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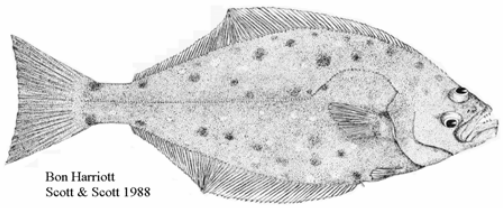
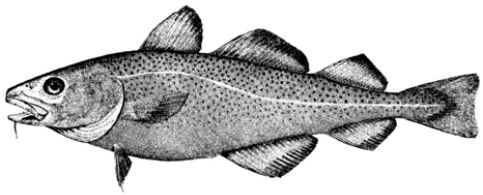
Canada

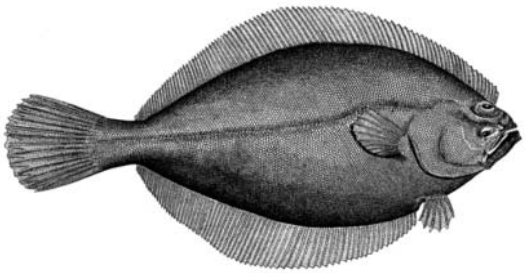
EKME 3363587
Integrated Fisheries Management Plan

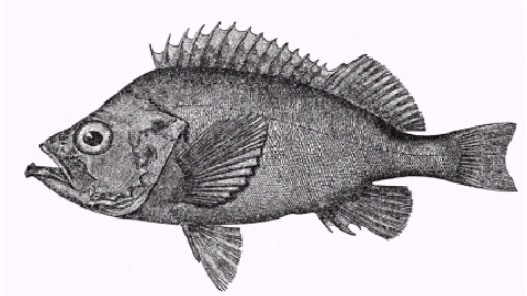
Gulf of St. Lawrence Groundfish

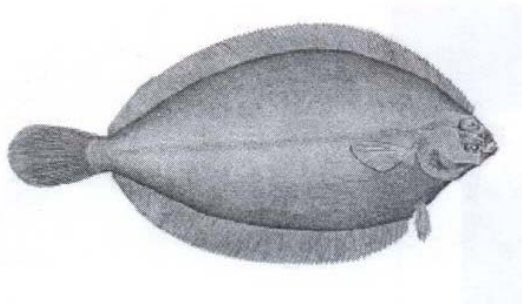
(NAFO Subdivisions 3Pn, 4Vn and Divisions 4RST)











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FOREWORD

The purpose of this Integrated Fisheries Management Plan (IFMP) is to identify the main objectives for the groundfish fishery in the Gulf of St. Lawrence-North Atlantic Fishing Organization (NAFO) Subdivision 3Pn and Divisions 4RST, as well as the management measures that will be used to achieve the objectives. This document also serves to communicate basic information about the fishery and its management. There is a separate IFMP for groundfish in NAFO Subdivision 4Vn.

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

This IFMP is not a legally binding instrument which can form the basis of a legal challenge. The IFMP can be modified at any time and does not fetter the Minister'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*.

The Gulf Region comprises all the waters of the Gulf of St. Lawrence adjacent to the eastern coast of New Brunswick, the Northumberland Strait coast of Nova Scotia and western Cape Breton Island, as well as the whole of Prince Edward Island. These waters, which represent about one per cent of Canada's exclusive economic zone, account for approximately 15 per cent of the total catch of Canadian fisheries, and constitute one of the country's most productive marine areas.

The Newfoundland and Labrador Region encompasses over 29,000 kilometers of coastline and a continental shelf of 2.5 million square kilometers. The region has responsibilities in the Gulf of St. Lawrence and includes three international boundaries including the Northwest Atlantic Fisheries Organization (NAFO) Regulatory Area, St. Pierre et Miquelon (France) and Greenland. The region covers an area from nearshore to the Flemish Cap, 320 NM offshore.

The Quebec Region falls within the borders of the province of Quebec. It encompasses more than 6 000 km of coastline running along the river, the estuary and part of the Gulf of St. Lawrence as well as Nunavik (Ungava Bay, eastern James Bay, eastern Hudson Bay and the Southern part of Hudson Strait).

The Maritimes Region, also known as the Scotia-Fundy Fisheries Management Sector, extends over two provinces, from the northern tip of Cape Breton to the New Brunswick-Maine border, and encompasses over 8,000 km of coastline.

Map of Atlantic Regions of the Department of Fisheries and Oceans

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1. OVERVIEW OF THE FISHERY

The Atlantic groundfish fishery involves 54 groundfish stocks distributed in an area ranging from Davis Strait off the Labrador Coast to Georges Bank in the Gulf of Maine. This IFMP covers ten of these stocks specific to the Gulf of St. Lawrence because of either their current or historical commercial importance for the area. Management of the fishery is generally divided into the Northern Gulf, North Atlantic Fishing Organization (NAFO) Subdivision 3Pn and Divisions 4RS and the Southern Gulf, NAFO Division 4T and subdivision 4Vn.

Common name	**Scientific name**	**Stock area**
Cod (Atlantic cod)	*Gadus morhua*	4RS-3Pn (Northern Gulf of St. Lawrence)
		4TVn (Southern Gulf of St. Lawrence)
White hake	*Urophycis tenuis*	4T
Atlantic halibut	*Hippoglossus hippoglossus*	4RST
Greenland halibut (turbot)	*Reinhardtius hippoglossoides*	4RST
American plaice	*Hippoglossoides platessoides*	4T
Witch flounder	*Glyptocephalus cynoglossus*	4RST
Winter flounder	*Pseudopleuronectes americanus)*	4T
Yellowtail flounder	*Pleuronectesferrugineus*	4T
Redfish	*Sebastes fasciatus* and *Sebastes mentella*	Unit 1: 4RST and 3Pn4Vn (January to May)

1.1 History

This history of the groundfish fishery in the Gulf of St. Lawrence really cannot be separated from the history of the rise and the downturn of the cod fishery in Atlantic Canada. Europeans, including the English, French, Spanish, Portuguese, and Basques, began fishing off Newfoundland in the 16th century. The plentiful, easy-to-catch cod was the most valuable commodity: dried or salted, it could be transported long distances and would keep for several months. Around the turn of the twentieth century, fishing technology and fishing power improved. Development of fisheries increased as rising prosperity and refrigeration in homes, stores, and transportation as well as improvements to storage facilities led to an increased demand for frozen fish, fundamentally changing the groundfish industry. The Canadian cod catch began to fall as both domestic and foreign fleets, the latter using huge factory freezer trawlers, increased fishing pressure. Overexpansion in some areas, as fishermen raced to get the fish before their competitors, began depleting stocks and amplifying the industry's chronic problems of low incomes and instability. From the 1950s on, fishery experts had bemoaned the common-property nature of the industry, with its tendency towards overexpansion and crisis. Licence limitation had failed to reduce fishing power and in the late 1970s, the idea of individual quotas (IQs) spread widely. Individual quotas offered the potential to end the destructive "race for the fish" by providing a greater sense of ownership through these quasi-property rights. Soon added to this was the idea of individual transferable quotas (ITQs), which could be bought and sold, letting a smaller number of enterprises consolidate quotas, typically under guidelines preventing excessive concentration.

In the mid-1970s foreign fishing became a national concern. Canada extended its fishing limits to 200 nautical miles (about 370 km) in 1977. Most foreign vessels left the Atlantic zone, federal fisheries authorities increased enforcement and doubled research. Strict quotas began rebuilding groundfish stocks. Scientists predicted strong growth especially for the Northern cod stock off eastern Newfoundland and Labrador. The thinking was that holding the fleet stable and increasing the abundance of fish would benefit all. The new zone shone with optimism, and the late 1970s and early 80s saw growth and relative prosperity in Atlantic fisheries. Despite rising catches, cost and market factors in the early 1980s drove the four largest groundfish processors, who controlled the offshore trawler fleet and influenced many other fisheries, close to bankruptcy. For many firms on the East Coast, the result was dashed expectations, imminent bankruptcy, and an appeal for government assistance to prevent a collapse of the industry.

In January 1982, the federal government appointed Dr. Michael Kirby to head up a new Task Force on Atlantic Fisheries. Despite concerted efforts to ensure a successful and sustainable fishery, by 1989, federal scientists were calling for a drastic reduction in Northern cod catches. In 1992, 15 years after the introduction of the 200-mile zone, a moratorium was imposed on the Northern cod fishery and closures followed for other major stocks of cod, haddock, and other groundfish. Total groundfish catches sank from 734,000 tonnes in 1988 to 96,000 tonnes in 1995, and the total value dropped from $373 to $102 million. Some 40,000 persons, mostly plant employees, lost work in the Atlantic Provinces and Québec.

In 1993, Fisheries and Oceans Canada (DFO) set up the Fisheries Resource Conservation Council (FRCC), bringing together government scientists and officials, industry representatives, and academics to make Total Allowable Catch (TAC) and conservation recommendations for Atlantic fisheries, mainly for groundfish stocks. Foreign fishing, although tightly restricted within the 200-mile zone, drew some blame for depleting stocks at the outskirts of the zone. In 1995, Canada arrested the Spanish trawler *Estai* outside the 200-mile zone, precipitating an international dispute, but also bringing better behaviour in following years by European fleets. By 1994, the Atlantic Groundfish Strategy (TAGS) and related programs were implemented with the federal government providing more than $4 billion in assistance (including a groundfish licence retirement program) to reduce economic dependence on the fisheries. Despite these drastic measures, which also included sporadic opening and closing of some cod fisheries, the stocks continued to decline.

In their attempts to understand the state of the stock, DFO scientists focussed their attention on life history parameters such as growth, (which has slowed), natural mortality (which has increased), recruit per spawner biomass and fish condition. Furthermore, during the 1990s and early 2000s, there were no clearly defined criteria on which to base decisions to either close or reopen the commercial fishery. By 2003, DFO, the provinces and industry were working together through cod Action Teams to develop recovery strategies for each of the cod stocks. This resulted in the development in the Southern Gulf of a comprehensive report "Strategic Vision: Long-term Recovery and Sustainability of the Southern Gulf of St. Lawrence 4TVn cod Stock". The recovery strategy was based on the precautionary approach with established biological reference points to define the critical, cautious and healthy status of the stock. More recently, biological reference points have also been defined for the Northern Gulf cod stock and work to implement the precautionary approach is commencing on other groundfish fisheries.

In more recent years, continued declines in Gulf groundfish stocks led to further moratoria (2009 to present: moratorium on Southern Gulf cod fishing) and reductions in TAC levels for other groundfish species. In April 2010, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the status of both Gulf cod stocks as "endangered", while the status of the Maritimes designatable unit of American plaice was assessed as "threatened". Both species of redfish (S*ebastes fasciatus* and S*ebastes mentella*) have been assessed as "threatened" and "endangered", respectively. In 2013-2014, public consultations have been held on the potential listing of these three species on the Species at Risk Registry. A decision is still pending at the time this integrated fisheries management plan (IFMP) is published.

1.2 Types of Fishery and Participants

1.2.1 Commercial

Commercial fishing is undertaken by registered fish harvesters who hold a groundfish licence with fixed gear, mobile gear, or both. In the area covered by this document, there are 2405 licenced fish harvesters with a homeport in the Gulf Region, 292 in the Maritimes Region, 953 in Quebec and 978 in Newfoundland and Labrador.

1.2.2 First Nations

There are 16 First Nations who have 89 communal commercial groundfish licences in the Gulf Region, one First Nation in Newfoundland with 9 communal commercial licences for the area covered by this plan, one in the Maritimes Region with one licence, and 10 First Nations with 33 licences from the Québec Region. Licences are also issued for food, social and ceremonial purposes.

1.2.3 Recreational

Recreational fish harvesters target mainly cod and white hake. They are restricted to fishing near shore and are permitted to retain a maximum number of groundfish species (bag limit). There is also a significant charter boat industry established mostly in Prince Edward Island and the Magdalen Islands.

1.3 Location of the Fishery

This IFMP is for groundfish fisheries in the Gulf of St. Lawrence within NAFO management units 3Pn and 4RSTVn. The Northern Gulf is generally considered to be within Subdivision 3Pn and Divisions 4RS, while the Southern Gulf is within Subdivision 4Vn and Division 4T. These NAFO management units are further divided in smaller areas as shown in Appendix A.

1.4 Fishery Characteristics

Groundfish fisheries are undertaken with either fixed gears (gillnets, longlines and handlines) or mobile gear (otter trawls and Danish/Scottish seines). The use of mobile gear for fishing cod has been prohibited in the Northern Gulf of St. Lawrence (3Pn 4RS) since the first cod moratorium in 1993. Although the use of mobile gear is still permitted in the Southern Gulf of St. Lawrence (4T) for other groundfish species, it has decreased considerably due to low availability of

quotas for directed fisheries. In 2013, a ministerial decision confirmed the future re-entry of the mobile gear fleet in the 4RST Greenland halibut (Turbot) fishery. This re-entry will take place progressively as (and only when) the 4RST TAC reaches levels above 4,500 t.

The fixed gear fleet includes vessels less than 19.2 m (65'), with the vast majority being less than 13.7 m (45'). The mobile gear fleet includes several different vessel categories: less than 13.7 m; vessels 13.7 m to 19.2 m; vessels 19.2 to 30.4 m (100') and the greater than 30.4 m category, the latter not being permitted to fish within the Gulf for many years.

Table 1 gives an overview of the number of licensed fish harvesters having access to the Gulf of St. Lawrence in 2014 by groundfish gear sector (NAFO Subdivision 3Pn and Divisions 4RST). It is important to note that in recent years only a small portion of licence holders are active (have had landings) in the fishery.

Table 1
Number of Licenced Fish Harvesters with Access to the Gulf of St. Lawrence Groundfish Fishery (2014)

Gear Type	Gulf Region	Maritimes Region	Quebec Region	Western portion of Newfoundland and Labrador Region
Fixed gear	1303	257	780	725
Mobile gear	24	47	100	50
Fixed and mobile gear	475			6
Total	1802	304	880	781

Annual TACs are typically established as part of multi-year harvesting plans for all commercially fished groundfish stocks. These TACs are then subdivided into fleet allocations based on gear type (i.e. fixed or mobile gear), geographic location, or management regime (competitive or individual transferable quota). The management cycle for groundfish stocks within the Gulf of St. Lawrence is from May 15 until May 14 of the following year. However, closures for conservation purposes may delay the opening of specific fisheries. More detailed information about management measures, access and allocations, TACs, etc. are found later in this document.

1.5 Governance

Development of fishery management plans is undertaken in consultation with stakeholders. Every second year, the Gulf Groundfish Advisory Committee (GGAC) meets in order to discuss fisheries issues and to establish the positions of the stakeholders in the various fisheries for which decisions are required. The GGAC membership includes fish harvester organization members, provincial representatives, members from the processing sector, and aboriginal organizations.

In addition to fishery management plans specific to each species, the fishery is governed by a suite of legislation, policy and regulations including but not limited to those noted below:

Fisheries Act
Oceans Act, 1996
Species at Risk Act, 2002
Coastal Fisheries Protection Act, 1985
Atlantic Fishery Regulations (AFR), 1985
Fishery (General) Regulations, 1993
Aboriginal Communal Fishing Licences Regulations, 1993
Commercial Fisheries Licensing Policy for Eastern Canada 1996
Commercial Fisheries Licensing Policy for the Gulf Region
A Policy Framework for the Management of Fisheries on Canada's Atlantic Coast
Sustainable Fisheries Framework: Conservation and Sustainable Use Elements
- o Precautionary Approach policy
- o Foraging Species policy
- o Sensitive Benthic Areas policy
- o Policy on Managing Bycatch

1.6 Approval Process

Generally, decisions concerning major conservation and management matters are made by the Minister of Fisheries and Oceans. Other elements related to the regular ongoing management of the fishery are made by the Regional Director General (RDG) for the Gulf Region in cooperation with the RDGs for Quebec, Maritimes and Newfoundland and Labrador Regions.

1.7 Multi-year management approach and schedule

In 2012, DFO undertook a review of the management of fisheries with the goal to implement a management approach based on multi-year cycles where possible. This approach allows establishing TAC levels for several years at a time, depending on the species or stock. Complete science stock assessments also take place on a multi-year schedule, and the science advice is now formulated for several years, depending on the species or stock. It is important to note that Science continues to issue a stock status update for each species on years when no complete stock assessment is scheduled. Starting in 2013, the GGAC meet every second year, instead of every year as it had in the past.

For Gulf groundfish fisheries, the multi-year approach can be summarized by the following table indicating the years when TACs are established and when complete science reviews (also known as Regional Advisory Processes or RAPs) occur, per species/stock. It also indicates the years when a meeting of the GGAC will take place.

Species	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Northern Gulf cod (4RS3Pn)	TAC		RAP/TAC		RAP/TAC	
Southern Gulf cod (4TVn)			RAP /TAC			
Greenland halibut 4RST	RAP / TAC		RAP /TAC		RAP/TAC	
Atlantic halibut 4RST	RAP / TAC		RAP/TAC		RAP/TAC	
Winter flounder 4T					RAP/TAC	
Redfish Unit 1 4RST, 3Pn (Jan-May), 4Vn (Jan-May)			RAP/TAC	TAC	To be confirmed	To be confirmed
Yellowtail flounder 4T				RAP/TAC		
American plaice 4T				RAP/TAC		
White hake 4T			RPA*		TAC	
Witch flounder 4RST					RAP/TAC	
GGAC meetings	**X**		**X**		**X**	

*Recovery Potential Assessment

2. STOCK ASSESSMENT, SCIENCE AND TRADITIONAL KNOWLEDGE

2.1 Stock Assessment

Stock assessment and research programs involving groundfish are conducted by DFO and through cooperative research programs carried out in conjunction with industry. Stock assessments are reviewed and scientific advice is provided through Regional Advisory Process (RAP) or Zonal Advisory Process (ZAP) meetings coordinated by the Canadian Science Advisory Secretariat (CSAS). The assessments are peer reviewed and information is made public in the form of Science Advisory Reports (SAR), research documents and meeting proceedings through publications available on the web (http://www.dfo-mpo.gc.ca/csas).

Assessments use commercial fishery data and abundance indices derived mainly from annual DFO trawl surveys and from sentinel fishery surveys. The latter, which are conducted by commercial fish harvesters with support by at-sea observers, follow a scientific sampling protocol to obtain information on the abundance, biomass, distribution and size composition of cod and other groundfish species. The status of some resources may be defined using population models, but other indicators may be used to determine trends in stock abundance. For example, tagging programs may also be used to estimate exploitation rates. For stocks with population models, projections are conducted and the risk of decline in spawning stock biomass is examined for various catch levels. The following is general information about stock trends, with the most recent stock status information available from the web site noted above.

2.1.1 Cod in the Southern Gulf of St. Lawrence (4TVn)

- The cod-directed fishery has been closed since 2009, with a 300 t TAC in place to cover by-catch in other groundfish fisheries, a limited recreational fishery, scientific purposes, and negotiated Aboriginal food, social and ceremonial agreements.
- Annual landings since 2009 have varied between 103 and 172 t.
- Since 2009, the exploitation rate has averaged 0.2% for ages 5-8 and 0.7% for ages 9+. These low levels have a negligible impact on the population trajectory.
- The biomass index for commercial-sized cod (≥ 42 cm) from the annual DFO research vessel survey was at the lowest level observed in the 44-year record in 2011 and 2012. The 2011 and 2012 indices were about 10% of the already low values in 1995-2002. The 2013 and 2014 indices were marginally higher, about 20% of the 1995-2002 level.
- The biomass index from the sentinel trawl survey was at the lowest level observed in 2012 and 2013, averaging 17% of the level at the start of this time series in 2003. The index in 2014 increased to 34% of the 2003 value, but was highly uncertain.
- The biomass index from the sentinel longline program steadily declined from 2004 to 2011. The 2011 value was 19% of the 1995-2004 average. The index remained low in 2012-2014.
- Over the past 15 years, cod have progressively moved out of shallow inshore waters and into deeper offshore waters during their feeding season in the sGSL. This appears to result from the high and increasing risk of predation by grey seals in inshore waters in summer.
- Estimated spawning stock biomass (SSB) declined steadily between 1997 and 2014. SSB at the beginning of 2014 was 28,700 t, 28.7% of the level in 2000 and 9% of the level in 1985. SSB in 2015 was slightly higher at 34,000 t, 29.2% of the level in 2000.
- A limit reference point (LRP), the level below which the stock is considered to have suffered serious harm to its productivity, was estimated in 2003 to be 80,000 t. The SSB in 2015 is estimated to be 42% of the LRP. There is no chance that the stock is at or above the LRP.
- Year-class strength has been declining since the mid-1980s due to declining SSB. Year-classes produced since 2002 have been the weakest on record, except for the 2011 year-class. The 2011 year-class is estimated to be nearly twice the average size of other year-classes produced since 2002.
- Extremely high natural mortality of cod 5 years and older is the reason for the lack of recovery of this stock. Natural mortality of about 18% annually (M= 0.2) is considered normal for adult cod. In this population, natural mortality of adults has increased over the past 35 years and is now estimated to be 52 - 58% annually (M = 0.74 – 0.88). Predation by grey seals is considered to be a major component of this mortality.
- Given the relatively strong 2011 year-class, SSB is expected to increase slightly in 2016. It is then expected to decline below the 2015 level by 2020 due to the high level of natural mortality.
- At the current level of natural mortality, recovery of this stock is highly improbable, even in the absence of fishing.
- The Science Advisory report is available on the Canadian Science Advisory Secretariat (CSAS) website: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2015/2015_061-eng.html

2.1.2 Cod in the Northern Gulf of St. Lawrence (3Pn, 4RS)

- The total allowable catch (TAC) for the 2012 to 2014 period was 1 500 t per year. Landings for those three years totalled 1 311, 1 206 and 1 229 t. Landings from the recreational fishery are not known.
- Commercial fishery performance indicators estimated from fishers' logbooks (longline and gillnet) show an increase from 2010 to 2013 and a slight decrease in 2014. In 2014, they were at average levels (1997–2013). The results of a survey of fishers regarding their fishing yields paint a similar picture.
- Sentinel fishery catch rates (longline and gillnet) increased from 2010 to 2012 or 2013 and then decreased, down to the series average (1995–2013) in 2014.
- In 2014, abundance indices from the DFO research survey and sentinel fishery trawl survey were above average for their respective series. This increase is attributed largely to year-class abundance from 2011 and 2012. The spatial distribution of cod has expanded in Division 4S and is now similar to that observed in the early 1990s.
- Natural mortality estimated by sequential population analysis (SPA) has increased substantially between 2002 and 2014. Possible causes are predation by seals and unaccounted fishing mortality.
- The estimated exploitation rates from the tagging program and the SPA diminished significantly between 2008 and 2014.
- Recruitment at age three, as estimated by the SPA since 1990, is higher in 2007, 2008 and 2009 (2004 to 2006 cohorts) as well as in 2014 and 2015.
- The spawning stock's abundance has been in the critical zone, well below the limit reference point, for the last 25 years. Catches in 2015 and 2016 should be kept at the lowest possible level.

- Projections for 2016 and 2017 indicate that, with an annual harvest of 1 500 t (2015-2016 and 2016-2017), the mature biomass should increase. This increase would mainly be related to the abundance of the recent 2011 and 2012 cohorts. However, their abundance will have to be confirmed over the coming years.
- SPA diagnostic tools reveal some uncertainties in the age estimates. This has been a recurring problem for several years. However, these uncertainties cast no doubt on the fact that the stock is still in the critical zone. New analytical approaches could be considered. The Science Advisory report is available on the Canadian Science Advisory Secretariat (CSAS) website: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2015/2015_041-eng.html

2.1.3 Greenland halibut (turbot) *(4RST)*

- Greenland Halibut landings reached 2,753 t in 2013-2014 and 2,986 t (preliminary as of December 31) in 2014-2015, out of an allocation of 3,751 t. The fishing season will run until May 14, 2015.
- Landings and fishing effort have significantly dropped in northern Anticosti and in Esquiman since 2012, but have increased in the western Gulf.
- Catch per unit of effort (CPUE) from fishing decreased significantly across the Gulf in 2013. The CPUE for the western Gulf improved in 2014, while it continued to drop in northern Anticosti and in Esquiman. Overall, the CPUE of 2014 is comparable to the average between 1999 and 2014.
- Biomass indices from research surveys for fish over 40 cm increased in 2014 and were higher than average, though they had decreased in 2013. Fish from 30 to 40 cm, pre-recruits to the fishery, are low in abundance. The 2012 and 2013 cohorts are very strong and will begin to recruit to the fishery in 2018.
- The condition index for fish over 30 cm increased in 2013 and 2014 and is higher than average. This increase could be explained by the arrival of new redfish cohorts in the Gulf, an important prey for large Greenland Halibut.
- Deep water temperature significantly increased in northern of Anticosti and in Esquiman. Fish were found on average at temperatures over 6°C, which is more than 1°C above the average between 1990 and 2014. The temperature increase is lower in the western Gulf.
- Locally, in northern Anticosti and at the head of Esquiman, we observe a decrease in catches, CPUE and biomass. A combination of factors could explain these decreases, such as the increased exploitation rate from previous years and higher deep water temperature.
- A new population dynamic model (SCALE) was presented and identified a slight decrease in exploitable biomass since 2010. The value observed in 2014 remains high compared to the average of 1990-2013. The arrival of 2012 and 2013 cohorts should contribute to increase exploitable biomass starting in 2018.
- In the short term, there is likely to be a slight decrease in abundance for commercial size fish, but in the medium term, the forecast is more optimistic. The landings of the past 10 years have helped maintain a stable exploitation rate. The SCALE model projection indicates that exploitation biomass will remain stable, with an annual landing of 3,750 t for the next two seasons.
- The latest Science advisory report on the 4RST Greenland halibut stock is available on the CSAS website at http://www.dfo-mpo.gc.ca/csas-sccs/publications/sar-as/2015/2015_056-eng.html

2.1.4 Atlantic halibut (4RST)

- Atlantic Halibut landings have been increasing since the early 2000s. For management years 2013-2014 and 2014-2015, preliminary landings were 802 t and 834 t (TAC of 864 t), the highest since 1952.
- Landings from the non-directed Atlantic Halibut fishery represented 18% and 15% of total landings for 2013-2014 and 2014-2015. The directed Greenland Halibut gillnet fishery contributed to more than half of those catches.
- In the past 10 years, the proportion of Atlantic Halibut under 85 cm decreased by half in catches sampled at sea. In the last two management years, this proportion was about 40% in the gillnet fishery and 24% in the longline fishery.
- There is no reliable indicator of spawning biomass for this stock. Consequently, current approaches do not provide data on spawning biomass levels or trends.
- Catches per unit effort for the directed Atlantic Halibut longline fishery show an estimated annual increase of 11% for the entire historical series (1997 to 2014). This trend corresponds to a 300% increase in the fishery's standardized yield since 2005.
- For catches sampled at sea, the proportion of fish over 130 cm (i.e. size at 50% maturity for females) increased from under 5% to about 20% over the past 10 years.
- Pre-recruit abundance indicators from fishery-independent survey data reached among the highest levels in the historical series and recent trends are stable or rising.
- The size frequency distributions suggest that cohorts that will reach legal size in the next two years will be less abundant than in previous years.
- The fished component of the stock is rising and has reached high levels. However, the harvest levels for the fished component are unknown. Pre-recruit indicators suggest high recruitment to the fishery over five years, although more limited in the short term.

- The latest Stock assessment of the 4RST Atlantic halibut is available on the CSAS website at http://www.dfo-mpo.gc.ca/csas-sccs/publications/sar-as/2015/2015_023-eng.html

2.1.5 American plaice (4T)

- American plaice is currently caught as bycatch in fisheries primarily directed for witch flounder and Greenland halibut. Preliminary landings in 2015 were 40 t.
- There has been a decrease in the size of American plaice with the mean length decreasing from around 25 cm prior to 1995 to 21.3 cm during the 2011 to 2015 time period. The mean length and weight at age of American plaice have also decreased.
- Natural mortality for American plaice ages 4 to 9, decreased from about 53% (annual mortality) in the late 1970s to about 39% since 2005. The estimated natural mortality for plaice aged 10+ increased from 22% in the 1970s to greater than 39% since 1995.
- The median estimate of spawning stock biomass (SSB) was about 350 kt in the late 1970s decreasing rapidly to 100 kt or less by 1984. Estimated SSB was estimated at 55 kt in 2015.
- The stock has been in the critical zone since 1993. In 2015, the median of the SSB estimate was 40% of the limit reference point (LRP) with essentially zero chance of the SSB being above the LRP.
- Fully recruited exploitation rate on age 10+ was estimated to have peaked in 1992 at just over 26% but has been less than 1% in the recent five years. Fishing mortality is a very small proportion of the total mortality (natural plus fishing) of American plaice of the southern Gulf of St. Lawrence.
- Under current productivity conditions, the SSB is expected to remain in the critical zone with essentially zero chance of the SSB being above the LRP during 2016 to 2021 at TAC options of 0 t, 100 t, or 250 t.
- The rebuilding prospects for this stock under current conditions are low because of the high level of natural mortality. Predation by grey seals is thought to be a major component of the high level of natural mortality.
- The Science Advisory report is available on the Canadian Science Advisory Secretariat (CSAS) website: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_031-eng.html

2.1.6 Witch flounder (4RST)

- Landings of witch flounder in recent years are well below the TAC level.
- The size distribution of witch flounder in both the fishery landings and the survey catches has contracted sharply over time, with the proportion of fish 40 cm and longer in the 1990s and 2000s about 15-20% of the proportions in the 1970s and 1980s.
- Biomass of commercial-sized witch flounder has declined by 90% since 1961.
- A biomass limit reference point (LRP) has been established for 4RST witch flounder and the stock is currently in the critical zone.
- A strong pulse of recruitment is now approaching commercial sizes. Protecting this pulse of recruitment year-class by keeping catches as low as possible for the next decade may promote rebuilding of the 40+ cm size group.
- The latest Science Advisory report is available on the CSAS website: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2012/2012_017-eng.html

2.1.7 Redfish Units 1 and 2

- Both species of redfish are distributed according to depth. In summer surveys, Sebastes fasciatus dominates in water depths of less than 300 m, along the slopes of channels and on banks, except in the Laurentian Fan where it is found in deeper waters. Sebastes mentella mostly predominates in the main channels at depths of over 300 m.
- From 2010 to 2015 (2014 and 2015 data are preliminary), average annual landings were 481 t in Unit 1 (annual 2000-tonne TAC). During the same period, average landings in Unit 2 were 3775 t (annual 8500-tonne TAC). Industry reported that market conditions and restrictions related to management measures had a major impact on taking all of the TAC.
- Since 2004, the performance index for the bottom trawl index fishery has been stable and comparable to the average in Unit 1. There is no performance index available for Unit 2.
- The abundance of juvenile redfish, largely dominated by S. mentella, increased significantly in research surveys starting in 2013. In the Northern Gulf of St Lawrence, the abundance of juvenile S. mentella and S. fasciatus was 80 and 4 times higher, respectively, than their average abundance for 1993–2012. The first large cohort, from 2011, had a modal size of 17 cm in summer 2015.

- The strong 2011 and 2012 year-classes of S. mentella have the genetic signature of the adult population of Units 1 and 2. The 2011 cohort seems to be as abundant as the last large cohort of S. mentella (1980) that contributed significantly to the fishery and adult population in Units 1 and 2.
- S. fasciatus juveniles observed in recent surveys have the genetic signature of the adult population of Units 1 and 2. In comparison, the large cohorts of S. fasciatus from 1973, 1985, 1988 and 2003 observed at the juvenile stage in Unit 1 had the genetic signature of the population along the southern edge of the Grand Banks.
- Based on redfish growth estimates and assuming the population is balanced, almost 50% of the fish in the 2011 cohort should be over 22 cm, the minimum harvest size, by 2018. By 2020, 51% of fish in the 2011 cohort should be over 25 cm, size at sexual maturity.
- The biomass of S. mentella and S. fasciatus spawning stocks estimated in research surveys fell in the early 1990s to its lowest observed values and has remained stable to date. The species in the Unit 2 survey could not be separated in 2014.
- Despite the potential for strong recruitment, the spawning stock biomass for both species is still in the critical zone, based on the 2011 precautionary approach.
- The redfish stock outlook for Units 1 and 2 is very encouraging in the short term due to the large cohorts from 2011, 2012 and 2013. Large numbers of these fish will start recruiting to the fishery from 2018 to 2020, which could lead to a rapid increase in the spawning biomass. Until then, bycatch of redfish under 22 cm should be minimized.
- The arrival of large redfish cohorts will most likely have a significant impact on the ecosystem in the area, especially due to increased predation on small invertebrates and fish.
- Current harvesting has not led to an additional decrease in the spawning biomass since the last assessment. The outlook is good for recruitment to the fishery for 2018 and an increase in the 2020 mature biomass for both species. Currently, the main concern is to maximize the survival of this potential recruitment for the next five years.
- Science Advisory report is available on the CSAS website: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_047-eng.html

2.1.8 Winter flounder (4T)

- Catch rates in a survey conducted yearly since 1971 indicate that the stock declined over the past two decades, the abundance index has varied without a clear trend near the long-term average and the recent survey biomass index was the lowest on record.
- The size composition of the winter flounder stock is represented by progressively fewer large fish and the shift towards smaller fish size has been accompanied by a reduction in the size and weight-at-age.
- A population model indicates that the spawning stock biomass (SSB) has peaked in regular intervals, but with an overall decline since 1973. The age composition of the SSB became dominated by young, 3 to 5-year-old winter flounder after the early 1980s. Recruitment increased sharply in the 1980s to a peak in the 1990s and early 2000s, but has been in a declining trend in the 2000s.
- Natural mortality is high and grey seals are an important predator of winter flounder and may be a contributing factor.
- The science Advisory Report is available on the CSAS website: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2012/2012_016-eng.html

2.1.9 Yellowtail flounder (4T)

- Yellowtail flounder is currently caught in a relatively small directed fishery concentrated around the Magdalen Islands with landings less than 200 tonnes over the past 14 years.
- There has been a decrease in the size distribution of the Yellowtail flounder stock with percentages of fish ^{3} 25 cm (minimum size limit for the fishery) decreasing from an average of 90% before 1990 to 19% by 2011, with a slight increase to 41% in 2015.
- Based on a population model, natural mortality on larger and older Yellowtail is estimated to have increased from 22% annual mortality during 1985 to 1990 to 86% in 2009 to 2015. In contrast, natural mortality on small and young Yellowtail is estimated to have declined from 53% annually in 1985 to 1990 to 16% to 21% since 1997.
- Based on a population model, the spawning stock biomass (SSB) is estimated to be higher in the past decade than in the mid to late 1980s but the percentage of the SSB composed of larger and older (7+ years) fish has declined from 40% in 1985 to 1990 to less that 0.5% since 2013.
- Fishing mortality is estimated to be generally low and of such a small proportion of the estimated total mortality of Yellowtail flounder that there is no perceived difference in stock trends over the next five years at catch projections of

0 t, 100 t, and 300 t annually. SSB declined slightly over the period in all cases. At the scale of the southern Gulf of St. Lawrence, natural mortality appears to be the dominant factor affecting stock status.

- A limit reference point (Blim = 1.06 kg per tow) was derived from the biomass index of large Yellowtail flounder (≥ 25 cm) from the September Research Vessel survey. The stock is considered to have been in the critical zone since 2006, and the index in 2015 was 61% of Blim.
- From the population model, the SSB has not changed like the large Yellowtail index used to define the reference point. However, the SSB is now composed primarily of fish less than 25 cm (72 %). This is an important consideration as there is an assumed greater value to reproductive potential of larger animals in the population.
- The contraction in size structure of Yellowtail flounder, the large decline in the estimated size at 50% maturity, and the decline in abundance indices of the previously abundant commercial sized group are consistent with a stock experiencing very high levels of mortality.
- The latest Science Advisory report is available on the CSAS website: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2016/2016_033-eng.html

2.1.10 White hake (4T)

- The directed fishery for 4T white hake was closed in 1995 and the stock has remained under moratorium since then. However, they can still be retained in the recreational fishery, as a by-catch in some fisheries and in food, social and ceremonial (Aboriginal) fisheries.
- Biomass and abundance of adults (ages 4 years and older) declined sharply in the early 1990s and have remained low since then despite the moratorium on directed fishing. Estimated abundance of hake 6 years and older is now less than 10% of the average level in the 1970s and 1980s.
- Estimated natural mortality of white hake increased sharply in the late 1980s and early 1990s and is now very high. Few hake now live beyond 5 years of age.
- The latest Science Advisory Report on white hake dates back to 2005: http://www.dfo-mpo.gc.ca/csas/Csas/status/2005/SAR-AS2005_009_e.pdf. Other more recent research documents are also available, such as the pre-COSEWIC review of variation in the abundance, distribution and productivity of white hake in the Southern Gulf of St. Lawrence in from 1971 to 2010: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2012/2012_066-eng.html
- A recovery potential assessment was completed in 2016: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2016/2016_045-eng.html

2.2 Precautionary Approach

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. Applying the precautionary approach to fisheries management decisions entails establishing a harvest strategy that:

- identifies three stock status zones – healthy, cautious, and critical;
- sets the removal rate at which fish may be harvested within each stock status zone;
- adjusts the removal rate according to fish stock status variations (i.e., spawning stock biomass or another index/metric relevant to population productivity), based on harvest decision rules.

In keeping with the precautionary approach (PA) framework, the following table summarizes the development of reference points and PA-compliant harvest decision rules for the various Gulf groundfish species:

Species/stock	Limit Reference Point	Upper Stock Reference	Stock status zone	PA-compliant harvest decision rules
Cod 4TVn	80,000 t SSB*	165,000 to 185,000 t SSB* (proposed)	Critical zone	N/A (moratorium)
Cod 4RS3Pn	116,000 t SSB*	180,000 t SSB*	Critical zone	HDRs in place (not assessed for PA compliancy)
White hake 4T	12,800 t SSB	N/A	Critical zone	N/A (moratorium)
Atlantic halibut 4RST	N/A	N/A	N/A	N/A
Greenland halibut (turbot) 4RST	10,056 t**	To be established at a later date.	N/A	N/A
American plaice 4T	64,000 t SSB*	N/A	Critical zone	N/A
Witch flounder 4RST	10,700 t***	To be established in consultation with Industry (21,400 t *** proposed by Science)	Critical zone	N/A
Winter flounder 4T	N/A	N/A	N/A	N/A
Yellowtail flounder 4T	1.06 kg per standardized catches from the September multi-species survey, fish >= 25 cm	2.12 kg per standardized catches from the September multi-species survey, fish >= 25 cm	Critical zone	N/A
Redfish Unit 1&2	*S.Fasciatus*: 148,000 t**** *S. Mentella*: 233,000 t****	*S.Fasciatus*: 296,000 t**** *S. Mentella*: 466,000 t****	Critical zone (both species)	N/A

* Spawning Stock Biomass
** Stock Biomass of fish 44 cm and up
*** Stock Biomass of commercial-sized fish (30 cm and up)
**** The Limit Reference Point and the Upper Stock Reference are 40% and 80% of Bmsy from a production model fitting.

Over time, it is anticipated that the precautionary approach would be implemented in all Gulf groundfish stocks.

3. ECONOMIC, SOCIAL AND CULTURAL IMPORTANCE OF THE FISHERY

Groundfish fisheries are one of the pillars of the Eastern Canadian society, as they supported the establishment of the first coastal colonies and were one of the first industries and trades to develop on the East coast. ***(Note: Aboriginal input on cultural and historical importance of groundfish fisheries for First Nations of the Atlantic is required here)***. Until the early 1990s, groundfish, mostly cod, dominated seafood landings in eastern Canada and its importance to the commercial fishing sector cannot be overstated. However, beginning in the early 1990s, it became evident that many populations of groundfish in eastern Canada were in a poor state and the fishery in many stocks was closed in 1992-1993. In 1990, the landed value of the commercial fishery in eastern Canada was $956 million. Groundfish accounted for $388 million of that amount, representing 41%. The landed value of cod was $244 million, 63% of groundfish, and 26% of total landed value. Despite the groundfish moratoria of the 1990's, the total landed value of all species fished in eastern Canada increased considerably over the same time period due to a significant increase in the landed value of shellfish. In 2010, the landed value of the commercial fishery was $1.3 billion with groundfish valued at $143 million, or just over 10%. Cod value had decreased to $22 million (15% of groundfish), only 2% of total landed value of commercial fisheries. About 10% of groundfish landings for eastern Canada come from the Gulf of St. Lawrence. Appendix "C" shows the landed volume and value of the Gulf of St. Lawrence groundfish species for 2005-2010 seasons.

In 2010, eastern Canada exports of groundfish were at $209 million compared to $824 million in 1990. Nova Scotia and Newfoundland and Labrador provide over 90% of the export value with the United States, China and Europe being the major destinations.

Most groundfish harvesters in the Gulf of St. Lawrence have other licences for commercially important species such as snow crab, shrimp, lobster, and there is a limited number of fish harvesters who have specialized in harvesting groundfish only. In recent years, of the more than 4,500 groundfish licence holders, only about one third has been active in the fishery with reported landings.

4. MANAGEMENT ISSUES

4.1 Fisheries Issues

The following management issues are common to more than one fishery or species.

4.1.1 Geographical Fleet Shares

In order to allow users to take more responsibility for the management of their fishery and to facilitate more efficient local management of the groundfish resources, there is a need to establish geographical fleet shares for various existing competitive groundfish fisheries. Eight pre-defined geographical fleets have been identified (Newfoundland and Labrador, Maritimes Region, Quebec North Shore, Magdalen Islands, Gaspé, Eastern New Brunswick, Prince Edward Island, Gulf Nova Scotia) and shares have been established for 4RST Atlantic halibut and 4TVn cod (see Appendix C). In the fall of 2011, the firm Ernst & Young reviewed the decision on Atlantic halibut inshore fixed gear fleet sharing and found that the methodologies and application of policy and precedence was in line with decisions made in other fisheries.

4.1.2 Use of By-Catch Quotas

In many fisheries, for practical reasons, there is a requirement to allow a by-catch. For a variety of reasons, there have been by-catch quotas left either unfished, or underutilized in various fleet sectors. Although these by-catch quotas are often not fished at all, they continue to be recognized in various quota sharing exercises and DFO receives requests by various fleet sectors on what can and should be done with these quotas (i.e. Greenland halibut by-catch quotas in the redfish index fishery)

4.1.3 Recreational Landings

With the exception of the charter vessel seasonal reports on landings from PEI, there is little to no information on catch and effort, or mortality of some groundfish species in recreational fisheries. There is currently no requirement for a marine recreational licence in the Gulf groundfish fisheries and this has had a number of negative implications for the management of groundfish fisheries, like the impossibility to measure or to control the number of participants or the removals from the recreational fisheries.

4.1.4 Latent Effort

Of the more than 4,500 commercial fish harvesters licensed to fish groundfish, only a small portion have been active in the fisheries over the last number of years. The reasons for the high level of inactivity are many but would include low availability of resource and weak markets for groundfish products. Should the price of groundfish strengthen significantly, this latent effort could easily become active with unknown results on the health of the stocks and on the viability of fishing

enterprises. For this reason, the Department is supportive of various fleet rationalization initiatives that aim at diminishing the number of groundfish licences while improving the sustainability of the licences that remain.

4.2 Depleted Species Concerns

The *Species at Risk Act* (SARA), enacted in 2003, is the legislative basis for the Government of Canada's strategy for the protection and conservation of wildlife species at risk and biological diversity. The purpose of the Act is to prevent wildlife species from becoming extinct and to provide for their recovery. The Minister of Fisheries and Oceans is responsible for the protection and recovery of aquatic species at risk. The protection and recovery of listed species at risk involves the development and implementation of recovery strategies and action plans for species listed as extirpated, endangered or threatened and management plans for species listed as special concern. Recovery documents can be at a single species level or at an ecosystem level, whichever is determined to be of greatest benefit for recovery of the listed species.

The Committee on the Status of Endangered Wildlife in Canada (COSEWIC), an independent organization of experts, assesses the status of wildlife species using the best available information of the biological status of the species. A number of groundfish species in the Gulf of St. Lawrence have been assessed as at risk by COSEWIC. The following species are currently (or will be) under consideration for addition to the List of Wildlife Species at Risk under the *Species at Risk Act*.

- Deepwater redfish (*Sebastes mentella*) - Gulf of St. Lawrence – Laurentian Channel population– Endangered
- Acadian redfish (*Sebastes fasciatus*) – Atlantic population - Threatened
- American plaice (*Hippoglossoides platessoides*) – Maritime population - Threatened
- Atlantic cod (*Gadus morhua* - Laurentian North population) – Endangered
- Atlantic cod (*Gadus morhua*) - Laurentian South population– Endangered
- Winter skate *(Leucoraja ocellata)* – Southern Gulf population – Endangered
- White hake (*Urophycis tenuis*) – Southern Gulf of St. Lawrence Population - Endangered

A threatened designation means that the species is likely to become endangered if nothing is done to reverse the factors leading to its extirpation. An endangered designation means that the species is facing imminent extirpation or extinction. Among the groundfish species, three wolffish species, namely Atlantic wolffish (Special Concern), Spotted wolffish (Threatened) and the Northern wolffish (Threatened) are on the List of Wildlife Species at Risk and are protected under the Species at Risk Act.

Further information about the *Species at Risk Act* can be found at the web sites listed below:
http://www.dfo-mpo.gc.ca/species-especes/act-loi/commercial-eng.htm
http://www.dfo-mpo.gc.ca/species-especes/listing-eng.htm
http://www.sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1

4.3 Oceans and Habitat Considerations

Work continues to develop a network of Marine Protected Areas (MPAs) as tools to support the ecosystem approach and to support sustainable fisheries. Marine Protected Areas are not necessarily "no take" zones; rather they are developed and implemented to support sustainable fisheries management. The first step in developing new MPAs requires the identification of Areas of Interest (AOI)which are identified by their ecological and biological importance and are deemed to be under some level of threat from human activity. One AOI has been identified in the Southern Gulf (the American Bank) and consultative processes have been initiated to ascertain whether they become MPAs.

There seems to be a growing consensus that the grey seal population in the Southern Gulf have had, and continue to have a negative impact on the status of the groundfish stocks, and are largely to blame for serious viability concerns of many groundfish stocks. These include effects on the recovery of 4TVn cod, gear damage, fish spawning and migration disruption, and parasite transfer to fish.

4.4 Gear Impacts

Scientific reviews has been undertaken to examine the impacts of mobile gear on habitat. The following science advisory reports contain conclusions and advice:

- **Impacts of Trawl Gears and Scallop Dredges on Benthic Habitats, Populations and Communities** (Canadian Science Advisory Secretariat – Science Advisory Report 2006/25) http://www.dfo-mpo.gc.ca/csas/Csas/status/2006/SAR-AS2006_025_E.pdf

Below is a summary of the report:

Mobile bottom-contact fishing gears do have impacts on benthic populations, communities, and habitats. The effects are not uniform, but depend on at least:

- The specific features of the seafloor habitats, including the natural disturbance regime;
- The species present;
- The type of gear used, the methods and timing of deployment of the gear, and the frequency with which a site is impacted by specific gears;
- The history of human activities, especially past fishing, in the area of concern; and
- The nature of many of the dependencies referenced above are described in the advice.

Application of measures to reduce impacts of mobile bottom-contacting gears requires case specific analyses and planning; there are no universally appropriate fixes. However, the documented effects of mobile bottom-contacting gears on seafloor populations, communities, and habitats are consistent enough with well-established ecological theory, and across studies, that cautious extrapolation of information across sites is legitimate. Case-specific research programmes are not required to develop options for case-specific applications of these generalisations.

Circumstances are discussed under which general spatial management, closed areas, gear modifications, and effort reductions could provide some mitigation of the effects of mobile bottom-contacting gears on benthic habitats, populations, and communities.

"Frontier areas" (areas without histories of fishing by bottom-contacting gears) require special considerations in managing the risks posed by mobile bottom-contacting gears. Several of these special considerations are discussed in the report.

In the application of precaution for managing the ecosystem effects of any human activity, the capacity of ecosystem components to recover from perturbations is an important consideration. Several considerations in this context are discussed, as are related issues of more general risk management relative to fisheries using bottom-contacting mobile gears.

A number of gaps in knowledge and necessary scientific studies are also discussed.

- **Potential Impacts of Fishing Gears (Excluding Mobile Bottom-Contacting Gears) on Marine Habitats and Communities** (Canadian Science Advisory Secretariat – Science Advisory Report 2010/03): http://www.dfo-mpo.gc.ca/CSAS/Csas/publications/sar-as/2010/2010_003_e.pdf.
  Below is a summary of this report:

The fishing gears reviewed in this science advisory report have impacts on marine habitats and biodiversity. However, these impacts are not uniform and are not expected to occur universally every time a particular gear is used.

Generally, the impacts of any fishing gear are relative to the effort of the fishery. The severity of any impact will depend on at least:

- The nature of the impact (i.e. what is impacted and in what way);
- The location and scale of the fishery (overall and relative to the location and scale of the ecosystem feature being impacted);
- How the gear is rigged, deployed, and retrieved; and
- Any additional threats facing the ecosystem feature being impacted by the gear in question.

Mitigation measures exist to reduce, and sometimes eliminate, every documented impact related to fishing gears. Many Canadian fisheries make use of appropriate mitigation measures as part of their regular operations and some have been shown to provide benefits to the fishery (e.g. reduced handling time and/or improved product quality).

The effectiveness of every mitigation measure is fishery-specific and depends on the particular impact being addressed, the appropriateness of the measure, and the how it is implemented. An evaluation of the nature and scale of impacts is an important step in identifying appropriate mitigation measures.

4.5 International Issues

The European Union (EU) has introduced regulations effective January 2010 that require Canadian fish and seafood products to have a government validated catch certificate attesting that the product is not from an Illegal, Unreported, and

Unregulated (IUU) fishery. More information can be found on the Fisheries Renewal website under Tracking & Traceability (http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/index-eng.htm).

There are growing legal and market driven demands in key fish importing countries for assurances that fisheries are managed sustainably and in environmentally responsible ways. The groundfish industry will be faced with decisions on whether to obtain certification in support of "eco-labelling" their products.

5. OBJECTIVES

5.1 Stock Conservation

- The long-term objective is to implement management measures that will ensure groundfish stocks conservation and rebuilding.
- The medium-term objective is to implement all elements of the precautionary approach including harvest decision rules for all groundfish species.
- The short-term objectives are to monitor and control of all groundfish catches while minimizing by-catches of closed fisheries species and small fish and to develop management measures and strategies to prevent quota overruns.

5.2 Ecosystem

- The long-term objective is to develop a strategy to address the impacts on groundfish of the grey seal population.
- The short-term objective is to maintain measures to protect cod rearing and nursery areas.

5.3 Stewardship

- The long-term objective is to foster greater dialogue and cooperation between the various fleet sectors.
- The short-term objective is to continue to include all stakeholders in the consultative process and to continue to promote open and respectful dialogue.

5.4 Social, Cultural and Economic

- The long term objective is to bring back the groundfish stocks, and particularly cod, to a level at which they can maintain sustainable Aboriginal, recreational and commercial directed fisheries.
- The short-term objective is to stabilize access to the resource.

5.5 Compliance

- The long-term objective is to achieve high compliance rates through effective monitoring and compliance programs and through productive and ongoing communications with stakeholders.
- The medium-term objective is to support conservation objectives by conducting at sea and coastal patrols to monitor compliance.
- The short-term objective is to assure compliance with management measures.

6. ACCESS AND ALLOCATION

Principles respecting the management of Atlantic Canadian fisheries including the priority of access to fishery resources can be found in the "Policy Framework for the Management of Fisheries on Canada's Atlantic Coast" available on line at http://www.dfo-mpo.gc.ca/fm-gp/policies-politiques/afpr-rppa/framework-cadre-eng.htm .

In response to the Supreme Court of Canada in the *Sparrow* (1990) and *Marshall* (1999) decisions, licenses are issued to Aboriginal organizations authorizing harvesting for food, social and ceremonial purposes; and communal commercial licenses are issued to Aboriginal organizations and they designate the fish harvesters and vessels to be used.

Commercial access to the groundfish fishery is limited and granted through licences issued at the discretion of the Minister under section 7 of the *Fisheries Act*. The policies governing the issue of these licences including licence reissuance, license splits, partnering, vessel replacement, fish harvester and vessel registrations, general policy guidelines, etc., are included in the "Commercial Fisheries Licensing Policy for the Gulf Region" which is available at http://www.glf.dfo-mpo.gc.ca/Gulf/Licenses-Delivery/Commercial-Fisheries-Licensing-Policy and the "Commercial Fisheries Licensing Policy for Eastern Canada 1996" available at http://www.dfo-mpo.gc.ca/fm-gp/policies-politiques/licences-permis/index-eng.htm .

The groundfish fisheries covered in this IFMP are quota-based and are each subject to a TAC. Appendix B provides information about how some of the TACs are divided and allocated to various fleets. Annual information about access and allocations is provided in the annual management plans found at http://www.dfo-mpo.gc.ca/decisions/index-eng.htm and Conservation Harvesting Plans (CHPs) available from DFO.

7. MANAGEMENT MEASURES FOR THE DURATION OF THE PLAN

This section provides an overview of some of the key management measures. Full details are found in various regulations and schedules and in conditions of licenses which are issued annually. Information about annual management measures is provided at http://www.dfo-mpo.gc.ca/decisions/index-eng.htm and in annual Conservation Harvesting Plans (CHPs) available from DFO.

7.1 Total Allowable Catch (TAC)

TACs are established for all commercially fished groundfish stocks taking into account the status of each stock and where available a risk analysis of various TAC options. These TACs are then subdivided into fleet allocations based on gear type, geographic location, or management regime (competitive or ITQ).

7.2 Fishing Seasons/Areas

The management cycle for groundfish stocks within the Gulf of St. Lawrence is from May 15th until May 14th of the following year. However, closures for conservation purposes may delay the opening of specific fisheries. The fishing areas are presented in Section 1.3 and Appendix A.

7.3 Control and Monitoring of Removals

7.3.1 Gear Restrictions

In the Gulf of St. Lawrence, commercial groundfish fisheries are undertaken with either fixed gear (gillnets, longlines and handlines) or mobile gear (otter trawls and Danish/Scottish seines). The use of mobile gear for fishing cod has been prohibited in the Northern Gulf of St. Lawrence (NAFO Subdivision 3Pn and Divisions 4RS) since 1994. For most fisheries, there are clear directives regarding the configuration of gear (ex. mesh size or hook size) and the amount of gear permitted (ex. number of hooks). These measures are identified in the corresponding CHP for each directed fishery.

7.3.2 At-sea Monitoring

At-sea monitoring by approved third-party companies is a requirement in these commercial groundfish fisheries. The level of coverage required may vary by fishery, and is based on factors such as location, timing and potential by-catch of other species.

7.3.3 Monitoring of Catches

Commercial groundfish fisheries require that all landings be recorded at dockside by an approved third-party monitoring company.

7.3.4 Harvest Controls

There are minimum legal sizes for some groundfish species. For Atlantic halibut, American plaice, and winter flounder (Blackback), undersize fish must be returned to the water. This only applies to Atlantic halibut for Quebec Region licence holders). Dogfish and lumpfish must all be returned to the water. This is optional for Quebec Region licence holders). For other groundfish species, all size of fish must be landed.

7.3.5 Small Fish and By-catch Protocols

There are protocols in place in order to ensure that the incidence of capturing small fish and by-catches are minimized. Protocols for small fish are based on a percentage limit for the capture of fish smaller than a given size. The by-catch protocols are based on established daily limits in weight of the by-catch or as a percentage of the total catch. The protocols trigger closures (either temporary or seasonal) of the fishery.

7.3.6 Quota Reconciliation

Quota reconciliation is the process of accounting for quota overruns by deducting the overrun on a one-for-one basis from one fishing period to the next. DFO implemented quota reconciliation for all quota-based Gulf groundfish fisheries starting with the 2010 season. With quota reconciliation, quotas, either individual or competitive, are reduced by quantities equal to an overrun from the previous fishing season. It is not a penalty or sanction for overfishing; rather it represents an accounting of overruns from one fishing period to the next so that removals respect established quotas over time.

7.4 Decision Rules

While preliminary harvest decision rules have been established for the Southern Gulf cod stock, work remains to be done to ensure they are compliant with the precautionary approach. In the meantime, the Southern Gulf cod TAC is established taking into account the established biological reference points and stock status. Recently, biological reference points were revised for the Northern Gulf cod and Greenland halibut. Harvest decision rules were developed and approved for Northern Gulf cod, under the direction of a DFO-industry working group. Furthermore, biological reference points have been defined for redfish (*Sebastes fasciatus* and *Sebastes mentella*), American plaice and witch flounder with the goal of developing harvest decision rules in the near future. Over time, it is anticipated that the precautionary approach would be implemented in all Gulf groundfish stocks.

7.5 SARA Requirements

When fishing activities may incidentally capture, take, kill, harm or harass listed species, permission under SARA will be required in addition to the fishing licence issued by the Minister. Where permission under both Acts is required for the same activity, fishing licences meeting SARA requirements (i.e consistent with SARA section 74) will be issued. Licence conditions will be added to the fishing licences (consistent with SARA section 75) to protect a listed wildlife species, any part of its critical habitat or the residences of its individuals. For similar purposes, the competent minister may also revoke or amend any term or condition.

Listed species applicable to this plan include:

- Spotted Wolffish (*Anarhichas minor*) – Threatened
- Northern Wolffish (*Anarhichas denticulatus*) – Threatened
- Leatherback Turtle (*Dermochelys coriacea*) – Endangered
- White Shark *(Carcharodon carcharias)* - Endangered

All groundfish licence holders are required, through conditions of licence, to submit a SARA logbook at the end of each fishing season whether or not species at risk are encountered.

7.6 Licensing

Anyone fishing groundfish commercially must have a valid licence and conditions and vessels must be registered and vessel registration numbers displayed. Crew members must also be registered. For communal commercial licences held by Aboriginal organizations, vessels and crews must be designated to fish.

A number of policies are in place to promote independent core fish harvesters, the owner/operator policy, the fleet separation policy, etc. More information about these and other policies are found in "Commercial Fisheries Licensing Policy for Eastern Canada (1996) and the "Commercial Fisheries Licensing Policy for the Gulf Region". Policies governing aboriginal fishing are presently in development.

For those wishing to fish groundfish recreationally, there is no marine recreational licence in Atlantic Canada but daily bag limits exist, as well as fishing seasons and other restrictions, depending on the areas. Management measures outlined in the *Atlantic Fishery Regulations (1985)*, as amended from time to time, are also enforced.

In response to the Supreme Court of Canada in the *Sparrow* (1990) decision, licences are issued to First Nations communities authorizing harvesting for food, social and ceremonial purposes.

7.7 Habitat Protection Measures

While there are no specific habitat protection measures for the Gulf groundfish fishery, the closure of a number of areas could have a positive impact on fish habitat. Discussions are presently underway to identify the American Bank off the coast of Gaspé as Marine Protected Areas (MPAs). In addition, a no-fishing zone is in place around the area defined as the Irving Whale so as to prevent potential contamination from eating fish caught in the surrounding environment.

The following areas within the Gulf of St. Lawrence are closed in order to protect fish during the spawning period:

- Closure of all groundfish fisheries from April 1 to June 23 in part of the NAFO Division 4R offshore from St. Georges Bay and Port au Port Bay.
- Closure by variation order of all groundfish fisheries from January 1 to December 31 in part of Groundfish Fishing Areas 4T3a and 4T3b known as Miscou Bank, which is recognized as a cod concentration area, except for a small section opened during the Atlantic halibut fishery.

- Permanent closure of all groundfish fisheries from January 1 to December 31 in Groundfish Fishing Area 4T5 known as Shediac Valley, which is recognized as a cod juvenile area.

8. COMPLIANCE PLAN

8.1 Conservation and Protection Program Description

The Conservation and Protection program promotes and maintains 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:

- 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
- compliance and enforcement program capacity

8.2 Regional Compliance Program Delivery

Compliance in the groundfish fishery is achieved through the application of the *Fisheries Act*, the *Fishery (General) Regulation*s and the *Atlantic Fishery Regulations* by Fishery Officers as well as any variation orders made pursuant to the regulations. The following offers a general description of compliance activities carried out by C&P in the groundfish fishery.

- Land-based Fishery Officers conduct:
    - inspection of catches to ensure compliance
    - inspection of fishing gear
    - dockside checks of landings and weigh-outs
    - licence checks
    - overt and covert patrols to ensure compliance during both open and closed seasons
- During sea patrols, Fishery Officers conduct vessel inspections to check groundfish gear and catch. Fishery Officers also do licence verifications during sea patrols.
- C&P Detachment Supervisors prepare a work plan each year in which they allocate human, material and fiscal resources and establish priorities (note: enforcement of the groundfish fishery is one of the priorities in the areas where this fishery is concentrated).
- C&P employees assist in making recommendations and/or proposing solutions within DFO to issues that arise during the fishing season.
- C&P assures quality control in Dockside Monitoring (DMP) through dockside checks and investigation of incidents related to dockside observer performance. C&P usually resolves irregularities in collaboration with dockside monitoring companies but reserves the right to recommend revocation of designation in serious cases of unprofessional or irregular observer conduct.
- The mobile gear and the fixed gear fleets, as well as fish harvesters participating in the sentinel groundfish fishery are all subject to at-sea-observer coverage which is used in sensitive fishing areas to address catch reporting irregularities. C&P (in consultation with Resource and Aboriginal Fisheries Management) reserves the right to request at-sea observer coverage where circumstances dictate.
- C&P's role in respect to at-sea observers is similar to dockside monitoring. The observers are employed by a third party but C&P is responsible for quality control and data analysis. The same options exist for resolution of irregularities as for dockside observers.
- Routine aerial patrols are conducted in the areas covered by this plan. This is a valuable means of ensuring compliance with seasonal and area closures as well as investigating reports of illegal activity.

8.3 Consultation

Shared stewardship and education are encouraged through emphasis on the importance of C&P communication with the community at large including:

- Presentations to client/stakeholder groups, including school visits or community programs.

- Informal interaction with all parties involved in the fishery on the wharf, during patrols or in the community to promote conservation.
- Participation of C&P Supervisors in enforcement advisory meetings with industry to determine expectations in relation to monitoring, control and surveillance activities. Fishery Officers try to match these expectations with available resources and incorporate this in their yearly planning profile.
- Participation of C&P personnel in Enforcement Round Tables in order to establish an ongoing relationship and partnership with stakeholder representatives from all sectors of the communities through out the Gulf Region interested in the conservation and protection of the marine resources and habitat.

- Engagement of C&P in internal DFO consultations with Resource and Aboriginal Fisheries Management and other DFO branches through post-season analysis and other committees to assess the effectiveness of enforcement activities and to develop recommendations for the upcoming season.
- Participation of C&P personnel (liaison officer) during consultations and annual meetings organized by Resource and Aboriginal Fisheries Management and the Area Aboriginal Coordinators with Aboriginal Organizations.

8.4 Compliance Performance

In addition to other tasks, Fishery Officers are responsible for enforcing many commercial, recreational and aboriginal fisheries. Groundfish enforcement in the Gulf Region accounts for an average of approximately 2% of Fishery Officers' time which is the equivalent of an average of approximately 1,625 hours/year. In some instances, the total time spent by Fishery Officers in the Gulf Region has risen closer to 2,600 hours in one year. For detachments where the level of groundfish activity is high in relation to other fisheries, more resources are dedicated to this fishery.

The compliance performance may be measured by a number of indicators, including:

- Total Fishery Officer hours
- Total patrol hours
- Number of vessels checked
- Number of vehicles checked
- Number of persons checked
- Number of gear checks
- Number of site checks
- Number of violations / warnings.
- Number of resulting charges
- Compliance with overall TAC and quotas
- Compliance with prohibitions
- Compliance with licence conditions

8.5 Current Compliance Issues

There are some compliance deficiencies in the groundfish fishery. Most of the violations are associated to fishing during closed time, failure to return incidentally caught fish to the water, as well as fishing with unauthorized fishing gear and fishing without authorization.

Some C&P statistics indicate relatively infrequent convictions and low fine levels which do not make for an adequate deterrent. While C&P is prepared to seek higher impact penalties through targeted enforcement, court action is still costly in terms of officer time and money. Industry participants in this fishery have a huge role to play in achieving better compliance through closer cooperation with C&P as part of an effort to lower the tolerance of illegal activity.

9.6 Compliance Strategy

C&P has developed a Compliance and Enforcement Strategy that will provide front line Fishery Officers with the necessary guidance and direction. It will also serve as a reference in establishing operational priorities in the groundfish fishery.

Priorities will be to focus on management measures that are conservation-related. Fishery Officers' efforts and energy will include activities such as conducting at sea and dockside inspections, verification of processing plants, grappling operations, overt and covert operations in support of detecting illegal activities associated to illegal fishing gear, size limits, etc.

In support of further developing an intelligence-based approach, efforts will be maintained towards increasing intelligence gathering and information sharing capacity. A close watch will also be maintained on the development of new technology;

new approaches in order to provide front line Fishery Officers the opportunity to broaden their knowledge and increase their skills. This approach will also provide an opportunity to expand the inventory of specialized equipment.

9. PERFORMANCE REVIEW

The following indicators will be used to determine if the plan objectives as outlined in Section 5 are met.

Stock Conservation

- Increasing number of stocks are rebuilding out of the critical zone.
- Harvest decision rules are developed for all groundfish stocks based on the precautionary approach.
- Rebuilding plans are developed for pertinent species.

Stewardship

- Increased number of fleet share agreements are reached based on consensus.
- Deliberations and participation at advisory committee are positive and respectful.

Social, cultural, economic

- Increased number of groundfish fisheries are possible due to stock status.
- Access to the resource is stabilized so that industry can develop long-term plans.

Compliance

- Increased number of Fishery Officers hours.
- Reduced number of occurrences and violations.

10. SAFETY AT SEA

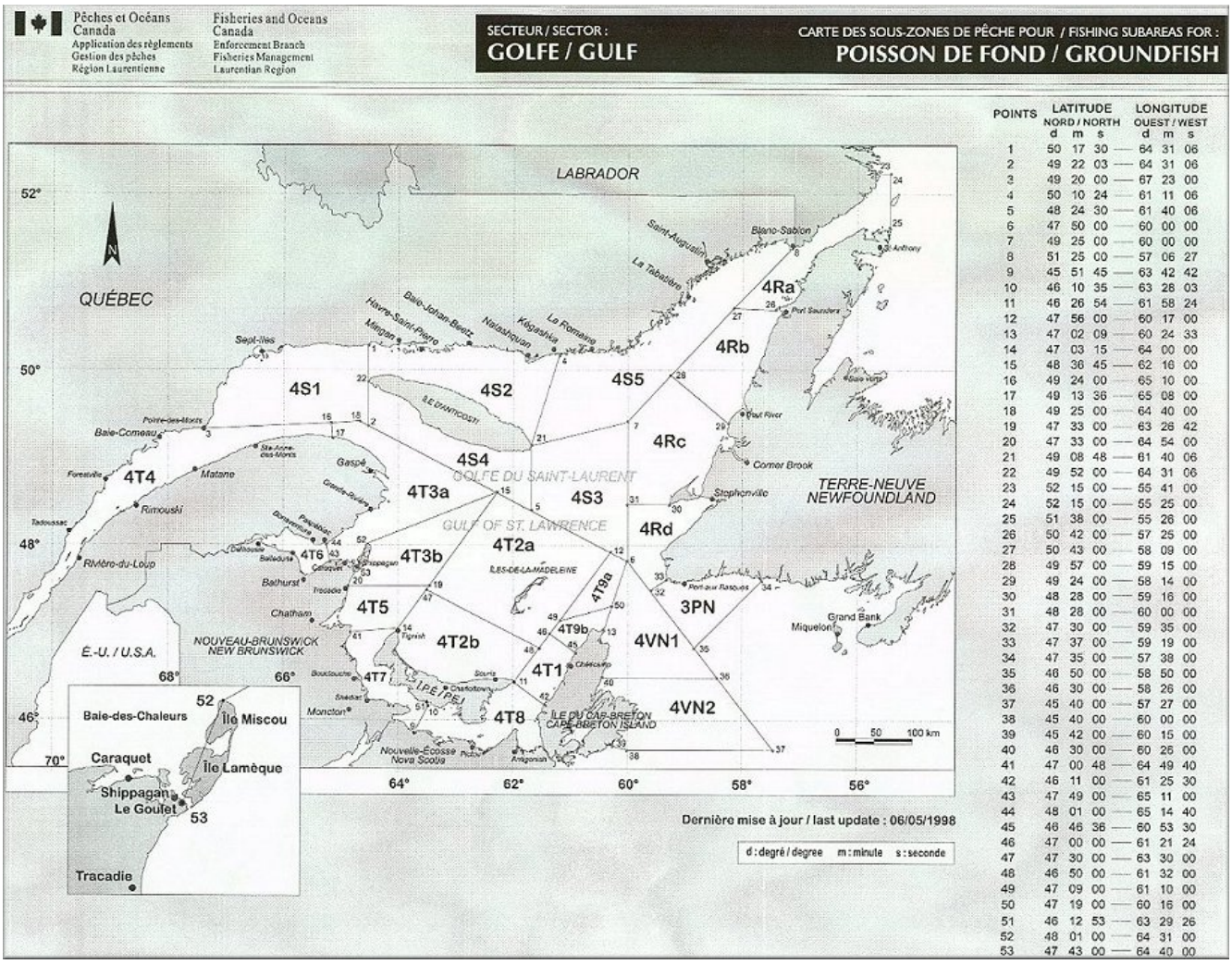
Caution is exercised relative to the timing of the opening of the Southern Gulf groundfish fisheries. Season openings may be delayed until the risks posed by ice or weather are minimal and these decisions are taken in consultation with industry representatives. An area known as the “dumping ground” (a former munitions dump) is closed to mobile gear fishing.

GLOSSARY

Abundance: Total number of individuals or total weight of animals 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.
By-catch: The unintentional catch of one species when the target is another.
Catch per Unit Effort (CPUE): The amount caught for a given fishing effort.
Communal Commercial Licence: Licence issued to aboriginal organizations pursuant to the *Aboriginal Communal Fishing Licences Regulations* for participation in the general commercial fishery.
Ecosystem Factors: The ecosystem is a complex web of interdependencies where changes in one constituent can have implications for other constituents. Examples of ecosystem factors include: the effect of one species exploitation on another, the impacts of habitat alteration on the mix of organisms the altered habitat can support.
Fishing Effort: Quantity of effort using a given fishing gear and/or over a given period of time.
Food, Social and Ceremonial (FSC) Fishery: A fishery conducted by Aboriginal groups for food, social and ceremonial purposes under rights affirmed by the Supreme Court of Canada in the *Sparrow* decision (1990).
Ghost Fishing: The situation where lost fishing gear continues to catch fish.
Limited Entry: A fishery management policy in place where no new licences are issued so as to limit fishing effort and to support economic viability of enterprises.
Marshall Response Initiative: In response to the Supreme Court of Canada decision in the *Marshall (*1999) case on the commercial aspects of Aboriginal fishing rights, the Department of Fisheries and Oceans introduced a series of initiatives to support the participation by First Nations in commercial fisheries.
Mobile Bottom Trawling Gear: A fishing gear where a funnel-shaped net is dragged along the bottom and fish are corralled into a mesh bag ("cod end") at the end of the gear.
Precautionary Approach: Set of 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, country, etc. is permitted to take from a stock in a given period of time.
Recruitment: Amount of individuals becoming part of the total stock.
Research Survey: Survey at sea, on a research vessel, allowing scientists to obtain information on the abundance, biomass, distribution and biological parameters of various species and/or collect oceanographic data. Ex: bottom trawl survey, plankton survey, hydro-acoustic survey, etc
Shared Stewardship: An approach to fisheries management whereby participants are effectively involved in fisheries management decision-making processes at appropriate levels, contribute specialized knowledge and experience, and share in accountability for outcomes.
Size at the Onset of Maturity: The size of an animal when reaching sexual maturity and has the capacity to reproduce.
Stock: Describes a population of individuals of one species found in a particular area.
Stock Assessment: Scientific evaluation of the status of a species belonging to a same stock within a particular area in a given time period.
Tonne (t): Metric tonne, which is 1000kg or 2204.6lbs.

APPENDIX A

Map of Groundfish Fishing Areas



POINTS	LATITUDE NORD / NORTH d	m	s	LONGITUDE OUEST / WEST d	m	s
1	50	17	30	64	31	06
2	49	22	03	64	31	06
3	49	20	00	67	23	00
4	50	10	24	61	11	06
5	48	24	30	61	40	06
6	47	50	00	60	00	00
7	49	25	00	60	00	00
8	51	25	00	57	06	27
9	45	51	45	63	42	42
10	46	10	35	63	28	03
11	46	26	54	61	58	24
12	47	56	00	60	17	00
13	47	02	09	60	24	33
14	47	03	15	64	00	00
15	48	36	45	62	16	00
16	49	24	00	65	10	00
17	49	13	36	65	08	00
18	49	25	00	64	40	00
19	47	33	00	63	26	42
20	47	33	00	64	54	00
21	49	08	48	61	40	06
22	49	52	00	64	31	06
23	52	15	00	55	41	00
24	52	15	00	55	25	00
25	51	38	00	55	26	00
26	50	42	00	57	25	00
27	50	43	00	58	09	00
28	49	57	00	59	15	00
29	49	24	00	58	14	00
30	48	28	00	59	16	00
31	48	28	00	60	00	00
32	47	30	00	59	35	00
33	47	37	00	59	19	00
34	47	35	00	57	38	00
35	46	50	00	58	50	00
36	46	30	00	58	26	00
37	45	40	00	57	27	00
38	45	40	00	60	00	00
39	45	42	00	60	15	00
40	46	30	00	60	26	00
41	47	00	48	64	49	40
42	46	11	00	61	25	30
43	47	49	00	65	11	00
44	48	01	00	65	14	40
45	46	46	36	60	53	30
46	47	00	00	61	21	24
47	47	30	00	63	30	00
48	46	50	00	61	32	00
49	47	09	00	61	10	00
50	47	19	00	60	16	00
51	46	12	53	63	29	26
52	48	01	00	64	31	00
53	47	43	00	64	40	00

APPENDIX B
Fleet Shares

Fleet Shares* of Canadian Quota (%)

Stock	FG <65'	MG <65'	FG 65'-100'	MG 65'-100'	All >100'	Total
Cod						
4RS,3Pn*	46.09	43.018	0.000	3.305	7.590	100.003
4T**	28.095	48.009	0.000	5.374	0.000	81.478
4Vn (N-A)	12.874	12.942	1.331	1.476	71.373	99.996
Redfish						
Unit 1	Index fishery only					
American plaice						
4T	14.800	80.200	0.000	5.000	0.000	100.000
Witch flounder						
4RST	0.000	88.000	0.000	7.000	5.000	100.000
White hake						
4T	No directed fishery					
Atlantic halibut						
4RST	69.714	11.714	3.429	3.429	11.714	100.000
Winter flounder						
4T	50.000	50.000	0.000	0.000	0.000	100.000
Yellowtail flounder						
4T	100% Magdalen Islands, by-catch elsewhere					
Greenland halibut						
4RST	76.200	14.267****	0.00	8.600****	0.933****	100.000

* All shares exclude those associated with the Licence Retirement Program (Bought Back Quota)
** the MG <65' share of 43.02% includes 1.54% for Danish Seiners.
*** The >100' (offshore quota) will be re-established to its share of 53.13% when the TAC increases to 3,500t.
**** the Greenland halibut MG fleets shares are currently not fished. Re-entry of MG fleets in this fishery will occur on a progressive scale once the 4RST TAC goes higher than 4,500t, as per a 2013 DFO decision.

APPENDIX B-1
Description of Groups

Group A: all enterprises in the <65' category based in 4RS-3Pn

Group B: all enterprises in the <65' category based in 4T

Group C: all enterprises in the <65' category based in 4Vn

APPENDIX C
GEOGRAPHICAL FLEET SHARES

	COD 4RS-3PN	COD 4T (N-A)	AMERICAN PLAICE 4T
GROUP A	34.72%	2.217%	0%
GROUP B	5.257%	50%	45.68%
GROUP C	0%	2.842%	0%

TABLE 1 - MOBILE GEAR ITQ FLEET <65' GROUP B

REGION		QUEBEC		GULF					
FLEET		QUÉBEC		NEW BRUNSWICK		NOVA SCOTIA		PEI	
		SHARE (%)	BOUGHT BACK (%)	SHARE (%)	BOUGHT BACK (%)	SHARE (%)	BOUGHT BACK (%)	SHARE (%)	BOUGHT BACK (%)
COD, 3PN-4RS		88.0927	9.9594	1.9455	0	0	0	0	0
COD, 4T		33.8605	17.7338	15.3035	10.3687	7.3124	7.0861	6.5061	1.8286
AMERICAN PLAICE 4T		30.4217	8.3293	15.6414	11.5540	20.4142	2.6586	8.3709	2.6091

TABLE 2 – FIXED GEAR COMPETITIVE FLEET SHARES <65'
ATLANTIC HALIBUT 4RST

REGION	FLEET	SHARE (%)
GULF	NEW BRUNSWICK	5.17
	NOVA SCOTIA	2.01
	PRINCE EDWARD ISLAND	1.46
	TOTAL GULF	*8.63*
QUEBEC	NORTH SHORE	8.24
	GASPÉ PENINSULA	44.03
	MAGDALEN ISLANDS	5.44
	TOTAL QUEBEC	*57.71*
NEWFOUNDLAND AND LABRADOR	NEWFOUNDLAND	32.03
MARITIMES	MARITIMES	1.63

TABLE 3 – FIXED GEAR COMPETITIVE FLEET SHARES <65'
COD 4TVN

REGION	FLEET	SHARE (%)
GULF	NEW BRUNSWICK	7.25
	NOVA SCOTIA	10.80
	PRINCE EDWARD ISLAND	19.30
	TOTAL GULF	*37.35*
QUEBEC	NORTH SHORE	0.62
	GASPÉ PENINSULA	41.71
	MAGDALEN ISLANDS	16.87
	TOTAL QUEBEC	*59.21*
NEWFOUNDLAND AND LABRADOR	NEWFOUNDLAND	1.41
MARITIMES	MARITIMES	2.03

APPENDIX D

Groundfish Species Landed Volume and Value Gulf of St. Lawrence Management Area 2005-2012 Seasons										
Species	Cod		Atlantic halibut	Witch flounder	Greenland halibut	Winter flounder	American plaice	White hake	Redfish	Yellowtail flounder
	Southern Gulf	Northern Gulf								
NAFO Zone	4T - 4Vn*	4RS3Pn	4RST	4RST	4RST	4T	4T	4T	4RST, 3Pn - 4Vn (Unit 1)	4T
Volume (MT)										
2005	2,826	4,476	410	935	4,048	394	338	44	975	186
2006	3,145	5,640	388	944	3,868	235	476	27	694	176
2007	1,457	6,475	439	914	3,918	171	368	20	106	123
2008	1,556	6,157	595	762	3,758	218	173	31	420	102
2009	148	4,695	640	443	4,253	240	126	33	635	120
2010	113	3,566	683	240	3,954	307	148	19	549	188
2011	150	1,774	739	453	3,855	318	97	18	630	168
Value ($000)										
2005	3,363	4,588	2,578	930	8,436	399	271	32	663	157
2006	4,198	6,359	2,542	1,007	6,761	255	632	19	540	189
2007	2,087	9,495	2,857	962	7,146	206	323	16	86	144
2008	2,198	9,341	3,752	729	7,116	318	156	21	343	133
2009	206	4,968	4,210	443	8,233	327	153	25	422	168
2010	162	3,640	4,835	192	8,504	462	163	14	378	301
2011	238	2,047	5,920	409	10,412	574	145	15	547	311

Data for fishing season (i.e. 2009 = May 15 2009 – May 14 2010)
* November - April
Source: Statistics, DFO-Ottawa