 1, automatic prohibitions apply and [SARA](#) recovery strategies and action plans must be developed within a set time. These same prohibitions do not apply to species listed as Special Concern under [SARA](#)

although a management plan must be developed within a certain time frame. Also to be noted is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) of which Canada is a member. CITES is an international agreement that ensures international trade in specimens of wild animals and plants does not threaten their survival. Table 3 in Appendix 2 lists species known to interact with the Greenland Halibut fishery and for which concerns exist. Their status (i.e., SARA status, COSEWIC designation, CITES listing and applicable moratoria) along with the threats and management measures relevant to the Greenland Halibut fishery are also included.

The Northern Wolffish and Spotted Wolffish have been listed as threatened species under SARA. Measures established in recovery plans require the release of wolffish and where alive in a manner that causes the least harm, or the retention of wolffish only for the purpose of licenced scientific study. Records of wolffish encounters from At-sea Observer data and logbook information by region are being kept to assist monitoring efforts.

There are also species which do not fall under any of the above formal listing processes but for which concerns exist, which are considered ecologically vulnerable. For example, sharks and skates typically grow slowly, mature late, and produce few offspring making them susceptible to overexploitation. Depletion in stocks can occur rapidly and recovery times can be long. Given their life history characteristics, in addition to the limitations in scientific and stock status information, the precautionary approach to management and conservation of these species is warranted. DFO has developed a National Plan of Action for the Conservation and Management of Sharks which covers all elasmobranchs, including sharks and skates. This Plan states objectives and actions, including ones related to improved reporting and reduction of elasmobranch bycatch. White Sharks (Northwest Atlantic population) have been listed as Endangered under SARA (Species at Risk Act). Although Atlantic Canadian waters comprise a portion of a larger geographic area with high White Shark density in summer months, there have been no recorded observations of White Shark in Arctic or Sub-Arctic waters.

Further discussion on depleted species concerns can be found in Section 4.4. Gear Impacts.

## 4.3 Oceans and habitat considerations

### 4.3.1 Ecologically and biologically significant areas

DFO has developed criteria for the identification of Ecologically and Biologically Significant Areas (EBSAs) in Canada's oceans (DFO 2004). All habitats are important ecologically. However, certain ones are particularly significant to the functioning of the ecosystem or to specific stages of the life history of a species. EBSAs do not have legal status, but rather are to be considered as areas requiring risk adverse management during planning and decision making processes.

The identification of EBSAs is a key component for the following initiatives:

- Development of ecosystem-based management in the marine environment;
- Compilation of a knowledge base for the development of the Arctic component of Canada's network of Marine Protected Areas, which is called for in the *Oceans Act*; and
- Implementation of DFO's Sustainable Fisheries Framework.

A science advisory meeting was held in 2011 and six areas were broadly identified within Subarea 0 (Hatton Basin-Labrador Sea-Davis Strait, Cumberland Sound, Baffin Island Coastline, Baffin Bay Shelf Break, Southern Baffin Bay, and Northern Baffin Bay) (DFO 2011). Given current limitations in data and changes that are expected to occur in Arctic ecosystems (e.g. climate change), it was recognized further work will be needed to refine these boundaries and potentially identify more specific areas within each of these broadly identified EBSA (Ecologically and Biologically Significant Areas).

Coldwater corals and sponges are a biologically diverse group of species which can occupy a variety of substrate types, current speeds, and depth ranges. Either as individuals or in groups, these species may form structural habitats that provide an important functional role for numerous forms of marine life (Hogg *et al.* 2010). They act as nurseries, refugia, and spawning and breeding grounds for many aquatic species (DFO 2010b; Baillon *et al.* 2012; Baker *et al.* 2012a; Baker *et al.* 2012b). Due to their sessile, long-lived nature, corals and sponges are particularly vulnerable to physical damage, sediment smothering, toxicity, and potential climate change effects.

A [Coral and Sponge Conservation Strategy for Eastern Canada](#) was completed in 2015 and describes the current state of knowledge of corals and sponges, provides the international and national context for conservation, and outlines existing research and conservation efforts. It also articulates DFO's management approach to coral and sponge conservation and identifies departmental objectives, targets, and actions.

### 4.3.2 Canada's marine and coastal areas conservation mandate

In October 2017, the Government of Canada announced it had reached its first milestone of protecting 5% of Canada's marine and coastal areas and remained committed to protecting 10% by 2020. On August 1st, 2019 the Government of Canada announced that with the creation of the Tuvaijuittuq Marine Protected Area, Canada had surpassed this target ahead of the 2020 deadline. The 2020 target is both a domestic target (Canada's Biodiversity Target 1) and an international target as reflected in the Convention on Biological Diversity's Aichi Target 11 and the United Nations General Assembly's 2030 Agenda for Sustainable Development under Goal 14. The 2017 and 2020 targets are collectively referred to as Canada's marine conservation targets. More information on the background and drivers for Canada's marine conservation targets is available at the following [link](#).

To meet this target, Canada is establishing Marine Protected Areas (MPAs) and "other effective area-based conservation measures" ("Other Measures"), in consultation with industry, non-governmental organizations, and other interested parties. An overview of these tools, including a description of the role of fisheries management measures that qualify as Other Measures is available at the following [link](#).

Within [NAFO \(Northwest Atlantic Fisheries Organization\)](#) Subarea 0 the Hatton Basin, Davis Strait, and Disko Fan Conservation Areas are closed to bottom contact fishing under the *Fisheries Act*. This is a result of significant collaboration between DFO, industry, non-governmental organizations and other stakeholders. These Areas contribute to Canada's marine conservation targets. Overviews of these Conservation Areas and their conservation objectives are available at the following [link](#).

## 4.4 Gear impacts

### 4.4.1 Greenland halibut

Size and age composition of Greenland Halibut catches in the Greenland Halibut fisheries in Subareas 0 and 1 can vary depending on gear type (Jørgensen 2002). Specifically, trawls catch primarily small fish (approx. range 35-65cm) that are immature, whereas gillnets catch larger fish (approx. range 50-85cm) with a mix of immature and mature status. Length of females at 50% maturity ranges from ~67-80cm in Division 0A and ~62-67cm in Division 0B (Harris *et al.* 2009).

### 4.4.2 Other fin fish species

Bycatch species and rates may vary between gear types and management areas. In the Division 0A fishery the most commonly caught bycatch species includes Greenland Shark, Thorny Skate, Arctic Skate and Roughhead Grenadier. In the Division 0B the most commonly caught species includes Greenland Shark, Thorny Skate, several grenadiers, redfish, and Northern Wolffish.

### 4.4.3 Marine mammals

There are a number of species of marine mammals (primarily seals and whales) found in Subarea 0 that have the potential to interact with fishing gear. Gear interactions with gillnet and trawl entanglements or entrapments can result in serious injury and/or mortality to marine mammals. Between 2013 and 2017 a total of 14 incidences of marine mammals interacting with mobile and fixed gear in Subarea 0 were recorded by At-Sea-Observers and logbook bycatch data. Areas in Subarea 0 where marine mammals are known to inhabit or frequent include the following:

- Cumberland Sound, which Beluga, Narwhal, Killer Whale, and Bowhead frequent during the open water season;
- the deeper waters (500-1500m) of Baffin Bay, where Sperm and Northern Bottlenose whales are found in summer months and where Narwhal overwinter; and
- Davis Strait, where Bowhead wintering grounds are located.

### 4.4.4 Marine birds

Several different groups of marine birds have been reported as bycatch, including Northern fulmars (*Fulmarus glacialis*), gulls (unknown species) and phalaropes (unknown species) (Hedd *et al.* 2015).

While fishing with longlines is limited some does occur within the foraging range of several colonies of northern fulmar ([Appendix 5, Figure 2](#)); a species that is known to be susceptible to capture on longline fishing gear (Wheeland, 2016; Whidden and McFarlane-Tranquilla, 2016).

Fishing with gillnets also overlaps with the known Northern fulmar foraging ranges of some of the southern colonies in Nunavut ([Appendix 5, Figure 3](#)) (Whidden and McFarlane-Tranquilla, 2016). While there is less research on the impacts of gillnet fisheries bycatch on seabirds and associated mitigation techniques, as compared to longline gear, this gear type has been shown to pose a threat to marine birds

(Žydelis *et al.* 2013). Although the number of vessels in Subarea 0 is small compared to other regions, recent work by Hedd *et al.* (2015) shows the highest regional marine bycatch rates in eastern and Arctic Canada occur in Subarea 0 Greenland Halibut gillnet fisheries. Recent modelling work based on at-sea observer data in the Greenland Halibut fishery in Subarea 0 show that current levels of fulmar bycatch rates in the fishery could negatively impact fulmar populations (Anderson *et al.* 2018). Many vessels bait gillnets to improve their catch. Baiting gear has been shown in other regions to greatly increase marine bird bycatch (Bull, 2007). Prior to 2019 baiting efforts were not formally documented in fisheries data preventing assessment of how marine bird bycatch rates are associated with this practice. Industry and the Government of Canada continue to support research on marine bird bycatch.

#### 4.4.5 Benthic habitat

Different gear types also have different benthic habitat impacts. [Appendix 5, Figure 4](#) shows total fishing effort of Greenland Halibut, Northern Shrimp and Striped Shrimp fisheries in the Eastern Arctic. DFO Science reviewed information available on the impacts of trawling on ocean-bottom habitat in 2006 (DFO 2006b) and other gear types on ocean-bottom habitat in 2010 (DFO 2010a). The information issued from these meetings represents the scientific basis on which Canadian policy regarding the management of fishing gears has been developed in the [Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas](#).

#### 4.4.6 Abandoned, lost or otherwise discarded fishing gear

Abandoned, lost or otherwise discarded fishing gear (ALDFG, or “ghost gear”) is a form of marine pollution that can be fatal to fish, marine mammals and other marine life, poses a navigation hazard, and also breaks down into other forms of pollution such as microplastics. As part of our G7 Presidency, Canada championed the Charlevoix Blueprint for Healthy Oceans, Seas, and Resilient Coastal Communities, which includes a commitment to strengthen our domestic and international activities to address marine litter. As of 2019 mandatory reporting requirements for lost gear, as well as reporting the retrieval of gear previously reported lost, has been implemented in commercial fisheries to accurately quantify ALDFG in Canada and allow for the development of priority areas for retrieval projects. By becoming a leader in addressing ALDFG, Canada is strengthening its commitment to improve the health of marine ecosystems, protect marine animals from harm, and safeguard human health and livelihoods.

### 4.5 International issues

Canada has various international commitments, agreements and obligations regarding commercial marine fisheries and has developed domestic policies and tools (e.g. Sustainable Fisheries Framework) to support them. These will be implemented in the Subarea 0 Greenland Halibut fishery in a phased and progressive manner over a number of years based on priorities established by DFO in consultation with the fishing industry and other stakeholders.

In particular, Canada is a signatory to the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries (1979) which promotes, through consultation and cooperation, the optimum utilization, rational management and conservation of the fishery resources of the Convention Area.

Denmark, in respect of Greenland, is also a signatory. NAFO (Northwest Atlantic Fisheries Organization) has, as one of its constituent bodies, a Scientific Council of which Coastal States may request advice. Canada and Denmark ask the NAFO Scientific Council to conduct the stock assessment and provide TAC (Total Allowable Catch) recommendations for the Subarea 0+Division 1A (offshore) and Divisions 1B-F stock area. However, a bilateral mechanism for discussions between Canada and Greenland on the management of the Subarea 0+Division 1A (offshore) and Divisions 1B-F Greenland Halibut stock is not in place.

Also to be noted, a substantial portion of Greenland Halibut caught in this fishery is offloaded in foreign ports (i.e. Greenland). Canada is working with Greenland officials to establish protocols for sharing and exchange of landing information.

## 5. Objectives

Objectives for the Greenland Halibut fishery are a key component of the IFMP (Integrated Fisheries Management Plan). Long term objectives guide the management of the fishery and may be categorized as stock conservation, ecosystem, shared stewardship, compliance, and social, cultural and economic objectives. Each long term objective is supported by one or more short term objectives to address existing management issues in the fishery. The objectives listed in Table 2 were developed in consultation with industry, co-management and Inuit organizations, and other stakeholders. Indicators and targets to measure progress on achieving these objectives still need to be developed.

**Table 2: Long and short term objectives for the Subarea 0 Greenland halibut fishery.**

Long-term Objective	Short-term Objective
<b>Stock Conservation</b>	
Conserve the Greenland Halibut stock through sustainable use and effective fishery management.	<ul style="list-style-type: none"> <li>• Improve knowledge of Greenland Halibut biology through the continuation of growth, maturity, genetics and migration studies.</li> <li>• Secure funding for annual multi-species surveys to monitor Greenland Halibut abundance and biomass.</li> <li>• Monitor size distribution of catch.</li> <li>• Promote fishing practices that maximize quality of the catch thereby minimizing discards.</li> </ul>
Take a precautionary approach to fishery decisions for the Greenland Halibut stock	<ul style="list-style-type: none"> <li>• Given uncertainties related to the Greenland Halibut stock, take a precautionary approach to setting TACs.</li> <li>• Develop a Harvest Strategy, containing Harvest Control Rules, for this fishery.</li> </ul>
<b>Ecosystem</b>	

<p>Conserve sensitive benthic areas through effective fishery management.</p>	<ul style="list-style-type: none"> <li>• Promote fishing practices that avoid or mitigate impacts on sensitive benthic habitats.</li> <li>• Determine priority areas within Baffin Bay and Davis Strait for future Ecological Risk Assessments.</li> </ul>
<p>Conserve bycatch species through effective fishery management.</p>	<ul style="list-style-type: none"> <li>• Promote fishing practices that avoid or mitigate impact on bycatch species.</li> <li>• Explore population based bycatch limits for vulnerable bycatch species (e.g., <u>SARA (Species at Risk Act)</u> and <u>COSEWIC (Committee on the Endangered Wildlife in Canada)</u> listed species, elasmobranchs).</li> <li>• For Northern Wolffish and Spotted Wolffish adhere to pertinent licence conditions. Also, implement fishery management related recommendations found in the Recovery Plan and Action Plan.</li> <li>• Reduce harm to Greenland Shark by promoting awareness of safe release techniques.</li> <li>• Improve data collection methods that facilitate improved assessment of seabird bycatch rates and possible impacts.</li> </ul>
<p><b>Shared Stewardship</b></p>	
<p>Promote collaboration, participatory decision making, and shared responsibility with resource users, co-management organizations and other interested parties.</p>	<ul style="list-style-type: none"> <li>• Conduct Greenland Halibut fishery meetings with stakeholders on a regular basis.</li> <li>• Work towards specific, measurable, achievable, realistic and time-sensitive (SMART) objectives and commensurate indicators and targets with which to measure progress.</li> <li>• Transition shared responsibility, accountability and decision making to licence holders within the constraints of the <i>Fisheries Act</i> and land claim agreements.</li> </ul>
<p>Promote collaborative science and management initiatives with Greenland.</p>	

<p>Support effective fishery management through reliable, timely and accessible fishery information.</p>	<ul style="list-style-type: none"> <li>• Obtain and evaluate information on total catch, effort, and other ecosystem components.</li> <li>• Improve the timeliness and accuracy of discard and landings reporting in the fishery to account for total catch.</li> <li>• Improve bycatch reporting in order to account for total catch.</li> <li>• Improve reporting of Species At Risk in order to account for total catch.</li> <li>• Establish standards and the infrastructure within DFO to support electronic logbooks and encourage their use.</li> <li>• Review monitoring program to identify gaps in monitoring and the associated risks.</li> </ul>
<p><b>Social, Cultural and Economic</b></p>	
<p>Promote a competitive and prosperous fishing industry that is able to maximize value from fisheries resources and generate economic growth, while ensuring stocks remain healthy and abundant for future generations.</p>	<ul style="list-style-type: none"> <li>• Support stability in allocation and effective management (subject to the 4th bullet).</li> <li>• Work with stakeholders to improve management of the Division 0B competitive fixed gear fishery including the possibility of moving to a share based regime.</li> <li>• Support increased market access initiatives such as eco-certification.</li> <li>• Continue to take into account relevant land claim agreements and Government of Canada strategies and policies when making access and allocation decisions.</li> </ul>
<p><b>Compliance</b></p>	

Support effective fishery management through a comprehensive compliance program.

- Conduct a risk assessment of compliance issues.
- Develop and implement compliance strategies to address identified compliance risks in this fishery.
- Conduct targeted at-sea fishery inspections/patrols.
- Conduct targeted aerial surveillance flights.
- Collaborate with Newfoundland and Labrador Region for operational planning to support compliance measures.
- Strengthen the collection and reporting on intelligence in the fishery.
- Conduct an enforcement driven compliance assessment.
- Develop and implement a risk-based enforcement plan (including enhanced stakeholder engagement on compliance issues in this fishery to support compliance planning and effectiveness).

## 6. Access and allocation

There are two elements that frame the sharing of adjacent marine resources: access (i.e. licences and validations for participation in the fishery) and allocation (i.e. distribution of quota). The Minister can, for reasons of conservation or for any other valid reasons, modify access, allocations and sharing arrangements as outlined in this IFMP (Integrated Fisheries Management Plan) in accordance with the powers granted pursuant to the *Fisheries Act*. Allocation information is publicly available and is provided upon request. Inquiries can be sent to the following email: [info@dfo-mpo.gc.ca](mailto:info@dfo-mpo.gc.ca).

### Access

There has been no increase in non-Nunavut access to the fishery since 2002. The Government of Canada is supportive of the development of Nunavut's fisheries and recognizes the importance of the commercial fishery to the economy of Nunavut. Additional information on access to the fishery can be found in [Section 1.4](#).

### Allocations

When making decisions regarding allocation of fisheries resources, primary consideration is given to conservation. Other important considerations include relevant land claim agreements, adjacency, historical dependence and economic viability.

With respect to the Greenland Halibut Subarea 0 fishery and land claim agreements, relevant provisions of the *NA* and *NILCA* (Nunavik Inuit Land Claims Agreement) apply ([Appendix 1](#) lists details of the key provisions of the *NA* and the *NILCA* related to the Greenland Halibut Subarea 0 fishery).

## **Allocations and the NA**

With the exception of the 100t inshore allocation in Division 0A, the fishery is prosecuted in the waters of Baffin Bay and Davis Strait (in Division 0A and 0B), which are adjacent to the NSA (Nunavut Settlement Area). These adjacent waters (north of 61° latitude) are included in Zone I as defined by the *NA*. As such, the following sections of the *NA* apply when determining fishery allocations: Section 15.3.4 of the *NA* sets out the circumstances under which the advice of the NWMB (Nunavut Wildlife Management Board) must be sought and considered; and Section 15.3.7 sets out requirements of the Minister with respect to consideration of adjacency and economic dependence when making decisions affecting Zone I. Inside the NSA, the NWMB is the main instrument of wildlife management and the main regulator of access to wildlife, including fish.

Once domestic allocations in waters adjacent to Nunavut, including Nunavut's share, have been established, it has been the practice of the NWMB (Nunavut Wildlife Management Board) to provide the Minister with advice regarding the allocation of Nunavut's share to individual Nunavut enterprises. (i.e. Recommendations for areas outside the NSA (Nunavut Settlement Area) and decisions for areas within the NSA). To provide structure to its sub-allocation advice for commercial marine resources the NWMB follows the processes under its NWMB Allocation Policy for Commercial Marine Fisheries. Please contact the NWMB for further information on their allocation policy.

## **Allocations and the NILCA (Nunavik Inuit Land Claims Agreement)**

Within the Nunavik Marine Region (NMR), the Nunavik Marine Region Wildlife Board (NMRWB) is the main instrument for the management of fish and other wildlife. The *NILCA* also sets out provisions related to the management and harvesting of fish and other wildlife in areas outside the NMR, including Southern Davis Strait. The definition of the 'Southern Davis Strait Zone', in general terms, refers to that part of Division 0B that is not part of the NSA (Nunavut Settlement Area). As such, the following sections of the *NILCA* apply when determining fishery allocations: Section 5.4.4 sets out the circumstances under which the advice of the NWMB must be sought and considered; and Section 5.4.8 describes the allocation of the Division 0B Greenland Halibut TAC (Total Allowable Catch) to Nunavik Inuit.

# **7. Management measures**

Management measures outline the controls or rules adopted for the fishery, including stock conservation and ecosystem management measures. These measures are based on the *Fisheries Act* and SARA (Species at Risk Act) and the regulations made under these acts. Also, non-quota limitations may be established under the *NA* on harvesting activities in the NSA (Nunavut Settlement Area). Variation Orders outline fishing season, management areas and conservation area closures. In addition to the provisions set out in the *Fishery (General) Regulations* and *Atlantic Fishery Regulations, 1985*, specific management measures are outlined in annual licences. Conservation Harvest Plans for each fleet reiterate key management measures found in licences and the IFMP (Integrated Fisheries Management Plan), as well as any industry proposed Codes of Conduct for responsible fishing. *SARA* requirements are included as licence conditions that list species and specific mitigation measures. Habitat protection measures (including

closures or partial closures) are also listed in licences. [Appendix 3](#) provides an overview of management measures currently in place in the [NAFO \(Northwest Atlantic Fisheries Organization\) Subarea 0 Greenland Halibut fishery](#).

Quota reconciliation is applied to the Subarea 0 Greenland Halibut fishery. Quota reconciliation provides that any overharvest of a quota in one year will be accounted for in advance of the following fishing season, i.e. the amount of the fleet or licence holders overrun will be subtracted from the next years fleet or licence holders allocation. Quota reconciliation facilitates the management of all fisheries and encourages harvest limits to be respected. Quota reconciliation helps to achieve conservation objectives for the resource, ensures that overruns by one fleet/licence holder does not impact others, and provides industry with increased responsibility in meeting conservation objectives.

The Subarea 0 Greenland Halibut fishery is not currently eligible for the carry forward of quota as per Quota Carry-Forward Guidelines for Atlantic Canada since it is a shared stock with Greenland for which an agreement with a prescribed carry-forward condition does not exist.

Subarea 0 stakeholders continue to support the introduction of Carry Forward provisions in this fishery and encourage Canada to engage Greenland bilaterally on this subject.

## 8. Shared stewardship arrangements

The Greenland Halibut fishery has a long history of shared stewardship arrangements. Internationally, Canada and Denmark (on behalf of Greenland) ask the [NAFO \(Northwest Atlantic Fisheries Organization\) Scientific Council](#) to conduct the Greenland Halibut stock assessment and provide [TAC \(Total Allowable Catch\)](#) recommendations. As well DFO and the Greenland Department of Fisheries, Hunting and Agriculture are signatories to a Memorandum of Understanding on Issues Related to Satellite Based Vessel Monitoring System (VMS). DFO and the [GINR \(Greenland Institute of Natural Resources\)](#) support collaborative research projects and the implementation of the multi-species survey. University researchers and DFO work collaboratively (e.g. benthic survey in Baffin Bay and Davis Strait) to understand ecosystem relationships in the Arctic marine environment. Co-management organizations, industry, and the Government of Nunavut have provided financial support to the multi-species survey program. Research undertaken in collaboration with the Government of Nunavut and its research vessel Nuliajuk supports the development of inshore fisheries.

Transport Canada (TC) and [CCG \(Canadian Coast Guard\)](#) representatives to participate in the regional fishery management plan development process, including regional fishery advisory committee meetings. TC safety-at-sea considerations and measures are available through the [TC Marine Transportation website](#).

## 9. Compliance plan

### 9.1 Conservation and Protection program description

The Conservation and Protection (C&P) Program promotes compliance with legislation, regulations and management measures implemented to achieve the conservation and sustainable use of Canada's aquatic resources, and the protection of species at risk, fish habitat and oceans.

The program is delivered through a balanced regulatory management and enforcement approach including the following:

- promotion of compliance through education and shared stewardship;
- monitoring, control and surveillance activities;
- management of major cases/special investigations in relation to complex compliance issues; and
- strengthening the collection and reporting on intelligence in the fishery.

### 9.2 Regional compliance program delivery

Fishery Officers in the C&A (Central and Arctic) Region are responsible for compliance activities related to the Greenland Halibut fishery. These Officers are supported by regional staff that provide oversight, SARA (Species at Risk Act) response and coordination, and also manage the air surveillance program. These Fishery Officers are designated under Section 5 of the *Fisheries Act* and have full enforcement powers and responsibilities outlined in the *Fisheries Act*, *Coastal Fisheries Protection Act*, *SARA*, *Criminal Code* and the *Constitution Act*. Fishery Officers can inspect and investigate fishing vessels for compliance with Variation Orders, conditions of licences, as well as the *Fisheries Act* and related regulations.

Designated At-sea Observers are deployed to perform duties best described as "Observe, Record and Report." Duties are related to monitoring of fishing activities, examination and measurement of fishing gear, collection of biological samples, recording of scientific data, monitoring the landing of fish, and verification of the weight and species of fish caught and retained. Designated At-sea Observers are not employed by DFO and have no enforcement authority.

All vessels engaged in the NAFO (Northwest Atlantic Fisheries Organization) Subarea 0 Greenland Halibut fishery are required to carry a DFO approved satellite tracking device. This VMS (Vessel Monitoring System) is used to monitor fleet activity particularly in and around closed areas and international boundaries as well as deploy surveillance resources. When a vessel is fishing in the NSA (Nunavut Settlement Area), the NWMB (Nunavut Wildlife Management Board) requires that vessels carry two (2) VMS units onboard.

With respect to monitoring capacities, the focus is on targeted air surveillance and at-sea patrols in the NAFO (Northwest Atlantic Fisheries Organization) Subarea 0 Greenland Halibut fishery. Patrol coverage using government or chartered aircraft with a Fishery Officer onboard is used to identify concentrations and distribution of fishing vessels. In particular, air patrols are necessary to monitor closed and/or

conservation areas and the boundary between Canada and Greenland for illegal fishing. Flight reports, photographs and other data collected from these overflights are readily available to C&P (Conservation and Protection) managers and Fishery Officers.

Fishery Officers conduct at-sea patrols monitoring for illegal fishing activity and boarding domestic vessels to verify compliance with licence conditions and other regulations.

Where fishing vessels offload in Greenland increased and improved communication and cooperation between At-Sea Observer Companies, Greenlandic and Danish authorities, and licence holders are essential to ensure compliance with Canadian laws and regulations.

Fishery Officers will focus on targeted compliance and enforcement of the Greenland Halibut commercial fishery by developing and implementing a Risk-based Enforcement Plan and action plan through consultation annually with Resource Management.

### 9.3 Consultation

C&P (Conservation and Protection) staff participate in fishery review meetings where compliance issues are presented and recommendations requested for resolution. As well, informal meetings continue on an ad hoc basis to resolve in-season matters.

### 9.4 Compliance performance

Post season analysis is conducted by C&P (Conservation and Protection) to review issues encountered during the previous season and make recommendations on improving management measures during the annual, multi-sector post season review.

### 9.5 Compliance issues and strategies

Fishery Officers conduct investigations in response to reported violations on compliance issues such as fishing in closure areas, licence conditions, regulations, international boundary complaints and other elements of the fishery. Where warranted appropriate enforcement action is taken.

The overall outcome is to enhance the standard of compliance in this fishery. This outcome is supported by the following compliance measures:

- Conduct targeted at-sea fishery inspections/patrols;
- Conduct targeted aerial surveillance flights;
- Collaborate with Newfoundland and Labrador Region for operational planning to support compliance measures;
- Strengthen the collection and reporting on intelligence in the fishery;
- Conduct an enforcement driven compliance assessment; and,
- Develop and implement a risk-based enforcement plan

## 10. Performance review

This IFMP (Integrated Fisheries Management Plan) was developed through a consultative process including resource users, co- management organizations, and other interested parties. DFO will continue to consult and liaise with these groups on an annual basis and as circumstances require, both through formal advisory processes as well as informal ad hoc or issue-related basis between advisory processes.

The stock will continue to be assessed through the NAFO (Northwest Atlantic Fisheries Organization) Scientific Council and monitoring of the fishery will be accomplished using several tools including quota reports, daily hauls, logbooks, VMS (Vessel Monitoring System), Dockside Monitoring Programs, At-sea Observers, air surveillance and at-sea patrols.

DFO will continue with annual internal post season reviews to identify operational issues encountered during the previous season and recommend actions for improvement. In addition, DFO will continue with annual completion of Sustainable Fisheries Framework surveys to identify gaps and further areas of improvement. Both exercises include all relevant sectors of DFO and inform broader discussions with fishery stakeholders.

## 11. Acronyms

**ALDFG:** Abandoned, lost or otherwise discarded fishing gear

**C&A:** Central and Arctic Region, Fisheries and Oceans Canada

**C&P:** Conservation and Protection, Fisheries and Oceans Canada

**CAD:** Canadian dollar

**CCG:** Canadian Coast Guard

**CITES:** Convention on International Trade in Endangered Species of Wild Fauna and Flora

**COSEWIC:** Committee on the Status of Endangered Wildlife in Canada

**CTD:** Conductivity, temperature, depth

**DFO:** Fisheries and Oceans Canada

**EBSA:** Ecologically and Biologically Significant Area

**GINR:** Greenland Institute of Natural Resources

**ICES:** International Council for the Exploration of the Sea

**IFMP:** Integrated Fishery Management Plan

**LOA:** Length Over All

**MCTS:** Marine Communications and Traffic Services

**MPA:** Marine Protected Area

**NMR:** Nunavik Marine Region

**NMRWB:** Nunavik Marine Region Wildlife Board

**N&L:** Newfoundland and Labrador Region, Fisheries and Oceans Canada

**NAFO:** Northwest Atlantic Fisheries Organization

**NA:** Nunavut Agreement

**NILCA:** Nunavik Inuit Land Claims Agreement

**NSA:** Nunavut Settlement Area

**NWMB:** Nunavut Wildlife Management Board

**RV:** Research Vessel

**SARA:** *Species at Risk Act*

**TAC:** Total Allowable Catch

**TC:** Transport Canada

**TEK:** Traditional Ecological Knowledge

**USD:** United States dollar

**VMS:** Vessel Monitoring System

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## 13. Glossary

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

**Age Composition:** Proportion of individuals of different ages in a stock or in the catches.

**Biomass:** Total weight of all individuals in a stock or a population.

**Bycatch:** The unintentional catch of one species when the target is another.

**Catch-per-unit-effort (CPUE):** The amount caught for a given fishing effort e.g. tonne of shrimp per tow, kilograms of fish per hundred longline hooks.

**Conservation Harvesting Plan (CHP):** A fishing plan, historically developed by all gear sectors, that outlines management measures in the fishery and any other industry proposed measures for responsible fishing.

**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.

**Discards:** Portion of the directed species catch returned to the water after being caught in fishing gear.

**Dockside Monitoring Program (DMP):** A monitoring program that is conducted by a company that has been designated by DFO, which verifies the species composition, product form and landed weight of all fish landed from a commercial fishing vessel.

**Ecologically and Biologically Significant Area (EBSA):** An area that has high ecological or biological significance and which should receive a greater-than-usual degree of risk aversion in management of activities in order to protect overall ecosystem structure and function.

**Ecosystem-based Management:** Taking into account species interactions and the interdependencies between species and their habitats when making resource management decisions.

**Elasmobranch:** Any cartilaginous fish of the subclass Chondrichthyes e.g. sharks, skates, rays. *Fishing Effort:* Quantity of effort using a given fishing gear over a given period of time.

**Fishing Mortality:** Death caused by fishing, often symbolized by the mathematical symbol  $F$ .

**Fixed Gear:** A type of fishing gear that is set in a stationary position. These include traps, weirs, gillnets, longlines and handlines.

**Gillnet:** A type of fishing gear composed of netting with weights on the bottom and floats at the top. Gillnets can be set at different depths and are anchored to the seabed.

**Groundfish:** Species of fish living near the bottom such as cod, haddock, halibut and flatfish.

**Landings:** Quantity of a species caught and landed.

**Longline:** A type of fishing gear composed of long lines with a series of baited hooks.

**Maximum Sustainable Yield (MSY):** Largest average catch that can continuously be taken from a stock.

**Mesh Size:** Size of the mesh of a net. Different fisheries have different minimum mesh size regulation.

**Minister:** Minister of Fisheries and Oceans Canada

**Mobile Gear:** A type of fishing gear that is drawn through the water by a vessel to entrap fish. These include otter trawls and Danish/Scottish seines.

**Natural Mortality:** Mortality due to natural causes, symbolized by the mathematical symbol  $M$ .

**At-sea Observer Coverage:** When a licence holder is required to carry an officially recognized At-sea Observer onboard his/her vessel for a specific period of time to verify fishing activities, such as the amount of fish caught, the area in which it was caught and the method by which it was caught.

**Otolith:** Structure of the inner ear of fish, made of calcium carbonate. Also called "ear bone" or "ear stone".

**Pelagic:** Of, relating to, or living or occurring in the open sea. A pelagic species lives in midwater or close to the surface (e.g. herring).

**Population:** Group of individuals of the same species, forming a breeding unit, and sharing a habitat.

**Precautionary Approach:** Set of agreed cost-effective measures and actions, including future courses of action, which ensures prudent foresight, reduces or avoids risk to the resource, the environment, and the people, to the extent possible, taking explicitly into account existing uncertainties and the potential consequences of being wrong.

**Quota:** Portion of the total allowable catch that a unit such as vessel class, enterprise, individual, etc. is permitted to take from a stock in a given period of time.

**Recruitment:** Amount of individuals becoming part of the exploitable stock i.e. that can be caught in a fishery.

**Research Survey:** Survey at sea, on a research vessel, allowing scientists to obtain information on the abundance and distribution of various species and/or collect oceanographic data (e.g. bottom trawl survey, plankton survey, hydroacoustic survey, etc.).

**Species at Risk Act (SARA):** A Canadian act to prevent wildlife species from becoming extinct and secure the necessary actions for their recovery. It provides the legal protection of wildlife species and the conservation of their biological diversity.

**Spawner:** Sexually mature individual.

**Spawning Stock:** Sexually mature individuals in a stock.

**Stock:** Describes a population of individuals of one species found in a particular area, and is used as a unit for fisheries management [e.g. NAFO (Northwest Atlantic Fisheries Organization) Subarea 0 and Division 1A (offshore) and Divisions 1B-F].

**Stock Assessment:** Scientific evaluation of the status of a species belonging to a same stock within a particular area in a given time period.

**Total Allowable Catch (TAC):** The amount of catch that may be taken from a stock.

**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.

**Tonne (t):** Metric tonne, which is 1,000kg or 2,204.6lbs.

**Trawl:** A type of fishing gear composed of a cone-shaped net towed in the water by a vessel called a "trawler". Bottom trawls are towed along the ocean floor to catch species such as groundfish. Mid-water trawls are towed within the water column.

**Validation:** The verification, by an independent certified At-sea Observer, of the weight of fish landed.

**Vessel Size:** Length overall.

**Year-class:** Individuals of a same stock born in a particular year. Also called "cohort".

## Appendix 1: Key provisions of the Nunavut Agreement and Nunavik Inuit Land Claims Agreement related to the Greenland halibut fishery

### Nunavut Agreement

The *Nunavut Agreement* in its entirety can be found at the following web [link](#).

The roles and responsibilities of the Nunavut Wildlife Management Board (NWMB) related to the Greenland Halibut fishery include but are not limited to the following:

5.2.33 Recognizing that Government retains ultimate responsibility for wildlife management, the ~~NWMB~~ (Nunavut Wildlife Management Board) shall be the main instrument of wildlife management in the Nunavut Settlement Area (NSA) and the main regulator of access to wildlife and have the primary responsibility in relation thereto in the manner described in the Agreement. Accordingly, the NWMB shall perform the following functions:

- (a) participating in research (Sections 5.2.37 to 5.2.38);
- (d) establishing, modifying or removing levels of total allowable harvest (Sections 5.6.16 to 5.6.18);
- (e) ascertaining the basic needs level (Sections 5.6.19 to 5.6.25);
- (f) adjusting the basic needs level (Sections 5.6.26 to 5.6.30);
- (g) allocating resources to other residents (Sections 5.6.32 to 5.6.37);
- (h) allocating resources to existing operations (Section 5.6.38);
- (i) dealing with priority applications (Section 5.6.39);
- (j) making recommendations as to allocation of the remaining surplus (Section 5.6.40);

(k) establishing, modifying or removing non-quota limitations (Sections 5.6.48 to 5.6.51);

(m) any other function the NWMB (Nunavut Wildlife Management Board) is required to perform by the Agreement and not specifically referred to in this Section.

5.2.34 In addition to its primary functions outlined in Section 5.2.33, the NWMB (Nunavut Wildlife Management Board) shall in its discretion perform the following functions related to management and protection of wildlife and wildlife habitat;

(c) approve plans for management and protection of particular wildlife habitats including areas within Conservation Areas, Territorial Parks and National Parks;

(d) (i) approve plans for management, classification, protection, restocking or propagation, cultivation or husbandry of particular wildlife, including endangered species.

(f) approve designation of rare, threatened and endangered species

## Research

5.2.37 There is a need for an effective system of wildlife management, and to be effective, the system of management requires an efficient, coordinated research effort. The NWMB (Nunavut Wildlife Management Board) in fulfilling its management functions requires an informed and effective role in wildlife research and its direction. The ability and right of the Government of Canada and Territorial Government to continue their own research functions shall not be prejudiced by this Section. Accordingly the NWMB shall:

(a) identify research requirements and deficiencies pertinent to wildlife management and the rational utilization of wildlife resources, and promote and encourage on an ongoing basis, research aimed at meeting requirements and overcoming deficiencies;

(b) identify relevant persons and agencies to undertake wildlife research;

(c) review research proposals and applications, and where appropriate recommend on the acceptance or rejection of such proposals to the appropriate government agency;

(d) collect, classify, and disseminate wildlife statistics and information and maintain a data base adequate for such purposes; and

(e) carry out all other research functions consistent with its responsibilities.

5.2.38 Further to its responsibilities in Section 5.2.37, the NWMB (Nunavut Wildlife Management Board) shall:

(a) establish and maintain an open file system for all raw and interpreted data and information regardless of its source;

(b) promote and encourage training for Inuit in the various fields of wildlife research and management;

(c) promote and encourage the employment of Inuit and Inuit organizations in research and technical positions made available through government and private sector research contracts; and

(d) prior to the carrying out of research, communicate, consult and cooperate with residents of the NSA (Nunavut Settlement Area) and Designated Inuit Organizations (DIO) likely to be affected.

## Criteria for Decisions by NWMB (Nunavut Wildlife Management Board) and Minister

Article 5 of the *NA* sets out a detailed process under which the Minister may accept, reject or vary decisions of the *NWMB* (*Nunavut Wildlife Management Board*) (Sections 5.3.3 to 5.3.23).

5.3.3 Decisions of the *NWMB* (*Nunavut Wildlife Management Board*) or a Minister made in relation to Part 6 shall restrict or limit Inuit harvesting only to the extent necessary:

- (a) to effect a valid conservation purpose;
- (b) to give effect to the allocation system outlined in this Article, to other provisions of this Article and to Article 40; or
- (c) to provide for public health or public safety.

5.3.4 Certain populations of wildlife found in the *NSA* (*Nunavut Settlement Area*) cross jurisdictional boundaries and are harvested outside the *NSA* by persons resident elsewhere. Accordingly, the *NWMB* (*Nunavut Wildlife Management Board*) and Minister in exercising their responsibilities in relation to Part 6 shall take account of harvesting activities outside the *NSA* and the terms of domestic interjurisdictional agreements or international agreements pertaining to such wildlife.

5.3.6 In making decisions affecting Parks, sanctuaries and Conservation Areas, the *NWMB* and the Minister shall take into account the special purposes and policies relating to those areas.

#### **Legal Effect of Decisions (Government of Canada Jurisdiction)**

5.3.16 All decisions made by the *NWMB* (*Nunavut Wildlife Management Board*) in relation to Subsection 5.2.34(a), (c), (d) or (f) or any of Parts 4 to 6 or Article 40 and subject to government of Canada jurisdiction shall be made in the manner set out in Sections 5.3.17 to 5.3.23.

5.3.17 When the *NWMB* (*Nunavut Wildlife Management Board*) makes a decision, it shall forward that decision to the Minister. The *NWMB* shall not make that decision public.

5.3.18 After receiving a decision of the *NWMB* (*Nunavut Wildlife Management Board*) pursuant to Section 5.3.17 the Minister shall within 60 days or within such further period as may be agreed upon by the Minister and the *NWMB*:

- (a) accept the decision and notify the *NWMB* in writing; or
- (b) give the *NWMB* reasons in writing for rejecting the decision.

5.3.19 The Minister shall be deemed to have accepted the decision of the *NWMB* when:

- (a) the Minister has so notified the *NWMB* in writing; or
- (b) the Minister has not rejected the decision within the time period required pursuant to Section 5.3.18.

5.3.20 Where the Minister is deemed to have accepted a decision of the *NWMB* (*Nunavut Wildlife Management Board*) as provided in Section 5.3.19, the Minister shall proceed forthwith to do all things necessary to implement that decision.

5.3.21 Where the Minister rejects a decision of the *NWMB* (*Nunavut Wildlife Management Board*) pursuant to Section 5.3.18 the *NWMB* shall reconsider the decision in light of the written reasons provided by the Minister and make a final decision, which it shall forward to the Minister. The *NWMB* may make the final decision public.

5.3.22 After receiving a final decision of the NWMB (Nunavut Wildlife Management Board) made pursuant to Section 5.3.21, the Minister may:

- (a) accept the final decision;
- (b) reject the final decision; or
- (c) vary the final decision.

5.3.23 Where a final decision has been received by the Minister pursuant to Section 5.3.21 and the Minister decides to accept or vary the final decision, the Minister shall proceed forthwith to do all things necessary to implement the final decision or the final decision as varied.

There are also provisions in the *NA* covering wildlife management and harvesting beyond the marine areas of the NSA (Nunavut Settlement Area), such as the offshore fisheries in Baffin Bay and Davis Strait. They include the following:

15.3.4 Government shall seek the advice of the NWMB (Nunavut Wildlife Management Board) with respect to any wildlife management decisions in Zones I and II which would affect the substance and value of Inuit harvesting rights and opportunities within the marine areas of the NSA (Nunavut Settlement Area). The NWMB shall provide relevant information to Government that would assist in wildlife management beyond the marine areas of the NSA.

15.3.7 Government recognizes the importance of the principles of adjacency and economic dependence of communities in the Nunavut Settlement Area on marine resources, and shall give special consideration to these factors when allocating commercial fishing licences within Zones I and II. Adjacency means adjacent to or within a reasonable geographic distance of the zone in question. The principles will be applied in such a way as to promote a fair distribution of licences between the residents of the Nunavut Settlement Area and the other residents of Canada and in a manner consistent with Canada's inter-jurisdictional obligations.

## Definitions

1.1.1 "Zone I" means those waters north of 61E latitude subject to Canada's jurisdiction seaward of the Territorial Sea boundary as measured from lines drawn pursuant to the Territorial Sea Geographical Coordinates (Area 7) Order SOR/85-872 that are not part of the NSA (Nunavut Settlement Area) or another land claim settlement area;

"Zone II" means those waters of James Bay, Hudson Bay and Hudson Strait that are not part of the NSA or another land claim settlement area.

## Nunavik Inuit Land Claims Agreement

The *Nunavik Inuit Land Claims Agreement* in its entirety can be found at the following web [link](#).

The key provisions of the NILCA (Nunavik Inuit Land Claims Agreement) with respect to Greenland Halibut include but are not limited to the following:

5.2.3 The NMRWB shall be the main instrument of wildlife management in the NMR and the main regulator of access to wildlife and have the primary responsibility in relation thereto in the manner described in this Agreement. Accordingly, the NMRWB shall perform the following functions:

- a. establishing, modifying or removing levels of total allowable take for a species, stock or population of wildlife other than anadromous fish spawning in Québec in accordance with sections 5.2.10 and 5.2.11;
- b. ascertaining the basic needs level for a species, stock or population of wildlife other than anadromous fish spawning in Québec, in accordance with sections 5.2.12 to 5.2.14;
- c. adjusting the basic needs level for a species, stock or population of wildlife other than anadromous fish spawning in Québec in accordance with sections 5.2.15 to 5.2.18;
- d. allocating from the total allowable take opportunities to harvest a species, stock or population of wildlife other than anadromous fish spawning in Québec in accordance with section 5.3.13;
- e. establishing, modifying or removing non-quota limitations in accordance with sections 5.2.19 to 5.2.22;
- f. participating in research in accordance with subsection 5.2.7.1 and section 5.2.8;
- g. determining sufficiency of information and identifying and undertaking measures necessary to obtain the information to enable the NMRWB to establish the basic needs levels in accordance with section 5.2.14;
- h. cooperating with other wildlife management institutions which deal with species that are harvested in the NMR and migrate outside the NMR;
- i. setting any trophy fees on wildlife harvested in the NMR;
- j. providing advice to any other management institutions as requested on all matters relating to management, conservation, protection and regulation of wildlife and wildlife habitat; and
- k. any other function the NMRWB is required to perform by this Agreement and not specifically referred to in this section.

5.2.4 In addition to its primary functions outlined in section 5.2.3, the NMRWB shall in its discretion perform the following functions related to management and protection of wildlife and wildlife habitat:

- a. except for national parks, national park reserves and national marine parks, approve the establishment, disestablishment, and changes to boundaries of protected areas and Marine Protected Areas, related to management and protection of wildlife and wildlife habitat;
- b. approve plans for management and protection of particular wildlife habitats including areas within protected areas;
- c. approve designation of species at risk;
- d. any other functions assigned to it by this Agreement.

## **Research**

5.2.7.1 There is a need for an effective system of wildlife management, and to be effective, the system of management requires an efficient, coordinated research effort. The NMRWB, in fulfilling its management functions, requires an informed and effective role in wildlife research and its direction. The ability and right of the Government of Canada and the Government of Nunavut to continue their own research functions shall not be prejudiced by this subsection. Accordingly, the NMRWB shall:

- a. identify research requirements and deficiencies pertinent to wildlife management and the rational utilization of wildlife resources, and promote and encourage on an ongoing basis, research aimed at meeting requirements and overcoming deficiencies;

- b. identify relevant persons and agencies to undertake wildlife research;
- c. review research proposals and applications and, where appropriate, recommend on the acceptance or rejection of such proposals to the appropriate government agency;
- d. collect, classify, and disseminate wildlife statistics and information and maintain a data base adequate for such purposes; and
- e. carry out all other research functions consistent with its responsibilities.

5.2.8 Further to its responsibilities in sub-section 5.2.7.1, the NMRWB shall:

- a. establish and maintain an open file system for all raw and interpreted data and information regardless of its source;
- b. promote and encourage training for Nunavik Inuit in the various fields of wildlife research and management;
- c. promote and encourage the employment of Nunavik Inuit and the use of Nunavik Inuit organizations in research and technical positions made available through government and private sector research contracts; and
- d. prior to the carrying out of research, communicate, consult and cooperate with residents of Nunavik and MDOs likely to be affected.

### **Criteria for Decisions Restricting or Limiting Nunavik Inuit Harvesting by NMRWB and/or Minister**

5.5.3 Decisions of the NMRWB or a Minister made in relation to Parts 5.2 and 5.3 shall restrict or limit Nunavik Inuit harvesting only to the extent necessary:

- a. to effect a conservation purpose in accordance with sections 5.1.4 and 5.1.5;
- b. to give effect to the allocation system outlined in this Article, to other provisions of this Article and to Articles 27, 28 and 29; or
- c. to provide for public health or public safety.

5.5.4.1 Certain populations of wildlife found in the NMR cross jurisdictional boundaries and are harvested outside the NMR by persons resident elsewhere. Accordingly, the NMRWB and the Minister in exercising their responsibilities in relation to section 5.2.3, paragraphs 5.2.4 (b), (c), (d), (f), (h), and sections 5.2.10 to 5.2.22, 5.3.8, 5.3.10 and 5.3.11 shall also take account of harvesting activities outside the NMR and the terms of domestic interjurisdictional agreements or international agreements pertaining to such wildlife.

5.5.4.2 In making decisions affecting protected areas, the NMRWB and the Minister shall also take into account the special purposes and policies relating to those areas.

5.5.5 Where a decision of the NMRWB is made in relation to a presumption as to needs or adjusted basic needs level, the Minister may reject or disallow that decision only if the Minister determines that the decision is not supported by or consistent with the evidence that was before the NMRWB or available to it.

### **Legal Effect of Decisions of the NMRWB (Government of Canada Jurisdiction)**

5.5.6 All decisions made by the NMRWB in relation to paragraphs 5.2.3 (a) to (f) or 5.2.4 (a), (c), (d) or (f) or any provisions in this Agreement arising from Articles 27, 28, and 29 of this Agreement shall be made in the manner set out in sections 5.5.7 to 5.5.13.

5.5.7 When the NMRWB makes a decision, it shall forward that decision to the Minister. The NMRWB shall not make that decision public.

5.5.8 After receiving a decision of the NMRWB pursuant to section 5.5.7, the Minister shall within 60 days or within such further period as may be agreed upon by the Minister and the NMRWB:

- a. accept the decision and notify the NMRWB in writing; or
- b. reject the decision and give the NMRWB reasons in writing for so doing.

5.5.9 The Minister shall be deemed to have accepted the decision of the NMRWB when:

- a. the Minister has so notified the NMRWB in writing; or
- b. the Minister has not rejected the decision within the time period and in the manner required pursuant to section 5.5.8.

5.5.10 Where the Minister is deemed to have accepted a decision of the NMRWB as provided in section 5.5.9, the Minister shall proceed forthwith to do all things necessary to implement that decision.

5.5.11 Where the Minister rejects a decision of the NMRWB pursuant to section 5.5.8, the NMRWB shall reconsider the decision in light of the written reasons provided by the Minister and make a final decision, which it shall forward to the Minister. The NMRWB may make the final decision public.

5.5.12 After receiving a final decision of the NMRWB made pursuant to section 5.5.11, the Minister may:

- a. accept the final decision;
- b. reject the final decision; or
- c. vary the final decision, and shall provide reasons for rejecting or varying the decision.

5.5.13 Where a final decision has been received by the Minister pursuant to section 5.5.12 and the Minister decides to accept or vary the final decision, the Minister shall proceed forthwith to do all things necessary to implement the final decision or the final decision as varied.

### **Commercial Harvesting: Southern Davis Strait Zone**

5.4.8 A portion of the total allowable catch of turbot established by the Minister for NAFO (Northwest Atlantic Fisheries Organization) Division 0B in the calendar year in which this Agreement takes effect and in subsequent calendar years will be allocated to one (1) or more MDOs to harvest in the Southern Davis Strait Zone. The portion will include any turbot allocation for the Southern Davis Strait Zone provided to, or to be provided to, Makivik or any of its subsidiaries in the calendar year in which this Agreement takes effect. The portion in any calendar year will be determined for that year as follows:

- a. 2.54% of that part of the total allowable catch established by the Minister for NAFO (Northwest Atlantic Fisheries Organization) Division 0B equal to or less than 5,500 metric tonnes; and
- b. 10% of that part of the total allowable catch established by the Minister for NAFO Division 0B in excess of 5,500 metric tonnes.

### **Definitions**

5.1.1.1 Southern Davis Strait Zone means the area that is defined in Annex 111 of the **Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries** that was ratified by Canada on November 30, 1978 and came into force on January 1, 1979, as that portion of NAFO (Northwest Atlantic

(Fisheries Organization) Sub-area 0 lying south of the parallel of 66 Degrees 15' north latitude, commonly known as NAFO Division 0B, and that is not part of the Nunavut Settlement Area.

## Appendix 2: Depleted species concerns

The following table lists species known to interact with the Greenland Halibut fishery and for which concerns exist. For each species, their status, known/potential threats, and relevant management measures are listed.

**Table 3: Depleted species known to interact with the Greenland Halibut fishery and where concerns exist.**

Species	Status	Known/Potential Threats Associated with the Greenland Halibut Fishery	Management Measures
<b>Fish</b>			
Northern Wolffish	<ul style="list-style-type: none"> <li>• <u>SARA (Species at Risk Act)</u>. Threatened</li> <li>• <u>COSEWIC (Committee on the Endangered Wildlife in Canada)</u> Threatened</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	SARA Recovery Plan in place and currently being updated. SARA Action Plan under development. Licence conditions related to authorization to kill, release, and reporting.
Spotted Wolffish	<ul style="list-style-type: none"> <li>• SARA Threatened</li> <li>• COSEWIC Threatened</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	SARA Recovery Plan in place and currently being updated. SARA Action Plan under development. Licence conditions related to authorization to kill, release, and reporting.
Atlantic Wolffish	<ul style="list-style-type: none"> <li>• SARA Special Concern</li> <li>• COSEWIC Special Concern</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	SARA Management Plan in place and currently being updated.
Roundnose Grenadier	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Endangered</li> <li>• MORATORIUM</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	Licence conditions related to retention and reporting.
Deepwater Redfish (northern population)	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Threatened</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	Licence conditions related to retention and reporting.

Acadian Redfish (Atlantic population)	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Threatened</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	Licence conditions related to retention and reporting.
Roughhead Grenadier	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Not at Risk (November 2018)</li> <li>• MORATORIUM</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	Licence conditions related to retention and reporting.
Thorny Skate	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Special Concern</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	DFO National Plan of Action for the Conservation and Management of Sharks. Licence conditions related to release and reporting.
American Plaice (northern population)	<ul style="list-style-type: none"> <li>• COSEWIC Data Deficient</li> </ul>	Bycatch. Disruption of habitat by bottom impact fishing gear.	Licence conditions related to release/retention and reporting.
Greenland Shark	<ul style="list-style-type: none"> <li>• COSEWIC not yet assessed, candidate wildlife species</li> </ul>	Bycatch. Entanglement in fishing gear. Competition for prey with fishery.	DFO National Plan of Action for the Conservation and Management of Sharks. Licence conditions related to release and reporting.
Lumpfish	<ul style="list-style-type: none"> <li>• COSEWIC Threatened</li> </ul>	Bycatch.	
<b>Marine Mammals</b>			
Blue Whale (Northwest Atlantic population)	<ul style="list-style-type: none"> <li>• SARA Endangered</li> <li>• <u>CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) Appendix I</u></li> </ul>	Vessel noise and traffic. Entanglement in fishing gear.	SARA Recovery Strategy in place. Licence conditions related to release and reporting.
Fin Whale (Atlantic population)	<ul style="list-style-type: none"> <li>• SARA Special Concern</li> <li>• COSEWIC Special Concern</li> <li>• CITES Appendix I</li> </ul>	Vessel noise and traffic. Entanglement in fishing gear.	SARA Management Plan in place. Licence conditions related to release and reporting.
Beluga Whale (Cumberland Sound population)	<ul style="list-style-type: none"> <li>• SARA Threatened</li> <li>• COSEWIC Threatened</li> <li>• CITES Appendix II</li> </ul>	Vessel noise and traffic. Entanglement in fishing gear. Competition for prey with fishery.	Licence conditions related to release and reporting.

Bowhead Whale (Eastern Canada- West Greenland population)	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Special concern</li> <li>• CITES Appendix I</li> </ul>	Vessel noise and traffic. Entanglement in fishing gear.	Licence conditions related to release and reporting.
Northern Bottlenose Whale (Davis Strait-Baffin Bay-Labrador Sea population)	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Special concern</li> <li>• CITES Appendix I</li> </ul>	Vessel noise and traffic. Entanglement in fishing gear.	Licence conditions related to release and reporting.
Beluga Whale (Eastern High Arctic- Baffin Bay population)	<ul style="list-style-type: none"> <li>• COSEWIC Special Concern</li> <li>• CITES Appendix II</li> </ul>	Vessel noise and traffic. Entanglement in fishing gear. Competition for prey with fishery.	Licence conditions related to release and reporting.
Narwhal	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Special Concern</li> <li>• CITES Appendix II</li> </ul>	Vessel noise and traffic. Entanglement in fishing gear. Competition for prey with fishery.	Narwhal Overwintering and Coldwater Coral fishing closure in Division 0A. Licence conditions related to release and reporting.
Atlantic Walrus (Arctic population)	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Special Concern</li> <li>• CITES Appendix III</li> </ul>	Vessel noise and traffic. Entanglement in fishing gear.	Licence conditions related to release and reporting.
Killer Whale Northwest Atlantic/Eastern Arctic population)	<ul style="list-style-type: none"> <li>• SARA under consideration</li> <li>• COSEWIC Special Concern</li> <li>• CITES Appendix II</li> </ul>	Vessel noise and traffic.	Licence conditions related to reporting.
Sperm Whale	<ul style="list-style-type: none"> <li>• COSEWIC not yet assessed</li> <li>• CITES Appendix I</li> </ul>	Entanglement in fishing gear.	Licence conditions related to release and reporting.

## Appendix 3: Overview of current management measures in the Subarea 0 Greenland halibut fishery

**Table 4: Overview of current management measures in the Subarea 0 Greenland Halibut fishery.**

<b>Management Measure</b>	<b>Description</b>
Total Allowable Catch (TAC)	<ul style="list-style-type: none"> <li>The Minister determines the Canadian TAC for the Greenland Halibut stock.</li> </ul>
Licences	<ul style="list-style-type: none"> <li>Required when fishing Greenland Halibut.</li> </ul>
Vessels	<ul style="list-style-type: none"> <li>Specified by fishing licence.</li> </ul>
Species, area and catch limitations	<ul style="list-style-type: none"> <li>Species, quantity and area permitted to fish are specified in a schedule attached to licence.</li> <li>Conversion factors for various product forms have been defined by DFO.</li> <li>Quota reconciliation is applied to all overruns.</li> </ul>
Fishing Season	<ul style="list-style-type: none"> <li>For Enterprise Allocation and Special Allocation holders, January 1 - December 30 (subject to identified closure provisions).</li> <li>For Division 0B fixed gear competitive participants, to be determined annually.</li> </ul>
Notification of closure	<ul style="list-style-type: none"> <li>Via broadcasting, electronic means, or Fishery Officer.</li> </ul>
Fishing gear	<ul style="list-style-type: none"> <li>Trawl (mobile)</li> <li>Longline (fixed)</li> <li>Gillnet (Fixed) <ul style="list-style-type: none"> <li>Gillnets require a valid tag securely attached to the headrope of each net.</li> </ul> </li> <li>Gear size specifications can be found in Conditions of Licence</li> <li>Every reasonable effort made to retrieve lost nets.</li> <li>Fishing gear is not to be left unattended in water for more than 72 consecutive hours.</li> </ul>

Fishing restrictions	<ul style="list-style-type: none"> <li>• No fishing in the <del>NSA (Nunavut Settlement Area)</del> or Nunavik Marine Region unless granted permission by respective wildlife board.</li> <li>• No fishing with otter trawls &gt;19.8m in waters &lt;12 nautical miles from Atlantic seacoast.</li> <li>• For fixed gear between May 1 and Dec.31, 20% At-sea Observer coverage is required.</li> <li>• No fishing in Division 0B with gillnets south of 63°10'N from October 1 to December 31.</li> <li>• No fishing with longline in Division 0B south of 63°10'N from October 1 to December 31 except where water depth is &gt;1372m.</li> <li>• Disko Fan Conservation Area*, Davis Strait Conservation Area, and Hatton Basin Conservation Area closed to all Greenland Halibut fishing. See <a href="#">Appendix 5, Figure 4</a>.</li> <li>• Division 0A closed to fixed gear as of November 11 – December 31 and closed to all gear January 1 – May 31 of each year. Close date may be extended depending on ice conditions.</li> </ul> <p>*A portion of Disko Fan Conservation Area is open to gillnets as outlined in <a href="#">Appendix 5, Figure 4</a>.</p>
Bycatch/incidental catch and discards	<ul style="list-style-type: none"> <li>• Groundfish are to be retained (unless specified otherwise in Conditions of Licence).</li> <li>• Any other fish other than groundfish are to be released and, where alive, in a manner causing the least harm.</li> <li>• Catch of each bycatch species for each trip is not to exceed a specified percentage of the weight of Greenland Halibut caught.</li> <li>• Procedures for Monitoring and Control of Small Fish Catches and Incidental Catches may be applied in this fishery.</li> </ul>
Treatment of species listed under the <i>Species At Risk Act</i>	<ul style="list-style-type: none"> <li>• Species at Risk identified in Condition of Licence are to be released and, where alive, in a manner causing the least harm.</li> <li>• Information on interactions with these species is to be recorded in logbook.</li> </ul>
Fish Harvester Reporting requirements	<ul style="list-style-type: none"> <li>• Pre-departure report (hail out) to an At-sea Observer company.</li> <li>• Daily At-sea Reports (daily hails).</li> <li>• Logbook completed daily and provided to DFO by the end of each trip.</li> <li>• Proper labelling of product forms.</li> <li>• End of trip report (hail in) to a Dockside Monitoring Company in Canada.</li> <li>• Lost Fishing Gear Form.</li> <li>• Retrieved Gear Form</li> <li>• Marine Mammal Interaction Form.</li> <li>• Greenland Offloading Notification Form.</li> </ul>
Vessel monitoring system (VMS)	<ul style="list-style-type: none"> <li>• Required to have an approved and operational VMS.</li> <li>• Within the <del>NSA (Nunavut Settlement Area)</del>, vessels are to have two VMS transponders onboard that operate on the iridium satellite system.</li> </ul>

At-sea Observers	<ul style="list-style-type: none"> <li>• 100% At-sea Observer required in Division 0A for both mobile and fixed gears.</li> <li>• 100% At-sea Observer required for mobile gear in Division 0B throughout the year and for fixed gear between January 1 and April 30.</li> <li>• Where required, the operator is not to depart for fishing until an At-sea Observer is onboard.</li> </ul>
Fish landing procedures	<ul style="list-style-type: none"> <li>• Offloading in Canada may only be carried out in the presence of a dockside observer.</li> <li>• Offloading in a Greenland can only occur in a port that is authorized under the control of the European Union Border Inspection Post (i.e. Nuuk or Sisimiut). <ul style="list-style-type: none"> <li>◦ the offload is to be monitored and documentation related to the offloading completed and submitted to DFO as set out in licence conditions.</li> </ul> </li> </ul>

**Note:** For complete information refer to the *Fisheries Act, Species at Risk Act, Fishery (General) Regulations* and *Atlantic Fishery Regulations, 1985*, as well as specific licences, Notices to Fishers, and Conservation Harvest Plans. Measures may vary based on fleet. In the event of discrepancies between the above table and licence conditions, licence conditions will prevail.

## Appendix 4: Economics Surrounding the Greenland Halibut Fishery

Greenland Halibut constitutes a major share of Canadian exports of groundfish both by volume and value. In 2016, Greenland Halibut export comprises 15% and 20% of groundfish exports in terms of quantity and value, respectively. [Table 5](#) provides an overview of the significance of Greenland Halibut in terms of exports of Canadian Greenland Halibut during 2011-16.

**Table 5: Canadian exports of Greenland Halibut during 2011-16.**

Variables	2011	2012	2013	2014	2015	2016
<b>Greenland Turbot</b>						
<b>Quantity (T)</b>	11,112	12,425	14,165	15,534	16,084	15,792
% of Groundfish Exports	13%	16%	16%	18%	17%	15%
% of Total fish Exports	1.8%	2.1%	2.4%	2.7%	2.6%	2.5%
<b>Value (CAD Mil.)</b>	\$56	\$61	\$74	\$80	\$92	\$97
% of Groundfish Exports	17%	18%	21%	20%	20%	20%
% of Total fish Exports	1.4%	1.5%	1.7%	1.6%	1.5%	1.5%
<b>Export Price/Tonne</b>	\$5,044	\$4,909	\$5,249	\$5,177	\$5,735	\$6,142
<b>Groundfish</b>						

Quantity (T)	83,602	79,831	87,675	84,270	96,315	107,298
Value (CAD Mil.)	\$334	\$330	\$352	\$396	\$455	\$492
Export Price/Tonne	\$3,989	\$4,130	\$4,018	\$4,703	\$4,719	\$4,588
<b>Total Fish Exports</b>						
Quantity (T)	609,335	595,924	592,883	571,513	621,453	639,943
Value (CAD Mil.)	\$4,097	\$4,154	\$4,398	\$4,914	\$5,972	\$6,553
Export Price/Tonne	\$6,725	\$6,971	\$7,417	\$8,598	\$9,609	\$10,239
<b>Source:</b> (i) <u>Canadian Trade</u>						

In Division 0A, during 2011–2017, average Greenland Halibut landings were 7,252 t generating an average landed value of \$47 million. In Division 0B, during 2011–2017, average Greenland Halibut landings were 7,041 t generating an average landed value of \$43 million. Of the average landings of 7,041 t, C&A (Central and Arctic) accounted for 46% and N&L for 54%. [Table 6](#) provides annual landings and landed value for the time period 2008-17.

**Table 6: Landings and landed values for Greenland Halibut in Divisions 0A and 0B during 2008-17.**

Variables	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>0A</b>										
Landings (T)	4,964	6,496	6,394	6,262	6,355	6,315	7,576	7,926	7,527	8,458
Landed Values (\$000)	\$20,467	\$24,343	\$24,343	\$37,904	\$37,435	\$39,821	\$49,171	\$54,598	\$55,479	\$53,618
<b>0B</b>										
<b>Landings (T)</b>	<b>5,416</b>	<b>5,529</b>	<b>6,969</b>	<b>6,968</b>	<b>7,008</b>	<b>7,036</b>	<b>6,853</b>	<b>7,513</b>	<b>6,255</b>	<b>7,477</b>
Nunavut	1,930	2,178	3,107	3,097	3,438	3,289	3,286	3,478	2,608	3,260
Newfoundland	3,360	3,351	3,862	3,871	3,570	3,747	3,568	4,035	3,646	4,217
Nova Scotia	126	-	-	-	-	-	-	-	-	-
<b>Landed Values (\$000)</b>	<b>\$21,595</b>	<b>\$30,859</b>	<b>\$39,986</b>	<b>\$39,607</b>	<b>\$39,746</b>	<b>\$40,115</b>	<b>\$50,377</b>	<b>\$30,859</b>	<b>\$42,121</b>	<b>\$47,399</b>
Nunavut	\$8,413	\$13,706	\$18,746	\$20,252	\$21,070	\$21,174	\$23,937	\$13,706	\$19,223	\$20,663
Newfoundland	\$12,998	\$17,154	\$21,240	\$19,355	\$18,675	\$18,941	\$26,440	\$17,154	\$22,899	\$26,736
Nova Scotia	\$184	-	-	-	-	-	-	-	-	-
<b>0A + 0B</b>										
Landings (T)	10,380	12,025	13,363	13,230	13,363	13,351	14,429	15,439	13,782	15,935
Landed Values (\$000)	\$42,062	\$45,951	\$55,202	\$77,890	\$77,042	\$79,567	\$89,286	\$104,975	\$97,600	\$101,017

**Source:** (i) Landings from FMHIS and data from DFO regional offices; (ii) Landed Values were obtained from DFO staff calculations and data from DFO regional offices.

**Note:** Landed value in Division 0A until 2010 is the summation of landings offloaded at Pangnirtung plant (10%) with average landed price CAD2,000/tonne (stated in 2006 Harvesting Summary and Historical Analysis, Baffin Fisheries Coalition), and the remaining landings offloaded elsewhere with export price for Greenland Halibut from DFO. Landed value in Division 0A from 2011 to 2015 and landed value in Division 0B for C&A during 2006-15 is calculated using export price for Greenland Halibut from DFO. The landed values for N&L and Maritimes Region were provided by respective regional offices.

In order to properly assess the economic viability of the Greenland Halibut fishery, several useful indicators are worth tracking.

The exchange rates play a highly significant role in the Canadian economy because international trade is a sizeable part of Canada's total output. As well, over the past couple of decades, the value of the Canadian dollar (CAD) has fluctuated widely against most major currencies. Moreover, as most Canadian trade occurs in the US dollar (USD), the value of the Canadian dollar against the US dollar is especially crucial.

Following a few years of wavering around parity with the U.S. dollar, the monthly average value of Canadian dollar has recently dropped to 0.75 USD. This trend is expected to continue in 2019. Based on a Bank of Canada dataset, since 2006, the monthly average value of Canadian dollar has been as high as 0.95 CAD/USD in the second and third quarter of 2011 and as low as 1.42 CAD/USD in the first quarter of 2016 which was a depreciation of 49% (Figure 1). In the last five years, the average value of Canadian dollar depreciated by over 33% against the US dollar. Such an unprecedented level of depreciation of the Canadian dollar against the US dollar has substantial implications on revenues from Greenland Halibut fishing activities because harvesters will see their revenues in Canadian dollars increased.

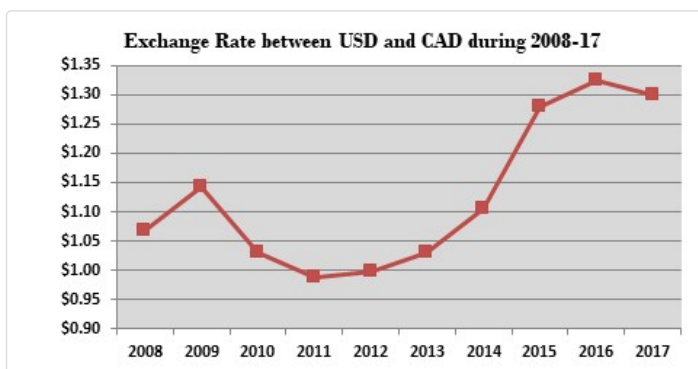


Figure 1: Exchange rated between the US and Canadian dollar.

The Canadian dollar has not only been weakened with the US dollar but also with other major trading partners (e.g. United Kingdom, European Union, China). For instance, in the last five years, the value of the Chinese renminbi (yuan) rose by 16% against the Canadian dollar. During the same period, while the value of Euro rose by 7% the value of U.K. pound sterling marginally rose by 4% and, Russian currencies fell against the Canadian dollar by 31%.

Another major concern for harvesters is the ever increasing costs of production. While the prices of most of the inputs (e.g. fuel, labour, interest payment) have gone up significantly in Canada in the last decade, the price of fuel was down substantially in recent years and which usually forms the biggest operating cost for harvesters.

World oil prices increased during the past 15 years driven by economic growth in China and other emerging market economies. In 2015, this trend has been reversed by a combination of slowing demand and increasing supply. During 2006-2014, the price surged by 46% (from \$73/barrel to \$106/barrel) and then dropped by 39% (from \$106/barrel to \$65/barrel) in 2015. Commercial fishing vessels primarily use diesel fuel, and diesel prices have not fallen as steeply as oil and gasoline because of limited refining capacity than gasoline. During 2009-2013, the diesel price surged by 62% (from \$80/barrel to \$130/barrel) and then dropped by 74% (from \$130/barrel to \$75/barrel) in 2016 (Figure 2). During 2016-17, the diesel fuel price rose by 19%. Because diesel demand and supply are inelastic (rigid) in the short-run, the prices are expected to remain relatively low over the coming year. The relatively low fuel price represents a cost-break opportunity for industry when compared to the average fuel price during 2011-14.

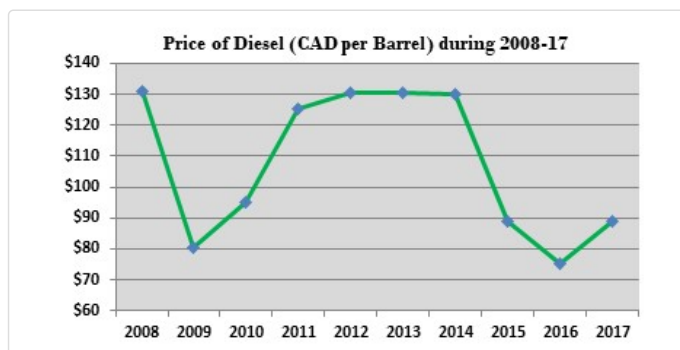


Figure 2: Price of diesel fuel.

Interest rates have been low since the 2008 economic recession, as central banks used this monetary policy tool to stimulate economic growth. Canada’s big commercial banks have passed some of the resulting interest savings on to consumers via reduced mortgage rates and a reduced prime rate. Business loans and lines of credit are expected to benefit from the lower prime rate. The degree to which commercial fishing operations benefit from lower interest rates depends in part on their level of debt with commercial banks. In the last quarter of 2018, the Bank of Canada raised the Bank rate at 1.75 from 1.00 level in 2017 which might put pressure to some extant depending on the level of debt with the commercial banks and associated financial arrangements.

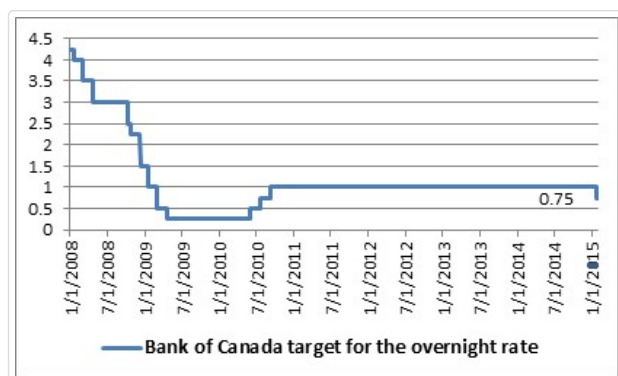


Figure 3: Bank of Canada target for overnight rate .

While harvesters in this fishery are at a relatively competitive disadvantage due to the high cost structure of operating in a remote and challenging environment, the significant fall in fuel costs and interest payments coupled with huge depreciation of the CAD against the USD has widened the profit margin of harvesters in the Greenland Halibut fishery in the last few years.

Income of major trading partners, which is widely measured as Gross Domestic Product, is a major determinant of the volume and prices of Canadian exports of fish and fish products. International Monetary Funds projected economic growth to be much higher in China and developing Asia as compared to European Union and Japan. The economic growth in the US is projected to be stable at around the current growth rate in the coming years. Since income is a major determinant of product demand, the projected higher growth in major importing countries is beneficial and may be considered to be a sign of stable and/or higher demand for Greenland Halibut in upcoming years.

## Appendix 5: Maps

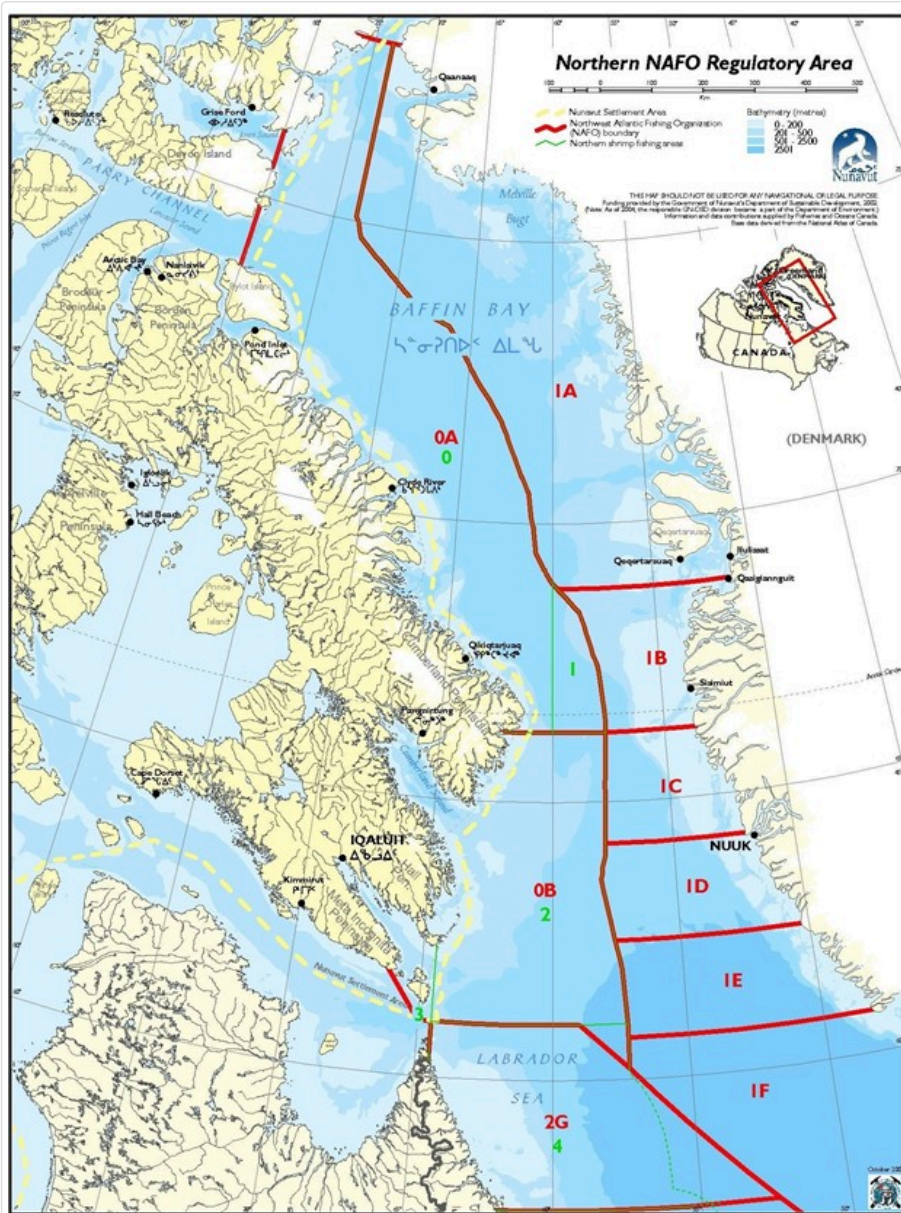


Figure 1: Map of Northwest Atlantic Fisheries Organization subareas and divisions.

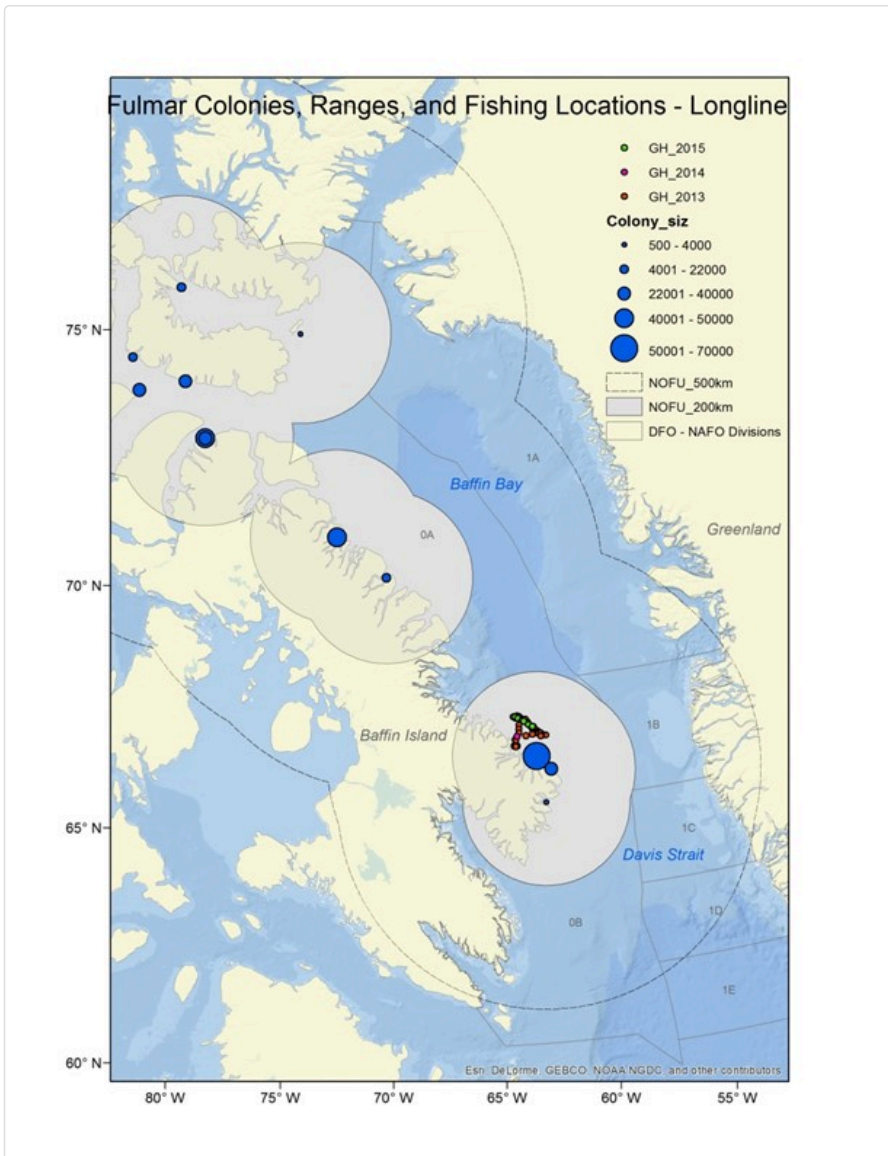


Figure 2: Map of overlap between Northern fulmar colonies and longline fishing locations.

Overlap between Northern fulmar (*Fulmarus glacialis*) colonies and longline fishing locations in Subarea 0 in 2013-15 for Greenland halibut. Colony size is depicted by the size of the blue dot at colony location. Inner circles are 200 km radius from colony which is the average foraging ranges for this species, with the larger circles representing 500km radiuses from the colonies which are maximum known foraging ranges for this species (Whidden and McFarlane-Tranquilla, 2016).

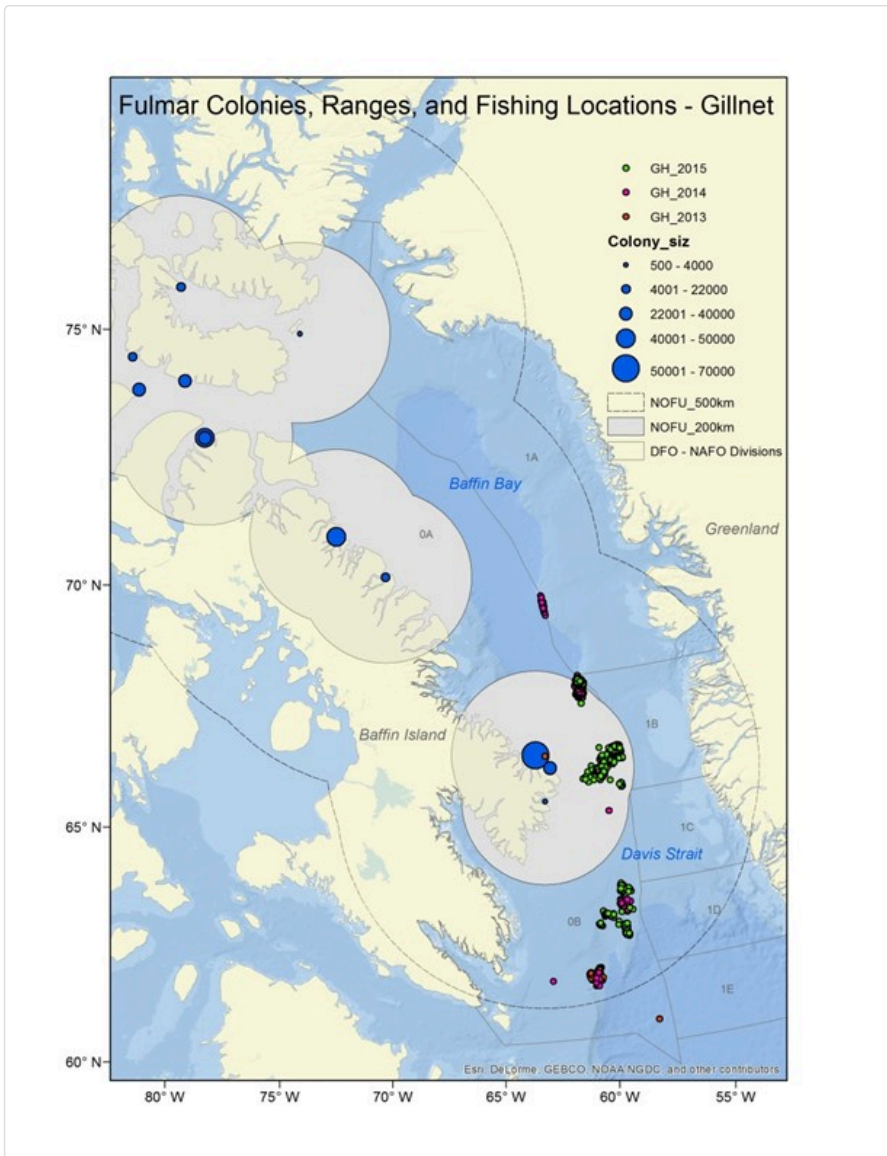


Figure 3: Map of overlap between Northern fulmar colonies and gillnet fishing locations.

Overlap between Northern fulmar (*Fulmarus glacialis*) colonies and gillnet fishing locations in Subarea 0 in 2013-15 for Greenland halibut. Colony size is depicted by the size of the blue dot at colony location. Inner circles are 200 km radius from colony which is the average foraging ranges for this species, with the larger circles representing 500km radiuses from the colonies which are maximum known foraging ranges for this species (Whidden and McFarlane-Tranquilla, 2016)

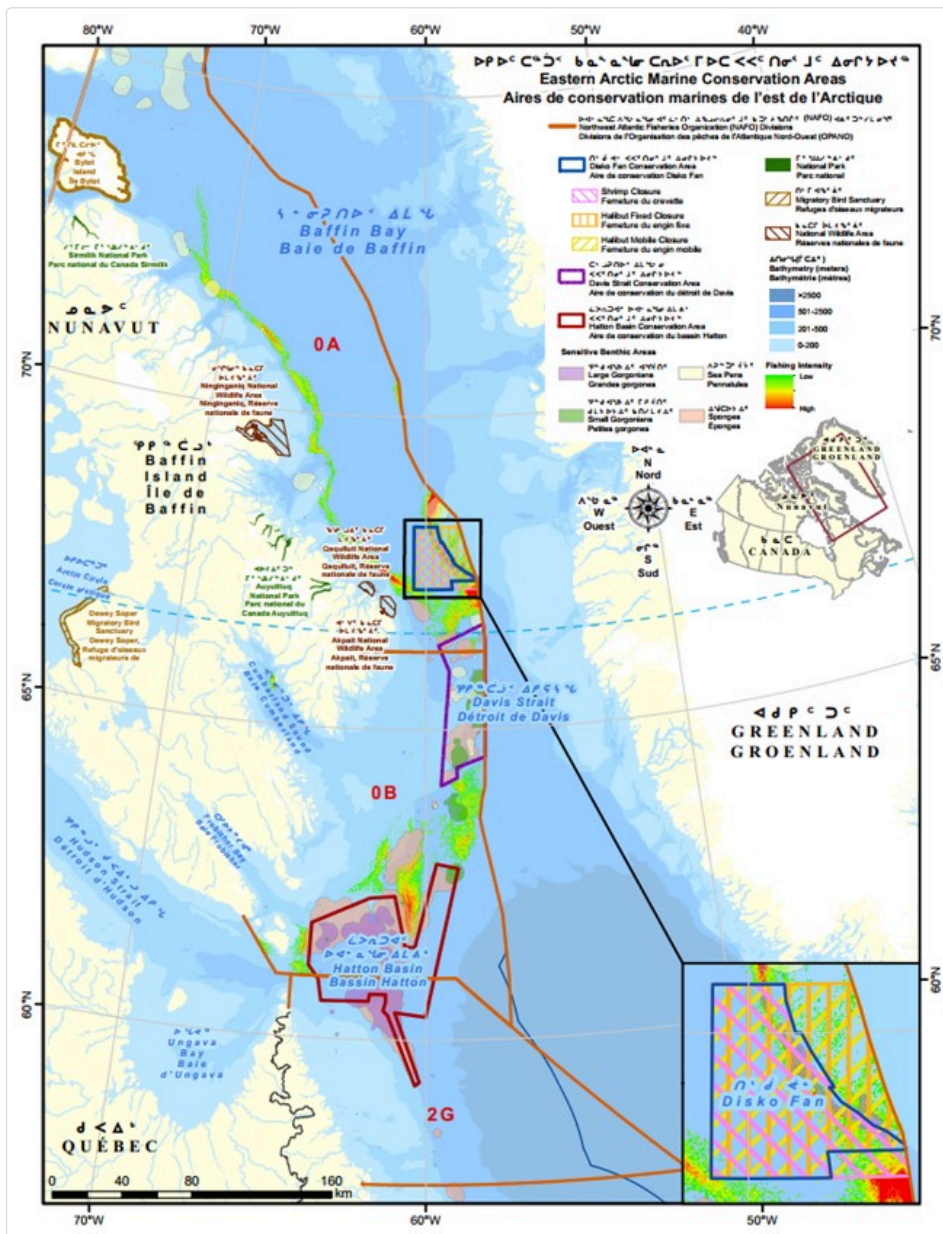


Figure 4: Map of overlap between Significant Benthic Areas and Total Fishing Effort.

## Appendix 6: Terms of Reference for Eastern Arctic Groundfish Stakeholder Advisory Committee

### Eastern Arctic Groundfish Stakeholder Advisory Committee (EAGSAC) Terms of reference

#### Preamble

The Fisheries and Oceans Canada (DFO) Fisheries Management program in Central and Arctic Region (C&A) administers Canada’s fisheries in consultation with Indigenous groups, private industry, non-governmental stakeholders, federal departments and other levels of government. The objective of the program is to ensure the conservation and sustainable use of our fishery resources while promoting

biodiversity and providing economic prosperity to the industry and to Canada. The program derives authority from the *Fisheries Act*, *the Oceans Act*, the *Species at Risk Act* and associated Regulations. The program relies on scientific assessments and consultative processes to develop and review policies, procedures, regulations, and management tools (e.g. Integrated Fisheries Management Plans and licence conditions).

The establishment of the Eastern Arctic Groundfish Stakeholder Advisory Committee (EAGSAC) is one of a series of measures to ensure the fisheries governance regime for groundfish in the Northwest Atlantic Fisheries Organization (NAFO) Subarea 0 is publicly accountable, predictable and transparent. It also provides DFO with additional opportunity to work with our co-management partners to ensure that the management of groundfish aligns with Land Claims such as the *Nunavut Agreement* and the *Nunavik Inuit Land Claims Agreement*.

## 1.0 Purpose

EAGSAC will provide a forum for discussion and an opportunity for members to provide advice and recommendations to DFO on management and policies related to groundfish fisheries in NAFO (Northwest Atlantic Fisheries Organization) Subarea 0, by:

- Providing a forum for information exchange;
- Supporting well-informed decision making;
- Optimizing the durability of management decisions;
- Building stakeholder relationships; and
- Strengthening the Integrated Fishery Management Plan (IFMP) process(es) for eastern Arctic groundfish fisheries.

## 2.0 Membership and Participation

EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) meetings will be led by the Chair. EAGSAC membership will consist of two main overarching groups: DFO representatives and primary members. EAGSAC participants will include observers and invited guests.

### 2.1 Chair

The C&A (Central and Arctic) Regional Manager of Resource Management (DFO), or another representative of, or appointed by, DFO.

### 2.2 Membership

#### 2.2.1 DFO Representatives

DFO representatives will be composed of DFO staff and will be led by the C&A (Central and Arctic) Regional Senior Fisheries Management Officer(s) responsible for the groundfish fishery.

#### 2.2.2 Primary Members

Primary membership will include one individual representing (and appointed by) each of the following interests:

- Co-management Organizations
  - Nunavik Marine Region Wildlife Board (NMRWB)

- Nunavut Wildlife Management Board (NWMB)
- Rights Holders
  - Nunavut Tunngavik Incorporated (NTI)
  - Makivik Corporation
- Coastal Communities
  - Qikiqtaaluk Wildlife Board (QWB)
- Commercial Fishery Associations
  - Atlantic Groundfish Council (AGC)
  - Northern Coalition (NC)
  - Nunavut Fisheries Association (NFA)
- Commercial Fishers
  - All enterprises with access to the NAFO Division 0A and/or 0B Greenland Halibut Fishery (see Appendix 1)
- Environmental Organizations
  - Ecology Action Centre
  - Oceans North Canada
  - World Wildlife Fund
- Other Government Organizations
  - Nunavut
  - Newfoundland/Labrador
  - Quebec
  - Transport Canada
  - Environment and Climate Change Canada

Primary membership will be subject to the discretion of DFO. If a representative cannot attend an EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) meeting, that member may nominate an alternate by notifying the lead DFO representative(s) as far in advance of the meeting as possible. See Appendix 1 for a list of primary members and their associated representatives.

## **2.3 Participants**

### **2.3.1 Observers**

Individuals that are a part of the organizations and enterprises in the primary membership are welcome to attend EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) meetings. DFO may allow other individuals or organizations to observe a meeting or parts of a meeting. Members of the media are referred to in Section 5.1.

### **2.3.2 Invited Guests**

DFO may invite individuals or organizations with particular expertise or experience to participate in EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) meetings.

## **2.4 Working Groups**

The members and leadership of the working groups will be set and agreed upon by EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee). Working groups may include participants recognized as content experts or otherwise beneficial to completing working group deliverables.

### **3.0 Roles and Responsibilities**

All members and individuals participating in EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) activities will conduct themselves in a respectful manner (see Code of Conduct in Appendix 2).

#### **3.1 Chair**

The Chair will have the following responsibilities:

- Promote interaction and communication during meetings;
- Keep meetings on-time and focused on the agenda;
- Enforce the Code of Conduct;
- Encourage active participation of all Members;
- Mitigate conflict;
- Help to summarize and focus discussion; and
- Bring issues to closure.

#### **3.2 Members**

##### **3.2.1 DFO Representatives**

DFO representatives, led by the Regional Senior Fisheries Management Officer(s) at DFO responsible for the groundfish fishery will coordinate EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) by:

- Assisting the Chair in carrying out her/his responsibilities;
- Making discretionary decisions on Primary membership, as required;
- Arranging meeting logistics;
- Communicating with Members about meeting arrangements;
- Developing agendas with Member input;
- Arranging meeting presenters;
- Distributing meeting materials;
- Preparing and distributing meeting records;
- Ensuring communication between and among EAGSAC and working groups;
- Providing updates on action items and how DFO utilized/responded to advice received from EAGSAC and the rationale for that response in a timely, open and transparent manner; and
- Assisting with the work of EAGSAC as required.

DFO representatives may also provide scientific, technical, program, policy, and other subject-matter expertise and will support EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) activities in a variety of ways, including:

- Presenting work at meetings, assisting in communicating the issues on which DFO is seeking advice and answer questions;

- Providing information and expertise on DFO policies and programs;
- Preparing background documents; and
- Ensuring senior managers and other staff that are linked to or impacted by these processes are kept informed of the activities of EAGSAC.

### **3.2.3 Primary Members**

Primary member representatives (see Appendix 1) will be the official point of contact for their member organizations/enterprises. Representative responsibilities will include the following:

- Participate in EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) meetings, including virtual meetings (teleconferences, email exchanges, videoconferences, etc.);
- Notify DFO representative lead(s) of any changes in their affiliations and interests related to EAGSAC;
- Engage with their member organizations/interest groups, keep them informed of the information and issues discussed at meetings, and communicate their support of/opposition to issues discussed;
- Promote the IFMP (Integrated Fisheries Management Plan) process and role of EAGSAC within their member organizations/interest groups, and bring forward any concerns; and
- Review records of meetings for accuracy and provide feedback within the specified timeframe.

## **3.3 Participants**

### **3.3.1 Observers**

Observers are welcome to attend and participate in discussions and activities at the invitation of, or following input from, members. Observers may provide input on agenda items and participate in the formulation of advice for DFO via their primary member representative (see Appendix 1). Observers that are not part of the Primary Member organizations and enterprises do not provide input on agenda items nor participate in the formulation of advice for DFO.

### **3.3.2 Invited Guests**

The role of an invited guest is to provide input or expertise on specific topics or agenda items, or assist DFO representatives with coordination responsibilities. Invited guests do not participate in the formulation of advice for DFO.

## **3.4 Working Groups**

Working groups may be formed to fulfill a specific role, as defined by EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee). Working groups may develop their own Terms of Reference (ToR), subject to approval by EAGSAC. A working group ToR should serve to outline the nature of the group's task(s), along with any required deliverables and timeframes. Working groups will report their findings to EAGSAC, and/or to others as determined through EAGSAC.

## **4.0 Procedural Matters**

### **4.1 Meeting Frequency and Format**

EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) meetings will be held annually, with additional meetings conducted at the discretion of the DFO representative lead(s), as required. Whenever possible, the annual meeting will be held in-person with preference to scheduling within the last week of January. Meeting formats may include teleconferences, email exchanges, WebExs, etc. Meeting locations will not be fixed and may vary as appropriate to EAGSAC needs and interests (with special consideration given to locations with proximity to the fishery).

#### **4.2 Meeting notice**

DFO representatives will send out invitations to attend in-person, teleconference and WebEx meetings. Efforts will be made to provide members with the agenda and briefing materials two weeks in advance of the meeting start date.

#### **4.3 Meeting agenda**

DFO representatives will be responsible for developing meeting agendas and soliciting input from members on agenda topics.

#### **4.4 Deliberations, decision making, and reports**

DFO representatives will prepare records of proceedings, highlighting key discussions and decisions and circulate to meeting attendees for review in a timely manner. Within the specified timeframe, attendees will confirm the draft as an accurate record or will correct it. DFO representatives will approve the final proceedings.

Records of proceedings will effectively summarize and reflect the advice offered. Proceedings will be non-attributable (i.e. there will be no references to comments made by an individual).

#### **5.0 Communication**

EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) members, participants or working group members will not disclose drafts, working documents or other specified information outside of EAGSAC or the working group unless agreed to by EAGSAC or the working group in advance.

#### **5.1 Media**

Meetings are closed to the media.

EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) is advisory to DFO. As such, DFO representatives will deal with any media enquiries about EAGSAC's membership, purpose, and work.

#### **6.0 Administration**

##### **6.1 Funding and Costs**

DFO will provide funding to cover logistical expenses of meetings and distribution of materials. All other expenses are the responsibility of EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) Members.

##### **7.0 Review**

This ToR document will be reviewed as required, or every five years. Recommendations for improvement will be considered by the DFO representative lead(s) on an ongoing basis.

## Appendix 1

### Primary Members

Members list available upon request.

## Appendix 2

### Code of conduct

An individual's decision to participate in consultation processes is accompanied by responsibilities. Persons that participate in consultation processes should do so in good faith and with the public interest in mind. Individuals also have a responsibility to engage in effective, balanced and civil communication. Representatives have a responsibility to ensure they are accountable to their member organizations/enterprises.

All individuals participating in EAGSAC (Eastern Arctic Groundfish Stakeholder Advisory Committee) activities are expected to:

1. Maximize the exchange of information among parties and minimize misunderstandings by:
  - speaking clearly, listening carefully and asking for clarification if a point is not understood;
  - sharing information related to the issues at hand;
  - stating concerns about other individuals or the process openly and directly;
  - clearly explaining what is important to them and why; and
  - stating their perspective as concisely and briefly as possible.
2. Ensure that all members have the opportunity to speak and all perspectives are considered by:
  - seeking the participation of all interests; and
  - providing opportunities for affected members to be heard before taking final positions.
3. Maintain a respectful atmosphere by:
  - respecting each other's values and interests;
  - avoiding accusatory language, rude behavior, and stereotyping;
  - beginning meetings on time; and
  - seeking a better understanding of other perspectives with an open mind.
4. Ensure accountability to their organizations/enterprises by:
  - making every effort to attend all important consultation meetings;
  - establishing clear lines of accountability with those they represent, and with other representatives;
  - acting in accordance with the authority granted by member organizations/enterprises and ensuring that other representatives understand this authority;
  - communicating pertinent information to their member organizations/enterprises regularly and seeking support for negotiated agreements; and
  - acting quickly to raise and resolve any concerns regarding the accountability of the process or any of the representatives to protect the integrity and trust of the group.
5. When negotiating in a consultation process, facilitate agreements across the full spectrum of interests by:
  - negotiating in good faith, building as much agreement as possible;

- avoiding participation in activities that may undermine the negotiation;
  - focusing on underlying interests or objectives rather than positions and seek to understand the interests of others;
  - recognizing the legitimacy of all interests;
  - treating issues as problems to be solved not as personal or sectoral conflicts;
  - allowing representatives the freedom to test ideas without prejudice to future discussion or negotiations - do not hold tentative suggestions or agreements against those who made them;
  - seeking creative solutions that accommodate all interests; and
  - positively supporting consensus agreements once they have been reached.
6. Engage in appropriate external communication by:
- ensuring that the descriptions of the process and the views of other representatives are accurate and acceptable to all representatives before communicating them to the general public or the media; and
  - ensuring that contact with the media is respectful of others.

**Date modified:**

2022-09-13

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