

SCOTIA-FUNDY HADDOCK FISHERY

2012 MSC Surveillance Visit Report

Certificate Number: F-SCS-0026



2000 Powell Street, Suite 600
Emeryville, CA 94608, USA

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Prepared for:

Mr. Bruce Chapman, Executive Director representing the
Groundfish Enterprise Allocation Council (GEAC)
1362 Revell Dr.
Manotick, Ontario K4M1K8
Canada

tel (613) 692-4249
fax (613) 692-8250
email bchapman@sympatico.ca
website www.geaconline.com

General Information

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Prepared by	SCS	Ms. Adrienne Vincent Mr. Eric Dunne
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Surveillance Team	SCS	Ms. Adrienne Vincent (lead, P1 and P2) Mr. Eric Dunne (P3)
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Methodologies	MSC Accreditation Manual Issue 5.1 MSC Certification Requirements v1.2 MSC Guidance to Certification Requirements v1.1	

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List of Acronyms

B _{MSY}	Biomass calculated for Maximum Sustainable Yield
DFO	Fisheries and Oceans Canada
ETP	Endangered, Threatened or Protected
FAM	Fisheries Assessment Methodology
FCM	Fisheries Certification Methodology
FLIM	Fishing Mortality Limit Reference Point
GEAC	Groundfish Enterprise Allocation Council
GN	Gill Net
GOMAC	Gulf of Maine Advisory Committee
HL	Hand Line
ISO	International Standard Organization
LL	Long Line
MSC	Marine Stewardship Council
NAFO	Northwest Atlantic Fisheries Organization
OTB	Otter Trawl, Bottom
P1, P2, P3	The three guiding Principles of the MSC
PI	Performance Indicator
SARA	Species At Risk Act
SCS	Scientific Certification Systems
SSB	Spawning Stock Biomass
SSR	Special Science Report
TAC	Total Allowable Catch
TMGC	Transboundary Management Guidance Committee
ULR	Upper Limit Reference Point
4X5Y and 5Zjm	NAFO statistical areas

Executive Summary

Table 1: Summary of Performance Indicators with conditions

Indicator	Status of Condition/Non-Conformance
Condition 1 1.2.2 All Gear Types NAFO Area 4X5Y	Rescored to 80 Condition closed
Condition 2 1.2.2 All Gear Types NAFO Area 5Zjm	Rescored to 80 Condition closed
Condition 3 2.1.1 Gears OTB & LL NAFO Area 4X5Y	Open and on target
Condition 4 2.2.1 Gears OTB and LL in NAFO Area 4X5Y, Gear LL in NAFO Area 5Zjm	Open and on target
Condition 5 2.2.3 Gears OTB and LL in NAFO Area 4X5Y	Open and on target
Condition 6 2.4.1 and 2.4.2 Gear OTB NAFO Area 4X5Y	Open and on target
Condition 7 3.2.1 All Gear Types NAFO Areas 4X5Y and 5Zjm	Open and ahead of target in both area 4X5Y and 5Zjm. In terms of the fourth audit requirements.
Condition 8 3.2.5 All Gear Types NAFO Areas 4X5Y and 5Zjm	Open and on target as of the second audit based on revised Client Action Plan necessitated by the new planning horizon of the management authority.

General background about the fishery certification

The fishery was first certified as a source of sustainable seafood on 22nd October, 2010. The fishery is divided into eight units of certification with four gear types and two areas. This report discusses the findings from the second surveillance audit. Tables with the original rationale, conditions, client action plans, and current progress toward conditions may be found below. Eight conditions were placed on the Scotia-Fundy Haddock fishery certification which must be closed within timeframes specified in the conditions.

Assessment Overview

Methodology

The surveillance audit was carried out in accordance with the Marine Stewardship Council (MSC) Certification Requirements v1.2 (Jan 2012). If a fishery fails the surveillance audit, and cannot address identified deficiencies in a reasonable period of time, then the use of the certificate and the MSC logo will be revoked by the certifier.

The issues for the certifier are whether the fishery has sufficiently acted on the required conditions set forth in the original certification report, and whether a random check on the performance of the fishery verifies continued compliance with the MSC standards.

The annual surveillance audit process is comprised of four general parts:

1. The certification body provides questions around areas of inquiry to determine if the fishery is maintaining the level of management observed during the original certification. In addition, the surveillance team requires that the client provide evidence that the fishery management system has taken the necessary actions to meet all conditions placed on the fishery during the initial certification assessment or any previous surveillance audits.
2. The surveillance/assessment team meets with the client fishery to allow the client to present the information gathered to answer the questions asked by the surveillance team. The surveillance team can then ask questions about the information provided to ensure its full understanding of how well the fishery management system is functioning and if the fishery management system is continuing to meet the MSC standards.
3. The surveillance team presents its findings to the client fishery at the end of the site visit. The results outline the assessment team's understanding of the information presented and its conclusion regarding the fishery management system's continued compliance with MSC standards. Where indicated, the surveillance team may provide the client fishery with additional time to supplement the information provided if the surveillance team finds that there are still issues requiring clarification.
4. Where appropriate, the client fishery submits final information to the surveillance/assessment team for consideration in the surveillance findings and report. The surveillance team then reviews the final information and submits a final report to the client fishery and the MSC for posting on the MSC website. If there are continued compliance concerns, these are presented as non-conformances that require further action and audits as specified in the surveillance report.

Masters of Marine Studies Program at Memorial University of Newfoundland and Labrador.

Most recently he has become fully versed in the overall MSC assessment process. In this context, he has been involved in both pre-assessments and full assessments of a variety of finfish, pelagic and shellfish fisheries in localities from the sub-Arctic areas of the Northwest Atlantic to the Gulf of Mexico.

Surveillance Meeting

The surveillance audit for 2012 comprised:

1. An invitation announcement was posted to the MSC website requesting that stakeholders contact SCS with any new information or concerns about the Canada Scotia-Fundy haddock fishery on 11 October, 2012. Stakeholders identified in the original assessment were contacted individually.
2. The GEAC were provided with a desk audit by SCS with a table identifying milestones by annual audit that the fishery is expected to achieve. Documents were requested to support closing conditions.
3. An Audit Plan was provided to the client, management and scientists before the meeting. The opening meeting with the client included an exchange of information relevant to the surveillance audit.
4. A request for stakeholder input was sent via email to identified stakeholders from the previous audit. SCS was available on November 13th 2012 for meetings with stakeholders in Dartmouth, Nova Scotia Canada. No stakeholders came forward in-person or via email to provide new comment for this fishery.
5. A meeting took place on the 13th November, 2012 with SCS, the Groundfish Enterprise Allocation Council and fishery management personnel at the Bedford Institute of Oceanography. The discussions focused on the ongoing activities associated with the Conditions placed on the fishery and updates in the fishery since 2010.
6. Necessary documents were presented by the client to SCS prior and during the meeting in Dartmouth, Nova Scotia, Canada, and subsequently by email after the 13th November, 2012 meeting.

Table 2: 2nd Annual Assessment Meeting Attendees and Organizations

2nd Annual Assessment Meeting Attendees	Organization	Role
Adrienne Vincent	SCS	Team Leader, P1, P2
Eric Dunne	SCS	Surveillance Team, P3
Peter Hurley, Population Ecology	DFO	Scientific Research Stock status
Tara McIntyre, Policy and Economics	DFO	MSC Coordinator for DFO
Scott Coffen-Smout, Ecosystems	DFO	Ecosystem Management
Verna Docherty	DFO	Groundfish Advisor, Fisheries Management
Bryan Wood, C&P	DFO	Fisheries Management
Mr. Bruce Chapman, Executive Director	GEAC	Client Representative

Summary of the Fishery

General discussion

This is the 2nd Annual Surveillance Report 2012 prepared by SCS to meet the requirements of the MSC for annual audits of certified fisheries.

The sections below provide the general information about the status of the stock, the ecosystem impacts from fishing, and management arrangements for this reporting period.

Principle 1 - Stock Status and Harvest Strategy

Haddock (*Melanogrammus aeglefinus*) are a cod-like fish and are primarily caught commercially by bottom otter trawl and bottom long-line gear in Atlantic Canada. The fishery in 4X5Y is in Canadian waters. DFO completes the stock assessment and determines the TAC. Area 5Zjm includes the Canadian portion of NAFO division 5Z and the haddock stock there is assessed by the Transboundary Resources Assessment Committee (TRAC) which has both US and Canadian members. See figure 1.

Area 4X5Y haddock

DFO conducts two surveys applicable to this fishery: a summer research vessel (RV) trawl survey and a joint industry/DFO survey known as the ITQ survey. The Scotian biomass Shelf estimates are treated separately from the Bay of Fundy estimates because it is believed that the Bay of Fundy haddock have a faster growth rate (DFO 2012b). There is some seasonal migration within the stock area, but little genetic exchange between the stocks occurs. Spawning occurs in April/May. Haddock in the Bay of Fundy experience 50% age at first maturity of 4 years. The ITQ survey indicates that recruitment was low in 2007 and 2008 but high in 2009 and 2010. Spawning Stock Biomass (SSB) will continue to decline due to poor recruitment, but is expected to improve as the stronger year classes mature. The most recent summer research survey biomass index was below the short- and long- term means, but has been stable for the last 8 years (DFO 2012b).

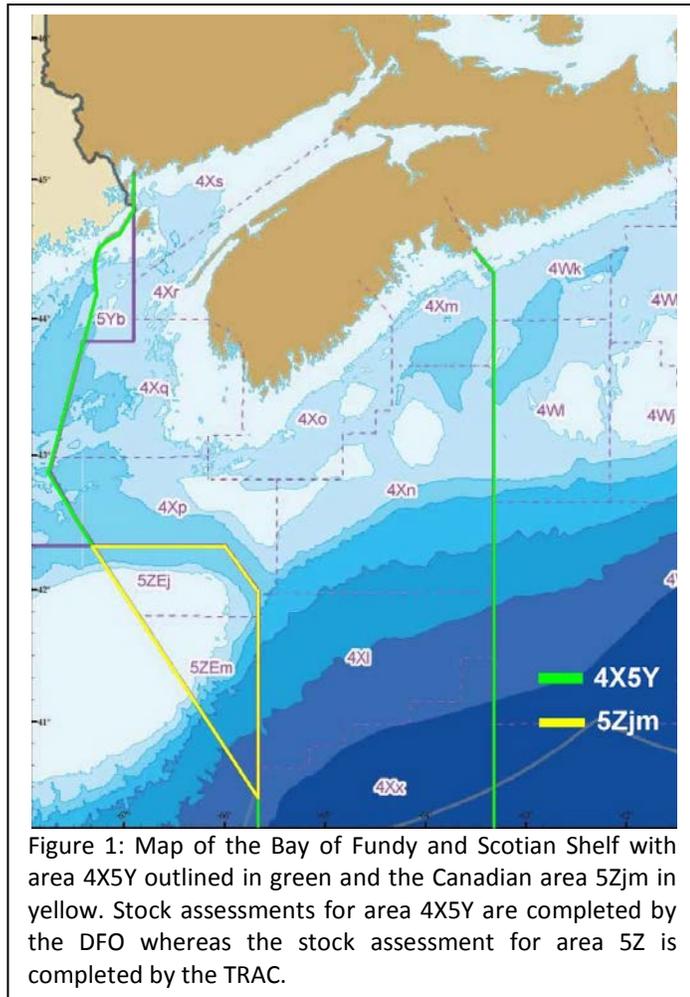


Figure 1: Map of the Bay of Fundy and Scotian Shelf with area 4X5Y outlined in green and the Canadian area 5Zjm in yellow. Stock assessments for area 4X5Y are completed by the DFO whereas the stock assessment for area 5Z is completed by the TRAC.

The Sequential Population Analysis model found SSB (ages 4+) to be stable. The model does not match well with the survey indices and retrospectively likely overestimates SSB. To mitigate the retrospective pattern a correction factor (-17%) was applied to calculate reference points and make recommendations for the harvest strategy.

The default approach within DFO’s precautionary approach framework for identifying biological reference points is based on SSB-MSY. The lower reference point (LRP) is 40% SSB_{MSY} and the Upper Stock Reference point (USR) is 80% SSB_{MSY}. In the 2012 Science Advisory Report (DFO 2012b) the SSB_{MSY} was estimated to be 52,000mt. The LRP was then calculated to be 20,800 mt and USR 41,600 mt. The assessment found that the stock is above the USR, but after the retrospective adjustment, the stock is currently likely between the reference points in the “cautious zone” and unlikely to be within the “critical zone.” A precautionary TAC of 5,100 mt was set for 2012/13 to achieve the

management objective of mitigating decline and promoting positive biomass change in the interim before the 2010 and 2011 1+ recruits enter the fishery.

Table 3: 4X5Y Haddock summary of reference points

FREF	0.25	BMSY	52,000mt
FLIM	0.43	LRP (0.4BMSY)	20,800mt
		USR (0.8BMSY)	41,600mt

Area 5Z haddock

Since 1969 the Canadian portion of the haddock landings from area 5Zjm has ranged from a low of 500 mt to a high of 17,600 mt (in 2009) with a long term average being 5,500 mt. Haddock are retained mandatorily in the groundfish fisheries. The Canadian catch in 5Zjm decreased from 16,592 mt in 2010 to 11,247 mt in 2011 (TRAC 2012). Haddock are discarded in the sea scallop fishery. The scallop fishery discarded 15 mt in 2011. Recently there have been two very large recruitment pulses with age one recruits estimated to be 304.4 million in 2004 and 588.9 million in 2011. This is much higher than the average of 36.3 million since 2003. Age 1 recruits are estimated to be 104.9 million in 2012 (TRAC 2012). Age 1 recruits are expected to start entering the fishery four years later (TRAC 2011).

Over the whole of the 5Z area, stock status is evaluated using an age structured analytical assessment that incorporates both size and age sample data. Sample collections from three surveys are incorporated: the National Marine Fisheries Service (NMFS) Spring, NMFS fall and DFO trawl surveys. In 2009, adult biomass (age 3+) reached a record high and was estimated to be 172,700 mt. Adult biomass has since declined to 136,600 mt in 2011 and 99,000 mt as the 2004 age +1 recruitment biomass diminishes. The TAC (US and Canada combined) has been responsive to the decrease in adult biomass and was decreased from 29,600 mt in 2010 to 22,000 mt in 2011 and to 16,000 mt in 2012. The fishery expects the exceptional age +1 recruitment cohort from this year to start entering the fishery by 2015 (TRAC, 2011).

The Transboundary Management Guidance Committee (TMGC) has established a fishing mortality reference point (F_{REF}) of 0.26. When the stock status decreases, the fishing mortality (F) is also decreased to promote rebuilding of the stock. F continued to remain below the F_{REF} , and was 0.14 in 2011. The stock assessment uses a Virtual Population Analysis (VPA) and incorporates commercial landings, DFO and NMFS surveys and biological samples (length, weight, and age). According to the TRAC status report, the model does not currently display retrospective bias (TRAC 2012). An Upper Stock Reference point of 40,000 mt was adopted for haddock in 5Zjm at the May 10, 2012 GOMAC meeting.

Table 4: 5Zjm Haddock, Summary of Reference Points

F_{REF}	0.26	B_{MSY}	78,000mt
		LRP (0.4 B_{MSY})	10,340mt
		USR (0.8 B_{MSY})	40,000mt

Table 5: Preliminary Quota Year Landings of Haddock in 4X5Y and 5Zjm, by Gear Type, 2011 & 2012

Area	Gear Type	2011/12 Landings mt	2012/13 Landings mt
4X5Y	LL	903	428
4X5Y	OTB	3,605	550
4X5Y	Gill net	4	1
4X5Y	Hand line	0	0
TOTAL		4,511	979*
4X5Y TAC		6,000	5,100

Area	Gear Type	2011 Landings mt	2012 Landings mt
5Zjm	LL	1,568	755
5Zjm	OTB	9,665	3,835
5Zjm	Gill net	1	1
5Zjm	Hand line	0	0
TOTAL		11,234	*
Canadian 5Zjm TAC		12,540	9,120

* From April 1st to October 2012

Note: Landings are in metric tonnes. Area 5Zjm TAC is by calendar year and 4X5Y TAC from April 1st to March 31st. LL=Long Line, OTB=Otter Bottom Trawl.

Table 6: Quota by Fleet Sector, 2011/12 and 2012/13

Fleet Sector	4X5Y 2011/12	4X5Y 2012/13	5Zjm 2011	5Zjm 2012
FG <45'	1,755.6	1,492.3	2,441	1,775.3
FG 45-65'	252.6	214.7	480.5	349.5
MG <65'	3,141.6	2,670.4	5,305.8	3,858.8
Aboriginal	492.0	418.0	998.0	725.8
FG 65-100'	33.6	28.6	124.1	90.3
MG 65-100	33.6	28.6	124.1	90.3
>100'	291.0	247.4	2,937.1	2,136.1
Bycatch Reserve	--	--	129.3	94.0
TOTAL	6,000.0	5,100.0	12,540.0	9,120.0

Source: GEAC

Notes: Quantities are in metric tons (mt).

In 5Z, the total quota is split between the US and Canada. The Canadian portion is shown in the table below. The total quota (including the US portion) for 5Z was 22,000mt in 2011 and 16,000mt in 2012.

Principle 2 – Ecosystem impacts from fishing
Non-Target Species (Retained, Bycatch and ETP)

The impact of a fishery on the ecosystem has many components. In the MSC process consideration is given to the interactions with the living organisms and the substrate as well as the over-all cumulative impacts on the ecosystem. The MSC process considers all organisms that are most likely to be affected by the fishery: these are the retained and discarded species that constitute 5% or more of the catch as well as those that are listed as being endangered, threatened or protected by national or international law. In the original fishery assessment (Moody Marine, 2010) several species were considered. Some species fall into more than one category. Of the species considered in the assessment, cod, skates and white hake have conditions associated with them and are discussed in the Conclusions section of this report.

Table 7: Non-Target Species Considered in the 2010 Fishery Assessment, by Area, Gear Type and MSC Performance Indicator (PI) set.

Species	Area by NAFO designation	Gear Type	Performance Indicator set
Pollock	4X5Y	OTB	R
Cod	4X5Y, 5Zjm	LL, OTB	R
Dogfish	4X5Y	LL, OTB	R, B
Cusk	4X5Y, 5Zjm	LL	R, B
Atlantic halibut	4X5Y	LL	R
White hake	4X5Y	LL	R
Yellowtail flounder	5Zjm	OTB	R
Skates	4X5Y, 5Zjm	LL, OTB	B
Northern wolffish	na	LL, OTB	ETP
Spotted wolffish	na	LL, OTB	ETP
North Atlantic right whale	na	GN	ETP
Harbour porpoises	na	GN	ETP
Leatherback turtle	na	LL, GN	ETP

Source: *Moody Marine, 2010*

Notes: Gear types include Long Line (LL), Bottom Otter Trawl (OTB), Gill net (GN) and Hand Line (HL). PI sets include Retained (R), Bycatch (B) and Endangered, Threatened or Protected (ETP).

Most species encountered in the haddock fisheries were found to be within biologically based limits or where outside the limits, appropriate recovery measures are in place. Cod and white hake in 4X5Y were identified as retained species with an associated condition (PI 2.1.1). Skates in 4X5Y and 5Zjm received a condition (PI 2.2.1) and skates in 4X5Y only received a separate condition (PI 2.2.3) These are discussed below in more detail. Generally though, preliminary discard estimates in the groundfish fishery were discussed at the May 10, 2012 GOMAC meeting. Discards were down overall in 2011.

Species with Associated Conditions

4X5Y Cod

Area 4X5Y cod populations have been declining since the early 1990s. Conservation Limit Reference Points (LRPs) have been calculated for cod in 4X5Y utilizing Beverton-Holt stock recruitment models and the precautionary approach. 4X5Y cod LRP is calculated to be 24,000 mt. The SSB in area 4X5Y is below the LRP (and has been since 2002) and was estimated to be 10,600t in 2008 or 44%LRP (DFO 2011b). The Limit Reference Point (LRP) for 4X5Y cod was provided for information only during the February 6-9 2012 Regional Science Advisory meeting and the Upper Limit Reference Point (URP) was proposed (DFO 2012a).

Cod in 4X5Y are managed with a TAC (1,650t in 2011/12). The 2011 RPA outlined the probability of achieving, at a minimum, a SSB equal to the LRP based on three different fishing mortality scenarios. Table 1, pg. 22 of the RPA summarizes the projected results. Informal estimates of the TAC equivalent to each fishing mortality level was 3,000 t at F_{REF} ; 1,500 t at $0.5F_{REF}$ and zero catch. Of the three fishing mortality scenarios that were explored at the RPA meeting, only two ($F=0$ and $F= \frac{1}{2} F_{REF}$) could satisfy the requirements to rebuild within a reasonable timeframe, and to present a very low risk of preventable decline. A scenario slightly above $\frac{1}{2} F_{REF}$ was found to also satisfy this requirement. A TAC of 1,650 t (approximately $F=0.11$) meets both the rebuild and preventable decline requirements, and therefore balances rebuilding requirements with socioeconomic considerations as allowed by the Policy (Clark et al 2011, DFO pers comm). Recent RV survey data indicate that 4X5Y cod are between the short and medium-term survey average (5 and 15 years between 1995 to 2009) but still below the long term survey average (since 1970) (DFO 2012).

GOMAC members discussed increasing observer coverage for cod discards in June 2012 to account for current variability in the sampling data (GOMAC Meeting Notes). On-board observer coverage in 4X5Y was historically low but was increased in 2011 and in 2012.

White Hake in 4X5Y

White hake in 4X5Y are part of a larger stock (4VWX5YZ). They are not targeted for, but are retained as a non-target species. Fishing mortality was decreased after bycatch limits and fleet bycatch caps were put in place. Small fish protocols to protect immature white hake are in place. These management measures are stipulated in fleet sector Conservation Harvest Plans. Some additional observer coverage was also implemented in 4X5Y in 2011 and 2012.

Average Biomass estimates are developed from DFO RV summer surveys. The DFO RV summer survey catch results are highly variable for white hake in the Scotia-Fundy sector. There was an assessment of 4VWX-5 white hake in 2005 (DFO, 2005), which found that biomass has decreased significantly since the early 1990s. White hake in 4X East were found to be between the short and medium-term RV survey average (5 and 15 years between 1995 and 2009). White hake in 4X west were above the medium-term average in the 2010 survey, but below the short-term average in 2011 (DFO 2012). Currently, no suitable assessment model has been developed for white hake in 4X5Y. The white hake reference points are

therefore based on the RV survey data. Biomass for MSY is estimated to be 25,433mt (B_{MSY} proxy). B_{MSY} proxy for the stock is estimated based on the productive period (1983 to 1992) and includes white hake that are 45+ cm. The LRP, based on B_{MSY} proxy is 10,173 mt or $0.4B_{MSY}$. The USR is $0.8B_{MSY}$ or 20,346 mt. If the biomass is estimated to be above the USR the stock is said to be in the *Healthy Zone*. If between the LRP and USR, the stock is said to be in the *Cautious Zone* and below the LRP in the *Critical Zone*. Depending on where the stock falls on this scale and what the trajectory is different harvest control rules will be applied. The following harvest control rules are proposed:

- When in the *Healthy Zone*, the TAC may be set at the catch corresponding to the target exploitation rate of 20% of the Index. A harvest rate in the range of 20% to 30% is acceptable in the *Healthy Zone*, with an objective to maintain the stock above the USR. Interannual changes in TAC are limited to 20% or 500 mt, whichever is greater.
- When in the *Cautious Zone*, the TAC should be set to mitigate declines and, when possible, promote positive change in the Index over a three-year period. The management response will vary depending on location of the stock within the *Cautious Zone*, whether the stock is increasing or decreasing, whether the trajectory (growth or decline) is expected to continue, and indications of incoming recruitment, for example. While a harvest rate in the range of 10% to 20% is acceptable, the secondary indicators listed above must be explicitly considered. Furthermore, the harvest rate should progressively decrease lower in the *Cautious Zone*. While TAC increases will be no more than 20% or 500 mt (whichever is greater) larger decreases may be considered if the stock is declining precipitously.
- When in the *Critical Zone*, the harvest strategy is to be results-driven rather than based on a predetermined harvest rate. Rebuilding to a level above the LRP should be achieved in a reasonable timeframe (1.5 to 2 generations) with a high degree of probability. The TAC should be set with a very low risk of biomass decline. In an effort to rebuild the stock above the LRP, catches will be kept at the lowest possible level, with the exploitation rate capped at 10% of the Index.

The stock is currently estimated to be between the LRP and USR in the *Cautious Zone*.

Skates in 4X5Y and 5Zjm

Several skate species occur in the Scotia-Fundy region. Five skate species likely encountered in fisheries include:

1. Smooth skate (*Malacoraja senta*)
2. Thorny skate (*Amblyraja radiata*)
3. Barndoor skate (*Dipturus laevis*)
4. Winter skate (*Leucoraja ocellata*)
5. Little skate (*Raja erinacea*)

Biomass estimates are calculated based on DFO RV surveys. A proxy for a Lower Reference Point is 40% of the long-term mean of the survey data. Based on the RV survey and proxy LRP, risk of serious or irreversible harm was estimated for the five skate species. Of the five species only thorny skates are found to be at risk (relative to the LRP). Barndoor skates in 4X5Y estimates are more than four times greater than the long term average and little skates in 4X5Y are estimated to be at the long-term mean. The other species are found to be below the long-term average, but above the LRP proxy (See Table 8).

Table 8: Evaluation of stock status of five main skates in Scotia-Fundy based on DFO RV survey.

Skate Species	2005-'09 average as % of long-term	2010-11 Relative to 2005-'09 average	At risk of serious or irreversible harm relative to LRP proxy at 40% of long-term mean
4X5Y Smooth	93%	up	no
5Z Smooth	70%	up	no
4X5Y Thorny	25%	down	yes
5Z Thorny	35%	up	yes
4X5Y Barndoor	453%		no
5Z Barndoor	65%	up	no
4X5Y Winter	75%	up	no
5Z Winter	61%	down	no
4X5Y Little	103%	up	no
5Z Little	85%	down	no

Source: SFGAC September 2012 Conservation Strategy and Management Measures for Skate 4X5Y and 5Zc.

Conservation strategies and management measures have recently been developed for skates in 4X5Y and 5Zc (Canadian portion of 5Z) (SFGAC, September 2012). These are:

- Utilize DFO's RV survey abundance indices of the designated species to monitor changing condition of the 5 main skate bycatch species relative to the LRP proxy of 40% of the long-term mean.
- For 5Zjm, to utilize annual observer reports, extrapolated to the full catch, to estimate bycatch percentage, and fishing mortality of the five skate species based on assumed survivability of live released skate at 50% for otter trawl and 80% for fixed gear.
- For 4X5Y, to utilize information derived from the 2010 observer-based bycatch study, extrapolated to the full catch, to estimate baseline bycatch percentage

and fishing mortality of the five skate species based on assumed survivability at 50% for otter trawl and 80% for fixed gear. Increase observer coverage rate as necessary to update this information/analysis through enhanced/targeted at-sea observer coverage conducted every 3-5 years.

- Inform fishermen of:
 - Best practices for live release of skate
 - How to identify skate species
 - The need to record quantities released by species
 - A move away protocol when encountering high bycatch of Thorny Skate
 - Thorny Skate in both 4X5Y and 5Zjm are below the respective LRP proxies, therefore live release of Thorny Skate caught in 4X5Y and 5jm will be required.

Several initiatives to protect skates have already been initiated and include education for fishers on skate handling and live release protocol, recommended move away protocol when thorny skate catch is high, reporting of live release bycatch and a colourful information sheet with photos to help identify skates to species.

Habitat

Habitat impacts from fishing are also considered in MSC fisheries assessments. NAFO sub-areas 4X5Y and 5Zjm have several important fishing banks. Area 4X5Y includes Browns Bank, a highly productive plateau with depths from <50 to 100m and varied substrate types from bedrock to gravel. Other fishing grounds in 4X5Y include the Roseway, Baccaro and LaHave Banks with limited availability for trawl effort due to boulders and gravel substrate. The Northeast Channel separates Browns Bank from Georges Bank in 5Zjm. The northern area of Georges Bank has more suitable habitat for haddock, with sediment ranging from sand to gravel. The Bay of Fundy is in the west and is characterized by high-energy tidal zones. Mapping of bottom trawl effort integrated with substrate features to determine fishing impacts of the fishery are ongoing and are being developed in Area 4X5Y. Gavaris and Black, 2004 provided rough estimates for Georges Bank using log records and at-sea observer reports. Foot gear was estimated to have impacted less than 10% of the substrate while bridles and warps were estimated to have impacted 30% of the area (DFO Map, Sept. 2011).

Areas with sensitive habitat types in Scotia-Fundy including coral and sponge gardens have been identified (Kenchington et al, 2011). High resolution maps using Multibeam sonar are used to develop accurate relief maps. Seismic profiling techniques have also been used to determine the sediment types to determine sub-surface sediment profiles of the Bay of Fundy and Scotian Shelf (Geological Survey of Canada (Atlantic))¹. Information on fishing location and frequency in which an area is impacted is available

¹ <http://gsc.nrcan.gc.ca/org/atlantic> for more information from Geological Survey of Canada or contact Gary Sonnichsen at (902) 426-4850

through fishing log books. Compiling this information to indicate impacts on sensitive habitat is in process.

Ecosystem

DFO is a leader in the development of the Ecosystem Based approach to Management and has been one of the first agencies to attempt to define and implement such an approach. The Maritimes Region has developed a framework by which the ecosystem approach is implemented. The DFO aims to take an integrated management approach to ocean uses that include stakeholder participation from all sectors of the Canadian community. The Maritimes Region's ecosystem is varied between three areas including the Eastern Scotian Shelf, the Western Scotian Shelf/Bay of Fundy and Grand Bank/Gulf of Maine. Anthropogenic uses of these areas have persisted with fishing being an important source of disturbance. Priority has been given to managing fisheries and bycatch levels although habitat disturbance work is ongoing. Work to define several important ecosystem attributes in addition to fishery specific ones is ongoing and includes identifying Ecologically or Biologically Sensitive Areas (EBSA), Ecologically or Biologically Sensitive Species (EBSS) and identifying depleted species and degraded areas.

Several strategies have been identified to achieve DFO's objectives as outlined in the "Ecosystem Approach to Management" for the Maritimes Region (DFO, 2011a):

Productivity

- *Keep fishing mortality moderate*
- *Promote positive biomass change when biomass is low*
- *Manage discards for all harvested species*
- *Allow sufficient escapement from exploitation of spawning biomass*
- *Limit disturbing activity in spawning areas/seasons*
- *Control alteration of nutrient concentrations by algae affecting primary production at the base of the food chain*

Biodiversity

- *Control incidental mortality for all non-harvested species*
- *Minimize unintended transmission of invasive species*
- *Distribute population component mortality in relation to component biomass*

Habitat

- *Manage area disturbed of bottom habitat*
- *Limit introduction of pollutants in habitat*
- *Minimize death from structures/equipment/lost gear*
- *Control noise and light disturbance.*

Principle 3 – Management and Regulation

The current overall management frameworks for all major Canadian fisheries are contained in Integrated Fisheries Management Plans (IFMP). These approved IFMPs are

now described as “evergreen” implying the overall basic framework is static but the IFMP is updated periodically with annual fishery management decisions on such elements as annual TACs, opening/closing dates or changes to other management measures. These annual decisions are published on the Department’s website. The current Maritimes Region’s Scotia-Fundy Sector Groundfish IFMP came into force in stages over 2011 and 2012. It contains Species Summaries for major groundfish species, including separate ones for 4X5Y and 5Zjm Haddock.

The IFMP 2012 Summaries for 4X5Y and 5Zjm Haddock indicate the following specific management measures in addition to quotas by gear type, IQs, limited entry licensing etc are applied to this fishery:

- Conservation Harvesting Plans are required to indicate target species and set out the measures that apply to non-target species. All non-groundfish species must be returned to the water, with the exception of those species whose retention is specifically permitted within licence conditions.
- All vessels are required to hail-out to the Department prior to departing on a fishing trip and are also required to hail-in from sea prior to returning to port.
- A majority of the commercial groundfish fleet is required to carry Vessel Monitoring Systems (VMS) on board when on a fishing trip. When fishing on Georges Bank, all vessels in the commercial groundfish fleet are required to carry a Vessel Monitoring System (VMS).
- The majority of 4X5Y haddock landings and all of the Eastern Georges Bank haddock landings are monitored at the dockside point of offloading by dockside monitors. These monitors verify the weight and the species of fish offloaded.
- At-sea observer coverage is employed.
- in 5Zjm, each season, 1.031% of the Haddock quota for Canada is allocated to the bycatch reserve to cover discarded haddock catch in the scallop fishery.
- In 5Zjm, the use of a separator panel when fishing with otter trawl is mandatory.
- Estimates of cod discards in the haddock fishery may be added to catches against the cod quota through a comparison of discards on observed and non-observed haddock fishing trips.

- In 4X5Y haddock, a regulated spawning closure on Browns Bank occurs yearly from March 1 to May 31. Through licence conditions, this spawning closure has been extended to include the period from February 1 to June 15.
- In 5Zjm haddock, a regulated spawning closure on Georges Bank occurs yearly from March 1 to May 31. Through licence conditions, this spawning closure has been extended backward to include a period beginning in early February. A protocol incorporating spawning condition from previous years with the goal of closing when 30% of the haddock are in spawning condition is used to select the exact; in 2012, the fishery closed on February 6th.

Section 4.2 of each IFMP Summary outlines the Strategies and Tactics being used in each fishery to achieve the objectives outlined for it. That Section outlines the strategies and tactics, incorporating the reference points, which are applied to achieve the objectives for each haddock stock. The harvest control rules outlined under the Productivity Strategies indicate the measures that will be taken in different stock circumstances (references and risk tolerances) to keep fishing mortality of the 4X5Y and 5Zjm haddock stocks moderate. For 5Zjm, the TMGC advised Harvest Strategy is: *“...to maintain a low to neutral risk of exceeding the fishing mortality limit reference, (Fref=0.26). When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.”*

The management system provides for extensive consultations with all industry stakeholders. The primary mechanism for consulting with all groundfish sector stakeholders in the Maritimes Region is the Scotia-Fundy Groundfish Advisory Committee (SFGAC), which is chaired by a representative of the Department of Fisheries and Oceans. Membership on the SFGAC includes representatives of all harvesting associations and First Nations communities representing groundfish license holders in each licensed fleet. Representatives from the processing sector and provincial governments also attend. Subject to the agreement of committee members meetings of SFGAC are usually open to the public and the media. Industry stakeholders have first opportunity to present their views on issues after which other interested parties can comment or make a presentation. The SFGAC is required to meet a least twice yearly to provide input on all elements of the Regional groundfish IFMP including advice on: TAC's, quota allocations and other regulatory measures (such as seasons, size limits and gear restrictions), conservation and compliance; ecosystem issues and licensing policy.

The first annual SFGAC meeting is usually preceded by the Science Regional Assessment Process (RAP) sessions to discuss and develop stock assessment advice. Also, local area

advisory committee/management board meetings also deal with specific local management issues and proposals before SFGAC meetings. Minutes or proceedings of all SFGAC meetings are prepared and circulated to members.

While SFGAC covers all Regional groundfish management issues some special arrangements exist for species in the Gulf of Maine that are jointly managed by Canada and the US. The Gulf of Maine Advisory Committee (GOMAC) is a forum for industry and provincial governments to jointly develop and provide advice to DFO on operational, technical and scientific analysis necessary to support formal discussions with the US on Gulf of Maine fisheries issues. GOMAC is jointly by the Regional Director-General (RDG), Maritimes Region of DFO and a senior industry official.

There are several bi-lateral cooperative arrangements in place to ensure sustainable management of the shared fish resources in the Gulf of Maine. The Canada/US Transboundary Steering Committee or 'Steering Committee' purpose ensures bi-annual discussion between Canada and the United States on transboundary integrated ecosystem management issues associated with the Gulf of Maine and Georges Bank marine environment. It strives to develop complementary and integrated approaches that can be implemented domestically, as required by both countries. The Steering Committee is co-chaired by the RDG, Maritimes Region, DFO and the Northeast Regional Administrator, National Marine Fisheries Service (NMFS).

The Transboundary Management Guidance Committee (TMGC), established in 2000, is a government – industry committee comprised of representatives from Canada and the United States. The Committee's purpose is to develop guidance in the form of harvest strategies, resource sharing and management processes for Canadian and US management authorities for the cod, haddock and yellowtail flounder transboundary resources on Georges Bank. The TMGC process led to the 2003 resource sharing agreement for cod, haddock and yellowtail flounder on Georges Bank.

The Transboundary Resources Assessment Committee (TRAC) is the scientific arm of the TMGC which conducts the peer review of the transboundary resources considered by the TMGC. TRAC reviews stock assessments and projections necessary to support management activities for shared resources across the USA- Canada boundary in the Gulf of Maine-Georges Bank region. These assessments advise decision makers on the status of these resources and likely consequences of policy choices. TRAC is co-chaired by representatives from NMFS and DFO.

The two countries agree on the management measures for Gulf of Maine species and then each controls their own harvesting through domestic fish management plans. In the Canadian case, these are contained in the relevant Species Summaries of the Maritimes Region's Scotia Fundy Sector Groundfish 2012 IFMP.

Canada has a comprehensive system for monitoring, control and surveillance (MCS) of the 4X5Y and 5Zjm haddock fisheries. Access and effort is regulated through fishing area licences, seasons, area and individual quotas. The fishery is monitored by at-sea-observer coverage paid for by licence holders. At-sea observers monitor for compliance with management measures on bycatches and discarding of catches, gear restrictions, area and closed time provisions and ETP species occurrences. Observers also collect scientific information including size and by-catch composition. Dockside monitoring is required for 100% of landings as is submission of accurate fishing and production logbooks and fish purchase slips.

In the case of the Gulf of Maine, this Canadian MCS system is complemented by the 1990 Canada-USA Fisheries Enforcement Agreement which supports efforts to prosecute unauthorized fishing on both sides of the boundary.

All these arrangements have not changed in substance since the last audit but the complete details of the management, measures, objectives, strategies and tactics and review provisions are now officially confirmed in the 2012 version of the IFMP summaries for both fisheries.

Information Presented for the 2nd Annual Audit

DFO. 2012. Assessment of the Status of 4X5Y Haddock in 2011. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2012/023.

DFO. 2012. Terms of Reference for the Fisheries and Oceans Canada, Maritimes Region and Marine Environmental Non-governmental Organizations Dialogue Forum

GOMAC. Gulf of Maine Advisory Committee Meeting Minutes. From 27 October 2011. Including the approval for the decision making framework for 5Zjm haddock.

GOMAC. Gulf of Maine Advisory Committee Meeting Minutes. From 10 May 2012. Including in Appendix 5 the Discussion Document for NAFO 5Zjm Haddock Objectives

GOMAC. Gulf of Maine Advisory Committee Meeting Minutes. From 18 October 2012. Including adoption of 5Zjm haddock objectives.

Docherty V. Announcement of Maritimes Region Groundfish TACs for 2012/13. Email. Sent 30 March, 2012.

DFO. 2012. Updated IFMP for 4X5Y Haddock. An appendix to the Scotia-Fundy Sector Maritimes Region Groundfish IFMP.

DFO. 2012. 5Zjm Haddock IFMP (summary). An appendix to the Scotia-Fundy Sector Maritimes Region Groundfish IFMP.

DFO. July 2012. Skate Bycatch Recommended Live-Release protocol and NOAA Skate Species Identification Guide.

Scattolon FG. 23 October 2012. Letter Re: MSC Scotia-Fundy Haddock 2nd Annual Audit from the Regional Director-General Maritimes Region.

SFGAC. September 2012. Scotia-Fundy Groundfish Advisory Committee. Conservation Strategy and Management Measures for Skate 4X5Y and 5Zc.

SFGAC. 2012. Discussion Document 4X5 White Hake Strategies and Tactics.

SFGAC. Scotia-Fundy Groundfish Advisory Committee Meeting Minutes. 12 January 2012.

SFGAC. Scotia-Fundy Groundfish Advisory Committee Meeting Minutes. 4 April 2012.

SFGAC. Scotia-Fundy Groundfish Advisory Committee Meeting Minutes. 7 June 2012.

SFGAC. Scotia-Fundy Groundfish Advisory Committee Meeting Minutes. 26 September 2012.

TRAC. 2012. Eastern Georges Bank Haddock. TRAC Status Report. 2012/03.

Progress toward Closing Conditions
Current Status of Previously Raised Conditions

Condition 1: All Gear Types 4X5Y: There are well defined and effective harvest control rules in place	
PI	1.2.2
Rationale from the 2010 Assessment	The assessment team concluded that although it seems clear from management and assessment documents that <i>F</i> has been maintained at or below $F_{0.1}$, specific rules for adjusting <i>F</i> in response to changes in stock status are not well defined. Furthermore, there is a lack of well-defined harvest control rules for years in which quantitative stock assessments are not done (e.g., 2006-2008). While evidence exists

	that quotas can be reduced in response to changes in survey indices, it is not certain that these adjustments will be consistent and transparent when such situations arise in the future.
Condition	The client is required to ensure that well defined and effective harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.
Client Action Plan	<p>This will be achieved by the following:</p> <ul style="list-style-type: none"> • GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO), and other industry organizations through the Scotia-Fundy Groundfish Advisory Committee (SFGAC) to translate implicit reference points and/or harvest control rules into explicit ones, while enabling scope for the exercise of judgment relative to circumstance. DFO's Precautionary Approach (PA) Framework will be utilized for this purpose, providing a limit and upper stock reference, and a fishing mortality strategy will be linked to quantitative assessment outputs and/or research vessel biomass indices, and be designed to promote an agreed direction and trajectory of the spawning stock biomass, taking into account stock status, risk factors, projected outcomes and socio-economic objectives. This process may or may not include simulation of results, and if not would include references that the chosen approach has worked elsewhere with stocks of similar attributes, e.g. life history. • By the second annual audit there will be documented evidence that the options for well-defined reference points and harvest control rules have been outlined and discussed with stakeholders. • By the third annual audit there will be documented evidence that the reference points and harvest control rules have been adopted. • By the fourth annual audit there will be documented evidence that the adopted harvest control rules have been implemented i.e. forms the basis of TAC-setting and other relevant management advice.
Progress toward closing condition	The 4X5Y Atlantic Haddock Integrated Fishery Management Plan (Summary) for the Scotia-Fundy Sector Maritimes Region 2012 includes a section that outlines objectives, strategies and tactics. The specific management strategies and tactics (Harvest Control Rules) for the haddock fishery in 4X5Y are reproduced in Appendix 1. This condition is now closed. This PI is rescored to 80. As the strategies and tactics are used in managing the fishery and shown to be effective a higher than 80 score will be warranted at that time.
Condition Status	Re-scored to 80. Condition closed.

Condition 2: All Gear Types 5Zjm: There are well defined and effective harvest control rules in place	
PI	1.2.2
Rationale from 2010 Assessment	The assessment team concluded that, as shown by interviews during the site visit, the harvest control rules used for 5Zjm haddock in the past have been generally understood by science, management, and stakeholders involved in the assessment process. Despite this general understanding, the specific harvest control rule is not "well defined". The realized relationship between SSB and <i>F</i> between 1998 and 2006 demonstrates that the harvest control rule is responsive to changes in stock status; however, observed changes in fishing mortality were generated during a period in which stock size was increasing away from the LRP. Therefore, one cannot judge whether the harvest control rule ensures that exploitation will be reduced when biomass declines in the future toward the LRP. The harvest control rule has not been designed and tested to take known uncertainties explicitly into account.
Condition	The client is required to ensure formal definition of a set of well-defined pre-agreed rules or actions used for determining a management action in response to changes in indicators of stock status with respect to reference points for the 5Zjm haddock fishery.
Client Action Plan	<p>This will be achieved by the following:</p> <ul style="list-style-type: none"> • Reflecting the fact that this is a trans-boundary stock for which TAC-setting is a cooperative process between Canada and the USA, who have differing legislative frameworks and processes, the action plan is applicable to mechanisms that function within the jurisdiction of Canada, principally the Gulf of Maine Advisory Committee (GOMAC), which is a DFO/industry consultative body that provides recommendations to the Minister of Fisheries & Oceans Canada. Once established, positions advanced by Canadian representatives at various international consultative mechanisms are to be consistent with explicit approaches adopted by GOMAC, subject only to legislated Ministerial discretion. Such approaches and positions may or may not be available to the public, but shall be available for audit by the certifying body in any event. • GEAC will collaborate with other stakeholders on the GOMAC to translate implicit reference points and/or harvest control rules into explicit ones, while enabling scope for the exercise of judgment relative to circumstance. DFO's Precautionary Approach (PA) Framework may be utilized, or, the harvest strategy adopted will be consistent with this PA framework. The fishing mortality strategy will be linked to quantitative assessment outputs and/or research vessel biomass indices, and be designed to promote an agreed direction and trajectory of the spawning stock biomass, taking into account stock status, risk factors, projected outcomes and socio-economic objectives. This process may or may not include simulation of results, and if not would include references that the chosen approach has worked elsewhere with stocks of similar attributes, e.g. life history. • By the second annual audit there will be documented evidence that options for well-defined limit reference points and harvest control rules have been outlined and discussed with stakeholders through the Gulf of

	<p>Maine Advisory Committee (GOMAC).</p> <ul style="list-style-type: none"> • By the third annual audit there will be documented evidence that GOMAC has established reference points and harvest control rules to guide Canadian representatives in their future discussions on TAC-setting with their counterparts in the USA. • By the fourth annual audit there is documented evidence that Canadian representatives have advanced positions that are consistent with the harvest control rules that have been adopted by GOMAC.
Progress Toward Closing Condition	<p>The 5Zjm Atlantic Haddock Integrated Fishery Management Plan (Summary) for the Scotia-Fundy Sector Maritimes Region 2012 includes a section that outlines objectives, strategies and tactics. The specific management strategies and tactics (Harvest Control Rules) for the haddock fishery in 5Zjm are reproduced in Appendix 2. This condition is now closed. This PI is rescored to 80. As the strategies and tactics are used in managing the fishery and shown to be effective a higher score than 80 will be warranted at that time.</p>
Status of Condition	<p>Re-scored to 80. Condition closed.</p>

<p>Condition 3. Areas 4X5Y (OTB & LL) Main retained species are <i>highly likely</i> to be within biologically-based limits, or if outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding</p>	
PI	2.1.1
Rationale from the 2010 Assessment	<p>The assessment team concluded that:</p> <p>Cod 4X5Y: Cod. The annual average retained catch of cod by otter trawlers targeting haddock in 4X for the period 2002 to 2008 was 2,002 mt. The annual average retained catch of cod by bottom long liners targeting haddock in 4X5Y for the period 2002 to 2008 was 1,731 mt. 4X biomass indices from surveys have remained low since 2000 when a rebuilding strategy was initiated. SSB at the beginning of 2008 was 9,000 mt; the lowest level in a time-series that started in 1948. Recruitment for the 2006 and 2007 year classes was below average, but about twice the abundance of the very low 2003 and 2004 year classes. While research vessel survey results increased by about 360% between 2008 and 2009, in historic terms biomass remains low and conclusions cannot depend on the results of one year. Total landings remained near 3,900 mt (i.e. < 5,000 mt TAC) from 2005 to 2008. The TAC for 2009 was reduced to 3,000 mt, and preliminary data indicates that the catch (directed cod fishery plus by-catch in other fisheries) totaled about 2,591 mt. The first scoring issue for SG60 is met, however whilst there a partial strategy in place that might be expected to ensure that the fishery does not hinder recovery and rebuilding of cod, it cannot yet be shown to be demonstrably effective and therefore the scoring issue for SG80 is not met.</p> <p>White hake 4X5Y. The annual average retained catch of white hake by bottom long liners targeting haddock in 4X5Y for the period 2002 to 2008 was 521 mt. In 4X5Y, there has been a general decrease in the abundance of white hake since the early 1990s. Fishing mortality is relatively low in all areas since the introduction of catch limits in 1996. Total mortality on the Scotian Shelf is high</p>

	<p>and its causes are unknown. Total mortality of white hake in the Bay of Fundy is variable without trend. The SAR 2010 (as reported by GEAC in January, 2010) observes that white hake in 4VWX were distributed throughout the survey area, with the largest catches in the Gulf of Maine (4Xpq), the Bay of Fundy, and in 4Vn. Biomass indices have risen for the last two years in all regions. In 4X East, abundance indices were above average for most lengths below 58cm in 2009, but below average for larger fish. This is similar to what was seen in 2008. White hake abundance indices in 4X West were near average for most lengths in both 2008 and 2009. The second scoring issue for SG60 is met, however whilst there a partial strategy in place that might be expected to ensure that the fishery does not hinder recovery and rebuilding of white hake, it cannot yet be shown to be demonstrably effective and therefore the scoring issue for SG80 is not met.</p>
<p>Condition</p>	<p>The client is required to ensure that the main retained species are highly likely to be within biologically-based limits, or if outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fisheries do not hinder recovery and rebuilding. The outcome above should be achieved within 4 years of certification</p>
<p>Client Action Plan</p>	<p>This will be achieved by the following:</p> <ul style="list-style-type: none"> • GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO), and other industry organizations through the Scotia-Fundy Groundfish Advisory Committee (SFGAC) to articulate a “recovery plan” for each of cod and white hake in 4X5Y. This may include the translation of implicit reference points and/or harvest control rules into explicit ones, while enabling scope for the exercise of judgment relative to circumstance. DFO’s Precautionary Approach (PA) Framework may be utilized, or, the harvest strategy adopted will be consistent with this PA framework. The fishing mortality strategy will be linked to quantitative assessment outputs and/or research vessel biomass indices as the case may be, and be designed to promote an agreed direction and/or trajectory of the spawning stock biomass, taking into account stock status, projected outcomes and socio-economic objectives. This process may or may not include simulation of results, and if not would include references that the chosen approach has worked elsewhere with stocks of similar attributes, e.g. life history. <ul style="list-style-type: none"> • By the second annual audit there is documented evidence that recovery milestones and management options for cod and white hake in 4X5Y have been outlined and discussed at the SFGAC. • By the third annual audit there is documented evidence that the agreed catch and/or by-catch targets for cod by the OT and LL gear and white hake by LL gear have been defined by DFO. • By the fourth annual audit there is documented evidence that recovery plans for cod and white hake in 4X5Y, and for the control or reduction in fishing mortality are being implemented as planned.
<p>Progress Toward Closing Condition</p>	<p>Outlined in the IFMP are tactics to mitigate the effects of the fishery on bycatch including white hake and cod. White hake and cod must be retained and their take is accounted for by being deducted from the available bycatch limit (or TAC in the case of cod) for each species. There are also bycatch limits for each fleet sector. An Upper Limit Reference Point for cod in 4X5Y and 5Zjm was recently</p>

	<p>proposed (DFO 2012a) and an LRP provided for information purposes only at the February 2012 Regional Science Advisory meeting (DFO 2012a). Recent RV survey trends show an increase in survey indices in recent years (DFO 2012). Management options for 4X5Y cod remain implemented through a precautionary TAC (1,650t) which is calculated to promote recovery (Clark et al, 2011).</p> <p>An implicit recovery milestone for white hake is to maintain the stock within the long-term mean of the RV survey index. Management options include bycatch caps by fleet sector. How the harvest control rules are applied depends on whether the stock is in the <i>Healthy Zone</i>, <i>Cautious Zone</i> or <i>Critical Zone</i>. Explicit recovery milestones for white hake are still in development but have been tabled and discussed with the SFGAC. The B_{MSY} proxy includes white hake 45+cm from the RV survey and is based on the productive period 1983 to 1992. B_{MSY} is estimated to be 25,433 mt. Based on the precautionary approach, the LRP and USR are 0.4 and $0.8B_{MSY}$ respectively or LRP = 10,173 mt and USR = 20,346 mt (SFGAC 2012 White Hake 4X5 discussion document).</p> <p>The assessment team finds this evidence to be satisfactory and concludes that this condition is on track to be closed out by the 4th surveillance audit.</p>
Status of Condition	Open and on target.

<p>Condition 4. Area 4X5Y (OTB & LL) & 5Zjm (LL). Main by-catch species are highly likely to be within biologically based limits or if outside such limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.</p>	
PI	2.2.1
Rationale from the 2010 Assessment	<p>The assessment team concluded that:</p> <ul style="list-style-type: none"> • The annual average discarded catch of skate by otter trawlers targeting haddock in 4X5Y in 2002 - 2008 was 197 mt (114 mt in 2008) - 1.1 % of the haddock catch. The annual average discarded catch of skate by bottom long liners targeting haddock in 4X5Y in 2002 - 2008 was 274 mt (224 mt in 2008) - 4.4 % of the haddock catch. The annual average discarded catch of skate by bottom long liners targeting haddock in 5Zjm in 2002 - 2008 was 114 mt (118 mt in 2008), or 4.0 % (over the period) of the haddock catch. • Abundance of thorny skate (<i>Amblyraja radiata</i>), the most common of the Scotian Shelf skates, has stabilised after decreases from the highs of the 1980s. Barndoor skate is considered by IUCN to be 'threatened'. There was a decline in the survey indices in the mid-1960s to early 1970s, likely caused by the high fishing effort of the distant water fleet on Georges Bank, followed by a period of low to zero catches. In 1985, consistent catches of barndoor skate started and

	observed increases in survey indices have continued. A COSEWIC assessment for the species in 2005 concluded that populations within the combined 4X and 5Ze areas were of “special concern”, although stable.
Condition	The client is required to ensure that the by-catch of skates are highly likely to be within biologically based limits or if outside such limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding. The outcome above should be achieved within 4 years of certification
Client Action Plan	This will be achieved by the following: <ul style="list-style-type: none"> • GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO), and other industry organizations through the Scotia-Fundy Groundfish Advisory Committee (SFGAC) towards the development and adoption of a suite of management measures specific to skate in 4X5Y and 5Ze, designed to avoid hindering the recovery and rebuilding of skate populations. • By the first annual audit, specific abundance indices for skate by species and area will be adopted for monitoring by DFO, the results of which shall be considered by the SFGAC annually. • By the second annual audit, a plan to identify discards by species and area will be tabled at the SFGAC and adopted. • By the second annual audit: (a) a best practices handling and live release protocol will be adopted, (b) a move-away protocol will be adopted, and (c) management measures to control or to reduce bycatch of skates in the directed haddock fishery (>50% haddock in a trip) will be adopted to achieve or continue improvement in the abundance indices for skate. • By the third annual audit there will be documented evidence that the adopted management measures are being implemented. • By the fourth annual audit a review of the effectiveness of the respective management measures will be completed, including an evaluation of the likely impact of the various sources of recent fishing mortality on the stock condition of skate.
Progress Toward Closing Condition 4	In the September 2012 Conservation Strategy and Management Measures for skate in 4X5Y and 5Zc several management measures are outlined, an assessment of the current status relative to an LRP proxy (0.4 of the long-term RV survey index), and identification guide is provided to fishers (see skate section above). This meets the requirements for the 2 nd surveillance audit.
Status of Condition 4	Open and on target.

Condition 5. Area 4X5Y (OTB & LL). Qualitative information and some quantitative information are available on the amount of main by-catch species affected by the fishery.	
PI	2.2.3
Rationale from the 2010 Assessment	The assessment team found there is no direct recording of the quantity of discards in logbooks. The only source of information is through independent observer coverage. While observer coverage is high on the OTB fishery (26%) and BLL (8.9%) in 5Zjm, it is lower in 4X5Y (2.1% and 0.4% for OTB and BLL respectively) and this leads to uncertainty about the level of discards. Accordingly the 4X5Y otter trawl and 4X5Y bottom long line do not meet the fourth issue of SG80 and achieve a score of 75 for this PI.
Condition 5	The client is required to ensure that sufficient data continue to be collected to detect any increase in risk to main by-catch species.
Client Action Plan for Condition 5	This will be achieved by the following: <ul style="list-style-type: none"> • By the first annual audit, DFO and GEAC will (a) evaluate the risk to main bycatch/discard species associated with haddock fished in 4X5Y, (b) identify options to improve the information base and estimates of discards, and (c) table these products for consideration by the SFGAC. • By the second annual audit, mechanisms to improve data collection and estimations of discards by the OTB and LL in 4X5Y fisheries will be adopted. • By the fourth annual audit there will be documented evidence that the adopted data collection and discard estimation mechanisms have been implemented.
Progress Toward Closing Condition 5	Observer coverage increased in area 4X5Y by 700 additional sea-days and is 25% in area 5Zjm in 2011 and 2012. Identification guides to assist fishers in indicating skate species and mandatory release of thorny skate were adopted and are anticipated to be implemented in the 2013 fishing year. Studies are also currently being conducted on post-release survival rates for bycatch which will improve impact assessments for bycatch species. Sufficient progress toward closing this condition has been made in the second surveillance audit.
Status of Condition 5	Open and on target.

Condition 6. Area 4X5Y (OTB). The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm; and there is some evidence that the partial strategy is being implemented successfully.	
PI	2.4.1, 2.4.2
Rationale from the 2010 Assessment	2.4.1: The assessment team concluded that mobile bottom-contact fishing gears do have impacts on benthic populations, communities, and habitats. The effects are not uniform, but depend on at least (i) the specific features of the seafloor habitats, including the natural disturbance regime, (ii) the species present, (iii) 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; and (iv) the history of human activities, especially past fishing, in the area of concern. The area trawled by Canadian groundfish bottom trawl fishery on Georges Bank was estimated using fishing log records and information captured by observers at sea

	<p>In 2001 and 2002, a rough estimate was the footgear disturbed less than 10% of the bottom while the bridles and warp swept less than 30%. The doors impacted less than 1% of the bottom. This information was based upon logbook data but has the potential for being updated and expanded to Area 4X using VMS data. Similar figures for Area 4X5Y have not been prepared, although the raw data (via VMS, logbook and observer sources) are available. The UoC meets the single issue of SG60 as there is evidence that the fishery is unlikely to reduce habitat structure and function as these areas have been fished for many years without serious or irreversible harm. Accordingly a score of 60 is allocated.</p> <p>2.4.2: A policy and process exists for ‘managing the impacts of fishing on sensitive benthic areas’, but it has yet to be implemented. Two pilot projects have been initiated to test this approach – one on Georges Bank and the second in coastal areas of 4X and the results will be used to fine-tune the approach for the wider roll-out of the strategy. Protected areas have been developed to protect the Gully (a 2,364 square kilometre area protecting the large canyon feature and associated habitats of the Gully, near Sable Island) as well as coral (the Northeast Channel Coral Conservation Area: a 424 km² area protecting deep water coral concentrations adjacent to Georges Bank). In the case of both the 4X5Y and 5Zjm otter trawl fisheries, these UoCs meets the first issue of SG80 as there is a partial strategy in place. However, this is a work in progress and accordingly it is considered that the UoC only meets the second issue of SG60. Accordingly a score of 70 is allocated.</p>
<p>Condition</p>	<p>The client is required to provide evidence to show that the otter trawl fishery in 4X5Y is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.</p> <p>The client is also required to demonstrate an active participation in rolling out DFO’s ‘Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas’, e.g. participating where required in the risk analysis process, the determination of management measures and their subsequent implementation.</p>
<p>Client Action Plan</p>	<p>This will be achieved by the following:</p> <ul style="list-style-type: none"> • GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO), and other industry organizations through the Scotia-Fundy Groundfish Advisory Committee (SFGAC) towards development of a program (a) to enhance the collection of information, and (b) to conduct an evaluation of the impact of otter trawl fishing for haddock in 4X5Y, at a minimum to the extent completed for 5Zjm. A project team will be assembled this purpose, which more generally will also ensure implementation of DFO’s Policy with respect to Sensitive Benthic Areas as it applies to the conduct of haddock fishing. • By the first annual audit there will documented evidence that a plan for the assembly of available information and a program for evaluation has been developed by the “project team”, and data collection and assembly for this purpose has commenced. • By the third annual audit there will documented evidence showing the information that has been assembled and the results of analysis to date. • By the fourth annual audit there will be documented evidence that at least a provisional evaluation has been completed, and mitigation measures have been identified and are being implemented as appropriate for this fishing activity.

Progress Toward Closing Condition 6	The fishery will be utilizing methodology developed by GEAC and a sub-contracted party to evaluate impacts of the haddock bottom otter trawl fishery on sensitive habitat types. The methodology maps fishing frequency and location relative to known sensitive habitat types. Fishing location is taken from trawl log book lat/long data. By the third surveillance audit the fishery is expected to have assembled these data and have available a preliminary analysis.
Status of Condition 6	Open and on target.

Condition 7. Area 4X5Y (All Gear Types); Area 5Zjm (All gear types). Short and long term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	
PI	3.2.1
Rationale from the 2010 Assessment	The assessment team concluded that while the Groundfish Management Plan (2002 – 2007) was based on three objectives, this plan has not been up dated since 2007. It does not provide defined and measurable short and long term objectives. It is largely descriptive of the situation and how various issues may be addressed, without presenting specific measures designed to meet the objectives. There is not a statement of the policy and related objectives in relation to the individual fleet segments and gear types. Currently, short and long term objectives consistent with achieving the outcomes expressed by MSC's Principles 1 and 2 are not explicit within the fishery's management system (SG80). However the UoC meets the single issue of SG60 with objectives implicit within the fishery management system (as contained in policy documents including the FMP 2001-2007
Condition 7	The client is required to ensure that clear long term objectives consistent with MSC Principles and Criteria and the precautionary approach are explicit within the fishery management system for Canada Scotia Fundy haddock fishery.
Client Action Plan for Condition 7	This will be achieved by the following: <ul style="list-style-type: none"> • GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO), and other industry organizations through the Scotia-Fundy Groundfish Advisory Committee (SFGAC) and through the Gulf of Maine Advisory Committee (GOMAC) towards the updating and/or development and adoption of clear long-term objectives that are explicitly applicable to haddock fishing in 4X5Y and 5Zjm. • By the first annual audit there will be documented evidence that drafts of long-term objectives explicitly applicable to haddock fishing have been tabled for discussion at SFGAC and GOMAC. • By the second annual audit, there will be documented evidence that long-term objectives explicitly applicable to haddock fishing have been adopted by DFO. • By the fourth annual audit, there will be documented evidence that measures consistent with the adopted long-term objectives are being implemented.
Progress Toward	At the second surveillance audit, the audit team was given two relevant documents for 4X5Y and 5Zjm haddock:: an official copy of the 4X5Y Haddock

<p>Closing Condition 7</p>	<p>Integrated Fishery Management Plan Summary (IFMP) and the 5Zjm Haddock Integrated Fishery Management Plan Summary (IFMP). These documents confirm that long-term objectives explicitly applicable to haddock fishing are now officially in effect for both fisheries.</p> <p>The Maritimes Region has taken the approach of developing generic objectives for groundfish management which are long-term in nature and equally applicable to each managed groundfish stock. The application to each such fishery will be accomplished by the use of selected strategies and tactics the scope of which will vary according to the circumstances of individual fisheries. Both of these are now officially contained in the 2012 4X5Y and 5Zjm Haddock IFMP Summaries. The generic groundfish objectives are in Section 4.1 and the applicable strategies and tactics are shown in Table 1 of Section 4.2. The first item under Productivity Strategies constitutes Harvest Control Rules.</p> <p>the Strategies and Tactics incorporate the accepted PA reference points for 4X5Y haddock, which add context to the application of the various Strategies and Tactics outlined in Table 1 to achieve the Generic Groundfish Objectives for the fishery on this haddock stock. The 2012 Summary IFMP for 5Zjm contains almost identical detail on Objectives, strategies and Tactics for that fishery</p>
<p>Status of Condition 7</p>	<p>This Condition is Open and on Target for both fisheries to the Second Audit. To the extent that Harvest Control Rules are now specified for various stock circumstances (zones), this condition appears to be ahead of schedule for the fourth year audit requirements.</p>

<p>Condition 8. Area 4X5Y (All Gear Types); Area 5Zjm (All gear types). The fishery has in place mechanisms to evaluate key parts of the management system and is subject to regular internal and occasional external review.</p>	
<p>PI</p>	<p>3.2.5</p>
<p>Rationale in the 2010 Assessment</p>	<p>The assessment team concluded that a review of the 2002 – 2007 IFMP as required by Section 7 of that plan was only carried out after the first year. While CHPs are informally reviewed on an annual basis, to a large part they remain unchanged. There are examples of evaluation of management policies with the Audit and Evaluation Directorate of the DFO e.g. the 2007 review of the Aboriginal Fisheries Strategy. In 2002 there was an external audit of the DMP. This was up-dated in 2005 and 2006. The new audit check list once implemented would provide the mechanism to evaluate all parts of the management system. Accordingly, each UoC meets the single issue of SG60 as mechanisms are in place to evaluate some parts of the management system and the fishery is subject to occasional internal review. As there is regular internal review of one part of the management system (CHPs) and there has been occasional external review, each UoC meets part of the single issue of SG80. Accordingly, a score of 70 is allotted for this PI.</p>
<p>Condition 8</p>	<p>The client is required to ensure that the fishery has in place mechanisms to evaluate key parts of the management system and is subject to regular and occasional external review.</p>

<p>Client Action Plan for Condition 8</p>	<p>To achieve this outcome:</p> <ul style="list-style-type: none"> • GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO) towards the development of an updated Integrated Fisheries Management Plan, applying the model developed for use for all major Canadian commercial fisheries. This plan will include biennial internal and occasional external reviews of haddock fishing in 4X5Y and 5Zjm. By the first annual audit, this plan will be adopted by DFO. • By the third annual audit, the results of a DFO internal review will be available to the audit team. • By the fourth annual audit, as a supplement to the on-going external reviews through TRAC and TMGC, the results of the internal review of the management system for haddock fishing in 5Zjm have been tabled for discussion by GOMAC, with documented evidence of resulting actions taken (if required). • By the fourth annual audit, the results of the internal review of the management system for haddock fishing in 4X5Y have been tabled for discussion by SFGAC, the principal advisory committee that is open to the public, with documented evidence of resulting actions taken (if any).
<p>Progress Toward Closing Condition 8</p>	<p>The 2012 4X5Y and 5Zjm Haddock IFMP Summaries were reviewed by the Audit Team on November 13, 2012 with the client and the management authority. It was concluded that the following paragraph from Section 6 of both 2012 IFMP Summaries means the current action plan cannot be achieved in the lifetime of the current Certificate:</p> <p>“ Through consultations with the Scotia-Fundy Groundfish Advisory Committee, as well as fleet sector advisory committees, on Conservation Harvesting Plans for the fishery, it will be evaluated whether the catch monitoring tools (e.g. dockside and at-sea monitoring) are sufficient to provide information to achieve our objectives and whether the tools are being used satisfactorily. While individual tactics to achieve stated objectives may be evaluated on a case-by-case basis as the need arises, a scheduled evaluation will occur every four years with the next evaluation due in the 2016/17 planning year. Such an evaluation will be documented in the meeting minutes for the Scotia-Fundy Groundfish Advisory Committee and reflected in any updates to this IFMP.”</p> <p>The management authority has decided that full evaluation of the IFMPs will take place on a four-year cycle with the next such IFMP evaluation set for 2016/17, which is beyond the term of the certificate issued to GEAC. Accordingly, it was agreed that the client (GEAC) would prepare a revised Action Plan to take account of this new planning reality created by the management authority. This revised Action Plan has been submitted and is as follows:</p> <p>“GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO) towards the development of an updated Integrated Fisheries Management Plan, applying the model developed for use for all major Canadian commercial fisheries. This plan will include a DFO internal review of the IFMP Summary for the haddock fishery in 4X5Y and 5Zjm</p>

	<p>every four (4) years commencing in 2016, and occasional external reviews. By the first annual audit, this plan will be adopted by DFO. By the third annual audit, GEAC in collaboration with DFO will conduct a review of the IFMP Summary, the results of which will be available to the audit team.</p> <p>By the fourth annual audit, as a supplement to the on-going external reviews through TRAC and TMGC, the results of GEAC’s review of the management system for haddock fishing in 5Zjm will be tabled for discussion by GOMAC, with documented evidence of resulting actions taken (if required).</p> <p>By the fourth annual audit, the results of the GEAC’s review of the management system for haddock fishing in 4X5Y will be tabled for discussion by SFGAC, the principal advisory committee that is open to the public, with documented evidence of resulting actions taken (if any).”</p> <p>With this revision, the Client Action Plan meets the requirements of the original wording of the Condition but in an altered time frame necessitated by the planning horizon imperatives of the management authority.</p>
Status of Condition 8	This Condition can now be deemed on target as of the second annual audit.

Recommendation from the 2010 Assessment	<p>Given the importance of the CHPs to the management of the groundfish fishery, and in the interests of greater transparency, it is recommended that the preparation of CHPs includes review by a wide range of stakeholders in addition to fishermen and their representative groups (PI 3.2.2).</p>
Status	<p>DFO considers CHPs to be the annual fishing plans developed by industry that outline how they intend to fish their specific allocation of quota and are therefore not subject to non-industry input. However, IFMPs, which lay out the management strategies for the fishery, can be available for input by non-fishing industry groups.</p> <p>In the 2012 audit the team was provided the terms of reference for DFO Maritimes Region and environmental non-governmental organizations (eNGO) dialogue forum. The forum meets three times/year and “is the primary body for discussion between DFO and eNGOs on overarching policy issues of relevance to all organizations involved in the forum, regarding the sustainable development and conservations of Canada’s marine resources.” This is a commendable step in increasing transparency and providing a forum for all interested parties and stakeholders to participate in the fishery management process.</p>

Recommendation for Continued Certification

SCS recommends the continued certification of the Scotia-Fundy Haddock Fishery as a source of sustainable seafood under the principles and criteria of the Marine Stewardship Council through to the 2013 audit cycle.

Use of the MSC blue eco-label

GEAC is not currently using the blue eco-label. The client representative was informed during the opening meeting that if GEAC were to use the label in the future, that a valid signed logo-licensing agreement would need to be in place.

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Appendix 1: Strategies and Tactics for 4X5Y Haddock from the 2012 IFMP

STRATEGIES	TACTICS
Productivity	
<p>Keep fishing mortality of 4X5Y Haddock moderate by using the following references and risk tolerances:</p> <ul style="list-style-type: none"> • The TAC may be set with a neutral (50%) probability of exceeding the fishing mortality target reference (F_{REF}) when it is above the upper stock reference (USR). • The TAC may be set with a low (less than 25%) probability of exceeding the fishing mortality limit reference (F_{LIM}) when the SSB is above B_{MSY}. • The TAC should be set to mitigate declines and, when possible, promote positive change in spawning stock biomass (SSB) over a three-year period when it is below the upper stock reference (USR). A harvest strategy of F_{REF} is acceptable when the stock is in the Cautious Zone, so long as the first criterion is met; however, it is required that fishing mortality will decline as the stock progresses lower into the Cautious Zone. The management response will vary depending on location of the stock within the Cautious Zone, whether the stock is increasing or decreasing, whether the trajectory (growth or decline) is projected to continue, and indications of incoming recruitment to the SSB, for example. • When the SSB is below the limit reference point (LRP), the harvest strategy is to be results-driven rather than based on a predetermined harvest rate. Rebuilding to a level above the LRP should be achieved in a reasonable timeframe (1.5 to 2 generations) with a high degree of probability (greater than 75%). The TAC (if appropriate) should be set with a very low (less than 5%) risk of preventable biomass decline. 	<ul style="list-style-type: none"> • Total Allowable Catch
<p>Keep fishing mortality of cusk, white hake, Atlantic wolffish and monkfish moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the fleet.</p>	<ul style="list-style-type: none"> • Bycatch limits • Fleet bycatch caps
<p>Keep fishing mortality of skates and sculpins moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the fleet.</p>	<ul style="list-style-type: none"> • Bycatch limits • Permitted release • Mandatory release of thorny skate
<p>Keep fishing mortality of all sharks moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the fleet.</p>	<ul style="list-style-type: none"> • Retention limits
<p>For all groundfish species not listed above and for which there is no TAC allocated, keep fishing mortality moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the fleet.</p>	<ul style="list-style-type: none"> • Bycatch limits

STRATEGIES	TACTICS
Biodiversity	
Control unintended incidental mortality for all non-groundfish species.	<ul style="list-style-type: none"> • Mandatory release
Control unintended incidental mortality for spotted wolffish, Northern wolffish and North Atlantic right whales.	<ul style="list-style-type: none"> • Mandatory release
Distribute population component mortality in relation to component biomass.	<ul style="list-style-type: none"> • Fleet quotas by area
Habitat	
Manage area disturbed of habitat.	<ul style="list-style-type: none"> • Coral conservation area
Culture and Sustenance	
Provide access for food, social and ceremonial purposes.	<ul style="list-style-type: none"> • Annual negotiations of food, social and ceremonial licences.
Support recreational participation.	<ul style="list-style-type: none"> • Open access
Prosperity	
Limit inflexibility in policy and licensing among individual enterprises/licence holders.	<ul style="list-style-type: none"> • Exempted fleet licences • Substitute operators/ Designated operators • Harvest benefit combining • ITQ quota pools
Minimize instability in access to resources and allocations by limiting annual changes in the TAC to no more than 15%, unless the SSB is below the Upper Stock Reference and declining precipitously	<ul style="list-style-type: none"> • Fleet shares • Individual quotas, enterprise allocations and community quotas. • Annual TAC variation
Limit inability for self-adjustment to overcapacity relative to resource availability.	<ul style="list-style-type: none"> • Quota transferability • Harvest Benefit combining
Support certification for sustainability.	<ul style="list-style-type: none"> • Provision of data, where available

Appendix 2: Strategies and Tactics for 5Zjm Haddock from the 2012 IFMP

STRATEGIES	TACTICS
Productivity	
<p>Keep fishing mortality of 5Zjm Haddock moderate by using the following references and risk tolerances:</p> <ul style="list-style-type: none"> • The TAC should be set with a neutral (50%) probability of exceeding the fishing mortality limit reference (F_{REF}) when it is above the upper stock reference (USR). • The TAC should be set to mitigate declines and, when possible, promote positive change in spawning stock biomass (SSB) over a three-year period when it is below the upper stock reference (USR). A low (25%) to neutral (50%) probability of exceeding F_{REF} is acceptable when the stock is in the Cautious Zone, so long as the first criterion is met; however, it is required that fishing mortality will decline as the stock progresses lower into the Cautious Zone. The management response will vary depending on the location of the stock within the Cautious Zone, whether the stock is increasing or decreasing, whether the trajectory (growth or decline) is projected to continue, and indications of incoming recruitment to the SSB, for example. • When the SSB is below the limit reference point (LRP), the harvest strategy is to be results-driven rather than based on a predetermined harvest rate. Rebuilding to a level above the LRP should be achieved in a reasonable timeframe (1.5 to 2 generations) with a high degree of probability (greater than 75%). The TAC (if appropriate) should be set with a very low (less than 5%) risk of preventable biomass decline. 	<ul style="list-style-type: none"> • Total Allowable Catch
<p>Keep fishing mortality of cusk, white hake, Atlantic wolffish and monkfish moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the fleet.</p>	<ul style="list-style-type: none"> • Bycatch limits • Fleet bycatch caps
<p>Keep fishing mortality of skates and sculpins moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the fleet.</p>	<ul style="list-style-type: none"> • Bycatch limits • Permitted release • Mandatory release of thorny skate
<p>Keep fishing mortality of all sharks moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the fleet.</p>	<ul style="list-style-type: none"> • Retention limits
<p>For all groundfish species not listed above and for which there is no TAC allocated, keep fishing mortality moderate and within biologically-based limits or, where biologically-based limits are not available, within historic levels for the</p>	<ul style="list-style-type: none"> • Bycatch limits

STRATEGIES	TACTICS
fleet.	
Biodiversity	
Control unintended incidental mortality for all non-groundfish species.	<ul style="list-style-type: none"> • Mandatory release
Control unintended incidental mortality for spotted wolffish and Northern wolffish.	<ul style="list-style-type: none"> • Mandatory release
Habitat	
Manage area disturbed of habitat.	<ul style="list-style-type: none"> • Coral conservation area
Prosperity	
Limit inflexibility in policy and licensing among individual enterprises/licence holders.	<ul style="list-style-type: none"> • Exempted fleet licences • Substitute operators/ Designated operators • Harvest benefit combining • ITQ quota pools
Minimize instability in access to resources and allocations.	<ul style="list-style-type: none"> • Fleet shares • Individual quotas, enterprise allocations and community quotas
Limit inability for self-adjustment to overcapacity relative to resource availability.	<ul style="list-style-type: none"> • Quota transferability • Harvest benefit combining
Support certification for sustainability.	<ul style="list-style-type: none"> • Provision of information, where available

Appendix 3: Condition Schedule by Surveillance Audit

Provided for reference for this and subsequent surveillance audits:

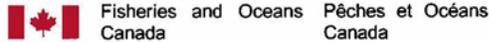
Surveillance Audit 1	Condition 4	4X5Y ([<i>Otter Trawl Bottom</i>] (OTB) and [<i>Long Line</i>] (LL)) and 5Zjm (LL) By the first annual audit, specific abundance indices for skate by species and area will be adopted for monitoring by DFO, the results of which shall be considered by the [<i>Scotia-Fundy Groundfish Allocation Council</i>] SFGAC annually.
	Condition 5	4X5Y OTB and LL: By the first annual audit, DFO and GEAC will (a) evaluate the risk to main bycatch/discard species associated with haddock fished in 4X5Y, (b) identify options to improve the information base and estimates of discards, and (c) table these products for consideration by the SFGAC.
	Condition 6	Habitat Area 4X5Y: By the first annual audit there will documented evidence that a plan for the assembly of available information and a program for evaluation has been developed by the “project team”, and data collection and assembly for this purpose has commenced.
	Condition 7	All areas all gears: By the first annual audit there will be documented evidence that drafts of long-term objectives explicitly applicable to haddock fishing have been tabled for discussion at SFGAC and [<i>Gulf of Main Advisory Committee</i>] GOMAC.
	Condition 8	GEAC will collaborate with the Scotia-Fundy Region of Fisheries & Oceans Canada (DFO) towards the development of an updated Integrated Fisheries Management Plan, applying the model developed for use for all major Canadian commercial fisheries. This plan will include biennial internal and occasional external reviews of haddock fishing in 4X5Y and 5Zjm. By the first annual audit, this plan will be adopted by DFO.

Surveillance Audit 2	Condition 1	4X5Y All Gear Types: By the second annual audit there will be documented evidence that the options for well-defined reference points and harvest control rules have been outlined and discussed with stakeholders.
	Condition 2	5Zjm All Gear Types: By the second annual audit there will be documented evidence that options for well-defined limit reference points and harvest control rules have been outlined and discussed with stakeholders through the Gulf of Maine Advisory Committee (GOMAC).
	Condition 3	By the second annual audit there is documented evidence that recovery milestones and management options for cod and white hake in 4X5Y have been outlined and discussed at the SFGAC.
	Condition 4	4X5Y (OTB and LL) and 5Zjm (LL): By the second annual audit: (a) a best practices handling and live release protocol will be adopted, (b) a move-away protocol will be adopted, and (c) management measures to control or to reduce bycatch of skates in the directed haddock fishery (>50% haddock in a trip) will be adopted to achieve or continue improvement in the abundance indices for skate.
	Condition 5	By the second annual audit, mechanisms to improve data collection and estimations of discards by the OTB and LL in 4X5Y fisheries will be adopted.
	Condition 7	All areas all gears: By the second annual audit, there will be documented evidence that long-term objectives explicitly applicable to haddock fishing have been adopted by DFO.

Surveillance Audit 3	Condition 1	4X5Y All Gear Types: By the third annual audit there will be documented evidence that the reference points and harvest control rules have been adopted.
	Condition 2	5Zjm All Gear Types: By the third annual audit there will be documented evidence that GOMAC has established reference points and harvest control rules to guide Canadian representatives in their future discussions on TAC-setting with their counterparts in the USA.
	Condition 3	By the third annual audit there is documented evidence that the agreed catch and/or by-catch targets for cod by the OT and LL gear and white hake by LL gear have been defined by DFO.
	Condition 4	4X5Y (OTB and LL) and 5Zjm (LL): By the third annual audit there will be documented evidence that the adopted management measures are being implemented.
	Condition 6	4X5Y Habitat: By the third annual audit there will documented evidence showing the information (mapping effort/substrate) that has been assembled and the results of analysis to date.
	Condition 8	By the third annual audit, the results of a DFO internal review will be available to the audit team.

Surveillance Audit 4	Condition 1	4X5Y All Gear Types: By the fourth annual audit there will be documented evidence that the adopted harvest control rules have been implemented i.e. forms the basis of [<i>Total Allowable Catch</i>] TAC-setting and other relevant management advice.
	Condition 2	5Zjm All Gear Types: By the fourth annual audit there is documented evidence that Canadian representatives have advanced positions that are consistent with the harvest control rules that have been adopted by GOMAC.
	Condition 3	By the fourth annual audit there is documented evidence that recovery plans for cod and white hake in 4X5Y, and for the control or reduction in fishing mortality are being implemented as planned.
	Condition 4	4X5Y (OTB and LL) and 5Zjm (LL): By the fourth annual audit a review of the effectiveness of the respective management measures will be completed, including an evaluation of the likely impact of the various sources of recent fishing mortality on the stock condition of skate.
	Condition 5	By the fourth annual audit there will be documented evidence that the adopted data collection and discard estimation mechanisms have been implemented.
	Condition 6	4X5Y Habitats: By the fourth annual audit there will be documented evidence that at least a provisional evaluation has been completed, and mitigation measures have been identified and are being implemented as appropriate for this fishing activity.
	Condition 7	By the fourth annual audit, there will be documented evidence that measures consistent with the adopted long-term objectives are being implemented.
	Condition 8	By the fourth annual audit, as a supplement to the ongoing external reviews through TRAC and TMGC, the results of the internal review of the management system for haddock fishing in 5Zjm have been tabled for discussion by GOMAC, with documented evidence of resulting actions taken (if required). By the fourth annual audit, the results of the internal review of the management system for haddock fishing in 4X5Y have been tabled for discussion by SFGAC, the principal advisory committee that is open to the public, with documented evidence of resulting actions taken (if any).

Appendix 4: Letter of Support from the Regional Director



PO Box 1035
Dartmouth, NS B2Y 4T3
OCT 23 2012

Groundfish Enterprise Allocation Council
Attn: Mr. Bruce Chapman
1362 Revell Drive,
Manotick, ON K4M 1K8

Dear Mr. Chapman:

Re: MSC Scotia-Fundy Haddock 2nd Annual Audit

As you are aware, the Marine Stewardship Council's (MSC's) 2nd Annual Audit for the Scotia-Fundy Haddock fishery is scheduled for November 13, 2012. The audit is to assess progress made against the eight conditions of its certification and will also examine if there have been any significant changes to the fishery or the way it has been managed. It is on this latter point that I wish to provide Fisheries and Oceans Canada's (DFO's) position.

With respect to assessment of the resource, the process has not changed; stock status advice continues to be reported in the appropriate series (DFO's Science Advisory Reports or Transboundary Resources Assessment Committee (TRAC) Status Reports). Management documents have been updated as necessary, outlining objectives for the fishery and establishing a precautionary approach framework against which management advice is provided. Licence conditions, data collection, governance arrangements and consultative processes remain the same with the exception of the following improvements which should be highlighted. Hard targets for at-sea observer coverage have now been incorporated in most fleet Conservation Harvesting Plans. These targets vary from a low of 5% to a high of 25%. In addition, the Department has implemented an improved method of deploying at-sea observers across the fleet to ensure these targets are met. Rather than rely on the at-sea observer company to contact individuals and arrange for coverage, licence holders are now informed when they make their hail-out using the Interactive Voice Recognition system that they must contact the observer company to arrange for an at-sea observer. Lastly, regarding compliance there have been no material changes nor have any concerns been noted.

To conclude, I would like to confirm that there have been no material changes to the assessment of the resource, the management environment in which the fishery operates, or with compliance that would affect the status of its certification and conditions.

I want to take this opportunity to applaud your organization's commitment to sustainability and wish you all the best with the upcoming surveillance audit.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Faith G. Scattolon".

Faith G. Scattolon
Regional Director-General
Maritimes Region