

Marine Stewardship Council 2nd Surveillance Report

For The

Canada Scotia-Fundy Haddock Fishery



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Facilitated By the

Groundfish Enterprise Allocation Council

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Foreword

The Canada Scotia-Fundy Haddock Fishery was first certified in accordance with the MSC Principles and Criteria for Sustainable Fishing in October 2010 and recertified on 28th April 2016.

At recertification, five Performance Indicators (PIs) were identified as having scored below the unconditional passing score of 80: 2.1.1 Retained Catch Outcome; 2.1.2 Retained Catch Management; 2.2.1 Bycatch Outcome; 2.2.2 Bycatch Management; and, 2.2.3 Bycatch Information/Monitoring, and a Client Action Plan for improving the performance of these PIs was put in place.

Based on the surveillance level for the fishery, SAI Global determined that the 2nd Annual Surveillance Audit of the fishery should be conducted as a Level 6 fishery surveillance audit in accordance with the provisions of the MSC Fisheries Certification Requirements v.2.0 (effective 1st April 2015) G7.23.2, G7.23.3.1 and G7.23.3.2.

The location of the on-site audit was chosen to reflect the client's preference and also facilitated the collection of information through face-to-face meetings with the client, stakeholders and those responsible for science and management of the fishery (Department of Fisheries and Oceans, Canada, Maritimes Region).

Table of Contents

Foreword	2
Table of Contents	3
1. Executive Summary	4
2. General Information	6
3. Introduction	7
4. Background	8
4.1. Fishery Observations	10
4.1.1. At-Sea Observer Coverage Update	12
4.1.2. Compliance Update	13
4.1.3. Consultations and Outcomes Update	13
Maritimes Summer Research Vessel Survey Trends	21
4.2. Relevant Changes to Legislation and Regulations	24
4.3. Relevant Changes to the Management Regime	24
4.4. Changes in Key Personnel	25
4.5. Traceability Within the Fishery	25
4.6. The General Conditions of Certification	27
4.7. The Specific Conditions of Certification	28
5. Assessment Process	29
5.1. Summary of stakeholder and client meetings	30
6. Results	32
6.1. Evaluation tables for Conditions during the 2 nd Surveillance Audit 2018	32
6.1.1. Condition 1	32
6.1.2. Condition 2	35
6.1.3. Condition 3	38
6.1.4. Condition 4	43
6.1.5. Condition 5	47
6.2. Recommendations Update	49
7. Conclusion	51
7.1. Outcome of SAI Global Decision	52
8. References	53
9. Appendices	54
9.1. Appendix 1. Re-scoring evaluation tables	54
9.2. Appendix 2. Stakeholder submissions	55
9.3. Appendix 3. Surveillance audit information	56
9.4. Appendix 4. Additional detail on conditions/ actions/ results	61
9.5. Appendix 5. Revised Surveillance Program	62

1. Executive Summary

This report contains the findings of the 2nd surveillance audit in relation to the Groundfish Enterprise Allocation Council's (GEAC) certificate of the Canada Scotia-Fundy Haddock Fishery.

This fishery is treated as two distinct stocks by scientific and management bodies and their associated committees and working group arrangements. Stock assessments for area 4X5Y are completed by Fisheries and Oceans Canada (DFO) whereas the haddock stock assessment for area 5Z (including sub-area 5Zjm) is completed by the Canada-US Transboundary Resources Assessment Committee.

The 2nd surveillance audit focused on any changes to the fishery and its management since the 1st surveillance audit, and monitoring of compliance with the MSC Principles and Criteria. Also, the audit team evaluated progress against the 5 conditions: PI 2.1.1 Retained Species Outcome, PI 2.1.2 Retained Species Management Strategy, PI 2.2.1 Bycatch Species Outcome, PI 2.2.2 Bycatch species management strategy, PI 2.2.3 Bycatch species information / monitoring.

SAI Global determines that:

The Canada Scotia-Fundy Haddock Fishery and all of its components continues to operate a well- managed and sustainable fishery: therefore, continued certification to the MSC Principles and Criteria for Sustainable Fishing is awarded.

On behalf of the MSC client, the Groundfish Enterprise Allocation Council (GEAC), SAI Global would like to extend thanks and appreciation to the management organisations and stakeholders of the Canada Scotia-Fundy Haddock Fishery who took part in this surveillance audit. In particular we would like to thank all the staff of the Department of Fisheries and Oceans (DFO) – Maritimes Region who provided information that greatly facilitated the conduct of this surveillance audit.

Lead Auditor: Paul Knapman is an independent consultant based in Halifax, Nova Scotia, Canada. Paul began his career in fisheries nearly 30 years ago as a fisheries officer in the UK (1989 – 1993), responsible for the enforcement of UK and EU fisheries regulations. He then worked with the UK government's nature conservation advisors (1993-2001), as their Fisheries Programme Manager, responsible for establishing and developing an extensive programme of work with fisheries managers, scientists, the fishing industry and ENGOs, researching the effects of fishing and integrating nature conservation requirements into national and European fisheries policy and legislation.

Between 2001-2004 he was Head of the largest inshore fisheries management organisation in England, with responsibility for managing an extensive area of inshore fisheries on the North Sea coast. The organisations responsibilities and roles included: stock assessments; setting and ensuring compliance with allowable catches; developing and applying regional fisheries regulations; the development and implementation of fisheries management plans; acting as the lead authority for the largest marine protected area in England.

In 2004, Paul moved to Canada and established his own consultancy providing analysis, advisory and developmental work on fisheries management policy in Canada and Europe. In 2008, Paul joined Moody Marine as their Americas Regional Manager, with responsibility for managing and developing their regional MSC business. He became General Manager of the business in 2012. Paul has been involved as a lead assessor, team member and technical advisor/reviewer for more than 50 different fisheries in the MSC programme. He returned to fisheries consultancy in 2015. Paul has completed his MSC Team Leader training.

Auditor: Dr. Ivan Mateo has over 20 years' experience working with natural resources population dynamic modelling. His specialization is in fish and crustacean population dynamics, stock assessment, evaluation of management strategies for exploited populations, bioenergetics, ecosystem-based assessment, and ecological statistical analysis. Ivan received a Ph.D. in Environmental Sciences with Fisheries specialization from the

University of Rhode Island. He has studied population dynamics of economically important species as well as candidate species for endangered species listing from many different regions of the world such as the Caribbean, the Northeast US Coast, Gulf of California and Alaska. He has done research with NMFS Northeast Fisheries Science Centres' Ecosystem Based Fishery Management on bio-energetic modeling for Atlantic cod. He also has been working as environmental consultant in the Caribbean doing fieldwork and looking at the effects of industrialization on essential fish habitats and for the Environmental Defense Fund developing population dynamics models for data poor stocks in the Gulf of California. Recently Ivan worked as National Research Council postdoc research associate at the NOAA National Marine Fisheries Services Ted Stevens Marine Research Institute on population dynamic modelling of Alaska sablefish. Ivan has completed his MSC Team Leader training.

Ivan was a member of the re-assessment team and Paul was the technical reviewer for the initial assessment of the fishery. The surveillance assessment team is different from the original assessment and audit team due to auditor availability.

2. General Information

Table 1. General Fishery Information

Fishery name	Canada Scotia-Fundy Haddock Fishery		
Unit(s) of certification	<p>Species: Haddock (<i>Melanogrammus aeglefinus</i>)</p> <p>UoC: 8 Units of Certification (by gear type and area)</p> <p>Geographical Area: The Canadian fishery for haddock is carried out in two areas that are defined by the Northwest Atlantic Fisheries Organisation (NAFO) as 4X5Y and 5Zjm; denominated respectively as the Southern Scotian Shelf / Bay of Fundy / Gulf of Maine (4X5Y) and the Canadian portion of Georges Bank (5Zjm). The fishery takes place in FAO Statistical Area 21.</p> <p>Methods of Capture: Demersal longline, Demersal otter trawl, Gillnet and Handline</p> <p>UoC: 8 Units of Certification (by gear type and area)</p> <p>Client Group: Groundfish Enterprise Allocation Council (GEAC);</p> <p>Other Eligible Fishers: There are no other eligible fishers.</p>		
Date certified	28 th April 2016	Expiry date	27 th April 2021
Surveillance level and type	Surveillance Level 6 (Default Surveillance), on-site surveillance audit		
Date of surveillance audit	5 th -6 th April 2018		
Surveillance stage (tick one)	1st Surveillance		
	2nd Surveillance	X	
	3rd Surveillance		
	4th Surveillance		
	Other (expedited etc.)		
Surveillance team	Lead auditor: Paul Knapman Auditor(s): Ivan Mateo		
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3. Introduction

This report sets out the results of the 2nd surveillance audit in relation to the Groundfish Enterprise Allocation Council's (GEAC) certificate of the Canada Scotia-Fundy Haddock Fishery.

To be awarded an MSC certificate for the fishery, the applicants agreed in a written contract to develop an action plan for meeting the required 'Conditions' against the performance indicators that scored below 80% in the re-assessment of the fishery. Action Plans for each Condition were submitted by the fishery client and these were approved by SAI Global as the certification body of record.

The applicant also agreed in a written contract to be financially and technically responsible for surveillance visits by an MSC accredited certification body, which would occur at a minimum of once a year, or more often at the discretion of the certification body (based on the applicant's action plan or by previous findings by the certification body from annual surveillance audits or other sources of information).

Announcement of Surveillance Audit

An announcement of the surveillance site visit was published on the MSC website on the 2nd March 2018 to provide an opportunity to stakeholders to meet with or submit information on the fishery to the assessment team. Additionally, written notification was sent to the list of stakeholders representing the consultation plan during the initial assessment of this fishery and in many cases follow up mails were also made to ensure that stakeholders had been provided with sufficient opportunity to participate in consultation.

Table 19 provides a list of the stakeholders and management organizations engaged in the process either through meetings, conference call or submission of information. These consultations focused on the questions and evidence that demonstrates the performance of the fishery throughout the year and measures that supported the fulfilment of the Conditions of Certification placed upon the client, GEAC, at the initial certification decision.

Meetings were held with the following management and scientific organizations responsible for the the Canada Scotia-Fundy Haddock Fishery:

- Department of Fisheries and Oceans (DFO) – Maritimes Region

A number of scientific and meeting reports were also examined by the surveillance team in producing this report, as detailed in the information sources section. The client submission and supporting documentation was quite extensive, rather than include it all in this audit report it can be provided on request from SAIGlobal.

4. Background

Canada – NAFO Division 4X5Y

The Canadian fishery for haddock is carried out in two areas that are defined by the Northwest Atlantic Fisheries Organization (NAFO) and denominated as the Southern Scotian Shelf / Bay of Fundy / Gulf of Maine (4X5Y) and the Canadian portion of Georges Bank (5Zjm). The fishery takes place in FAO Statistical Area 21.

Haddock is harvested as part of a mixed, multi-species fishery that includes other groundfish such as cod, halibut, redfish, pollock and flounders. The fishery is primarily undertaken using otter trawls (OT) and bottom longlines (LL), and by gillnets (GN) and handlines (HL). The fishing year in 4X5Y is defined as 1st April to 31st March. In 5Zjm, the fishing year is the calendar year, 1st January to 31st December. The fishery is dominated by the mobile gear sector (variable, but >80 % of landings in some years).

Gears used to prosecute the fishery tend to capture a variety of groundfish species, irrespective of the target species. Conservation Harvesting Plans indicate which species may be the target of a directed fishery and set out the measures that apply to non-target species (e.g. cusk, white hake, monkfish). All non-groundfish species must be returned to the water, with the exception of those species whose retention is specifically permitted within licence conditions.

The 4X5Y haddock stock is comprised of the entirety of NAFO Division 4X, as well as the portion of NAFO Division 5Y which lies within Canada's Exclusive Economic Zone.

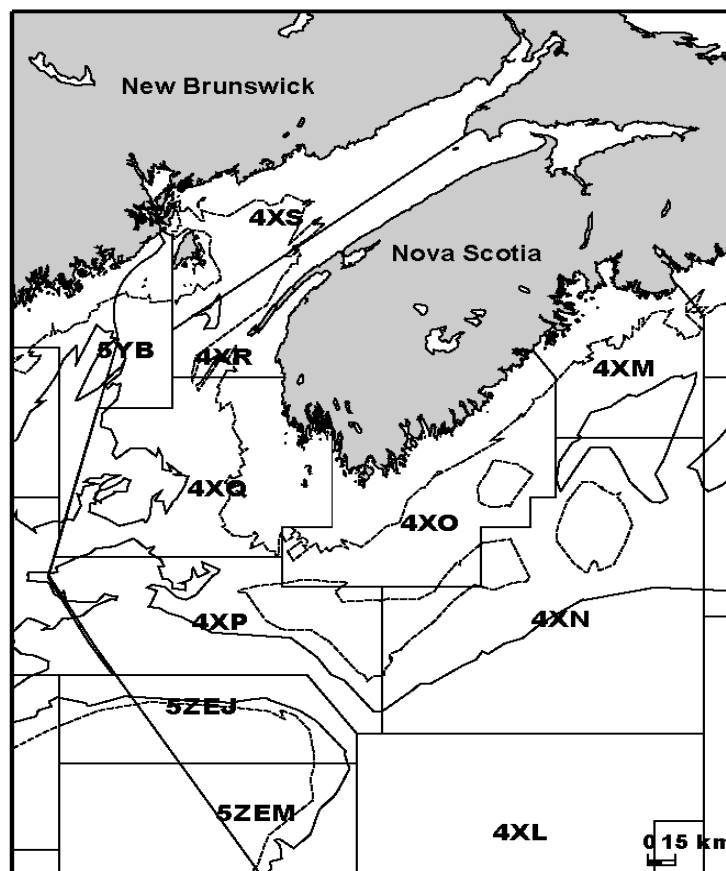


Figure 1. Map of NAFO statistical fishing areas in the Bay of Fundy and western Scotian Shelf.

To some extent the haddock fishery is limited by the incidental catch of cod. There are strict cod by-catch limits and haddock fishers choose time, location and methods to avoid interacting with cod. An increasing number of fishers are using separator panels to reduce cod by-catch, equipment that is mandatory on Georges Bank (Division 5Z). A seasonal spawning closure, instituted in 1970, currently extends from February 1st to June 15th.

TAC management was introduced to the fishery in 1970. Biological reference points were introduced in 2012 as a basis for a Precautionary Approach to management. The harvest strategy is to maintain fishing mortality of 4X5Y haddock at a moderate level by using the reference points and risk tolerances to determine harvest control rules.

Catch monitoring within the commercial groundfish fishery has many components. All vessels are required to hail-out to the Department (DFO) prior to departing on a fishing trip and are also required to hail-in from sea prior to returning to port. The hail-in is captured by a third-party, independent dockside monitoring company. The majority of 4X5Y haddock landings are monitored at the dockside point of offloading by the independent dockside. A variety of information such as effort, species composition, location of fishing activities, ETP interactions etc., must also be reported to the Department in fishery monitoring documents completed by the captain for each trip.

A majority of the commercial groundfish fleet is required to carry Vessel Monitoring Systems (VMS) on board when on a fishing trip.

Sharing arrangements for the 4X5Y haddock stock are stable, with each commercial fleet receiving a defined share/allocation of the TAC each season. Table 2 lists the % shares by fleet sector for the 2017 TAC. The TAC applies to the commercial fishery only. Allocations are transferable within fleets and between fleets, subject to the Atlantic Canada Groundfish Transfer Guidelines.

Table 2. Percentage shares by fleet of the 2017 4X5Y Haddock TAC (Source: DFO Statistical report submitted by the client).

Fleet Sector	% Share of TAC
Fixed Gear 65' – 100'	0.56
Mobile Gear 65' – 100'	0.56
Offshore >100'*	4.85
Mobile Gear <65'	55.493
Aboriginal	5.067
Fixed Gear 45' – 64'	4.210
Fixed Gear <45'	29.260

*The offshore quota will revert to the former 1984 proportional share of the TAC if and when the TAC increases to 25,000 mt.

Canada - United States Transboundary Management: NAFO Division 5Z (Georges Bank)

The Transboundary Management Guidance Committee (TMGC), established in 2000, is a government – industry committee composed of representatives from Canada and the United States. The TMGC's purpose is to develop guidance in the form of harvest strategies, resource sharing, and management processes for Canadian and U.S. management authorities for 3 trans-boundary groundfish resources on Georges Bank: cod, haddock and yellowtail flounder.

The haddock stock exhibits a number of positive features. It has produced three exceptionally strong and two strong year classes in the last 13 years. The population age structure displays a broad representation of age groups. The spatial distribution patterns were similar to the average patterns over the previous ten years.

However, there has been a general decline in weights at age since the late 1990s and fish condition derived from DFO survey data has generally been below the time series average since 2004.

Annual harvest levels are established consistent with the legal and policy requirements of both countries. Advice on management measures and quotas is the responsibility of the Transboundary Resources Assessment Committee (TRAC)¹.

The annual allocation shares between countries are based on a combination of historical catches (10% weighting) and resource distribution based on trawl surveys (90% weighting). Combining these factors entitles the USA to 41% and Canada to 59% of the TAC.

The strategy is to maintain a low to neutral risk of exceeding the fishing mortality limit reference, $F_{REF} = 0.26$ (established in 2002 by the TMGC). When stock conditions are poor, fishing mortality rates should be further reduced to promote rebuilding.

4.1. Fishery Observations

The Groundfish Enterprise Allocation Council (GEAC) and the Department of Fisheries and Oceans (DFO), Maritimes Region provided a number of documents in support of this audit. The following is a summary of relevant documentation related to this audit.

Included with the client's submission was a letter dated 6th March, 2018, from the Regional Director General of DFO's Maritimes Region (see Appendix 3 of this report). The letter highlights the following:

- The continued temporary suspension of enforcement of the small fish protocol for Haddock in 5Z (Georges Bank) due to the exceptionally high abundance and stunted growth of the 2013 year class. This is to be re-evaluated prior to the start of the new season;
- Consideration to allow a limited number of vessels to conduct a test fishery on Georges Bank in May, which could result in an earlier opening of the fishery in 2018;
- No material changes to data collection, the regulatory compliance regime, governance arrangements and consultative processes.
- Personnel changes with responsibilities for the Haddock fishery in 4X5Y and 5Z.

Table 3 and Table 4 detail the total TACs, and the UoA and UoC shares of those TACs as well as total landings by the UoC (i.e. the total certified catch) for the years 2016 and 2017 in 4X5Y and 5Zjm respectively.

Table 3. TACs and Catch Data – 4X5Y

TAC (Initial)	Year	2017	Amount	7,650 mt
UoA share of TAC	Year	2017	Amount	7,650 mt
UoC share of TAC	Year	2017	Amount	7,650 mt
Total green weight catch by UoC	Year (most recent)	2017	Amount	5,008.8 mt
	Year (second most recent)	2016	Amount	3,413.0 mt

¹ For a more complete description of the Canada-US transboundary management process, refer to the fishery's recertification report on the MSC's website <https://fisheries.msc.org/en/fisheries/canada-scotia-fundy-haddock/@assessments>.

Table 4. TACs and Catch Data – 5Zjm

TAC (Initial)	Year	2017	Amount	20,500 mt
UoA share of TAC	Year	2017	Amount	20,500 mt
UoC share of TAC	Year	2017	Amount	20,500 mt
Total green weight catch by UoC	Year (most recent)	2017	Amount	13,376.7 mt
	Year (second most recent)	2016	Amount	11,912.1 mt

See <http://dfo-mpo.gc.ca/decisions/fm-2017-gp/atl-18-eng.htm>

DFO monitors the performance of the fishery's fleet sectors against their assigned TACs and Individual Transferable Quotas (ITQ) throughout the fishing season. Data provided by Dockside Monitors, At-Sea Observers and from the vessels' logbooks are compiled by departmental personnel and published in the form of Quota Reports. Table 5 represents the initial TACs and associated (target) catch for the Canada Scotia-Fundy Haddock Fishery by Fleet/Gear type and NAFO Division (4X5Y, 5Zjm) for the most recent three-year period. Table 6 lists the initial haddock allocations by fleet sector and area for the most recent two-year period.

Table 5. TACs and Landings by Gear Type and Year (Source: DFO statistical data, DFO quota reports).

Gear Type	4X5Y Haddock Landings (mt)			5Zjm Haddock Landings (mt)		
	2015 - 2016	2016 - 2017	2017 - 2018	2015	2016	2017
Longline	107.1	83.6	50.1	281.7	95.5	
Otter Trawl Bottom	2,636.6	3,329.4	4,957.8	14,326.0	11,816.6	13,322.9
Gillnet	3.7	*	0.82	*	*	0-1*
Handline	*		0.53	0	0	50 – 60*
Total	2,747.4	3,413.0	5,008.8	14,607.7	11,912.1	13,276.7
TAC	5,100.0	5,100.0	7,650	19,240.0	21,830.0	20,500

*Indicates data did not pass confidentiality

Table 6. TACs and Quotas by Fleet Sector, Fishing Area and Year. Note: 5Z TAC is shared between US and Canada; Allocations are initial; only Canadian portion is shown (Source: DFO Groundfish Plan).

Fleet Sector	4X5Y Haddock Stock (mt)		5Zjm Haddock Stock (mt)	
	2016 - 2017	2017 - 2018	2016	2017
FG < 45	1,492.3	2,238.39	4,249.4	3,990.53
FG 45 - 65	214.7	322.06	836.5	785.56
MG < 65	2,830.1	4245.21	9,236.5	8,673.75
Aboriginal	258.4	387.63	1,737.2	1,631.39
FG 65 - 100	28.6	42.84	216.1	202.95
MG 65-100	28.6	42.84	216.1	202.95
MG > 100	247.4	371.02	5,113.0	4,801.51
Bycatch			225.1	211.35
TAC	5,100.0	7,650.0	21,830.0	20,500.00

4.1.1. At-Sea Observer Coverage Update

The information provided in the tables below has been provided by DFO and is based on analyses which attempt to match information from the Maritimes Region Industry Surveys Database (ISDB) and the MARFIS landings database for mobile and fixed gear categories. Percent observer coverage for fixed gear was calculated as: observed catch (mt)/total catch (mt) and observed trips/total trips. For mobile gear, the calculation was only done for observed catch (mt)/total catch (mt).

For mobile gear coverage of haddock in 4X5Y, all observed mobile gear catches for this gear sector/area were compared with the total landings of these species for the same gear sector/area reported in the MARFIS database. For 4X5Y longline, haddock are captured in directed fishing trips and as bycatch in the halibut directed trips. In this case, all trips which had observed catches of haddock were compared with haddock landings from all longline trips which reported haddock in the catch.

Table 7. Percent observer coverage for haddock (observed haddock catch/ total haddock landings) for the directed mobile gear fishery in 4X5Y and 5Zjm, 2015 to 2017 (Taken from DFO figures submitted in “Document 1” by the client).

Year	Stock	Obs. Haddock catches (mt)	Total landings (mt)	Obs. Haddock landings (%)
2015	5Zjm	10,636.4	14,325.5	74.2
	4X5Y	57.7	2,636.55	2.3
2016	5Zjm	9,238.6	11,855.2	77.9
	4X5Y	137.7	3,329.4	4.5
2017	5Zjm	6564.5	10,848.2	60.8
	4X5Y	328.8	4,301.1	8.4

Table 8. Percent observer coverage for haddock (observed haddock catch/ total haddock landings; observed haddock trips/total haddock trips) for the Georges Bank (5Zjm) longline fishery, 2015 to 2017. (Taken from DFO Doc 14 – Observer Coverage)

Year	Vessel Size Class	Obs. Trips	Obs. Had catch (t)	Total trips	Total landings (mt)	Obs. had Trips (%)	Obs. had landings (%)
2015	All	15	74.2	53	281.7	28.3	26.3
2016	All	9	15.4	37	95.5	24.3	16.1
2017	All	4	8.5	27	52.9	14.8	16.2

Table 9. Percent observer coverage for haddock (observed haddock catch/ total haddock landings; observed trips with haddock/total trips with haddock) for the 4X5Y longline fishery, 2015 to 2017.

Year	Vessel Size Class	Obs. Trips	Obs. Had catch (t)	Total trips	Total landings (mt)	Obs. had Trips (%)	Obs. had landings (%)
2015	All	28	2.5	455	107.3	6.2	2.3
2016	All	26	3.8	408	83.5	6.4	4.6
2017	All	36	0.9	276	40.9	13.0	2.2

At the site visit DFO highlighted that on page 56 of the groundfish IFMP, under Monitoring, Evaluation, and Plan Enhancement, it states the following:

“Through consultations with the SFGAC or GOMAC, as well as fleet sector advisory committees, 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 related to biodiversity, habitat and prosperity and whether the tools are

being used satisfactorily. For example, the levels of observer coverage for both fixed and mobile gears in 2015 and 2016 were shared at the SFGAC in the fall of 2016.”

Also, Appendix 22 of the IFMP includes, the “Scotia-Fundy Groundfish Advisory Committee Observer Coverage Plan for 2017/18”. This identifies the current need to review observer coverage targets and how well they are being met. It also notes that DFO is working towards a National Catch Monitoring Framework that will provide guidance for establishing catch monitoring requirements including at-sea observer coverage. Until this initiative is completed, the plan is stated as likely developing strategies that will help meet the established targets, rather than reviewing the targets themselves.

DFO and the client also confirmed that a feasibility assessment for the use of Electronic Video Monitoring in the 5Z Haddock fishery is currently underway, with a report scheduled to be provided to the Department by mid-May. Plans for the next stages of this project will not be determined until after this report is reviewed.

4.1.2. Compliance Update

DFO Maritimes provided a 2017 Conservation and Protection (C&P) Enforcement Compliance Summary. The summary noted that the present C&P data systems does not separate species type in the groundfish fishery, therefore, the information is collected as “Groundfish”, which can include haddock, cod, pollock, redfish and halibut. Table 10 summarise the number of violations and number of fines issued, Table 11 summarises the fishery patrol hours for the groundfish fishery.

Table 10. C&P Maritimes Region enforcement compliance summary for the groundfish fishery between 1st January and 31st December 2017 (DFO, 2018).

Violation Type	Number of Violations	Number of Fines Issued
Area / Time	3	2
Assault / Obstruct	1	1
Gear – Illegal / Used Illegally	0	3
Illegal buy/sell/ posses	27	2
Other legislation	1	0
Quota / Bag limit	12	0
Gear conflict	7	0
Foreign unauthorised entry / fishing	0	1
Illegal export	0	1
Registration / licence	47	8
Reporting	59	13
Species / size limit	7	1
Total	164	32

Table 11. C&P Maritimes Region, fishery patrol hours between 1st January and 31st December 2017 (DFO, 2018)

Fishery	Fishery Patrol Hours
Groundfish	14,167

4.1.3. Consultations and Outcomes Update

A number of formal industry/stakeholder meetings were held throughout 2017 and early 2018. Using meeting minutes provided by the client and DFO, outcomes of relevance to the haddock fishery are reported below:

Scotia-Fundy Groundfish Advisory Committee (SFGAC, 2017)
October 17, 2017

Review DRAFT 2017 RV Survey document review

A widespread increase in squid, and an increase in silver hake particularly in the Bay of Fundy was reported. The Halibut index was the highest on record. There was general decline across many 4X stocks, including 4X cod and 4X haddock. Some investigation of potential environmental co-variables will be undertaken to see if there's an obvious explanation for this.

4VWX5 Groundfish IFMP

DFO has been working on a new Integrated Fisheries Management Plan (IFMP) (DFO, 2017a) for 4VWX5 Groundfish fisheries and the 3NOPs4VWX5 Atlantic Halibut fishery. The draft document was circulated to the SFGAC in September. A meeting to further discuss the draft IFMP, was set for November 16th.

4X5Y Atlantic Cod Rebuilding Plan

The draft 4X5Y Atlantic Cod Rebuilding Plan (DFO, 2017b) was circulated in advance of the meeting. It was noted that the Plan will be revised following the framework assessment currently planned for 2018/19. Comments received included concern that rebuilding targets/ reference points may not be possible under current environmental conditions. It was suggested that the fishing mortality reference point for the critical zone should be considered to be a target rather than a limit, because the intent is to keep fishing to the lowest possible level, and that it should be considered "interim" until the framework assessment. A meeting to further discuss the draft 4X5Y Cod Rebuilding plan was set for November 16th.

Changes to Logbooks

Changes to SARA logbooks in 2018/19, were proposed for further discussion. The Fixed Gear Logbook instructions explicitly require recording discards, while the mobile gear logbook does not. For 2018/19, DFO intends to revise the mobile gear logbooks to require discard reporting and create sufficient space to do so. Information on discarding will help DFO manage bycatch species with authorized discards, like skates, and help with MSC certification. Also, it is very possible that new requirements to report interactions with sharks and/or marine mammals will be implemented in 2018/19. To allow discard reporting for mobile gear fishing, the main logbook could be modified, likely by including less sets on a page. Alternatively, a separate discard log could be developed, as in the large pelagics fishery. There is some potential for a separate discard log to replace the SARA logs eventually.

Retention of 4VW Skates

The SFGAC adopted a skate conservation plan in January 2017. An element of the plan includes releasing all Smooth and Winter skates in 4VW, in addition to all Thorny skates (which are already required to be released). As it is very difficult to tell Little skates from Winter skates at sizes below 40 cm, it would likely be necessary to release Little skate in 4V as well.

4VW and 4X5Y White Hake Reference Points

At the Recovery Potential Assessment meeting for White Hake in 2015, Science recommended new reference points for 4VW and 4X5Y White Hake. These reference points have recently been published (<http://waves-vagues.dfo-mpo.gc.ca/Library/40594798.pdf>) and will be incorporated into the new IFMP for groundfish. The new reference points are based on adult (≥ 42 cm) biomass in both cases and are similar to the previously used proxy reference points. Under the new reference points, both stocks appear to be on the boundary of the cautious and critical zones, with some annual fluctuations.

	LRP (adult biomass)		URP (adult biomass)		2017 survey index and status
	Old	New	Old	New	
4VW White Hake	3,176 mt	3,885 mt	6,352 mt	7,770 mt	4,150 t; Cautious/critical boundary
4X5Y White Hake	5,447 mt	6,867 t	11,093 mt	13,734 mt	6,736 t; Cautious/critical boundary

4VWX5 Groundfish Observer Coverage Plan

DFO reported that under the 4VWX5 Groundfish Observer Coverage Plan adopted in 2016, it was aimed to review progress towards meeting observer coverage targets at the fall SFGAC meeting each year. At this time, no estimates of coverage in 2017 are available because of issues involving the observer database. In general, coverage is expected to be similar to previous years, except that the coverage target for Unit 3 Redfish and 4X5 Pollock was increased to 30% in the fall of 2016, and quite a few trips were observed, so those fisheries are likely performing better against the targets than in previous years.

Scotia-Fundy Groundfish Advisory Committee (SFGAC, 2018) January 11, 2018

Updates on 4X5Y haddock

Last year, the fishery had the first TAC increase in many years as a result of a very optimistic assessment in fall 2016.

The objectives of the 2017 stock assessment update were to: report new information from the DFO Summer survey and the fishery and compare this information to the 2016 assessment results and projection input parameters; evaluate recent biomass trend against reference point values; and to determine whether the catch advice from the projection is still valid.

At the assessment, the 2013 year class was shown to be the largest on record (based on surveys of this year class at ages 0-2, and the model predicted a very large increase in biomass in 2017-18 as those fish grew and recruited to the fishery). This does not seem to have materialized and the RV survey estimates for 2016 and 2017 are lower than 2015.

Weight at age for many ages are the lowest in the time series, which seems to be at least partially driving the lower than anticipated biomass growth.

Because of uncertainty in the 2013 year class, a sensitivity run was completed at the assessment. The sensitivity analysis assumed the 2013 year class recruitment was equal to the largest recruitment in the time series prior to 2013 (54 million).

Conclusions from the 2017 Update for this stock were:

- The 2017 Age 4+ biomass is expected to be close to the upper stock reference point, although there is uncertainty whether it was above or below.
- The standard projection from the 2016 assessment is not supported for providing catch advice.
- For the 2016/17 fishing year, the TAC was set at 7,650 t due to the uncertainty around the projections. It is recommended a similar approach to be taken for the 2017/18 fishing year.
- Since the sensitivity analysis was considered a conservative approach to assessing the uncertainty of the 2013 year class the sensitivity, deterministic projections could be useful as a lower bound for catch advice.
- Sensitivity analyses produced catch advice for ages 1+ of **10,379 t** with F=0.25 (Flim in the healthy zone), and for F=0.15 (Fref for the cautious zone) produced catch advice of **6,831 t** in 2018.

Gulf of Maine Advisory Committee (GOMAC) (GOMAC, 2017)**April 25, 2017**

The 5Z winter groundfish fishery in January and February 2017 included three changes: suspension of the small fish protocol for haddock, reduction in observer coverage to 50% for January, with 100% coverage in February, and real-time monitoring approach of cod and haddock maturity, closing the fishery once it was estimated that 30% of cod or haddock were sexually mature.

GEAC put forward a proposal to have a limited test fishery in May 2017, with eight vessels (seven GEAC vessels and one Indigenous vessel) making one trip per week each in the 5Z area. The objective would be to provide an opportunity for industry to explore the performance of the 5Z haddock fishery during a period when it is historically closed, to allow the assessment of bycatch patterns, quality of catch (such as tissue quality), and to increase opportunities to catch the Canadian 5Z haddock quota.

Proposed changes to the 2017 5Z groundfish Conservation Harvesting Plan (CHP) were reviewed.

DFO Science provided a presentation on cod discard estimates for the 2016 Georges Bank groundfish fishery. It was noted that most fishing occurred in Zones A and B. Total discards were identified at 236 mt. Discards were estimated for both the mobile gear (MG) <65' fleet and the Aboriginal fleet, though sufficient 2016 cod quota remained to cover the estimated discards in both these fleets.

A preliminary summary of cod, haddock and yellowtail flounder discards from the Canadian Georges Bank scallop fishery for 2016 was provided. Through a series of calculations, discard rates from observed trips are applied to the total offshore scallop fleet effort, in order to provide total bycatch estimates. Preliminary estimates for 2016 for cod, haddock, and yellowtail flounder are 9 mt, 8 mt, and 10 mt, respectively.

One of the fall 2016 reports released by the Commissioner of the Environment and Sustainable Development (*Sustaining Canada's Major Fish Stocks—Fisheries and Oceans Canada*) indicated a need to develop rebuilding plans for stocks in the critical zone that are still being fished. This would include 5Z Atlantic cod and 5Z yellowtail flounder

GOMAC, October 2017²

Discussions consisted of email exchanges between the parties for reasons of efficiency and to reduce scheduling conflicts. The main agenda item was the approval of the recommended Canadian quotas for Georges Bank (5Z) Atlantic Cod, Haddock, and Yellowtail Flounder.

Science Advice on quotas for 5Z groundfish stocks was generated by the Transboundary Resource Assessment Committee (TRAC) in mid-July, as reflected in the attached TRAC Status Reports. Following the TRAC meeting, representatives of the Transboundary Management Guidance Committee (TMGC) met with groundfish industry members on September 8, 2017 in Yarmouth. TMGC received clear recommendations from industry members about the 2018 quotas and the impacts of 5Z groundfish quotas on their operations and livelihoods.

The TMGC met in Boston on September 6th and 7th, and generated joint Canada-U.S. recommendations for 5Z quotas for 2017, summarized in Table 12. GOMAC and New England Fisheries Management Council members agreed with the recommended TACs, quotas and shares for 2017. Final approvals were received from the DFO Minister.

² Content is from emails provided by DFO's J. Ford to GOMAC members.

Table 12. TMGC recommended TACs and Quotas (mt) for 5Z: 2017 (Final) and 2018 (Recommended).

Species	2017 (Final)					2018 (Recommended)				
	TAC (mt)	Quota (mt)		Share (%)		TAC (mt)	Quota (mt)		Share (%)	
		Canada	US	Canada	US		Canada	US	Canada	US
Cod	730	584	146	80	20	951	694	257	73	27
Haddock	50,000	20,500	29,500	41	59	40,000	24,400	15,600	61	39
Yellowtail	300	93	207	31	69	300	87	213	29	71

Note: For 2017, the overall Haddock TAC increased by 35% but the Canadian quota decreased slightly as a result of a significant shift in haddock distributions to the US side in the 2015 and 2016 research surveys.

Note that for Haddock, the overall TAC will increase by 35% but the Canadian quota will decrease slightly as a result of a significant shift in haddock distributions to the US side in the 2015 and 2016 research surveys.

Updates from 2017 Stock assessment

The 2016 DFO survey index was the highest value for the time series (1986-2016), but decreased by 48% in 2017. A similar decrease occurred for the 2016 NMFS fall survey from 2015 to 2016 (53%), but index values increased by 16% from 2016 to 2017 for the NMFS spring survey (see Figure 2 within panel below).

Several large recruitment events since 1990 and reduced capture of small fish in the fisheries allowed the adult population biomass (ages 3+) to increase from near a historical low of 10,208 mt in 1993 to a historical high of 293,317 mt in 2016. At the beginning of 2017, adult biomass was 274,482 mt (80% confidence interval: 208,936 mt – 359,157 mt) (see Figure 3 within the panel below). The more than doubling of the adult biomass after 2005 was due to the exceptionally strong 2003 year class, estimated at 196 million age 1 fish. A preliminary estimate for the 2016 year class is 111 million age 1 fish. The current estimate for the 2013 year class at age 1 is 885 million fish, which would make it the largest cohort in the assessment time series, followed by the 2010 year class at 243 million age 1 fish. Except for the recent strong year classes, recruitment has fluctuated between 1.8 and 26.1 million age 1 fish since 1990.

Fishing mortality (population weighted for ages 4-8 prior to 2003 and ages 5-8 for 2003-2013) fluctuated between 0.26 and 0.47 during the 1980s, and increased in 1992 to 1994 to about 0.55, the highest observed since 1971. After 2002, the age at full recruitment to the fishery has been at age 5 (previously age 4) due to a decline in size at age of haddock. Fishing was below $F_{ref} = 0.26$ during 1995 to 2003, fluctuated around 0.35 in 2004 to 2006, then declined to 0.15 in 2008. Fishing mortality increased to levels above F_{ref} from 2010 to 2014 before dropping off again in 2015. In 2016, F was estimated at 0.10 (80% confidence interval: 0.08-0.14), well below F_{ref} (see Figure 1 within the panel below).

TRAC Advice

The TMGC concluded that the most appropriate combined Canada/U.S. TAC for Eastern Georges Bank haddock for the 2018 fishing year is 40,000 mt, representing a value below the low risk (25%) of exceeding F_{ref} using the VPA and below the neutral risk (50%) of exceeding F_{ref} in the sensitivity analysis accounting for past model overestimation of biomass (TRAC, 2017). Although model projections show a decrease in biomass in upcoming years, biomass is expected to remain high. Analyses provided by TRAC suggest that while there have been changes in growth and selectivity since the last benchmark, the F_{ref} is more conservative than when originally negotiated and remains relevant. This quota represents a 10,000 mt reduction compared to the 2017 TAC and addresses concerns around the growth of the 2013 year class and the request from industry for stability in inter-annual TACs. The TMGC also agreed that since the TRAC provided two-year catch advice, and given uncertainties surrounding model performance and the request for stability, the TMGC recommends that 40,000 mt be used as an upper bound when determining 2019 catch advice. The annual allocation shares between countries for 2018 are based on a combination of historical catches (10% weighting) and resource distribution based on trawl surveys (90%

weighting). Combining these factors entitles the U.S. to 39% and Canada to 61% of the TAC, resulting in a national quota of 15,600 mt for the U.S. and 24,400 mt for Canada.

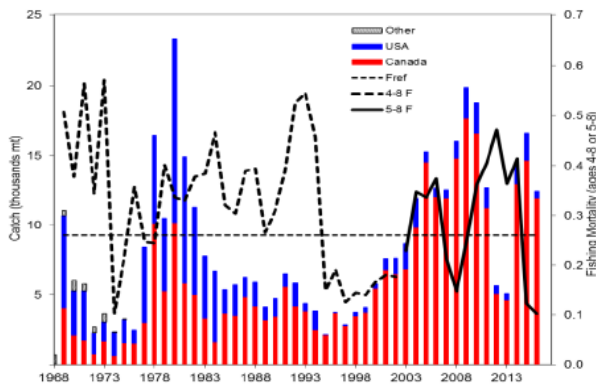


Figure 1. Catches and fishing mortality (F for ages 4-8 for 1969-2002 and ages 5-8 for 2003-2016) for Eastern Georges Bank (EGB) haddock. The asterisk (*) represents the rho adjusted value for fishing mortality in the terminal year.

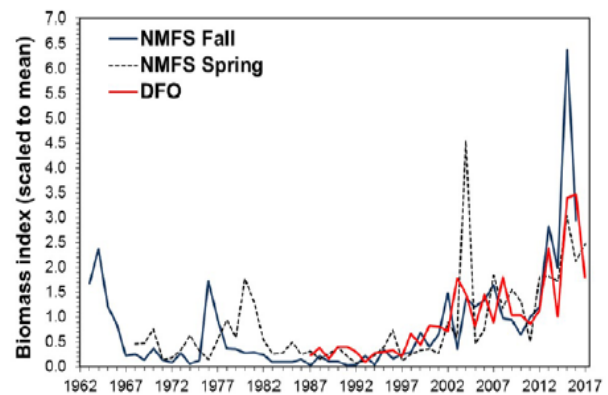


Figure 2. Scaled total biomass indices from research surveys for EGB haddock.

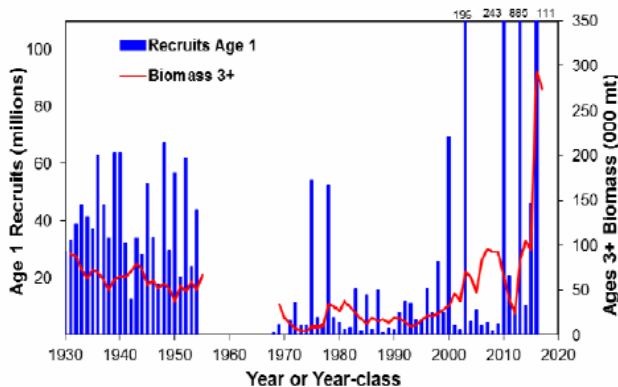


Figure 3. Biomass and recruitment for EGB haddock. The asterisk (*) represents the rho adjusted value for biomass (red) and recruits (blue) in the terminal year.

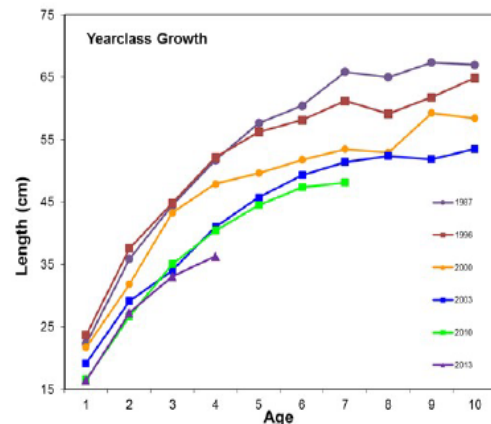


Figure 4. Mean length at age for selected year classes of EGB haddock sampled from the DFO survey.

Figure 2. Biomass, Catch, Fishing Mortalities and Mean length at Age of Eastern Georges Bank Haddock: Source TRAC 2017³

North Atlantic Right Whale (NARW)

During the 2017 summer, an aggregation of over 100 individual NARW was present in the Gulf of St Lawrence (GSL) and an unprecedented mortality event occurred (Daoust et al 2017). Between June 6th and September 15th, 13 incidents involving 12 dead individuals were reported in the GSL. Necropsies on some of these whales concluded that fishing gear entanglement or blunt trauma, likely from vessels transiting the area, contributed or caused the fatalities. A further 5 NARW were observed as being entangled in fishing gear. The Southern GSL snow crab fishery was implicated in a number of the fatal and non-fatal entanglements.

In November 2017, DFO Maritimes Region sent a letter (see Appendix 3) to all licensed lobster, snow crab and groundfish harvesters, notifying them of the NARW entanglements in the Gulf of St Lawrence and highlighting that the whales will migrate to their overwintering grounds off the US coast and, in so doing, there would be an increased risk of encountering the whales while fishing within the DFO Maritimes Region. The notification highlighted that as NARW are observed, DFO may close defined areas that pose a risk of entanglement and

³ https://www.nefsc.noaa.gov/saw/trac/tsr_2017_haddock.pdf

also asked fishermen to use voluntary practices to help the safe migration of the whales:

1. to be extra vigilant in regularly tending gear;
2. avoid setting or retrieving gear when whales sighted in the area;
3. minimise floating gear/rope in the water.
4. report any sightings to DFO and any dead, injured or entangled whales to the Marine Animal Response Society.

While the interaction with NARW was focused on the GSL and the snow crab fishery, the audit team were made aware that, in response to the situation, DFO undertook engagement sessions with the fishing industry in different Gulf, Maritimes and Atlantic provinces between October and early November 2017.

Specific to the DFO Maritimes Region, 26 engagement meetings and workshops (18 in-person; 8 by phone) were convened with fixed gear industry groups September and March 2017 (DFO, 2018a). Their purpose was to inform the industry of the situation, highlight that NARW and other whales migrate between the Gulf and the eastern seaboard of Canada and the U.S, whale behaviour may be changing in response to environmental change and that evidence shows that entanglement in fixed fishing gear and vessels strikes are the main threats to some whale species, in particular the NARW. The workshops were also intended to provide a forum through which recommendations on how operational aspects and management of fisheries could be adapted to mitigate any interactions with whales. DFO confirmed that in the event of entanglement in fixed gear during 2018 they will evaluate the situation and determine if additional measures can be taken and that these measures will be informed by the current on-going dialogue within DFO and with the industry.

Furthermore additional obligatory and voluntary management measures were included in the 2018/2019 licence conditions for all groundfish fleets – See Appendix 3.

On 1st June 2018, The Regional Director-General, Maritimes Region, Fisheries and Oceans Canada, notified fishers that, owing to the presence of NARW, fishing with fixed gear for groundfish in an area in Division 4X (see below) was prohibited from 3rd June 2018, until further notice.

The closure applied to waters enclosed by a straight line joining the following points in the order in which they are listed:

Point	North Latitude	West Longitude
1.	42° 41' 46.232" N	65° 20' 0.000" W
2.	43° 0' 0.000" N	65° 20' 0.000" W
3.	43° 0' 0.000"N	64° 57' 12.810" W
4.	42° 47' 0.000" N	64° 59' 0.000" W
5	42° 41' 46.232" N	65° 20' 0.000" W

A Critical Habitat Order was issued in December 2017 for NARW (see http://www.registrelep-sararegistry.gc.ca/document/default_e.cfm?documentID=3207).

Critical habitat is the habitat necessary for the survival or recovery of a listed endangered, threatened or extirpated species in Schedule 1 of the Species At Risk Act (SARA). Critical habitat will be identified in the recovery strategy or action plan for each listed species and posted on the SARA Public Registry.

The Critical Habitat Order is made to satisfy the obligation to ensure that the identified critical habitat of the NARW is legally protected. With the Order, the NARW benefits from the prohibition in subsection 58(1) of SARA against the destruction of any part of its critical habitat. The prohibition applies to anyone undertaking activities in and around the NARW critical habitat that would result in the destruction of any part of it. (See : https://www.registrelep-sararegistry.gc.ca/document/default_e.cfm?documentID=3207).

As the haddock fishery is not an activity that is likely to destroy critical habitat for NARW, the Critical Habitat Order will not impact the fishery.

Maritimes Research Vessel Survey Trends⁴

Georges Bank

The Georges Bank (NAFO 5Z) Winter RV Survey has been conducted annually since 1987 (Figure 3). The survey is the primary data source for monitoring trends in species distribution, abundance, and biological condition on Georges Bank.

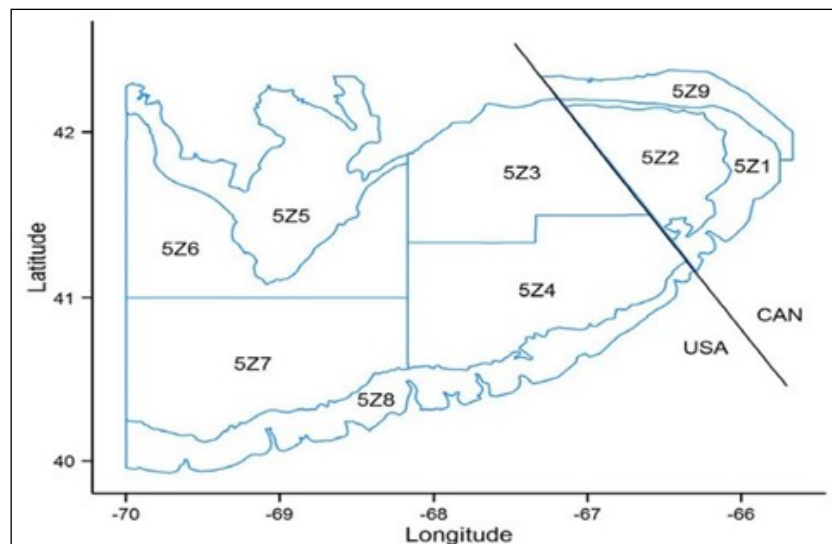


Figure 3. Georges Bank (5Z) Winter RV Survey Strata.

The time-series of survey biomass indices are compared to averages for a series of time periods to provide historical context for biomass levels.

Table 13 represents Winter RV Survey biomass indices (tonnes) by species for 2015, 2016, 2017, 3-year geometric mean (GM), and 40% and 80% of the long-term (1987-2016) GM. No time period averages (NA) were provided for mixed Little and Winter Skates because sampling began in 2014

⁴ DFO. 2016. 2016 Maritimes Winter Research Vessel Survey Trends on Georges Bank. DFO Can. Sci. Advis. Sec. Sci. Resp. 2016/042. The report results from the DFO Science Response Process of 2nd June, 2016.

Table 13. Research Vessel Survey biomass indices (mt), means and time periods.

Species	2015	2016	2017	Current 3yr GM	40% Long- Term GM	80% Long- Term GM
Cod	3,652	3,625	17,071	5,719	5,058	10,117
Haddock	261,530	232,880	65,511	208,625	19,969	39,937
Pollock	1,591	168	5,546	459	625	1,251
Yellowtail	822	1,728	11,505	787	1,894	3,788
Smooth Skate	5	0.3	10	2	2	4
Thorny Skate	45	63	165	49	39	77
Barndoor Skate	83	281	159	77	37	74
Winter Skate	5,428	26,531	13,485	4,446	4,072	8,145
Little Skate	3,407	4,327	7,305	3,770	2,536	5,072
Mixed Winter/Little Skate	126	550	901-			

Conclusions

The 3-year GM biomass indices in 2017 for Strata 5Z1-5Z4 from the Winter RV Survey were below 40% of the long-term GM (1987-2015) biomass for pollock, yellowtail flounder, and Winter skate. For haddock, the 3-year GM biomass index was the highest in the series. For species such as smooth skate and pollock, which are generally found in water deeper than is found in Strata 5Z1-5Z4 on Georges Bank, inclusion of a broader area may be needed to provide indices that are useful for monitoring abundance trends.

Maritimes Summer Research Vessel Survey Trends⁵

Scotian Shelf and Bay of Fundy

DFO has conducted Summer Research Vessel (RV) surveys in the Maritimes Region, Northwest Atlantic Fisheries Organization (NAFO) Divisions 4VWX and a small portion of 5Y, using a standardized protocol since 1970 (Figure 4).

While these data reflect trends in biomass and abundance and are a critical part of science-based stock assessments, a full assessment, including other sources of data, would be required to evaluate the impacts of management measures on population status. The time-series of survey biomass indices are compared to averages for a series of time periods to provide historical context for biomass levels (Table 14).

⁵ DFO. 2017. 2016 Maritimes Research Vessel Survey Trends on the Scotian Shelf and Bay of Fundy. DFO Can. Sci. Advis. Sec. Sci. Resp. 2017/004. This Science Response Report results from the Science Response Process of 1st December 2016.

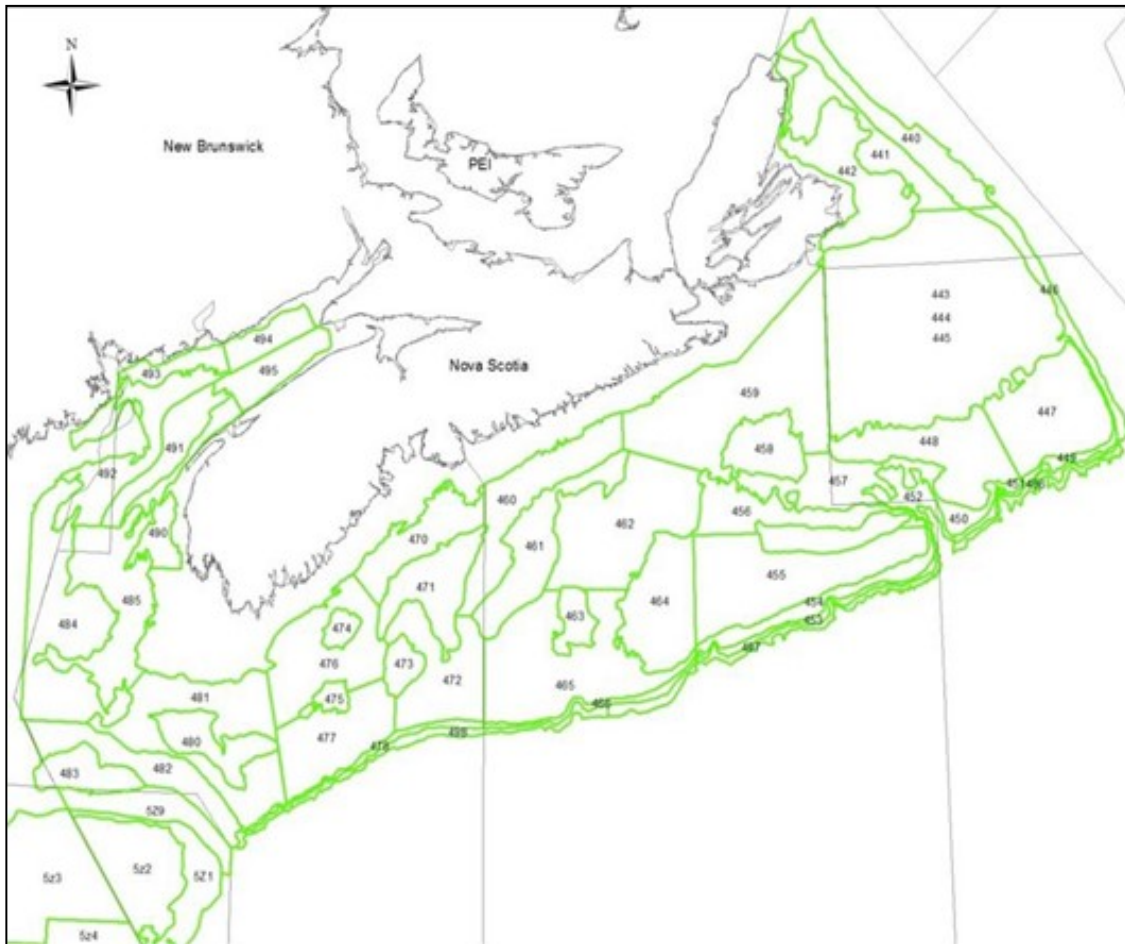


Figure 4. 2016 Summer Research Vessel Survey Strata.

Table 14. DFO Summer Research Vessel survey biomass indices (mt) for species by stock/region for 2014, 2015, 2016 and averages for long-term (1970 – 2015), medium-term 15-year (2001 – 2015), and short-term 5-year (2011 – 2015) time periods. Only strata 440 – 495 were included in calculations.

Stock/Region	2014	2015	2016	Av. 1970 – 2015	Av. 2001 – 2015	Av. 2011 – 2015
4X Atlantic Cod	2,786	3,722	5,195	19,397	7,599	3,122
4VsW Atlantic Cod	23,393	3,464	1,691	49,207	17,299	13,762
4Vn Atlantic Cod	2,388	1,729	20,643	14,500	4,178	2,175
4VW Haddock	37,638	20,093	32,209	58,191	57,175	32,099
4X Haddock	42,911	69,820	62,550	56,031	53,192	45,233
4VW White Hake	3,159	5,767	5,221	9,605	4,865	3,729
4X White Hake	9,582	6,452	11,216	17,889	11,033	8,155
4VWX Silver Hake*	60,364	40,230	46,074	36,778	32,091	47,227
Western Component Pollock	9,752	5,199	32,192	29,409	27,522	11,234
Eastern Component Pollock	13,654	22,190	15,754	30,152	28,146	51,610
Unit II Redfish	55,170	14,675	64,701	48,788	39,200	31,638
Unit III Redfish	76,917	176,411	345,764	117,221	134,099	149,536
4X American Plaice	525	273	299	1,945	974	547
4VW American Plaice	3,369	5,669	3,515	22,872	14,078	9,085
4X Witch Flounder	1,594	1,684	1,344	1,793	1,434	1,073
4VW Witch Flounder	2,323	2,932	6,457	3,904	4,239	3,716
4X Yellowtail Flounder	119	466	106	647	733	349
4VW Yellowtail Flounder	11,485	9,690	9,973	13,443	10,241	11,364
4X Winter Flounder	2,673	6,250	4,760	3,622	5,428	5,051
4VW Winter Flounder	431	1,366	299	893	494	704
3NOPs4VWX5Zc Atlantic Halibut	8,530	10,789	11,501	3,780	5,999	8,488
4X Atlantic Wolffish	25	208	113	1,978	529	238
4VW Atlantic Wolffish	267	142	159	1,855	687	272
4X Monkfish	1,306	803	853	2,152	911	727
4VW Monkfish	454	638	928	3,054	998	754
4X Smooth Skate	344	339	476	471	350	292
4VW Smooth Skate	40	81	160	441	157	107
4X Thorny Skate	372	606	69	3,724	731	340
4VW Thorny Skate	705	1,111	1,184	10,766	3,432	1,707
4X Barndoor Skate	2,879	1,453	2,225	519	1,335	1,384
4VW Barndoor Skate	712	253	1,169	306	408	674
4X Winter Skate	206	1,134	818	985	837	970
4VW Winter Skate	419	139	161	3,354	517	266
4X Little Skate	536	1,726	1,325	821	995	1,171
4VW Little Skate	76	0	44	134	92	109
4VWX Spiny Dogfish	133,384	42,472	114,542	125,805	149,521	100,608
4X Longhorn Sculpin	713	1,568	1,241	1,563	1,621	1,166
4VW Longhorn Sculpin	1,261	2,147	1,085	2,777	2,481	1,477

*For silver hake, long-term average is 1982 – 2015.

Conclusions (Excerpted)

Biomass indices for 4VsW cod and 4X Thorny Skate are the lowest in the time-series. The short-term average for 4VWX Silver Hake, 4X Winter Flounder, 4X and 4VW Barndoor Skate, and 4X Little Skate are all greater than the long-term average of the time series. The short-term mean of 4X5Y Haddock, 4VW Yellowtail Flounder, 4VW Winter Flounder, 4VW Witch Flounder, 4X Winter Skate, 4VW Little Skate, 4X Longhorn Sculpin, and 4VWX Spiny Dogfish all remain at similar biomass estimates to the long-term average (short-term mean biomass greater than 70% of the long-term mean). The short term mean biomass estimate for all other fish stocks (4Vn, 4VsW, and 4X5Y Atlantic Cod, 4VW Haddock, 4X and 4VW White Hake, 4VW and 4X American Plaice, 4X Witch Flounder, 4X Yellowtail Founder, 4VW and 4X Smooth Skate, 4VW and 4X Thorny Skate, 4VW Winter Skate, 4VW and 4X Atlantic Wolffish, 4VW and 4X Monkfish, 4VW Longhorn Sculpin) are below the long-term mean.

The short-term mean for all Atlantic Cod stocks are reduced to less than 50% of the long-term average, and both 4Vn and 4X Cod are less than 20% of the long-term. A biomass index greater than the long term mean was observed in 4Vn Atlantic Cod in 2016; this was largely due to the catch from a single tow and may not represent an increase that will continue in the stock. The short-term mean for both 4X and 4VW White Hake are less than 50% of the long-term mean, but the biomass indices for these stocks remain above the SFGAC defined lower reference points. The short-term mean is less than 50% of the long-term for American Plaice and Monkfish in all areas, and biomass continues to be at or near the time-series low. Similarly, the short-term mean for Atlantic Wolffish and Thorny Skate are below 20% of the long-term average and biomass estimates remained very low in recent years. The short-term average of biomass estimates of Smooth Skate in 4VW are less than 50% of the long-term, but the stock biomass in 4X has been at or near the long-term average in recent years. Similarly, the short-term average of 4X Winter Skate is similar to the long-term average, but 4VW short-term biomass estimates are less than 20% of the long-term. 4X Yellowtail and Witch Flounder, and 4VW Haddock and Longhorn Sculpin have short-term biomass estimates between 50-70% of the long-term average.

4.2. Relevant Changes to Legislation and Regulations

Conditions of Licence have been revised to include the following requirements specific to Species at Risk (SARA) species:

For all fleets:

- Mandatory reporting of lost gear (VRN or VIN, identification # on buoy (if applicable), lat/lon and last date the gear was fished) to DFO.MaritimesGear-EnginsMaritimes.MPO@dfo-mpo.gc.ca
- Mandatory reporting of marine mammal interactions (bycatch, collision and all sightings of marine mammals entangled in fishing gear). Complete and submit the DFO Marine Mammal Interaction Form (available at <http://www.dfo-mpo.gc.ca/fm-gp/mammals-mammiferes/index-eng.htm>).
- A new updated SARA logbook was available from suppliers as of January 2018 and new SARA logbook instructions are included in 2018/19 licence conditions. For 2018 only, industry can submit the 'old' SARA log to Dockside Monitoring Companies. However, starting in 2019, they must use the most up-to-date version. SARA log must be submitted for each trip, even if it is a NIL report.

4.3. Relevant Changes to the Management Regime

A new IFMP was adopted in December 2017 (DFO, 2017a). The plan takes into account the outcome of the 2016 Auditor General's report on "Sustaining Canada's Major Fish Stocks – Fisheries and Oceans, Canada"⁶

⁶ http://www.oag-bvg.gc.ca/internet/English/att_e_41724.html

which highlighted deficiencies with some IFMPs. It is noted that at the time of the audit the IFMP had not been published on the DFO website.

4.4. Changes in Key Personnel

There have been a number of internal personnel changes within DFO:

- Melanie Barret is now the lead scientist for the haddock stock in 5Z.
- Jennifer Hiltz is acting as the Senior Advisor for groundfish in the 5Z transboundary area.
- Penny Doherty is acting as the Senior Advisor for the groundfish fishery in 4VWX.

None of these changes were reported to affect the ability of DFO to continue to effectively manage the fishery or affect the relationship with the fishing industry.

4.5. Traceability Within the Fishery

There were no reported changes or developments within the fishery which impact traceability or the ability to segregate between fish from the UoCs and fish from outside the UoC (non-certified fish).

4.6. Harmonisation

MSC CR v2.0 Guidance states that, *“The aim of harmonisation is to avoid the perversity that two essentially similar fisheries receiving materially different scores (materially in the number, and text, of conditions, or in the overall outcome, whether a pass or a fail). Fisheries that are identical should receive identical scores.”* MSC have also confirmed that harmonisation of similar fisheries using different versions of the default assessment tree, i.e. v1.3 and v2.0, should still take place where they are materially unchanged (MSC Interpretations webpage).

Therefore, in this instance, it is concluded that harmonisation is required for those fisheries that:

1. Target the same Principle 1 stock and have been assessed using v1.3, i.e. the same version used for the Canada Scotia Fundy Haddock Fishery; and,
2. Operate under the same overarching governance and policy framework (PIs prefixed with 3.1).

Table 15 lists the MSC certified or in-assessment fisheries that overlap with the Canada Scotia Fundy Haddock Fishery. The fisheries that are coloured are those that meet points 1 and 2 above and need to be harmonised:

Table 15. MSC certified and in-assessment fisheries that overlap with the Canada Scotia Fundy Haddock Fishery

MSC Fishery	MSC Link	MSC CR version		Comment
		1.3	2.0	
Full Bay Sea Scallop	https://fisheries.msc.org/en/fisheries/fbsa-canada-full-bay-sea-scallop	✓		Harmonisation required for PIs pre-fixed with 3.1
Gulf of Maine Lobster trap	https://fisheries.msc.org/en/fisheries/gulf-of-maine-lobster-fishery	✓		Not the same P1 stock or overarching governance and policy framework
Eastern Canada Offshore Scallop	https://fisheries.msc.org/en/fisheries/eastern-canada-offshore-scallop	✓		Harmonisation required for PIs pre-fixed with 3.1

MSC Fishery	MSC Link	MSC CR version		Comment
		1.3	2.0	
Eastern Canada Offshore Lobster	https://fisheries.msc.org/en/fisheries/eastern-canada-offshore-lobster	✓		Harmonisation required for PIs pre-fixed with 3.1
North West Atlantic Longline Swordfish	https://fisheries.msc.org/en/fisheries/north-west-atlantic-canada-longline-swordfish	✓		Harmonisation required for PIs pre-fixed with 3.1
US Acadian Redfish, haddock and Pollock Otter Trawl	https://fisheries.msc.org/en/fisheries/us-acadian-redfish-haddock-and-pollock-otter-trawl-fishery	✓		Not the same P1 stock or overarching governance and policy framework
US Gulf of Maine and George's Bank Haddock, Pollock and Redfish trawl	https://fisheries.msc.org/en/fisheries/us-gulf-of-maine-and-georges-bank-haddock-pollock-and-redfish-trawl		✓	Not the same P1 stock or overarching governance and policy framework
North West Atlantic Harpoon Swordfish	https://fisheries.msc.org/en/fisheries/north-west-atlantic-canada-harpoon-swordfish	✓		Harmonisation required for PIs pre-fixed with 3.1
Canada Atlantic Halibut	https://fisheries.msc.org/en/fisheries/canada-atlantic-halibut	✓		Harmonisation required for PIs pre-fixed with 3.1
US Acadian Redfish, haddock and Pollock Otter Trawl	https://fisheries.msc.org/en/fisheries/us-acadian-redfish-haddock-and-pollock-otter-trawl-fishery	✓		Not the same P1 stock or overarching governance and policy framework
US Gulf of Maine and George's Bank Haddock, Pollock and Redfish trawl	https://fisheries.msc.org/en/fisheries/us-gulf-of-maine-and-georges-bank-haddock-pollock-and-redfish-trawl		✓	Not the same P1 stock or overarching governance and policy framework
US Atlantic Spiny Dogfish	https://fisheries.msc.org/en/fisheries/us-atlantic-spiny-dogfish	✓		Not the same P1 stock or overarching governance and policy framework
US Atlantic Surfclam and Ocean Quahog	https://fisheries.msc.org/en/fisheries/us-atlantic-surfclam-and-ocean-quahog	✓		Not the same P1 stock or overarching governance and policy framework
US North Atlantic Swordfish	https://fisheries.msc.org/en/fisheries/us-north-atlantic-swordfish	✓		Not the same P1 stock or overarching governance and policy framework
US North East Longfin Inshore Bottom Trawl Fishery	https://fisheries.msc.org/en/fisheries/us-northeast-longfin-inshore-squid-bottom-trawl-fishery	✓		Not the same P1 stock or overarching governance and policy framework

Table 16. Overlapping fisheries with the same Principle 3 governance and policy framework PIs

MSC Fishery	3.1.1	3.1.2	3.1.3	3.1.4
Full Bay Sea Scallop	100	95	100	100
Eastern Canada Offshore Scallop	95	90	100	90
Eastern Canada Offshore Lobster	95	90	100	90
North West Atlantic Longline Swordfish	95	90	100	90
North West Atlantic Harpoon Swordfish	95	90	100	90
Canada Scotia Fundy Haddock Trawl	90	90	80	100
Canada Atlantic Halibut	90	90	90	100

The audit team can confirm that the Scotia Fundy Haddock Fishery is harmonised with each of the overlapping certified / in-assessment fisheries, see Table 16.

4.7. The General Conditions of Certification

The general 'Conditions' set out for the GEAC as the certificate holder are as follows:

- The Client must recognize that MSC standards require regular monitoring inspections at least once a year, focusing on compliance with the 'Conditions' set forth in this report (as outlined below) and continued conformity with the standards of certification;
- The Client must agree by contract to be responsible financially and technically for compliance with required surveillance audits by an accredited MSC certification body, and a contract must be signed and verified by SAI Global prior to certification being awarded;
- The Client must recognize that MSC standards require a full re-evaluation for certification (as opposed to yearly monitoring for update purposes) every five years;
- Prior to receiving re-certification, the Client fulfilled the requirement to document an 'Action Plan' for meeting the conditions for continued certification, and this was approved by SAI Global; and
- The Client must provide a list of all the entities eligible for certification as well as a list of active vessels fishing under one the certificate. This list must be updated annually prior to each annual surveillance audit activity.

Fulfilment of General Conditions – Surveillance Audit 2:

- An Action Plan was submitted and accepted prior to the initial certification of the Canada Scotia-Fundy Haddock Fishery and actions undertaken against the milestones of each Condition in the intervening period are reported upon in the next following sections.
- An up-dated list of members of the client group has been provided and a list of active vessels during the 2017 fishery.

4.8. The Specific Conditions of Certification

During the re-assessment of the Canada Scotia-Fundy Haddock Fishery, conditional scores were allocated for five PIs (PI 2.1.1 Retained Species Outcome, PI 2.1.2 Retained Species Management Strategy, PI 2.2.1 Bycatch Species Outcome, PI 2.2.2 Bycatch species management strategy, PI 2.2.3 Bycatch species information/monitoring).

Table 17. Summary of Assessment Conditions

Condition number	Performance Indicator (PI)	Status	PI original score	PI revised score
1	2.1.1	Open - On Target	75	Not revised
2	2.1.2	Open - On Target	75	Not revised
3	2.2.1	Open - On Target	75	Not revised
4	2.2.2	Open - On Target	75	Not revised
5	2.2.3	Open - On Target	75	Not revised

5. Assessment Process

The Surveillance Audit followed the current version of MSC procedures implemented by SAI Global's accredited MSC Procedures (QP).

MSC Scheme Document	Issue Date	Implementation
MSC Certification Requirements v1.3	January 14 th , 2013	Standard
MSC FCR and Guidance v2.0	October 1 st , 2014	Process
General Certification Requirements v.2.1	February 20 th , 2015	Process
Surveillance Reporting Template v1.0	October 8 th , 2014	Process

Table 18. Fishery Surveillance Program.

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 6	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit.

The surveillance audit was conducted as a normal onsite audit.

The Surveillance Audit was comprised in general of:

1. To review any changes in the management of the fishery, including regulations, key management or scientific staff or stock evaluation.
2. To evaluate the progress of the fishery against any Conditions of Certification raised during the Main Assessment.
3. To review any developments or changes within the fishery which impact traceability and the ability to segregate MSC from non-MSC products.
4. To review any other significant changes in the fishery.

The surveillance audit consisted of the announcement to stakeholders and interested parties as required through the MSC website and more direct stakeholder contact with the original stakeholders that took part in the initial assessment and management organizations that comprise the management system and regime for the Canada Scotia-Fundy Haddock Fishery. Through this process, a stakeholder consultation plan was developed as part of the on-site assessment.

Emails and information on objectives of the surveillance audit were sent to stakeholders and management agencies. From this, a surveillance on-site meeting plan was organized and appointments for each individual meeting set. Due to the nature of the management of the Canada Scotia-Fundy Haddock Fishery, and the geographic location of the respective clients and stakeholders, the on-site audit meeting was proposed to be in Halifax, Nova Scotia, Canada.

- The on site Surveillance Audit took place on 5th and 6th April 2018.
- On-site audits were performed by Paul Knapman (Lead Auditor) and Ivan Mateo (Auditor).

The surveillance audit meeting was informed by a pre-determined agenda. The agenda was set out so as to allow specific stakeholder interests and concerns to be covered through a structured approach.

Information and notes from the consultation phase of the audit were combined with a review of formal documentation from science and management agencies, regulatory amendments and the direct evidence collected during the site visit meetings.

5.1. Summary of stakeholder and client meetings

Arising out of the stakeholder consultation plan preparation stakeholders were contacted directly by e-mail and a final direct consultation plan for the audit was prepared. Table 19 details the dates, meeting locations and organisations that were consulted through direct meetings or conference calls during the on-site surveillance assessment.

All meetings were conducted by the Surveillance Team.

Table 19. Consultation Meetings during the On Site Surveillance Assessment of the the Canada Scotia-Fundy Haddock Fishery.

Location	Halifax, Nova Scotia, Canada	
Venue	Central Library	
Date	5 th April 2018	
Time	1030 -1230	
Representative	Organisation	Position
Paul Knapman	On behalf of SAIGlobal	Lead Auditor P3 specialist
Ivan Mateo	SAIGlobal	Auditor & P1/P2 specialist
Kris Vascotto	GEAC	Executive Director
Steve Devitt	GEAC	Director of Sustainability

Location	DFO, Dartmouth, Nova Scotia, Canada	
Venue	Bedford Institute of Oceanography (BIO)	
Date	5 th April 2018	
Time	1300 - 1500	
Representative	Organisation	Position
Paul Knapman	On behalf of SAIGlobal	Lead Auditor P3 specialist
Ivan Mateo	SAIGlobal	Auditor & P1/P2 specialist
Kris Vascotto	GEAC	Executive Director
Steve Devitt	GEAC	Director of Sustainability
Laura Hussey-Bondt	DFO	Eco-certification Coordinator
Scott Coffen-Smout	DFO	Ecosystems Management
Penny Doherty	DFO	Senior Advisor 5Z groundfish
Monica Finley (by phone)	DFO	Stock Assessment Biologist 4X5Y haddock
Melanie MacClean	DFO	Policy and Economics
Thomas Wheaton	DFO	Science Coordinator
Jay Lugar (Observer)	MSC	MSC Outreach

Location	Teleconference – The above meeting had to be cut short owing to a burst water main at the BIO. The meeting was reconvened the following day	
Date	6 th April 2018	
Time	1000 -1130	
Representative	Organisation	Position
Paul Knapman	On behalf of SAIGlobal	Lead Auditor P3 specialist
Ivan Mateo	SAIGlobal	Auditor & P1/P2 specialist
Steve Devitt	GEAC	Director of Sustainability
Laura Hussey-Bondt	DFO	Eco-certification Coordinator
Scott Coffen-Smout	DFO	Ecosystems Management
Penny Doherty	DFO	Senior Advisor 5Z groundfish
Thomas Wheaton	DFO	Science Coordinator
Jay Lugar (Observer)	MSC	MSC Outreach

6. Results

6.1. Evaluation tables for Conditions during the 2nd Surveillance Audit 2018.

As indicated in Section 4.7 (Table 17), during the formal reassessment of the Canada Scotia-Fundy Haddock Fishery, a total of 5 conditions were raised, all of which relate to Principle 2. Details including the evidence collected during this are presented below. The details from last year's audit are also included to show where incremental progress has been made.

6.1.1. Condition 1

	PI number	Scoring issue / scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.1.1. Retained Species Outcome.	<u>SG80</u> Slc. If main retained species are 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.	75
Condition	Applicable to: UoC1 – Area 4X5Y OT and UoC2 – Area 4X5Y LL The client must provide evidence that there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding of retained species (4X5Y Cod).		
Milestones	<p><u>By Year 2:</u> The Assessment Team shall be provided with evidence that a partial strategy to reduce 4X5Y Cod mortality by retained catch of the Scotia-Fundy Haddock fisheries (OTB,LL) has been reviewed and corrective adjustments (if any) have been taken.</p> <p><u>By Year 4:</u> The Assessment Team shall be provided with evidence that the relative fishing mortality for 4X5Y Cod has been maintained at levels that would enable a positive recovery trajectory.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide “evidence of recovery” or a “demonstrably effective strategy” as being in place such that the fishery does not hinder recovery of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> ▪ Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass. ▪ Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other cod stocks, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered. ▪ Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as ‘demonstrably effective’. 		
Client Action Plan	<p><u>Client Action Plan</u> Action required: To implement management measures to maintain relative fishing mortality at levels that would enable a positive recovery trajectory. This will be achieved by the following:</p> <p><u>By Year 2:</u></p>		

	<p>The Assessment Team shall be provided with evidence that a partial strategy to reduce 4X5Y Cod mortality by retained catch of the Scotia-Fundy Haddock fisheries (OTB,LL) has been reviewed and corrective adjustments (if any) have been taken.</p> <p><u>By Year 4:</u></p> <p>The Assessment Team shall be provided with evidence that the relative fishing mortality for 4X5Y Cod has been maintained at levels that would enable a positive recovery trajectory.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide “evidence of recovery” or a “demonstrably effective strategy” as being in place such that the fishery does not hinder recovery of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> ▪ Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass. ▪ Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other cod stocks, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered. ▪ Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as ‘demonstrably effective’. <p><u>Responsible parties</u></p> <p>Client in consultation with DFO.</p> <p><u>Timeframe for Milestones</u></p> <p>Timescale: The outcome above should be achieved within 4 years of certification.</p>
<p>Progress on Condition Year 2</p>	<p>The following submission was made by the client:</p> <p>In addition to having met the Year 2 milestone during the Year 1 audit, the client would like to report the following for consideration by the audit team.</p> <p>At the first year audit, the client demonstrated that partial strategy is fully implemented and is achieving the expected results of continuing to reduce fishing mortality on this stock. The estimated relative fishing mortality calculated for 2016 was 0.12 (DFO, 2018 Science Response: 4X5Y Atlantic Cod (<i>in draft</i>)). The TAC reduction approach of implanting a 1,650mt TAC over a two-year period was carried forward again for the 2017/ 18 and 2018/19 seasons. In addition to the measures identified at last year’s audit, a stock assessment is expected to be completed in 2018/19, thus informing Fisheries Management on any need to change its current approach. Further, a Rebuilding Plan for 4X5Y Atlantic Cod was developed and signed by the Region in 2017/18.</p> <p>The client again contends that the requirements of this condition have been met within the capacity of the certified fishery and management agency to control fishing mortality such that the fishery is not hindering recovery or rebuilding. Guidance for MSC FCR v1.3 relative to the application of PI 2.1.1 scoring issue C is very limited. The most relevant explanation can be found in FCRv1.3 Guidance in Table GC4, which is an example of development of a condition for PI 2.2.1. Specifically, the example rationale states “<i>Both scoring issues for SG60 are met, however since the mitigation measures have been recently implemented, they cannot yet be shown to be demonstrably effective and the scoring issue for SG80 is not met.</i>” Further, the example Client Action Plan speaks of “<i>The client fishery will conduct ongoing monitoring of current mitigation measures to show that they are demonstrably effective such that the fishery does not hinder recovery and rebuilding...</i>” Both of these examples clearly demonstrate that the intended emphasis is on ensuring that the mitigation measures are effective, not that the impacted</p>

species is in fact rebuilding.

Guidance relative to this issue is much better explained in MSC FCR version 2.0 (GSA3.4.6) and the client would request that the audit team review this fully. Understanding that while the concept of unit of assessment or cumulative impacts are specific to FCR version 2 certified fisheries, the intent described in this guidance clearly defines the MSC's intent on this issue. Pertinent phrases from this guidance include:

- *The text in this clause and its associated scoring issues require teams to evaluate whether a species below the PRI is actually recovering or if either the over-arching management strategy or a specific strategy employed by UoA(s) allows for a species to recover, even in the absence of recovery at the time of assessment.*
- *If a species below the PRI has an overarching recovery strategy in place, with effort controls set on total fishing mortality that are adhered to, an 80 score may also be achieved where evidence exists that the fishing mortality caused by all MSC UoAs is within the limits set by the recovery strategy in place for the species.*
- *If there is no evidence of recovery as outlined above, by either evaluating stock biomass or total fishing mortality, SA3.4.6d allows an 80 score in cases where the proportion of combined catch by all relevant MSC UoAs is effectively not hindering recovery. In other words, in cases where total fishing mortality is not below FMSY, teams need to evaluate whether the marginal fishing mortality caused only by the relevant MSC UoAs is material to the stock's ability to recover.*

Given this guidance, the client opines that the intent of this condition has been met and there is not a specific requirement to demonstrate the stock is rebuilding. FCR version 2.0, Table GSA3 provides additional support for this argument. The further explanation of *Does not Hinder* states:

This should be interpreted as not materially or significantly impeding recovery or rebuilding and relates to the potential impact of the UoA rather than an observed change in the absolute status of the component.

- *If there is a formally planned recovery then the management of the UoA(s) should be consistent with that plan and should not prevent the planned recovery from being achieved in the intended timeframe.*
- *If there is no formally planned recovery then the UoA(s) would permit recovery on a timeframe that is consistent with the natural dynamics of the species.*

Sometimes a species is depleted or otherwise experiencing very low productivity for reasons that are unrelated to the impacts of the UoA (e.g. highly unfavourable environmental conditions, effects of contaminants on reproduction, etc.). Due to such factors, there is never a guarantee that a species will recover promptly, even in the absence of fishing. The key concern is thus whether or not the UoA could prevent a potential recovery from occurring. Hence it is appropriate to evaluate this component relative to the impact of the UoA on the species (or all MSC UoAs where appropriate), but not actually require evidence that the status of the species is improving. This is different to the treatment of target species in P1, where low status would preclude certification irrespective of the cause of that low status.

Given the actions of DFO to reduce fishing mortality, collect additional information and develop/implement a rebuilding strategy, in addition to the clearly anomalous ecosystem conditions observed since 2015 on the Scotian Shelf, it is clear that the fishery has demonstrably implemented an effective partial strategy and that ecosystem conditions are likely having a significant impact on the recovery of cod in this region (and others). The client requests that the audit team reconsider the available evidence and re-score this performance indicator.

	<u>Audit Team Conclusion</u> The Audit Team has considered all available information of relevance to the Action Plan's Year 2 milestone for this PI. It is clear from the available evidence that the client has worked closely with DFO and other industry stakeholders since the recertification of the fishery in laying the groundwork to demonstrate that the strategy for current fishing practices in the Scotia Fundy haddock fishery is effective in not hindering the recovery of 4X5Y cod. Evidence of this includes the estimated relative fishing mortality for 2016 at 0.12 which is lower than the F_{ref} . The team recognizes that progress has been made and the ongoing work is under the guidance of a strategy agreed to by members of the SFGAC. Accordingly, the client has met the Year 2 milestone for Condition 1. The audit team commend the fishery for reducing the fishing pressure below the F target reference point and continued performance will result in the condition being met. Given this is the first time that current fishing pressure is below the F target, the audit team consider that at least one more year is needed to show the current fishing mortality can be maintained at levels that would enable a positive recovery trajectory. Therefore, the Condition remains open and the original score for this PI remains unchanged.
Status of condition	Open and on-target.

6.1.2. Condition 2

	PI number	Scoring issue / scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.1.2. Retained Species Management Strategy	<u>SG80</u> Sla. There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	75
Condition	Applicable to: UoC1 – Area 4X5Y OT and UoC2 – Area 4X5Y LL The client must provide evidence that there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding of retained species (4X5Y Cod).		
Milestones	<p><u>By Year 2:</u> The Assessment Team shall be provided with evidence that a partial strategy to reduce 4X5Y Cod mortality by retained catch of the Scotia-Fundy Haddock fisheries (OTB,LL) has been reviewed and corrective adjustments (if any) have been taken.</p> <p><u>By Year 4:</u> The Assessment Team shall be provided with evidence that the relative fishing mortality for 4X5Y Cod has been maintained at levels that would enable a positive recovery trajectory.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide “evidence of recovery” or a “demonstrably effective strategy” as being in place such that the fishery does not hinder recovery of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> ▪ Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass. ▪ Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other cod stocks, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered. 		

	<ul style="list-style-type: none"> Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as 'demonstrably effective'.
Client Action Plan	<p><u>Client Action Plan</u> Action required: To implement management measures to maintain relative fishing mortality at levels that would enable a positive recovery trajectory. This will be achieved by the following:</p> <p><u>By Year 2:</u> The Assessment Team shall be provided with evidence that a partial strategy to reduce 4X5Y Cod mortality by retained catch of the Scotia-Fundy Haddock fisheries (OTB,LL) has been reviewed and corrective adjustments (if any) have been taken.</p> <p><u>By Year 4:</u> The Assessment Team shall be provided with evidence that the relative fishing mortality for 4X5Y Cod has been maintained at levels that would enable a positive recovery trajectory.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide "evidence of recovery" or a "demonstrably effective strategy" as being in place such that the fishery does not hinder recovery of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass. Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other cod stocks, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered. Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as 'demonstrably effective'. <p><u>Responsible parties</u> Client in consultation with DFO.</p> <p><u>Timeframe for Milestones</u> Timescale: The outcome above should be achieved within 4 years of certification.</p>
Progress on Condition Year 2	<p>The following submission was made by the client:</p> <p>In addition to having met the Year 2 milestone during the Year 1 audit, the client would like to report the following for consideration by the audit team. Considering the Year 2 response offered under Condition 1, the client offers the following information with regards to the second year deliverable.</p> <p>The 2018 Stock Status Update of Atlantic Cod in NAFO Division 4X5YB noted that in the most recent stock assessment (2008), a conservation Limit Reference Point (LRP) was calculated for the Spawning Stock Biomass (SSB) based on a Beverton-Holt stock recruitment model as $B_{lim} = 24,000$ t and the <u>target</u> fishing mortality (F_{ref}) was 0.2. The most recent DFO Summer Research vessel survey biomass index for 4X Atlantic cod noted the continued increase, 2,786mt (2014), 3,722mt (2015) and 5,195mt (2016).</p> <p>Approximate relative fishing mortality from the certified haddock groundfish UoCs is 0.075, calculated using a two year (2016, 2017) average of the total catch of all gears of 667mt, a catchability (q) of ~0.5 and a two year (2015, 2016) average SSB index for 4X Atlantic Cod, as</p>

calculated from the Summer RV survey indices of 4458mt.

Two new documents specific to Atlantic Cod in 4X5Y have been published since the last audit including a Stock Status update of Atlantic Cod in NAFO Divisions 4X5Y_B (DFO, 2018 Science Response: 4X5Y Atlantic Cod (*in draft*)); and a Rebuilding Plan for Atlantic Cod in NAFO Division 4X5Y. Further, in regards to overall 4X5Y groundfish fishery management, an update of the evergreen 4VWX5 Groundfish Integrated Fishery Management Plan for the Scotia Fundy region was finalized and authorized in March 2018. Collectively, these documents demonstrate that DFO have fully implemented a “partial strategy” (a cohesive arrangement which may comprise one or more **measures**, an **understanding of how it/they work** to achieve an outcome and an **awareness of the need to change** the measures should they cease to be effective) for the management of the certified haddock fisheries’ impact on 4X5Y stock status.

The Stock Status update included new survey information from the 2016 and 2017 annual DFO Summer Research Vessel survey and fishery landing data up to 2016. The following summary points are from that Stock Status update (DFO, In-press). In 2017, Atlantic Cod survey biomass was 3,068 t, which is above the series low seen in 2013 (2,058 t), but it remains among the lowest in the time series. As a result of recent TAC decreases and relatively stable survey biomass indices in recent years, the 2016 and 2017 relative fishing mortality (relF) is the lowest in the time series (Figure 5). Overall, the total mortality (combination of natural mortality, mortality from reported fishery landings and discards, unaccounted for mortality, and fish emigration) of Age 4 and 5 (Z4-5) has been quite variable over the time series. However, this variability has increased since 2003, with values ranging from -0.06 to 2.78 (Figure 5). Moreover, there have been very few Atlantic Cod older than Age 5 in survey and fishery catches since 2010 (Figure 6), which suggest that natural mortality of Age 4+ Cod remains elevated or has further increased.

Recent assessment work on adjacent Eastern Georges Bank, Eastern Scotian Shelf, Southern Gulf of St. Lawrence, and Gulf of Maine stocks confirm that productivity has been unusually low due to persistent low recruitment and high total mortality across the entire area (DFO 2011b, Mohn and Rowe 2012, Palmer 2014, Swain et al. 2012, TRAC 2016). In 4X5Y_B, total mortality of Age 4+ Atlantic Cod was elevated from 2009 to 2016.

The purpose of the draft 4X5Y Atlantic Cod Rebuilding Plan is to identify the main objectives and requirements for Atlantic Cod in NAFO division 4X5Y, as well as the management measures that will be used to achieve these objectives. This document also serves to communicate the basic information on 4X5Y Atlantic Cod and its management to DFO staff, Indigenous groups, and other fishery interests. This plan provides a common understanding of the basic “rules” for rebuilding this stock. The objectives and measures outlined in this plan are applicable as long as 4X5Y Atlantic Cod is below the LRP. Management measures outlined in this rebuilding plan are mandatory and may be modified to include additional catch restrictions if they fail to result in stock rebuilding.

In addition to describing the historical and current context of 4X5Y Atlantic cod fishery and stock status, the document re-confirms the limit (24,000mt) and upper (48,000mt) stock reference points, as well as the interim fishing mortality reference point for the Critical Zone (F_{Lim}) of 0.1, which will be used to guide management decisions until the fishery is out of the Critical Zone. Management issues, short, mid and long-term objectives are described, along with management measures and harvest strategies for target and bycatch fisheries. Finally, requirement for the plan evaluation and performance review are described, including a listing of on-going/ future actions to support the rebuilding plan.

Finally, revision of the evergreen 4VWX5 Groundfish Integrated Fishery Management Plan (IFMP) has resulted in a much more comprehensive document that describes the overarching objectives and requirements for the 4VWX5 groundfish fishery. This document includes and re-communicates many management pieces, previously seen during evaluation of this certified fishery. Appendices include updates on key targeted and non-directed species, outlining the objectives for management of each species, and includes similar information on 4X5Y Atlantic cod as presented in the rebuilding plan, and the updated conservation strategy for skate species.

	<p>Given the actions of DFO to reduce fishing mortality, increase in the survey index biomass, ongoing collection of additional information and development/ implementation of a rebuilding strategy, in addition to the clearly anomalous ecosystem conditions observed since 2015 on the Scotian Shelf, it is clear that the fishery has demonstrably implemented an effective partial strategy and that ecosystem conditions are likely having a significant impact on the recovery of cod in this region (and others). The client requests that the audit team reconsider the available evidence and re-score this performance indicator.</p> <p><u>Audit Team Conclusion</u></p> <p>The Audit Team has considered all available information of relevance to the Action Plan's Year 2 milestone for this PI. It is clear from the available evidence that the client has worked closely with DFO and other industry stakeholders since the recertification of the fishery in laying the groundwork to demonstrate that the strategy for current fishing practices in the Scotia Fundy haddock fishery is effective in not hindering the recovery of 4X5Y cod. Evidence of this includes the estimated relative fishing mortality for 2016 at 0.12 which is lower than the F_{ref}. The team recognizes that progress has been made and the ongoing work is under the guidance of a strategy agreed to by members of the SFGAC. Accordingly, the client has met the Year 2 milestone for Condition 2. Given this is the first time that current fishing pressure is below the F target, the audit team consider that further time is needed to show the current fishing mortality can be maintained at levels that would enable a positive recovery trajectory, as described by the year 4 milestone. Therefore, the Condition remains open and the original score for this PI remains unchanged.</p>
Status of condition	Open and on target

6.1.3. Condition 3

	PI number	Scoring issue / scoring guidepost text	Score
Performance Indicator(s) & Score(s)	PI 2.2.1. Bycatch Species Outcome	<p><u>SG 80</u></p> <p>SI b. If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.</p>	75
Condition	<p>Applicable to: UoC2 - 4X5Y LL The client must provide evidence that a partial strategy of demonstrably effective management measures is in place such that the Canadian Scotia- Fundy Haddock Fishery does not hinder the recovery and rebuilding of 4X5Y Thorny Skate.</p> <p>Applicable to: UoC5 - 5Zjm OT; UoC6 - 5Zjm LL The client must provide evidence that a partial strategy of demonstrably effective management measures is in place such that the Canadian Scotia-Fundy Haddock Fishery does not hinder the recovery and rebuilding of 5Zjm Thorny Skate.</p>		
Milestones	<p>Applicable to: UoC2 – 4X5Y LL; UoC5 - 5Zjm OT; UoC6 - 5Zjm LL</p> <p><u>By Year 1:</u> Area 4X5Y (LL) and 5Zjm (OT) (LL). In the first year following grant of recertification, GEAC will work actively with DFO to monitor compliance and implementation of the adopted Skate Conservation Strategy, and other (new) measures as may be appropriate, with the aim of being able to demonstrate that this Strategy is resulting in sufficiently low fishing mortality such that</p>		

	<p>the fishery does not hinder recovery and rebuilding. Information required for this purpose shall include the following:</p> <ul style="list-style-type: none"> ▪ Examination of the status of Thorny Skate relative to its' Limit Reference Point (LRP) proxy ; ▪ For each gear type, fleet sector and management area, (i) data on Thorny Skate bycatch from the pre-assessment averages reported in the initial 2010 fishery assessment to March 2015, in regards to annual quantities caught/retained and discarded, and associated percentages of haddock catch, and (ii) haddock trip catch and effort; ▪ Quantified estimates of discard mortality in relation to the summer and winter RV biomass index for the pre-assessment period and recent years; and ▪ Examination of observer reports relative to the management measures applicable to Thorny Skate i.e. handling, live release, move-away protocol etc. <p>By Year 2: The Assessment Team shall be provided with evidence that the partial strategy to mitigate 4X5Y thorny skate bycatch has been reviewed and corrective adjustments (if any) have been taken.</p> <p>By Year 4: The Assessment Team shall be provided with evidence that the abundance of Thorny Skate is on a positive recovery trajectory, or an assessment that the estimated fishing mortality is not hindering recovery.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide "evidence of recovery" or a "demonstrably effective strategy" as being in place such that the fishery does not hinder recovery and rebuilding of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> ▪ Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass. ▪ Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other skate species, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered. ▪ Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as 'demonstrably effective'.
Client Action Plan	<p><u>Client Action Plan</u></p> <p>Action required: Continue with the implementation of the Thorny Skate bycatch strategy and monitoring of the resource by means of the DFO RV surveys. This will be achieved by the following:</p> <p>By Year 1:</p> <p>Area 4X5Y (OTB) & (LL) and 5Zjm (LL). In the first year following recertification, GEAC will work actively with DFO to monitor compliance and implementation of the adopted Skate Conservation Strategy, and other (new) measures as may be appropriate, with the aim of being able to demonstrate that this Strategy is resulting in low fishing mortality. Information required for this purpose shall include the following:</p> <ul style="list-style-type: none"> ▪ Examination of the status of Thorny Skate relative to its' Limit Reference Point (LRP) proxy; ▪ For each gear type, fleet sector and management area, (i) data on Thorny Skate bycatch from the pre-assessment averages reported in the initial 2010 fishery assessment to March 2015, in regards to annual quantities caught/retained and discarded, and associated percentages of haddock catch, and (ii) haddock catch and effort;

	<ul style="list-style-type: none"> ▪ Quantified estimates of discard mortality in relation to the summer and winter RV biomass index for the pre-assessment period and recent years; and ▪ Examination of observer reports relative to the management measures applicable to Thorny Skate i.e. handling, live release, move-away protocol etc. <p><u>By Year 2:</u></p> <p>The Assessment Team shall be provided with evidence that the partial strategy to mitigate 4X5Y thorny skate bycatch has been reviewed and corrective adjustments (if any) have been taken.</p> <p><u>By Year 4:</u></p> <p>The Assessment Team shall be provided with evidence that the abundance of Thorny Skate is on a positive recovery trajectory, or an assessment that the estimated fishing mortality is not hindering recovery.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide “evidence of recovery” or a “demonstrably effective strategy” as being in place such that the fishery does not hinder recovery and rebuilding of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> ▪ Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass. ▪ Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other skate stocks, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered. ▪ Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as ‘demonstrably effective’.
<p>Progress on Condition Year 2</p>	<p>The following submission was made by the client:</p> <p>At the first year audit, the client demonstrated that partial strategy has been successfully implemented. For the second audit, the client provides evidence that the partial strategy to mitigate 4X5Y thorny skate bycatch has been reviewed, and corrective actions taken if necessary.</p> <p>Review of the existing strategy was undertaken since the last audit under two separate processes including preparation and approval of the 4VWX5 IFMP inclusive of the SFGAC Skate Conservation Strategy; and, by the updated analysis presented below.</p> <p>Recalling that 4X5Y and 5Zjm thorny skate stocks are below their respective LRP proxies, a conservation strategy was developed by GEAC for this plus two other skate species stocks in these as well as other areas (4VW). The strategy was implemented in 2015. Revision of the evergreen 4VWX5 IFMP started in 2016 and was authorized in March 2018. As per all significant policy guidance tools, revision of the IFMP has been completed through a revision process within the Scotia Fundy Groundfish Advisory Committee process. Further, requirements for release of thorny skate species is clearly defined in the Conditions of Licence issued annually to harvesters</p> <p>DFO also provided an update of the analysis on thorny skate discards by fishery and gear type for fixed and mobile gear haddock-directed trips in 5Zjm and 4X5Y for 2012-2017.</p> <p>The tables presented below present only groundfish trips (excluding halibut directed trips), since the request was to determine if the move away protocol for thorny skate was followed for 4X5Y and 5Zjm haddock fisheries (and not halibut longline). This substantially reduces the number of at-sea observed trips available for the analysis, to the extent that there were no non-halibut directed groundfish fixed gear trips observed in 2013, 2014 and 2017.</p> <p>What the analysis shows is that the move-on threshold of 200kg/tow for mobile gear was reached for 2 of 2220 tows (0.1%) on eastern Georges Bank during this 6-year period. There</p>

were no mobile gear tows which exceeded this amount in the Georges Bank fishery in 2017. All of the observer trip reports for the trips with high thorny skate bycatch were verified and there was no documentation indicating that the vessel actually moved away from the high bycatch areas. For mobile gear in 4X5Y, there were no tows with thorny skate bycatch exceeding the 200 kg threshold from 2012-2017.

5Zjm Mobile

Year	Discard wt (kg)	Sets with t. skate	sets with catch > 199 kg	% of sets > 199 kg	Maximum wt/set (kg)
2012	4441	512	1	0.2	200
2013	3451	466	0	0.0	127
2014	2191	312	0	0.0	170
2015	1419	275	0	0.0	40
2016	3764	456	1	0.2	200
2017	2326	199	0	0.0	80
Total	17592	2220	2	0.1	200

4X5Y Mobile

Year	Discard wt (kg)	Sets with t. skate	sets with catch > 199 kg	% of sets > 199 kg	Maximum wt/set (kg)
2012	3129	80	0	0	136
2013	224	32	0	0	20
2014	398	23	0	0	90
2015	22	3	0	0	14
2016	141	6	0	0	68
2017	519	30	0	0	50
Total	4433	174	0	0	136

For the 5Zjm fixed gear fishery on Georges, 4 sets out of 367 (1.1%) had thorny skate bycatches exceeding the 100 kg threshold over the 6 year period, but again there was no written confirmation by the observers that the vessel moved away from the high skate bycatch areas. There were no sets on Georges that exceeded this amount in 2017. 4X5Y fixed gear observer deployments on haddock-directed longline occurred in 2012, 2015 and 2016. None of these had skate bycatch rates exceeding the 100 kg threshold.

5Zjm Fixed

Year	Discard wt (kg)	Sets with t. skate	Sets with catch > 99 kg	% of sets > 99 kg	Maximum wt/set (kg)
2012	3122	181	0	0.0	64
2013	786	75	0	0.0	45
2014	793	42	1	2.4	109
2015	1448	49	3	6.1	175
2016	343	15	0	0.0	75
2017	95	5	0	0.0	40
Total	6587	367	4	1.1	175

	4X5Y Fixed					
		Discard	Sets with	sets with	% of sets	Maximum
	Year	wt (kg)	t. skate	catch > 99 kg	> 99 kg	wt/set (kg)
	2012	49	5	0	0	20
	2013		no coverage			
	2014		no coverage			
	2015	63	4	0	0	23
	2016	195	11	0	0	40
	2017		no coverage			
	Total	307	9	0	0	40
	<p>In summary, although there have been a few occasions in the 5Zjm haddock fishery where thorny skate bycatch has exceeded the gear specific thresholds established by SFGAC, there is no evidence indicating that a “move away” protocol was practiced.</p> <p>It is not clear that at-sea observers have been specifically instructed to record when vessels are moving on, the client will confirm this with the at-sea observer service providers and DFO. Given the very low percentage of triggered events, the client would argue that the fishery has successfully mitigated thorny skate bycatch, primarily by capture avoidance.</p> <p>Overall, through both processes, the Skate Conservation Strategy has been reviewed and continues to be effective, no additional corrective actions to the approach is required.</p>					
	<p><u>Audit Team Conclusion</u></p> <p>The Audit Team has considered all available information of relevance to the Action Plan’s Year 2 milestone for this PI. It is clear from the available evidence that the client has worked closely with DFO and other industry stakeholders since the recertification of the fishery in laying the groundwork for improved data collection across the fishery and participating fleets. Progress has been made and the ongoing work is under the guidance of a strategy agreed to by members of the SFGAC. Accordingly, the client has met the Year 2 milestone for Condition 3.</p> <p>The audit team note the absence of a Year 3 Milestone. It is recommended that at the year 3 audit the client provide an update on the partial strategy and, if available information suggests that the stock is not on a positive recovery trajectory, what consideration they might have given to demonstrating that the stock is not being hindered by the fishery, in accordance with their agreed client action plan, i.e. using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> Proxy approaches, including reference to fishing mortality levels and the use of simulation studies for other skate stocks, in which expert opinion is acceptable. Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. confirming that the stock is expected to recover, and thus that the strategy can be regarded as ‘demonstrably effective’. <p>The Condition remains open and the original score for this PI remains unchanged.</p>					
Status of condition		Open and on target				

6.1.4. Condition 4

Performance Indicator(s) & Score(s)	PI number(s)	Scoring issue / scoring guidepost text	Score
	PI 2.2.2. Bycatch species management strategy	<p><u>SG 80</u></p> <p>SI a: There is a partial strategy in place, if necessary, that is expected to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.</p> <p>SI b: There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.</p> <p>SI c: There is some evidence that the partial strategy is being implemented successfully.</p>	75
Condition	<p>Applicable to: UoC2 - 4X5Y LL The client must provide evidence that a partial strategy of demonstrably effective management measures is in place such that the Canadian Scotia- Fundy Haddock Fishery does not hinder the recovery and rebuilding of 4X5Y Thorny Skate.</p> <p>Applicable to: UoC5 - 5Zjm OT; UoC6 - 5Zjm LL The client must provide evidence that a partial strategy of demonstrably effective management measures is in place such that the Canadian Scotia-Fundy Haddock Fishery does not hinder the recovery and rebuilding of 5Zjm Thorny Skate.</p>		
Milestones	<p>Applicable to: UoC2 – 4X5Y LL; UoC5 - 5Zjm OT; UoC6 - 5Zjm LL</p> <p><u>By Year 1:</u></p> <p>Area 4X5Y (LL) and 5Zjm (OT) (LL). In the first year following grant of recertification, GEAC will work actively with DFO to monitor compliance and implementation of the adopted Skate Conservation Strategy, and other (new) measures as may be appropriate, with the aim of being able to demonstrate that this Strategy is resulting in sufficiently low fishing mortality such that the fishery does not hinder recovery and rebuilding. Information required for this purpose shall include the following:</p> <ul style="list-style-type: none"> ▪ Examination of the status of Thorny Skate relative to its' Limit Reference Point (LRP) proxy ; ▪ For each gear type, fleet sector and management area, (i) data on Thorny Skate bycatch from the pre-assessment averages reported in the initial 2010 fishery assessment to March 2015, in regards to annual quantities caught/retained and discarded, and associated percentages of haddock catch, and (ii) haddock trip catch and effort; ▪ Quantified estimates of discard mortality in relation to the summer and winter RV biomass index for the pre-assessment period and recent years; and ▪ Examination of observer reports relative to the management measures applicable to Thorny Skate i.e. handling, live release, move-away protocol etc. <p><u>By Year 2:</u></p> <p>The Assessment Team shall be provided with evidence that the partial strategy to mitigate 4X5Y thorny skate bycatch has been reviewed and corrective adjustments (if any) have been taken.</p> <p><u>By Year 4:</u></p> <p>The Assessment Team shall be provided with evidence that the abundance of Thorny Skate is on a positive recovery trajectory, or an assessment that the estimated fishing mortality is not</p>		

	<p>hindering recovery.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide “evidence of recovery” or a “demonstrably effective strategy” as being in place such that the fishery does not hinder recovery and rebuilding of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> ▪ Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass. ▪ Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other skate species, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered. ▪ Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as ‘demonstrably effective’.
<p>Client Action Plan</p>	<p><u>Client Action Plan</u></p> <p>Action required: Continue with the implementation of the Thorny Skate bycatch strategy and monitoring of the resource by means of the DFO RV surveys. This will be achieved by the following:</p> <p><u>By Year 1:</u></p> <p>Area 4X5Y (OTB) & (LL) and 5Zjm (LL). In the first year following recertification, GEAC will work actively with DFO to monitor compliance and implementation of the adopted Skate Conservation Strategy, and other (new) measures as may be appropriate, with the aim of being able to demonstrate that this Strategy is resulting in low fishing mortality. Information required for this purpose shall include the following:</p> <ul style="list-style-type: none"> ▪ Examination of the status of Thorny Skate relative to its’ Limit Reference Point (LRP) proxy; ▪ For each gear type, fleet sector and management area, (i) data on Thorny Skate bycatch from the pre-assessment averages reported in the initial 2010 fishery assessment to March 2015, in regards to annual quantities caught/retained and discarded, and associated percentages of haddock catch, and (ii) haddock catch and effort; ▪ Quantified estimates of discard mortality in relation to the summer and winter RV biomass index for the pre-assessment period and recent years; and ▪ Examination of observer reports relative to the management measures applicable to Thorny Skate i.e. handling, live release, move-away protocol etc. <p><u>By Year 2:</u></p> <p>The Assessment Team shall be provided with evidence that the partial strategy to mitigate 4X5Y thorny skate bycatch has been reviewed and corrective adjustments (if any) have been taken.</p> <p><u>By Year 4:</u></p> <p>The Assessment Team shall be provided with evidence that the abundance of Thorny Skate is on a positive recovery trajectory, or an assessment that the estimated fishing mortality is not hindering recovery.</p> <p>Where a species is below the level at which recruitment could be impaired, the client shall provide “evidence of recovery” or a “demonstrably effective strategy” as being in place such that the fishery does not hinder recovery and rebuilding of the species using any or a combination of the following as rationale:</p> <ul style="list-style-type: none"> ▪ Evaluation of a recovery of a species below the limit reference point is actually happening on a stock level, as evidenced by a demonstrably increasing trend in biomass.

	<ul style="list-style-type: none">▪ Proxy approaches may be used, including reference to fishing mortality levels and the use of simulation studies for other skate stocks, in which expert opinion is acceptable. In a very general sense, if fishing mortality for the entire stock is less than FMSY (the fishing mortality that would deliver maximum sustainable yield) the recovery of the stock can reasonably be expected to not be hindered.▪ Simulation studies which combine information on recent and expected F levels, stock size and recruitment etc. may also be used to confirm that the stock is expected to recover, and thus that the strategy can be regarded as ‘demonstrably effective’.																																																
Progress on Condition Year 2	<p>The following submission was made by the client:</p> <p>At the first year audit, the client demonstrated that partial strategy has been successfully implemented. For the second audit, the client provides evidence that the partial strategy to mitigate 4X5Y thorny skate bycatch has been reviewed, and corrective actions taken if necessary.</p> <p>Review of the existing strategy was undertaken since the last audit under two separate processes including preparation and approval of the 4VWX5 IFMP inclusive of the SFGAC Skate Conservation Strategy; and, by the updated analysis presented below.</p> <p>Recalling that 4X5Y and 5Zjm thorny skate stocks are below their respective LRP proxies, a conservation strategy was developed by GEAC for this plus two other skate species stocks in these as well as other areas (4VW). The strategy was implemented in 2015. Revision of the evergreen 4VWX5 IFMP started in 2016 and was authorized in March 2018. As per all significant policy guidance tools, revision of the IFMP has been completed through a revision process within the Scotia Fundy Groundfish Advisory Committee process. Further, requirements for release of thorny skate species is clearly defined in the Conditions of Licence issued annually to harvesters.</p> <p>DFO also provided an update of the analysis on thorny skate discards by fishery and gear type for fixed and mobile gear haddock-directed trips in 5Zjm and 4X5Y for 2012-2017.</p> <p>The tables presented below present only groundfish trips (excluding halibut directed trips), since the request was to determine if the move away protocol for thorny skate was followed for 4X5Y and 5Zjm haddock fisheries (and not halibut longline). This substantially reduces the number of at-sea observed trips available for the analysis, to the extent that there were no non-halibut directed groundfish fixed gear trips observed in 2013, 2014 and 2017.</p> <p>What the analysis shows is that the move-on threshold of 200kg/tow for mobile gear was reached for 2 of 2220 tows (0.1%) on eastern Georges Bank during this 6-year period. There were no mobile gear tows which exceeded this amount in the Georges Bank fishery in 2017. All of the observer trip reports for the trips with high thorny skate bycatch were verified and there was no documentation indicating that the vessel actually moved away from the high bycatch areas. For mobile gear in 4X5Y, there were no tows with thorny skate bycatch exceeding the 200 kg threshold from 2012-2017.</p> <p>5Zjm Mobile</p> <table><tr><th>Year</th><th>Discard wt (kg)</th><th>Sets with t. skate</th><th>sets with catch > 199 kg</th><th>% of sets > 199 kg</th><th>Maximum wt/set (kg)</th></tr><tr><td>2012</td><td>4441</td><td>512</td><td>1</td><td>0.2</td><td>200</td></tr><tr><td>2013</td><td>3451</td><td>466</td><td>0</td><td>0.0</td><td>127</td></tr><tr><td>2014</td><td>2191</td><td>312</td><td>0</td><td>0.0</td><td>170</td></tr><tr><td>2015</td><td>1419</td><td>275</td><td>0</td><td>0.0</td><td>40</td></tr><tr><td>2016</td><td>3764</td><td>456</td><td>1</td><td>0.2</td><td>200</td></tr><tr><td>2017</td><td>2326</td><td>199</td><td>0</td><td>0.0</td><td>80</td></tr><tr><td>Total</td><td>17592</td><td>2220</td><td>2</td><td>0.1</td><td>200</td></tr></table>	Year	Discard wt (kg)	Sets with t. skate	sets with catch > 199 kg	% of sets > 199 kg	Maximum wt/set (kg)	2012	4441	512	1	0.2	200	2013	3451	466	0	0.0	127	2014	2191	312	0	0.0	170	2015	1419	275	0	0.0	40	2016	3764	456	1	0.2	200	2017	2326	199	0	0.0	80	Total	17592	2220	2	0.1	200
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4X5Y Mobile

Year	Discard wt (kg)	Sets with t. skate	sets with catch > 199 kg	% of sets > 199 kg	Maximum wt/set (kg)
2012	3129	80	0	0	136
2013	224	32	0	0	20
2014	398	23	0	0	90
2015	22	3	0	0	14
2016	141	6	0	0	68
2017	519	30	0	0	50
Total	4433	174	0	0	136

For the 5Zjm fixed gear fishery on Georges, 4 sets out of 367 (1.1%) had thorny skate bycatches exceeding the 100 kg threshold over the 6 year period, but again there was no written confirmation by the observers that the vessel moved away from the high skate bycatch areas. There were no sets on Georges that exceeded this amount in 2017. 4X5Y fixed gear observer deployments on haddock-directed longline occurred in 2012, 2015 and 2016. None of these had skate bycatch rates exceeding the 100 kg threshold.

5Zjm Fixed

Year	Discard wt (kg)	Sets with t. skate	Sets with catch > 99 kg	% of sets > 99 kg	Maximum wt/set (kg)
2012	3122	181	0	0.0	64
2013	786	75	0	0.0	45
2014	793	42	1	2.4	109
2015	1448	49	3	6.1	175
2016	343	15	0	0.0	75
2017	95	5	0	0.0	40
Total	6587	367	4	1.1	175

4X5Y Fixed

Year	Discard wt (kg)	Sets with t. skate	sets with catch > 99 kg	% of sets > 99 kg	Maximum wt/set (kg)
2012	49	5	0	0	20
2013		no coverage			
2014		no coverage			
2015	63	4	0	0	23
2016	195	11	0	0	40
2017		no coverage			
Total	307	9	0	0	40

In summary, although there have been a few occasions in the 5Zjm haddock fishery where thorny skate bycatch has exceeded the gear specific thresholds established by SFGAC, there is no evidence indicating that a “move away” protocol was practiced.

It is not clear that at-sea observers have been specifically instructed to record when vessels are

	<p>moving on, the client will confirm this with the at-sea observer service providers and DFO. Given the very low percentage of triggered events, the client would argue that the fishery has successfully mitigated thorny skate bycatch, primarily by capture avoidance.</p> <p>Overall, through both processes, the Skate Conservation Strategy has been reviewed and continues to be effective, no additional corrective actions to the approach is required.</p> <p><u>Audit Team Conclusion</u></p> <p>The Audit Team has considered all available information of relevance to the Action Plan's Year 2 milestone for this PI. It is clear from the available evidence that the client has worked closely with DFO and other industry stakeholders since the recertification of the fishery in laying the groundwork for improved data collection across the fishery and participating fleets. Progress has been made and the ongoing work is under the guidance of a strategy agreed to by members of the SFGAC. Accordingly, the client has met the Year 2 milestone for Condition 4.</p> <p>The Condition remains open and the original score for this PI remains unchanged.</p>
Status of condition	Open and on target

6.1.5. Condition 5

	PI number(s)	Scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	PI 2.2.3. Bycatch species information/monitoring	<p>SG 80:</p> <p>SI c: Information is adequate to support a partial strategy to manage main bycatch species.</p> <p>SI d: Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p>	75
Condition	<p>Applicable to: UoC1 - 4X5Y OT; UoC2 - 4X5Y LL</p> <p>The client is required to ensure that sufficient data are collected to enable evaluation of the level and impact of bycatch species in the haddock fishery.</p>		
Milestones	<p><u>By Year 1:</u></p> <p>Area 4X5Y (OTB) & LL): In the first year following grant of recertification, GEAC will work actively with DFO and the third party Observer program service provider to complete a review of recent and appropriate future levels of observer coverage for both fleets operating in the area such that, beginning in 2016, better data are available on the bycatch of species in the haddock fishery.</p> <p><u>By Year 2:</u></p> <p>Improved data collection and estimations of discards by OT and LL in 4X5Y will be adopted.</p> <p><u>By Year 4:</u></p> <p>There will be documented evidence that the adopted data collection and discard estimation mechanisms have been implemented.</p>		
Client Action Plan	<p><u>Client Action Plan</u></p> <p>Action required: Working cooperatively with SFGAC and DFO to improve at-sea observer coverage levels in 4X5Y where appropriate to address identified information gaps, including the organization of observer deployments by fleet, fishing area and season. This will be achieved by the following:</p>		

	<p><u>By Year 1:</u> Area 4X5Y (OTB & LL): In the first year following grant of recertification, GEAC will work actively with DFO and the third party Observer program service provider to complete a review of recent and appropriate future levels of observer coverage for both fleets operating in the area such that, beginning in 2016, better data are available on the bycatch of species in the haddock fishery.</p> <p><u>By Year 2:</u> Improved data collection and estimations of discards by OT and LL in 4X5Y will be adopted.</p> <p><u>By Year 4:</u> There will be documented evidence that the adopted data collection and discard estimation mechanisms have been implemented.</p>
<p>Progress on Condition Year 2</p>	<p>The following submission was provided by the client:</p> <p>The client agreed that by the second year, improved data collection and estimations of discards by OT and LL in 4X5Y would be adopted. In response to this action plan, the following evidence is offered.</p> <p>DFO submission document 1 (4VWX5 Groundfish Observer Coverage to November 2017) provides estimates of At-Sea Observer (ASO) coverage for the DFO Maritimes Region Fixed and Mobile Gear Groundfish Fisheries for the period of 2015 to 2017. This report evaluates the 4X5Y haddock fishery, as required for this condition.</p> <p>DFO reported that the information provided in the two tables below is based on analyses which match data from the Maritimes Region Industry Surveys Database (ISDB) and the MARFIS commercial landings database for fixed and mobile gear categories in 2015, 2016 and 2017 (Jan 1- Nov 3). The percent observer coverage was calculated as: observed catch (t)/total catch (t) X 100 and observed trips/total trips X 100. The fisheries examined included fixed and mobile gear sectors for 4X5Y haddock and other fisheries (see report for detail).</p> <p>This year, adjustments were made to refine the observer coverage estimates for the 4X5Y haddock mobile gear fisheries. The observer database (ISDB) provides details on what type of “directed” trip the observer is deployed on (i.e. cod/haddock/pollock, redfish, halibut, flounder etc.). Similar information is not available in the MARFIS landings database so that landings for 4X5Y haddock include both groundfish and redfish directed trips combined. MARFIS does however contain data on the cod end mesh size used for each commercial set that is reported in the fishing log documents, so this value can be used to filter out haddock landings from redfish trips to provide a better match with the observer data for groundfish (excluding redfish) directed trips. A “mesh size” filter was used to separate out small mesh trips (< 130 mm cod end = redfish) from large mesh trips (≥ 130mm cod end = groundfish) to obtain total landings and trip numbers for groundfish trips and this information was used in the calculations to estimate observer coverage levels.</p> <p><i>Percent observer coverage for 4X5Y haddock (observed haddock catch/ total haddock landings; observed trips with haddock/total trips with haddock) for the 4X5Y groundfish longline fishery, 2015-2017.</i></p> <div data-bbox="344 1659 1455 1856" style="background-color: black; height: 88px; width: 100%;"></div> <p><i>Percent observer coverage for 4X5Y haddock (observed haddock catch/total haddock landings; observed haddock trips/total haddock trips) for 4X5Y haddock from large mesh (cod end mesh size ≥130 mm) groundfish-directed mobile gear fisheries for the western Scotian Shelf/Bay of Fundy, 2015-2017.</i></p>

Year	Large Mesh Had Landings (t)	Large Mesh Had Trips	Obs Had Catch (t)	Obs Had Trips	Obs Had Land (%)	Obs Had Trip (%)
2015	2525.7	425	57.7	14	2.3	3.3
2016	3073.1	483	137.7	17	4.5	3.5
2017	3928.5	408	328.8	25	8.4	6.1

DFO submission document 12 (Observed bycatch 2016 & 2017 Haddock directed trips 4X5Y) provides retained and discard data collected by observers in the 4X5Y fishery for 2016 and 2017 and queried from the ISDB.

It should be noted that the information on attained levels of observer coverage in the fishery (as reported in the proceeding two tables) has been captured differently than what is presented in the reports on observed bycatch in DFO Doc 12, so the number of observed trips will not match up. The bycatch data currently includes trips that were haddock directed according to the observer database. The two observer coverage report tables above are calculated differently. For otter trawl, the observed samples include all groundfish (pollock, cod, haddock) directed trips. The landings include OT haddock with the restriction on mesh size to remove the small mesh redfish fishery landings. For longline, it includes both halibut and groundfish (pollock, cod, haddock) directed observed trips from the ISDB matched with haddock longline landings from MARFIS. Therefore, the number of observed trips includes groundfish directed trips as well as halibut commercial index, and halibut commercial fishery. This is done in order to match as best as possible with MARFIS commercial landings database since halibut and haddock directed trips are not easily differentiated. This information has been provided in a similar manner as in previous years, so it should be consistent.

Appendix 22 of the updated 4VWX5 Groundfish Fishery IFMP (DFO Doc #6) presents the Observer Coverage Plan for the 2017/2018 season. This appendix includes a review of strategies to address challenges which have been identified with the ASO program and its ability to meet the defined targets. There continues to be on-going review and improvement of the observer program as a result of annual review and planning.

Finally, GEAC is currently working with DFO and third party electronic video monitoring service providers to establish the terms of reference for an EVM pilot project. The objective is to determine the feasibility of using this technology in the Scotia Fundy groundfish fisheries to enhance at-sea fishery monitoring options.

Audit Team Comclsuion

The Audit Team has considered all available information of relevance to the Action Plan’s Year 2 milestone for this PI. It is clear from the available evidence that the client has worked closely with DFO and other industry stakeholders since the recertification of the fishery in laying the groundwork for improved data collection across the fishery and participating fleets. Progress has been made and the ongoing work is under the guidance of a strategy agreed to by members of the SFGAC. Accordingly, the client has met the Year 2 milestone for Condition 5.

The Condition remains open and the original score for this PI remains unchanged.

Status of condition	Open and on target
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6.2. Recommendations Update

Recommendations are included to highlight how the management or operation of the fishery could be enhanced and contribute to ongoing efforts to ensure the long-term sustainability of the fishery. Recommendations do not impose a mandatory requirement nor are they auditable, however, they do act as a marker for future audits and assessments and may highlight actions that will ensure information or evidence of good management remain current and continue to meet MSC requirements. A number of

recommendations were made at the re-assessment. These are repeated below along with client and/or DFO responses to each recommendation.

1. DFO should make full use of the “*Fisheries Decisions*” and “*Notice to Fish Harvesters*” sections of the website to communicate current information about the management changes to the fishery (as opposed to only sending email notifications to industry stakeholders).

Response: DFO indicated that information is clearly communicated to affected industry through electronic means, information is sent to the SFGAC distribution list (broader group), direct emails to industry stakeholders. No new progress currently planned (this year) to address this recommendation.

2. DFO should grant membership status to regionally-based Environmental NGOs in respect of the GOMAC committee and appropriate sub-committees on the same basis as currently provided in respect of the SFGAC.

Response: DFO is open to requests for meeting participation. DFO have not yet looked at GOMAC’s TORs. Subject to internal discussion at the moment.

3. DFO and the relevant industry sector should update the Community Management Board Operational Guidelines (December 1998).

Response: DFO indicated that this has not been a priority and has not been raised as an issue.

4. DFO should augment its existing Monitoring and Surveillance (C&P) data for the 4X5Y and 5Zjm Haddock fishery by incorporating data currently captured by the third party at-sea and dockside monitoring services providers. This would add value to the evaluation of some MCS P3 Performance Indicators.

Response: DFO indicated that the Haddock Enforcement Summary (provided) has addressed this.

Fishery specific - 4X5Y and 5Zjm

General

1. DFO should assemble scientific consensus or expert opinion about the potential influence of trophic structure and/or various environmental/ecological conditions in the Southern Scotian Shelf and Northeast Georges Bank in relation to species/stocks that appear to remain at low abundance, despite low-to-moderate fishing mortality rates.

Response: GEAC: In 2017, DFO published CSAS Science Advisory Report 2017/031, Oceanographic Conditions in the Atlantic Zone in 2016, which provided an update of the Atlantic Zone Monitoring Program results inclusive of a description of the seasonal patterns in the distribution of phytoplankton and zooplankton in relation to the physical environment. This document concluded that a number of the measured variables (e.g. surface, bottom temperatures, nutrient inventories, zooplankton composition) demonstrated strong anomalies on the Scotian Shelf, thus supporting the client’s contention that further work may be necessary to demonstrate that stock recoveries for certain species (e.g. cod, thorny skate) are significantly impeded by current environmental circumstances.

4X5Y and 5Zjm Cod

2. DFO and GEAC are encouraged to maintain fishing mortality at low levels until the limit reference point is achieved.

Response: GEAC: Relative fishing mortality for 5Z 4-9 year old cod was reported as 0.05 for 2016. The 2016 reIF for 4X5Yb cod was the lowest in the time series at approximately 0.12.

Porbeagle 4X5Y (OTB, LL) and 5Zjm (OTB, LL)

3. Inconsistencies were found with the Porbeagle discards estimates in the 4X5Y OTB fishery provided by the client and the information included on Table 1 (DFO 2015) of the RPA for the OTB haddock fishery. The assessors recommend that DFO re-examine and explain the basis for both sets of estimates, ideally in advance of the first surveillance audit of the Scotia-Fundy Haddock Fishery.

Response: GEAC: Again, GEAC is compelled to remind SAI Global that recommendations are non-binding and the prescription of additional work outside of certification conditions is neither warranted nor accepted. There is an ICCAT assessment of porbeagle planned in 2019. Further information on this is possible after the shark species intercessional meeting in July 2018.

4. The post-release mortality of un-injured Porbeagle has been investigated but that of injured Porbeagle is largely unknown. The assessors recommend that DFO investigate post-release mortality of injured Porbeagle in order to reduce uncertainty in their estimates.

Response: GEAC: Again, GEAC is compelled to remind SAI Global that recommendations are non-binding and the prescription of additional work outside of certification conditions is neither warranted nor accepted. There is an ICCAT assessment of porbeagle planned in 2019. DFO clarified its position on porbeagle discards last year (Table 8) and has provided estimates of at sea observer records of porbeagle discards for 2016 and 2017.

Through the fishery client for the Canada North West Atlantic swordfish fishery, GEAC has been advised that there was a post release mortality (specific to pelagic longline) study started in 2017 with additional work planned for 2018.

5. There is no accepted limit reference point (LRP) for Porbeagle. An Upper Stock Reference Point of 80% of female spawning stock numbers (SSN) at MSY, SSN80%, is proposed in the 2015 RPA as the population recovery target. The assessors recommend that DFO work toward establishing a limit reference point for Porbeagle.

Response: GEAC: There is an ICCAT assessment of porbeagle planned in 2019. Further information on this is possible after the shark species intercessional meeting in July 2018.

7. Conclusion

The audit team conducting this 2nd surveillance audit confirms that GEAC has met the general requirements for continued certification to the MSC Principles and Criteria for Sustainable Fishing.

The audit team concludes that there is sufficient evidence and information provided by the client and substantiated through the course of the consultation meeting during the surveillance audit to confirm that commitment to meeting the Year 2 Milestones of conditions 1, 2, 3, 4 and 5 of certification has been met.

The audit team recommends that continued certification of the fisheries.

7.1. Outcome of SAI Global Decision

SAI Global determines that:

- **The Canada Scotia-Fundy Haddock Fishery continues to operate a well-managed and sustainable fishery and therefore, continued certification to the MSC Principles and Criteria for Sustainable Fishing is awarded.**

8. References

DFO 2017, Groundfish TACs

DFO, 2017a 4VWX5 Groundfish Integrated Fishery Management Plan, Scotia Fundy Sector, Maritimes Region

DFO, 2017b, Rebuilding Plan for Atlantic cod (*Gadus morhua*) NAFO Division 4V5Y, 2017

DFO, 2018, C&P Maritimes Region enforcement compliance summary for the groundfish fishery between 1st January and 31st December 2017

DFO, 2018a, DFO engagement sessions, workshops, and other meetings that were held in Maritimes Region between Sept 2017 and March 2018 to discuss right whale risks, mitigation options

GOMAC, 2017, Gulf of Maine Advisory Committee, Minutes, April 25, 2017

SFGAC, 2017, Scotia-Fundy Groundfish Advisory Committee, October 17, 2017

SFGAC, 2018, Scotia-Fundy Groundfish Advisory Committee, January 11, 2018

TRAC, 2017, Status Report – Eastern Georges Bank Cod and Haddock Assessments (5Zjm)

9. Appendices

9.1. Appendix 1. Re-scoring evaluation tables

Not applicable

9.2. Appendix 2. Stakeholder submissions

Not applicable

9.3. Appendix 3. Surveillance audit information



Fisheries and Oceans Canada
Pêches et Océans Canada

1 Challenger Drive
PO Box 1006
Dartmouth, NS
B2Y 4A2

MAR 06 2018

Mr. Kris Vascotto
Groundfish Enterprise Allocation Council
P.O. Box 28
Clementsvalle, NS
B0S 1G0

Re: Canada Scotia-Fundy Haddock Marine Stewardship Council Certification - Second Annual Surveillance Audit

Dear Mr. Vascotto:

I am writing in response to your request for a material change letter, which is required for your upcoming second annual surveillance audit of the Canada Scotia-Fundy haddock fishery for Marine Stewardship Council (MSC) certification. As the audit will examine if there have been any significant changes to the fishery or the way it has been managed over the past year, an update on Fisheries and Oceans Canada (DFO) activities related to this fishery since the first audit in March 2017 is provided below.

Regarding the assessment of the resource, the process has not changed. Stock status advice continues to be reported in the appropriate series, e.g. DFO's Science Advisory Reports/Science Responses or Transboundary Resource Assessment Committee Status Reports.

With respect to the management of the fishery, enforcement of the small fish protocol for haddock in 5Z (Georges Bank) has continued to be suspended due to the exceptionally high abundance and stunted growth of the 2013 year class. This will be re-evaluated prior to the start of the new season in the spring. Additionally, a proposal is currently under consideration for a test fishery in 5Z in May, which could result in an earlier opening of the fishery in 2018 (no test fishing occurred in May 2017). Data collection, the regulatory compliance regime, governance arrangements, and consultative processes remain the same.

A number of changes in personnel for the haddock fishery have taken place. Melanie Barrett is now the lead Scientist for the haddock stock in 5Z, Jennifer Hiltz is currently acting as the Senior Advisor for groundfish in the 5Z transboundary area, and Penny Doherty is acting as the Senior Advisor for the groundfish fishery in the remainder of the Region (4VWX).

Should you require anything further, please contact the Eco-certification Coordinator in the Maritimes Region, Laura Hussey-Bondt, either by phone: 902-426-6384 or by email: Laura.Hussey-Bondt@dfo-mpo.gc.ca. I wish you all the best with your upcoming surveillance audit.

Yours sincerely,



Mary-Ellen Valkenier
Regional Director General
Maritimes Region



Fisheries and Oceans Canada Pêches et Océans Canada

PO Box 1006
Dartmouth, NS
B2Y 4A2

North Atlantic Right Whale (NARW) notice to Harvesters

Dear Harvesters:

As you are likely aware, there have been an exceptionally high number of North Atlantic Right Whales (NARW) present in the Gulf of St. Lawrence this year. As a result, there have been a significant number of whale injuries and mortalities, several of which have been related to entanglement in fishing gear. This represents a serious impact to a species that is listed as endangered under the Species at Risk Act in Canada, and under the U.S. Endangered Species Act.

We do not know exactly when these whales will leave the Gulf of St. Lawrence, but they will make their southwest migration at some point through the fall, moving towards their overwintering grounds off the US Coast. During this time, there is an increased risk that you may encounter them while fishing.

DFO may close defined areas to fisheries that pose a risk of entanglement as North Atlantic Right Whales are observed to be migrating through Maritimes Region waters. Please be aware of this and continue to monitor for further communications on this matter.

Additionally, we are asking operators to use the following voluntary practices to help ensure the safe migration of these whales:

- 1) Be extra vigilant in regularly tending your fishing gear in order to be able to respond immediately if whales are present in the immediate area,
- 2) Avoid setting or retrieving gear when whales have been sighted in the vicinity, and
- 3) Minimize floating gear/rope in the water to minimize the chance of entanglements.

As usual, notice of any Variation Orders or other relevant communications will be provided via marine radio and DFO's email distribution lists.

Monitoring and identification is of great importance to our improved knowledge and understanding of the movement and habits of this species. If you see a North Atlantic Right Whale, please note the coordinates and if possible, take photos of the right whale especially the head area. You can submit this information to DFO's marine mammal database at xmarwhalesightings@dfo-mpo.gc.ca or call 1-844-800-8568.

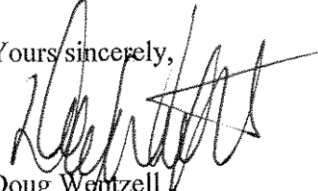
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Canada

-2-

If you see any dead, injured or entangled whale, contact the Marine Animal Response Society's toll-free line at 1-866-567-6277.

Yours sincerely,


Doug Wentzell
Regional Director
Fisheries Management
Maritimes Region

*If you are an Association or Port Representative, we ask that you relay this information to those individuals that you represent.

Management measures related to marine mammals Included in 2018/19 licence conditions for all groundfish fleets

MARINE MAMMAL INTERACTION REPORTING

49. (A) The licence holder/operator must provide information regarding all lethal and non-lethal marine mammal interactions during fishing trips;
- (B) For the purpose of subsection 49a), lethal and non-lethal interactions include bycatch, collision and all sightings of marine mammals entangled in fishing gear;
- (C) The licence holder/operator must complete the DFO Marine Mammal Interaction Form (available at <http://www.dfo-mpo.gc.ca/fm-gp/mammals-mammiferes/index-eng.htm>) and it must be submitted as per the instructions provided on the form.

Included in 2018/19 licence conditions for fixed gear < 45', fixed gear 45'-65' and mobile gear < 65' groundfish fleets

REPORTING OF LOST GEAR

48. While fishing under this licence, the licence holder/operator must report lost gear that is authorized to be fished in this licence to Fisheries and Oceans Canada. The information that is applicable to the specific gear type must be sent to the following email address DFO.MaritimesGear-EnginsMaritimes.MPO@dfo-mpo.gc.ca within 24 hours of the trip being completed. The required information to be sent includes but is not limited to:
- (A) the vessel registration number and identification number written on the buoy (if applicable);
 - (B) the latitude and longitude of last known position of lost gear; and
 - (C) the last date the gear was fished.

VOLUNTARY MANAGEMENT MEASURES FOR MARINE MAMMALS

Shortening of Line between Buoys

Harvesters are asked to shorten the line between the primary and secondary buoy beyond the requirements outlined in their licence conditions (if applicable) to further reduce the risks of North Atlantic Right Whale and other whale entanglements. Many fisheries in the Maritimes region have been doing this as part of voluntary measures included in their Conservation Harvesting Plans. The Department commends these efforts and encourages harvesters to continue these practices.

Reduction of Floating Rope at Surface

Harvesters are asked not to have rope attaching fishing gear to a primary buoy floating on the surface of the water after the gear has been set. This is to further reduce the risks of North Atlantic Right Whale and other whale entanglements.

Reporting Sightings of North Atlantic Right Whales and Marine Mammals

Harvesters are also asked to report all sightings of North Atlantic Right Whales and Marine Mammals that are in distress or dead. All sightings of North Atlantic Right Whales should be reported to XMARwhalesightings@dfo-mpo.gc.ca or 1-844-800-8568. The following information must be provided in the report as soon as practicable:

- date and time of sighting;
- the latitude and longitude of your position when whale was sighted;
- the number of North Atlantic Right Whales observed;
- species certainty (certainty of species identification using the following codes: 1 = unsure/possible, 2 = probable, 3 = definite);
- identifying features (the features used to identify the species—for example, no dorsal fin for the North Atlantic Right Whale); and
- provide photographs if possible.

If you encounter a dead or distressed Marine Mammal you are asked to contact the Marine Animal Response Society at 1-866-567-6277 as soon as practicable. In this report, you will be asked to provide the following information:

- species encountered (if known);
- date and time of sighting;
- the latitude and longitude of your position when Marine Mammal(s) was sighted;
- the number of animals observed; and
- provide photographs if possible.

9.4. Appendix 4. Additional detail on conditions/ actions/ results

Not necessary

9.5. Appendix 5. Revised Surveillance Program

It is not proposed to change the surveillance program. It will continue as described in Table 18 above and it is proposed that the 3rd surveillance audit takes place at a similar time of year in 209.