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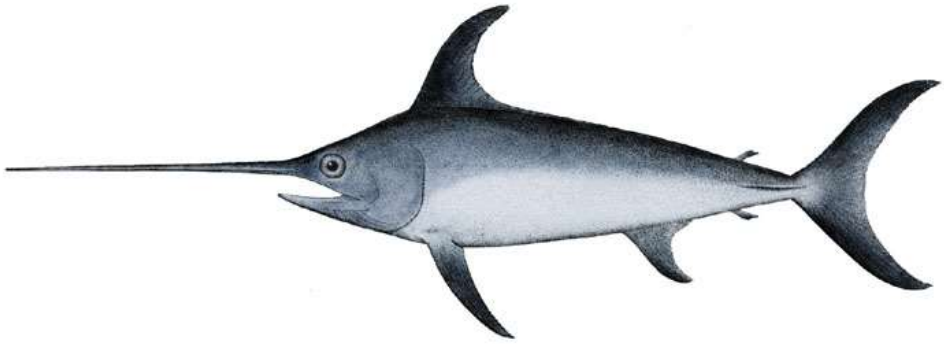
MSC SUSTAINABLE FISHERIES CERTIFICATION

On-Site Surveillance Visit - Report for North West Atlantic Canada Longline Swordfish Fishery



Revised 4th Surveillance Report

North West Atlantic Canada Longline Swordfish Fishery

This surveillance audit was undertaken in October 2016. The reasons for this revised audit report are detailed in section 1.11.1
This further revision, published in April 2018 includes changes made as the result of an Accreditation Services International finding. Changes have been made to the scoring tables to clarify the rationale for closing condition 8 and highlighted in yellow for ease of review.

April 2018

Certificate Code	F-ACO-0057
Prepared For:	Nova Scotia Swordfishermen's Association
Prepared By:	Acoura Marine
Authors:	Paul Knapman, Kevin Stokes & Rob Blyth-Skyrme

Assessment Data Sheet

Fishery name	North West Atlantic Canada Longline Swordfish		
Species and Stock	North Atlantic Swordfish (*Xiphias gladius*)		
Date certified	19th April 2012	Date of expiry	18th April 2017
Surveillance level and type	Level 6 - Onsite		
Date of surveillance audit	3rd – 7th October 2016		
Surveillance stage (tick one)	1st Surveillance		
	2nd Surveillance		
	3rd Surveillance		
	4th Surveillance	✓	
	Other (expedited etc.)		
Surveillance team	Lead auditor: Paul Knapman Auditors: Kevin Stokes & Rob Blyth-Skyrme		
CAB name	Acoura Marine		
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1. Introduction

1.1 Delay in Publication of the Surveillance Report

An earlier version of this 4th surveillance report was submitted to MSC in December 2016. That version concluded, among other things, that Condition 2 should remain open owing to "exceptional circumstances", in accordance with Section 27.11.8 of the MSC Certification Requirements (CR) version 1.3, i.e.:

> "27.11.8 The CAB may recognise that achieving a performance level of 80 may take longer than the period of certification under exceptional circumstances.
>
> 27.11.8.1 The CAB shall interpret exceptional circumstances in 27.11.8 to refer to situations in which even with perfect implementation, achieving the 80 level of performance may take longer than the certification period."

Condition 2, is related to Performance Indicator (PI) 1.2.2, and the need for the fishery to have well defined harvest control rules. This PI was reviewed as part of a MSC pilot harmonisation meeting, held in August 2016 (see section 2.2.2 of this audit report). The meeting concluded that the SG 60 had been met but the SG 80 had not and a score of 75 was agreed.

At the site visit for the North West Atlantic Canada Longline Swordfish 4th audit / re-assessment, (3rd - 7th October 2016), the audit / re-assessment team concluded that the failure to achieve the SG 80 for PI 1.2.2 was a result of circumstances beyond the client's control, despite their best efforts at advocating the development and setting of well-defined harvest control rules by the Regional Fisheries Management Organisation (RFMO), the International Commission for the Conservation of Atlantic Tuna (ICCAT). Therefore, the team concluded in their surveillance report that, owing to exceptional circumstances, the condition should remain open and revised milestones, that had been agreed at the pilot harmonisation meeting, be applied.

On receipt of the surveillance report, MSC undertook an internal review of the application of CR v1.3, section 27.11.8, with regard to RFMOs. This review took longer than anticipated. MSC gave Acoura Marine Ltd the options of having the surveillance report published before the outcome of their internal review or, to delay finalisation of the surveillance report in order to take account of any changes that might result from the review. Acoura Marine Ltd chose the latter option. Two variations requesting a delay in publication were submitted to and agreed by MSC during the review period - see https://fisheries.msc.org/en/fisheries/north-west-atlantic-canada-longline-swordfish/@@assessments.

During this period, drafting of the re-assessment report continued and took into account new information published in December 2016 by ICCAT following their 20th Special Meeting. This included Recommendation 16-03 (ICCAT 2016a), which describes the ICCAT approach to the development of harvest control rules and action that will be taken, in the intervening period, should the swordfish biomass approach a pre-agreed trigger level.

This Recommendation was discussed, in January 2017, between members of the North West Atlantic Canada Longline and Harpoon Swordfish audit / re-assessment team and the US North Atlantic Swordfish audit team, as part of the on-going harmonisation of overlapping swordfish fisheries using MSC CR v1.3. It was agreed that the new Recommendation, in combination with previous ICCAT Recommendations and actions, met the Scoring Guidepost (SG) 80 for PI 1.2.2.

Acoura Marine Ltd was notified of the outcome of the internal MSC review on 9th April 2017. In summary, the MSC concluded that:

> "For 'exceptional circumstances' to apply within the P1 context of RFMO managed fisheries, assessment teams should provide evidence that a research plan and associated timeframe has been implemented that will lead to the condition(s) being closed out. Condition milestones and action plans should be aligned with the research plan set by the RFMO"

As a result, the audit / reassessment team re-visited the surveillance report and took account of the changes that had been agreed during the additional harmonisation discussions in January 2017. In summary, the team concluded, Condition 2 could be re-scored at 80 and closed out. Furthermore, as a result of this outcome, there was no need to apply the new MSC guidance for CR v1.3, section 27.11.8.

The revised surveillance report was published on the MSC website on 18th April 2017.

On the 2nd May 2017, Acoura received an email from WWF Germany, registering a complaint regarding the decision to close Conditions 6 and 8.

On the 3rd May 2017, Acoura received by email, a MSC Technical Oversight[1] (TO). In summary, the TO concluded that the scoring rationale for PI 1.2.2 did not adequately justify a score of 80 for both fisheries, the score should be revised to 60 and the condition remain.

On the 4th May 2017, Acoura received by email, a letter of complaint from the Ecology Action Centre (EAC) expressing similar concerns as those raised by WWF.

With respect to the complaints, Acoura asked the audit team to review their conclusions and any new information that may not have been taken into account in making their decision to close conditions 6 and 8. The audit team undertook a review and added additional new information to the audit report. Letters of response were sent to EAC and WWF on 22nd and 23rd June, respectively.

With respect to the MSC TO, the Acoura audit team held further harmonisation discussions with the US North Atlantic Swordfish audit team and both teams participated in a conference call with members of the MSC Standards Team to explain further their shared rationale for scoring PI 1.2.2 at 80. MSC agreed that the team's verbal explanation more clearly provided a rationale for meeting the SG80 requirements and, it was agreed that a revised scoring rationale would be provided in response to the TO and added as an addendum to the respective audit reports for the North West Atlantic Canada Longline and Harpoon Swordfish Fisheries. The reports and their respective addendums were posted on the MSC website on 11th July 2017.

On 12th July 2017, Acoura received by email, a letter from WWF Germany highlighting that the surveillance reports had not been amended to take account of new information and to express their concern that the additional information, as detailed in the Acoura letter of response to their initial complaint, did not take account of information related to the status of loggerhead turtle in regard to the Canadian Species at Risk Act (SARA). Furthermore, the letter contested that the decision to close Conditions 6 and 8 contradicted the findings of the original CAB and the new SARA related information.

Acoura responded to the letter on the 1st August 2017, confirming there had been an error in uploading the correct revised audit report and addressed this by publishing a revised report (i.e. this report) along with a response to concerns of a contradiction to the findings of the original CAB and the new SARA related information.

The revised scoring rationale that responds to the MSC TO can be found under PI 1.2.2 in, 'Appendix 1 – Rescoring evaluation tables' of this report.

The correspondence from WWF and EAC and Acoura's response can be found in Appendix 3.

1.2 Scope of Surveillance

This report outlines the findings of the 4th Annual Surveillance of the North West Atlantic Canada Longline fishery. The scope of the certified fishery and therefore of this surveillance is specified in the Unit of Certification (UoC) set out below:

UoC 1

Species:	Atlantic Swordfish *(Xiphias gladius)*
Geographical area:	Atlantic Canadian EEZ and international waters within the ICCAT Northern Swordfish Boundary Area (North of 5°N and west of 30°W)
Method of capture:	Pelagic longline

[1] Technical Oversight (TO) is the process whereby MSC Fisheries Assessment Managers review assessment reports and raise findings for the assessment team to address. TO is completed to maintain the quality of assessment reports, ensure consistent application of the Certification Requirements by assessment teams, and inform the MSC of areas where Certification Requirements improvements are needed.

Stock:	North Atlantic swordfish stock
Management System	International Commission for the Conservation of Atlantic Tunas (ICCAT) Department of Fisheries and Oceans, Canada (DFO)
Client Group:	Nova Scotia Swordfishermen's Association

1.3 Aims of the Surveillance

The purpose of the annual Surveillance Report is fourfold:

1. to establish and report on whether or not there have been any material changes to the circumstances and practices affecting the original complying assessment of the fishery;
2. to monitor the progress made to improve those practices that have been scored as below "good practice" (a score of 80 or above) but above "minimum acceptable practice" (a score of 60 or above) – as captured in any "conditions" raised and described in the Public Report and in the corresponding Action Plan drawn up by the client;
3. to monitor any actions taken in response to any (non-binding) "recommendations" made in the Public Report;
4. to re-score any Performance Indicators (PIs) where practice or circumstances have materially changed during the intervening year, focusing on those PIs that form the basis of any "conditions" raised.

Please note: The primary focus of this surveillance audit is to assess changes made in the previous year. For a complete picture, this report should be read in conjunction with the Public Certification Report for this fishery assessment which can be found here:

https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-west-atlantic/north_west_atlantic_canada_longline_swordfish/assessment-downloads

1.4 Certificate Holder Details

The client for the certification is the Nova Scotia Swordfishermen's Association (NSSA). The NSSA is comprised of the 77 swordfish and other tuna license holders in Nova Scotia, Newfoundland, and New Brunswick, as well as those individuals that are involved in support industries such as fish processors, bait and gear suppliers. The NSSA provides a forum for the large pelagic longline industry to interact with Department of Fisheries and Oceans (DFO), Canada, and other regulatory bodies, both domestically and internationally.

2. Surveillance Process

2.1 Findings of the original assessment

As a result of the assessment, 11 conditions of certification were raised by the assessment team, and maintenance of the MSC certificate is contingent on the fishery moving to comply with these conditions within the time-scales set at the time the certificate was issued.

2.2 Surveillance Process

2.2.1 Surveillance team details

This on-site surveillance visit was carried out by Paul Knapman, Kevin Stokes and Rob Blyth-Skyrme.

Paul Knapman (Lead Auditor & P3) Paul is based in Halifax, Nova Scotia, Canada and has recently returned to Fisheries Consultancy.

He was the General Manager of Intertek Fisheries Certification a Conformity Assessment Body (CAB) that focused their work on Marine Stewardship Council (MSC) fisheries and chain of custody assessment / certification. He has extensive experience of MSC related work having been the Lead Assessor / Auditor and/or technical reviewer for 50+ client fisheries throughout the world. Paul has completed his MSC training as a Team Lead Assessor.

He was previously Head of an inshore fisheries management organization in the UK, a senior policy advisor to the UK government on fisheries and environmental issues, a British Fisheries Officer and a fisheries consultant to clients in Europe and Canada.

Kevin Stokes (P1) Kevin is a fisheries science, management, and policy consultant with extensive international and Pacific experience. He has worked at senior management levels in both the public and private sectors as a fisheries scientist, manager, and advisor. Kevin worked for the Ministry, Agriculture, Fisheries and Food and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) in the UK for 15 years. He was responsible for all finfish monitoring, assessment and advice and worked extensively in Europe, serving as chair of the EC Scientific, Technical and Economic Committee for Fisheries (STECF) and as UK representative on the International Council for the Exploration of the Sea (ICES) advisory Committee for Fisheries Management (ACFM), as well as chairing working groups and committees. He served on multiple UK research councils, led the UK scientific delegation to the International Whaling Commission (IWC) and served as UK Alternate IWC Commissioner for many years. He served for many years as an ad hominem member of the UK Special Committee on Seals. Kevin worked as Chief Scientist for the New Zealand Seafood Industry Council (SeafIC) for 9 years, responsible for science policy and process as well as leading a consulting group drawing on diverse international expertise. He has worked on a wide range of marine shellfish and finfish, and environmental issues and has provided advice nationally and internationally at senior governmental and ministerial levels, as well as to fishing, processing and retail industries, and to NGOs. For nine years he chaired the New Zealand National Rock Lobster Management Group (NRLMG). Kevin was for many years a member of the New Zealand Institute of Directors and has worked on governance and strategy development projects, particularly in New Zealand. For the past 6 years, Kevin has worked as a private consultant in the general area of fisheries but extending to governance and wider advisory matters. He has worked extensively across the globe as well as in New Zealand, doing technical reviews; certification programme review and design work as well as certification assessment; governance review and design; and sustainability advice to retailers and processors. He has worked on Ecological Risk Assessment (ERA) design and implementation. In 2007 Kevin participated in the MSC Quality and Consistency work, reviewing advice on development of the new P1 CR, and as part of the group that led development of the new P2 and P3 CR. He has undertaken more than 60 MSC pre-assessments as well as acting as an assessor, auditor, and peer reviewer for multiple certification assessments, ranging from prawns to tunas. He has carried out work for a number of Certification Assessment Bodies (CABs). From late 2013 for one year, Kevin worked exclusively to Conservation International, leading development work on the Global Tuna Initiative, with a focus on the Western Central Pacific. Among his current, contracted activities relevant to this assessment, he is involved in MSC certification and surveillance of tuna fisheries in the Indian Ocean. He previously undertook surveillance on the certified PNA non-associated purse seine fishery for skipjack in the WCPO.

Rob Blyth-Skyrme (P2) Rob started his career in commercial aquaculture, but subsequently shifted his focus to the sustainable management of wild fisheries. After his PhD he went to the Eastern Sea Fisheries Joint Committee, one of the largest inshore fisheries management bodies in England, where he became the Deputy Chief Fishery Officer. He then moved to Natural England, the statutory adviser to UK Government on nature conservation in English waters, to lead the team dealing with fisheries policy, science and nationally significant fisheries and environmental casework. Rob now runs Ichthys Marine Ecological Consulting Ltd., a marine fisheries and environmental consultancy. As well as carrying out general consultancy, he has undertaken all facets of MSC work as a lead assessor, expert team member and peer reviewer across a wide range of fisheries, including those targeting highly migratory species. Rob is a member of the MSC's Peer Review College, and has completed the MSC v1.3 and v2.0 training modules.

2.2.2 Harmonisation Meeting for North Atlantic swordfish fisheries managed under the auspices of the International Commission for the Conservation of Atlantic Tunas (ICCAT)

In January 2016, the MSC Board of Trustees signed off the MSC proposal for a limited trial of annual harmonisation pilots to help improve harmonisation in response to difficulties for fisheries

with RFMO-managed highly migratory species.

Following the first pilot in March 2016 for assessed and in-assessment fisheries managed under the auspices of the Western & Central Pacific Fisheries Commission (WCPFC), a further harmonisation pilot meeting took place in Washington DC, USA, on 22-23 August for assessed and in-assessment North Atlantic swordfish fisheries managed under the auspices of the International Commission for the Conservation of Atlantic Tuna (ICCAT).

In summary, at the meeting, P1 and P3 team members from the certified and in-assessment ICCAT swordfish fisheries, reviewed, discussed and agreed scoring rationale text for each Principle 1 scoring issue under each scoring guidepost using the CR v1.3 scoring table. An independent facilitator appointed by the MSC assisted the process.

Stakeholders were made aware of the process and were provided opportunity to submit comments and evidence prior to the meeting. Two stakeholder groups provided submissions and these were taken into account within the rationale drafting and scoring process.

On completing the P1 scoring, the opportunity was taken to review PI 3.1.3. Harmonisation on this PI had not been achieved in two previous audit cycles for the US North Atlantic Swordfish Longline and the North West Atlantic Canada Longline and the North West Atlantic Canada Harpoon fisheries. It had therefore been agreed that this harmonisation pilot should also be used for this purpose.

An independent peer reviewer with P1 expertise was appointed by the MSC Peer Review College and participated in the meeting.

Given the non-normative approach to harmonisation, the MSC's third party accreditation provider, Accreditation Services International (ASI), was present to observe and evaluate the auditability of the process.

Members of the MSC Standards Team and regional outreach staff were also present to provide guidance and answer any questions related to interpretation.

The draft P1 scoring table and draft score and scoring rationale for PI 3.1.3 were then made publicly available and circulated to registered stakeholders by the Conformity Assessment Bodies (CABs) that have certified the SSLLC US North Atlantic Swordfish Longline, the US North Atlantic Swordfish, the North West Atlantic Canada Longline and the North West Atlantic Canada Harpoon fisheries. Stakeholders were provided with 30 days to provide comments.

Following the 30 days' consultation, the P1 and P3 team members reconvened remotely to review, respond and where appropriate, amend any of the scoring rationales or scores. The MSC appointed facilitator and MSC staff also participated.

Two submissions from stakeholders were received via Acoura Marine. These were taken into account and responses from the CAB were provided to the stakeholders.

The final scoring rationales, scores and a condition were agreed following further correspondence between the group. The outcomes from the harmonisation pilot are set out in a final report on the MSC website. The report will be used by the audit and assessment teams at the next audit/assessment of their respective ICCAT managed swordfish fisheries. If new information becomes available that changes scores and scoring rationales, further harmonisation between CABs will be required.

The full details and report of this meeting can be found at the following link:

https://fisheries.msc.org/en/fisheries/north-west-atlantic-canada-longline-swordfish/@@assessments

NB. A further harmonistion discussion took place in January 2017 between audit team members for the US North Atlantic Swordfish and the North West Atlantic Canada Longline and Harpoon fisheries with respect to the outcome of the ICCAT 20th Special Meeting, in particular, ICCAT Recommendation 16-03 (ICCAT 2016a). This resulted in agreement that PI 1.2.2 could be rescored at 80. A revised scoring rational was also agreed and appears in Appendix 1 of this report.

2.2.3 Date & Location of surveillance audit

The site visit was held in Halifax & Dartmouth, Nova Scotia, Canada the week commencing 3rd October 2016.

2.2.4 Stakeholder consultation & meetings

4th October 2016, 1801 Hollis Street, Halifax, Nova Scotia		
Name	**Organisation**	**Role**
Paul Knapman	Acoura Audit Team Member	Team Lead and P3 Specialist
Kevin Stokes	Acoura Audit Team Member	P1 Specialist
Rob Blyth-Skyrme	Acoura Audit Team Member	P2 Specialist
Troy Atkinson	NSSA	Client representative
Dale Richardson	Swordfish Harpoon Quota Society	Client representative

4th October 2016, Ecology Action Centre Offices, Halifax		
Name	**Organisation**	**Role**
Paul Knapman	Acoura Audit Team Member	Team Lead and P3 Specialist
Kevin Stokes	Acoura Audit Team Member	P1 Specialist
Rob Blyth-Skyrme	Acoura Audit Team Member	P2 Specialist
Heather Grant	Ecology Action Centre	Marine Campaigner
Katie Schleit	Ecology Action Centre	Marine Coordinator
Shannon Arnold	Ecology Action Centre	Marine Coordinator

5th October 2016, Bedford Institute of Oceanography, Dartmouth		
Name	**Organisation**	**Role**
Paul Knapman	Acoura Audit Team Member	Team Lead and P3 Specialist
Kevin Stokes	Acoura Audit Team Member	P1 Specialist
Rob Blyth-Skyrme	Acoura Audit Team Member	P2 Specialist
Mark Comley	DFO	Chief, Program & Operational Readiness
Margaret Lever	DFO	Staff Officer C & P
Carl MacDonald	DFO	Regional Manager/Resource Management
Troy Atkinson	NSSA	Client representative
Heather Bowlby	DFO	Shark specialist
Thomas Wheaton	DFO	Science Coordinator
Alex Dalton	DFO	Aquatic Biologist Large Pelagics
Terry Higgins	DFO	Record Keeper
Colleen Smith	DFO	MSC Coordinator
Scott Coffen-Smout	DFO	Ecosystem Management
Marilyn Sweet	DFO	Resource Management
Mike James	DFO	Sea Turtle Science

5th October 2016, Bedford Institute of Oceanography, Dartmouth		
Name	**Organisation**	**Role**
Aimee Gromack	DFO	Ecosystem Management

2.2.5 What was inspected

Progress against the conditions of certification, the scientific base of information and stock assessment, changes to the fishery and its management, e.g. legislation and regulations, personnel changes within the science and management structure and within the industry, interaction with ETP species, any changes that might affect traceability within the fishery, conformity with regulations.

2.2.6 Stakeholder Consultation

A total of 6 stakeholder organisations and individuals having previous interest in the assessment/audit process were identified and consulted during this surveillance audit. The interest of others not appearing on this list was solicited through the postings on the MSC website.

https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-west-atlantic/north_west_atlantic_canada_longline_swordfish/assessment-downloads-1/20160901_ANMT_SA_SWO220_update.pdf

2.3 Surveillance Standards

2.3.1 MSC Standards, Requirements and Guidance used

This surveillance audit was carried out according to the MSC Fisheries Certification Requirements FAM 1.3 using v2.0 process.

2.3.2 Confirmation that destructive fishing practices or controversial unilateral exemptions have not been introduced

There were no reports or evidence provided during the surveillance audit to suggest that destructive practices or unilateral exemptions have been introduced within the fishery during the audit period.

3. Update on Fishery

3.1 Fishery Background

The following is text is adapted from the Public Certification Report (PCR), available from: https://fisheries.msc.org/en/fisheries/north-west-atlantic-canada-longline-swordfish/@@assessments which contains more detailed text and supporting references

Swordfish in Atlantic Canada are harvested using both pelagic longline and harpoon. Both fisheries have MSC certification. The gear type used in this Unit of Certification (UoC) and considered in this report is the pelagic longline.

Large pelagic longline fishing, primarily for swordfish, began in Canadian waters in the early 1960s, as Canadian vessels adopted methods developed by the Japanese and Americans in fishing for tuna and swordfish.

During the early years of the large pelagic longline fishery, vessels targeted mainly swordfish. However, since 1999, there has been a noted shift toward retaining “other tuna” (bigeye, yellowfin and albacore). These shifts in target species, not only influences where and how the fishery is conducted but also composition of the by-catch.

Entry to the swordfish fishery has been limited to 77 longline licenses for both swordfish and other tunas since 1992. Licenses have been fixed at this number, but may be re-issued, within certain policy restrictions, from one fisher to another.

All longline license holders in the fleet are represented by the Nova Scotia Swordfishermen’s Association (NSSA).

In addition to the license holders that are members of NSSA, there is an offshore tuna licence based in the Maritimes Region, also authorized to operate a longline fishing operation Atlantic-wide. The offshore tuna longline license is not represented by NSSA, but by its owner/mangers directly. Since it is not a member of the client group, the operation is not considered a part of the UoC, and therefore product from that vessel is not eligible to use the MSC logo.

The Swordfish Total Allowable Catch (TAC) is set by ICCAT and Canada receives an annual quota. The offshore tuna license receives a 5 t by-catch allocation for swordfish. The remaining Canadian quota is then allocated between the longline and harpoon sectors based on the sectors historic catch of swordfish, this results in the longline fleet receiving 90% and harpoon 10% of the Canadian quota. The longline quota is then allocated to active harvesters in the fleet based on an Individual Transferable Quota (ITQ) sharing formula.

40-50 vessels are active in the fishery in any given year. The vessels are multi-species so they can direct effort to other species, e.g. lobster or groundfish. Vessels range in length from 45-99 feet.

Principle ports of landing in the Atlantic Region include Shelburne, Sambro, Wood's Harbour and Clark's Harbour in Nova Scotia, and St. John's and Fermeuse in Newfoundland & Labrador.

The fishery follows the seasonal migration of swordfish and tuna through Canadian waters. The longline fishing effort generally progresses from west to east and back again and from offshore to inshore along the edge of the continental shelf following swordfish movements associated with seasonal warming trends of surface water temperature, and a northward movement of the edge of the Gulf Stream. Swordfish migrate into the Canadian Excusive Economic Zone (EEZ) during summer and fall to feed in the productive waters of the continental shelf slope and shelf basins, areas where water temperatures form a distinct thermocline (see Figure 1). As a result, the fishery usually starts in April and may run through to December.

Pelagic longline fishing involves the use of a main fishing line with a series of shorter lines with baited hooks attached at intervals. A string of longline gear is deployed at night as the vessel slowly moves over the fishing grounds. Buoy lines are attached to both ends of the longline to a ‘high flyer” buoy and fastened along it’s length to brightly colored floats and flags that mark the location of the gear at the surface. The lines are set near the surface, suspended over water depths greater than 150 meters. The lines are not anchored. Automatic Identification System (AIS) beacons are placed at intervals along the length of the mainline enabling tracking of the gear.

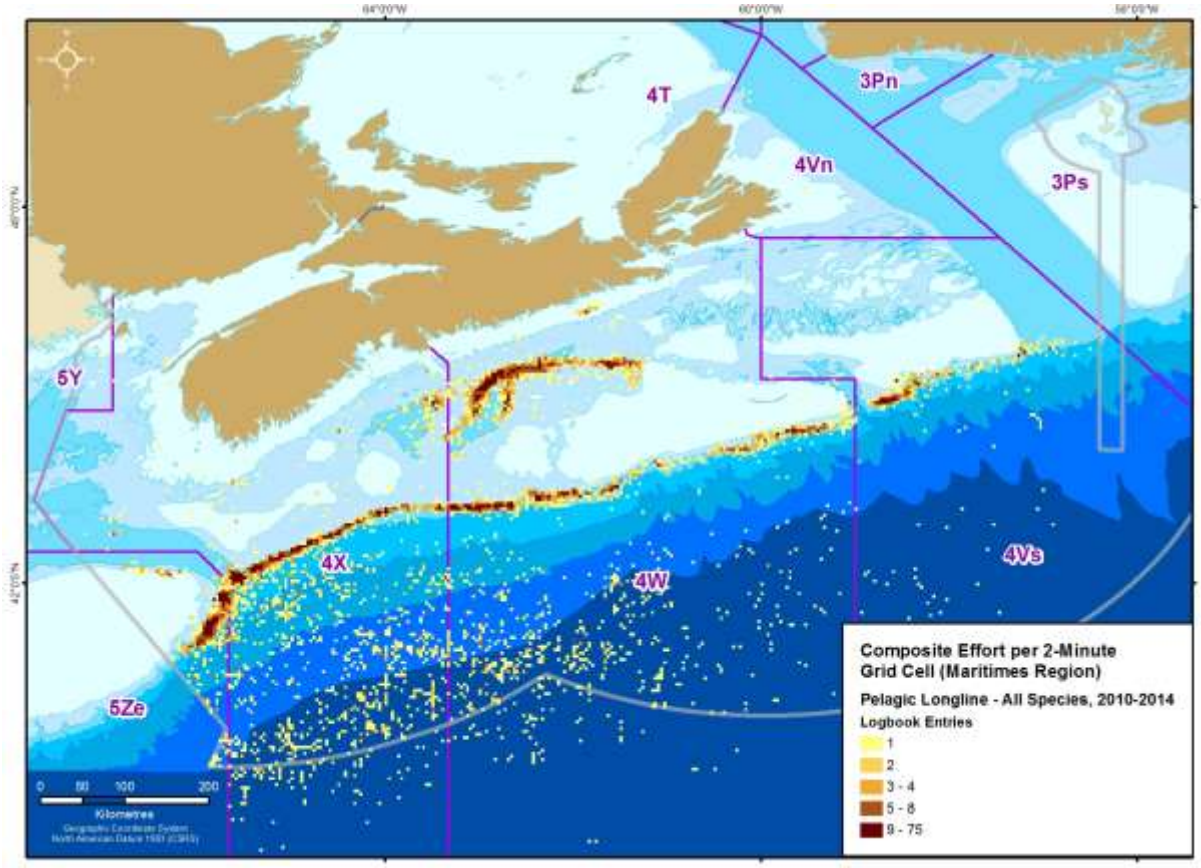

Figure 1. Fishing effort distribution for the Canadian pelagic longline fleet between 2010-14 (DFO 2016)

Anywhere between 20 and 60 miles of gear is set per night, with the number of hooks per set ranges between 600 and 1,100. Leaders are approximately 4 fathoms, although sometimes gear may be set at the surface, depending on weather or fish location. Hooks are baited with mackerel or squid, depending on the target species – mackerel are a preferred bait for swordfish, squid are preferred for tuna. During an average 14-day trip, up to 10 sets will be deployed.

3.2 Changes in the management system

The Canadian Atlantic Swordfish and other Tunas Integrated Fisheries Management Plan was last updated in 2013. A summary of the IFMP can be found at http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/ifmp-gmp/swordfish-espadon/swordfish-2013-espadon-eng.htm

A new license condition was added to the 2016 Canadian Atlantic Other Tuna and the Swordfish Longline License Conditions requiring license holders/operators to promptly release all live porbeagle sharks in the manner which causes the least amount of harm to the shark. The numbers of porbeagle sharks discarded and released are required to be recorded in the logbook, along with the status (dead or alive) of released sharks.

3.3 Changes in relevant regulations

No changes in regulations were reported during the audit period

3.4 Changes to personnel involved in science, management or industry

Heather Bowlby has recently been appointed by DFO as their new shark specialist. The post has been vacant for some time, and Heather will be reviewing and updating where necessary the shark work programme within DFO.

3.5 Changes to scientific base of information including stock assessments

3.5.1 Swordfish

ICCAT (2014) provides the most recent update of the assessment and associated research of North Atlantic swordfish. The stock status determined by this assessment was fully described in the 2014 audit report (IFC, 2014). ICCAT (2014) indicates that there has been no change in the status of the stock, with ICCAT advice reiterating that an annual TAC of 13,700 t would maintain the stock at a level consistent with the Convention objectives over the next decade. The next North Atlantic swordfish is planned for the fall of 2017.

3.5.2 Main Retained Species

The main retained species in the assessment are bluefin, bigeye, yellowfin and albacore tuna, porbeagle and shortfin mako shark, and blue and white marlin. No new stock assessments have been undertaken in this audit period. The stock status determined by last assessments for each species were described in the 2015 audit report (Acoura, 2015). The next scheduled stock assessments are:

Bluefin tuna	2017
Yellowfin tuna	November 2016
Albacore tuna	November 2016
Porbeagle shark	2019
Shortfin Mako	2017
Blue marlin	2017
White marlin	2018

https://www.iccat.int/en/assess.htm

3.5.3 Main Bycatch Species

Blue shark is the only main MSC bycatch species. The most recent assessment was in 2015. The stock status determined for blue shark was fully described in the 2015 audit report (Acoura, 2015). The next assessment has yet to be determined but the ICCAT assessment cycle for this species has been approximately every 7 years.

3.5.4 ETP Species

Leatherback, Loggerhead, Kemp's Ridley and Green Turtle, Pilot and Northern bottlenose whale were identified as the ETP species in this fishery. No new significant status update has been released on these species during the audit reporting period.

A progress report was provided to the audit team on the DFO loggerhead post-release survival study (DFO 2016b). In summary, four people were trained to support the deployment of satellite linked tags on turtles accidentally caught in the pelagic longline fishery. Within the current 2016 season, there have been deployments on 6 pelagic longline trips between June and August. While 54 sets were observed, only three hooked loggerheads were observed. Two turtles were tagged. A third became unhooked and so the tag was not deployed.

The paucity of observed loggerheads this season reflects observed trips and anecdotal reports by the fleet. This is thought to reflect unusually low loggerhead density in Canadian waters this year although some changes in spatio-temporal patterns in fishing effort this season may also partially explain the relatively low numbers observed.

The original target sample size for the study was 48 successfully deployed tags. Satisfactory datasets have been obtained from 30 tags - not including the two 2016 tags which are scheduled to be released in early 2017. The goal still remains to deploy the remaining tags. Given the lateness in the season, it is unlikely that this will now happen until 2017. Therefore, presentation of associated final analyses of post-release survivorship will be delayed.

DFO (2016f) reported that emerging veterinary opinion identifies capture stress and ingested monofilament as potentially critical variables in predicting post-release survival of incidentally hooked turtles. Therefore, in 2016, research efforts expanded to: 1. Collaborate with specialists in marine turtle physiology and health assessment to implement on-board blood collection and analysis of blood biochemistry; and, 2. Control for presence or absence of monofilament attached hooks. Unfortunately, this year there were insufficient numbers of turtle encounters to support their analysis.

Recent consideration of historical patterns in coding turtle interaction interactions by fishery observers and others suggests that reporting biases may exist, and these may be related to variation in turtle handling and examination procedures. To help address these potential biases, further training was provided to fishery observers in 2016 and additional changes were made to turtle sampling instruction manuals and data sheets. Unfortunately, the lack of sampling opportunities in 2016 did not allow for expanded data collection. This is significant because translating survivorship results from the two principal treatment conditions (lightly and deeply hooked) into an assessment of the fleet's overall impact on the loggerhead turtle requires a good understanding of not only turtle encounter rate, but also the expected proportion of turtles falling into each hooking category. Collection of more data of this type remains a priority.

3.5.5 Assessment of incidental catch

As part of the DFO regional peer review process, a meeting was held in February 2016, at the Bedford Institute of Oceanography, Dartmouth, to review an assessment of incidental catch in the Atlantic Canadian Swordfish/Other Tuna longline fishery. The meeting was a follow-up to a meeting previously held on this topic in July 2011 entitled 'Incidental Catch in Canadian Large Pelagic Fisheries'. The incidental species catch, in this instance, related to undersized Swordfish, Bluefin Tuna, Porbeagle, Shortfin Mako, Blue Shark, Leatherback Turtle, and Loggerhead Turtle.

To guide discussion, a Working Paper was provided to meeting participants in advance of the meeting.

Peer reviewers felt that the Working Paper was not of sufficient detail to fully understand the methods used in analysis. In addition, the analysis was not as extensive as it could have been, though it was also recognized that the objectives were too broad and therefore a challenge to address given the available resources. As a result, the reviewers did not feel that a Science Advisory Report or Research Document could be completed for publication at this time. All participants agreed that without sufficient observer coverage levels, both spatially and throughout the fishing season (i.e., high enough to observe/define spatio-temporal components of the fishery), it is difficult reasonably to account for spatial and temporal components/variation in the fishery with respect to incidental catch. Further, it was agreed that continuation of this research in a timely manner was viewed as a priority for the Department to pursue.

3.6 Compliance

DFO Conservation and Protection (C&P) staff presented information on compliance related to swordfish fisheries for the period 2011 – 2015:

Distribution of work effort	2011	2012	2013	2014	2015
Total Fishery Officer Enforcement hours expended on Swordfish fishery. This number includes patrol hours	634.25	751	873.5	976	834
Total Fishery Officer hours (included in the totals above)	296.25	293.75	382	562	327.75

Air and at-sea surveillance platform hours	2011	2012	2013	2014	2015
Air surveillance hours for swordfish fishery	53.84	57.97	73.66	121.14	108.60
At-sea patrols (Large Patrol Vessels) hours for the swordfish fishery	137	119.75	198	390.5	126.75

Charge Information	2011	2012	2013	2014	2015	Total
Warnings						
Other legislation	0	0	0	1	0	1
Registration / License	3	10	3	15	7	38
Reporting	1	4	2	7	2	16
Inspection	0	0	0	1	0	1
Charges not approved						
Registration / License	3	1	0	0	1	5
Reporting	0	1	0	0	0	1
Charges laid	0	0	0	1	0	1
Illegal buy/sell/possess	0	0	2	0	0	2
Illegal transportation	0	0	1	0	0	1
Registration/License	2	0	0	0	1	3
Reporting	1	1	0	1	0	3
Total	10	17	8	25	10	71

No. of convictions with fines	2011	2012	2013	2014	2015	Total
Illegal buy/sell/possess	0	0	2	0	0	2
Illegal transportation	0	0	0	1	0	1
Registration/License	2	0	0	0	1	3
Reporting	0	1	0	0	0	1
Total	2	1	2	1	1	7

Penalty information – fine levied	2011	2012	2013	2014	2015
Maximum fine	1,000	4,000	750	2,000	1,250
Minimum fine	200		500		

The audit team noted that there is no indication of systematic non-compliance in the fishery. The majority of the violations are related to administrative requirements. While fines are relatively low, C&P officers consider they act as a deterrent. The fishery client suggested that the legacy of a large scale DFO investigation that resulted in heavy penalties for some fishermen and buyers several years prior to the MSC assessment and certification was likely to continue to be a significant deterrent.

3.7 Any developments or changes within the fishery which impact traceability or the ability to segregate between fish from the Unit of Certification (UoC) and fish from outside the UoC (non-certified fish)

There were no reported changes to the traceability system within the fishery during the reporting period.

TAC and catch data

Table 3.6-1 TAC and Catch Data

TAC	**Year**	**2015**	**Amount**	**13,700 tonnes**
UoA share of TAC	**Year**	**2015**	**Amount**	**13,700 tonnes**
UoC share of TAC	**Year**	**2015**	**Amount**	**2,187.97 tonnes**
Total green weight catch by UoC	**Year (most recent)**	**2015**	**Amount**	**1,409.17 tonnes**
	Year (second most recent)	**2014**	**Amount**	**1,397.59 tonnes**

3.8 Summary of Assessment Conditions

Table 3.7-1 Summary of Assessment Conditions

Condition no.	Performance indicator	Status	PI original score	PI revised score
1	1.1.2	Closed year 4	75	80
2	1.2.2	Closed year 4	75	80
3	2.1.1	Short fin mako - closed year 1 Porbeagle – closed year 4	75 75	Short fin mako 80 Porbeagle 80
4	2.1.2	Short fin mako – closed year 2 Porbeagle – closed year 4	75 75	Short fin mako 80 Porbeagle 80
5	2.2.2	Closed year 2	60	80

Condition no.	Performance indicator	Status	PI original score	PI revised score
6	2.3.1	Closed year 4	75	85
7	2.3.2	Closed year 3	75	80
8	2.3.3	Closed year 4	70	80
9	3.1.3	Closed year 4	75	80
10	3.2.2	Closed year 2	75	80
11	3.2.4	Closed year 2	75	80

4. Results

Condition 1

	PI number	Scoring Issue text	Score
Performance Indicator & Score	1.1.2	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity	75
Condition	By the 4th surveillance audit, evidence must be provided to show that the Limit Reference Point (LRP) is set above the level at which there is an appreciable risk of impairing reproductive capacity for the North Atlantic Swordfish stock. Recognizing that ICCAT is the body responsible for the development and implementation of reference points, to address the condition, the assessment team requires that the client is to work with DFO to strongly encourage ICCAT to develop an explicit Limit Reference Point for North Atlantic Swordfish stock. This LRP must be set above a stock biomass (t) at which there is an appreciable risk of recruitment being impaired. The client and DFO must submit a formal request to ICCAT to develop an explicit LRP for the stock within four years of certification. A copy of this letter must be provided at the first annual surveillance audit.		
Milestones	**Year 1** By the first surveillance audit the client is required to provide evidence that shows the necessary steps have been taken to ensure that the Department of Fisheries and Oceans (DFO) submits a request to ICCAT for them to develop a limit reference point (LRP) for North Atlantic swordfish. The client shall also provide copies of any ICCAT documentation to confirm that appropriate groups within ICCAT have been tasked with developing an appropriate LRP for North Atlantic swordfish before the next stock assessment for this species. Milestones associated with the first surveillance audit have been defined as a means to monitor progress, meeting the milestones would likely not result in a change in score at this surveillance audit. **Year 2** During the second surveillance audit the client will be required to provide evidence that initial discussions commenced within ICCAT groups (i.e. SCRS) to develop an appropriate LRP for North Atlantic swordfish. Milestones associated with the second surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 3** By the third surveillance audit the client must provide an update on work undertaken by the SCRS to develop an appropriate LRP for North Atlantic swordfish. This would include evidence that work is on-going. Milestones associated with the third surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 4** By the fourth surveillance audit the client must provide evidence to indicate that the SCRS has developed an appropriate LRP for North Atlantic swordfish, as requested by ICCAT and that the LRP has been implemented and is set above the level at which		

	there is an appreciable risk of impairing reproductive capacity for the North Atlantic Swordfish stock. Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would likely be re-scored at 80 or higher.
Client action plan	The Canadian swordfish industry, working through DFO, at the 2009 ICCAT meeting, proposed that the SCRS develop an explicit LRP for the North Atlantic Swordfish stock, before the next North Atlantic Swordfish assessment. This proposal was adopted as part of ICCAT Recommendation # 2009-02 Supplemental Recommendation by ICCAT to Amend the Rebuilding Program for North Atlantic Swordfish, and can be found in paragraph 5 of this document. The next North Atlantic Swordfish stock assessment is scheduled for 2013. The same wording appears in paragraph 6 of ICCAT Recommendation 10-2, entitled "Recommendation by ICCAT for the Conservation of North Atlantic Swordfish", adopted at the 2010 ICCAT meeting and is scheduled for completion in 2013. Deliverables: **1st Surveillance Audit:** At the first surveillance audit, the Nova Scotia Swordfishermen's Association (NSSA) will provide a copy of the letter to the Department of Fisheries and Oceans (DFO), requesting the Department to request that ICCAT develop a limit reference point (LRP) for North Atlantic swordfish. The NSSA will also provide copies of ICCAT Recommendation # 2009- 02 Supplemental Recommendation by ICCAT to Amend the Rebuilding Program for North Atlantic Swordfish and ICCAT Recommendation 10-2, Recommendation by ICCAT for the Conservation of North Atlantic Swordfish to confirm that ICCAT has tasked the SCRS to develop an appropriate LRP for North Atlantic swordfish before the next stock assessment for this species (currently scheduled for 2013). **2nd Surveillance Audit:** At the second surveillance audit the NSSA will provide a copy of the agenda for and the report of the 2011 Joint Meeting of the ICCAT Working Group on Stock Assessment Methods and Bluefin Tuna Species Group to Analyse Assessment Methods Developed Under the GBYP and Electronic Tagging (Madrid, Spain – June 27-July 1, 2011), where initial discussions by the SCRS were commenced to develop an appropriate LRP for North Atlantic Swordfish. **3rd Surveillance Audit:** At the third Surveillance audit the NSSA will provide an update on work undertaken by the SCRS to develop an appropriate LRP for North Atlantic swordfish. **4th Surveillance Audit:** At the fourth surveillance audit the NSSA will provide documentation that the SCRS has developed an appropriate LRP for North Atlantic swordfish, as requested by ICCAT.
Progress on Condition [Year 4]	**The following text is taken from the client's submission on progress against this condition:** http://www.iccat.int/Documents/Recs/compendiopdf-e/2011-02-e.pdf is the document that outlines management measures for North Atlantic Swordfish including the requirement for the SCRS to develop an LRP and the Commission to adopt HCR with respect to this LRP before the next assessment, scheduled for 2013. Attached separately is the letter from the NSSA to the Canadian Head of Delegation to ICCAT requesting the development of an LRP and HCR for North Atlantic swordfish.

	Also Attached is a PDF document entitled 2013 METHODS REP ENG which outlines on page 10 the conceptual approach that the SCRS intends to take at the June 2013 meeting where the LRP is to be developed. ICCAT Recommendation 2011-2 and the letter from the NSSA to the Canadian Head of Delegation to ICCAT full fill the requirements set out in the milestones for year1, as determine in the 1st Surveillance Audit for the fishery. http://www.iccat.es/Documents/Recs/compendiopdf-e/2011-02-e.pdf The documents entitled 2013 METHODS REP ENG and SWO DATA RPEP 2013 full fill the requirements of both the milestones for year 2 and year 3, clearly demonstrating that "initial discussions commenced within ICCAT groups (i.e. SCRS) to develop an appropriate LRP for North Atlantic Swordfish", as specified by the year 2 milestone, and that "an update on work undertaken by the SCRS to develop an appropriate LRP for North Atlantic swordfish", including evidence that work is ongoing, satisfying the requirements of the year 3 milestone. The following link, ICCAT Doc. No. SCI-036/213 http://www.iccat.int/Documents/Meetings/Docs/2013_SWO_ASSESS_REP_ENG.pdf is the 2013 detailed swordfish assessment, conducted by the SCRS, providing both an update on stock status and the work conducted to develop a limit reference point (LRP) for North Atlantic Swordfish. ICCAT Document 13-02, Recommendation by ICCAT for the Conservation of North Atlantic Swordfish, paragraph 4, http://www.iccat.es/Documents/Recs/compendiopdf-e/2013-02-e.pdf , clearly demonstrates that the SCRS has developed an interim LRP of 0.4*Bmsy for North Atlantic swordfish and this was presented to the Commission and adopted at the 2013 annual meeting, held in Cape Town, South Africa, thus completing the requirements for the year 4 milestone. This document can be found, attached separately under the title "2013 ICCAT Recommendations". Thus, it is our view that the requirements of this condition have been met and that this PI should be re-scored. A Harmonisation Meeting for North Atlantic Swordfish Fisheries Managed under the Auspices of the International Commission for the Conservation of Atlantic Tuna (ICCAT) was held on August 22-23, 2016 in Washington, D.C., USA. The report of this meeting can be found the following link: https://msc.org/track-a-fishery/fisheries-in-the-program/certified/north-west-atlantic/north_west_atlantic_canada_longline_swordfish/assessment-downloads-1/20160825_iccat_harmonisation_naswordfish_draft-report_v2.pdf and concluded that this condition was closed and rescored at 80. **Audit team observations and conclusion** This PI was reviewed as part of the pilot harmonization meeting described in section 2.2.2 of this audit report. The meeting concluded that the SG 80 had been met and therefore this condition can be closed.
Status of condition	As a result of the MSC harmonisation meeting, this PI has been rescored at 80. Therefore, the condition has been met and is closed. The revised scoring rationale is provided in Appendix 1 of this report.

Condition 2

	PI number	Scoring issue text	Score
Performance Indicator & Score	1.2.2	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit	75

		reference points are approached.	
Condition	By the fourth surveillance audit, evidence must be presented by the fishery client which shows that well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. As defined by the first scoring issue of the 80 scoring guidepost, an explicit HCR which stipulates how fishing mortality is reduced as the limit reference point (see PI 1.1.2) is approached needs to be implemented for this stock by ICCAT.		
Milestones	**Year 1** During the first surveillance audit the client is required to provide evidence that industry has asked that the Department of Fisheries and Oceans (DFO) request that ICCAT develop a limit reference point (LRP) as well as harvest control rules (HCRs) for North Atlantic swordfish that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as the limit reference point is approached. Milestones associated with the first surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 2** During the second surveillance audit the client is required to provide evidence that initial discussions by the SCRS were commenced to develop an appropriate LRP and associated HCR, for North Atlantic Swordfish. Milestones associated with the second audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of the score at this surveillance audit. **Year 3** At the third surveillance audit the client is required to provide an update on work undertaken by the SCRS to develop an appropriate LRP and associated HCRs for North Atlantic swordfish. Milestones associated with the third audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of the score at this surveillance audit. **Year 4** By the forth surveillance audit the client must provide evidence that the SCRS has developed an appropriate LRP for North Atlantic swordfish, as requested by ICCAT and that the Commission has adopted HCRs that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. By the fourth surveillance audit, evidence must be presented by the fishery client which shows that well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. Provided the actions defined in the milestone and the deliverables in the client action plan are met, the PI would be re-scored at 80 or higher at the fourth surveillance audit		
Client action plan	The Canadian swordfish industry, working through DFO, at the 2009 ICCAT meeting, proposed that the SCRS develop an explicit LRP for the North Atlantic Swordfish stock, before the next North Atlantic Swordfish assessment. This proposal was adopted as part of ICCAT Recommendation # 2009-02 Supplemental Recommendation by ICCAT to Amend the Rebuilding Program for North Atlantic Swordfish, and can be found in paragraph 5 of this document. The next North Atlantic Swordfish stock assessment is scheduled for 2013. Following the development of this LRP, by the SCRS, as outlined in ICCAT Resolution		

	# 2009-02, "Future decisions on the management of this stock shall include a measure that would trigger a rebuilding plan, should the biomass decrease to a level approaching the defined LRP as established by the SCRS." (see paragraph 5 of ICCAT Recommendation 2009-02). The Canadian longline swordfish industry, working through DFO, will work to initiate within this rebuilding plan specific rules to establish appropriate harvest levels, should biomass levels begin to approach the LRP developed by the SCRS. The same wording appears in paragraph 6 of ICCAT Recommendation 10-2, entitled "Recommendation by ICCAT for the Conservation of North Atlantic Swordfish", adopted at the 2010 ICCAT meeting. To address concerns about the over exploitation of North Atlantic Swordfish in a given year, ICCAT Recommendation # 2009-02, paragraph 1, bullet 2, states that, "If the total catch in 2010 exceeds 13,700 t, the excess amount shall be deducted from the quota / catch limit for each CPC on a prorate basis in 2011." This was adopted to address concerns that if all countries fished their entire allocation and carry-forward that the total TAC might be exceeded in any given year. The same wording appears in paragraph 4 of ICCAT Recommendation 10-2, entitled "Recommendation by ICCAT for the Conservation of North Atlantic Swordfish", adopted at the 2010 ICCAT meeting. Since the mandate of ICCAT is to maintain or rebuild stock to MSY and since North Atlantic swordfish has just completed a successful rebuilding plan, it would be the position of the Canadian swordfish industry, working through DFO to adopt management measures that would maintain this stock at this level. Deliverables: **1st Surveillance Audit:** At the first surveillance audit, The Nova Scotia Swordfishermen's Association (NSSA) will provide a copy of the letter to the Department of Fisheries and Oceans (DFO), requesting the Department to request that ICCAT develop a limit reference point (LRP) for North Atlantic swordfish and develop harvest control rules (HCR) that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as the limit reference point is approached. The NSSA will also provide copies of ICCAT Recommendation # 2009-02 Supplemental Recommendation by ICCAT to Amend the Rebuilding Program for North Atlantic Swordfish and ICCAT Recommendation 10-2, Recommendation by ICCAT for the Conservation of North Atlantic Swordfish to confirm that ICCAT has tasked the SCRS to develop an appropriate LRP for North Atlantic swordfish before the next stock assessment for this species (currently scheduled for 2013) and propose harvest control rules that are consistent with the harvest strategy and ensure that the exploitation rate is reduced should the limit reference point be approached. **2nd Surveillance Audit:** At the second surveillance audit, the NSSA will provide a copy of the agenda for and the report of the 2011 Joint Meeting of the ICCAT Working Group on Stock Assessment Methods and Bluefin Tuna Species Group to Analyze Assessment Methods Developed Under the GBYP and Electronic Tagging (Madrid, Spain – June 27 July 1, 2011), where initial discussions by the SCRS were commenced to develop an appropriate LRP for North Atlantic Swordfish and associated HCRs. **3rd Surveillance Audit:** At the third Surveillance audit, the NSSA will provide an update on work undertaken by the SCRS to develop an appropriate LRP and associated HCRs for North Atlantic swordfish. **4th Surveillance Audit:** At the fourth surveillance audit, the NSSA will provide documentation that the SCRS has developed an appropriate LRP for North Atlantic swordfish, as requested by

	ICCAT and that the Commission has adopted harvest control rules that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.
Progress on Condition **[Year 4]**	**The following text is taken from the client's submission on progress against this condition:** http://www.iccat.int/Documents/Recs/compendiopdf-e/2011-02-e.pdf is the document that outlines management measures for North Atlantic Swordfish including the requirement for the SCRS to develop an LRP and the Commission to adopt HCR with respect to this LRP before the next assessment, scheduled for this year. Attached separately is the letter from the NSSA to the Canadian Head of Delegation to ICCAT requesting the development of an LRP and HCR for North Atlantic swordfish. Also Attached is a PDF document entitled 2013 METHODS REP ENG which outlines on page 10 the conceptual approach that the SCRS intends to take at the June 2013 meeting where the LRP is to be developed. The document entitled SWO DATA PREP 2013 is the agenda for this meeting. ICCAT Recommendation 2011-2 and the letter from the NSSA to the Canadian Head of Delegation to ICCAT full fill the requirements set out in the milestones for year 1, as determine in the 1st Surveillance Audit for the fishery. The documents entitled 2013 METHODS REP ENG and SWO DATA RPEP 2013 full fill the requirements for the year 2 milestone, clearly demonstrating that "initial discussions commenced within ICCAT groups (i.e. SCRS) to develop an appropriate LRP for North Atlantic Swordfish. These documents replace the report of the 2011 Joint Meeting of the ICCAT Working Group on Stock Assessment Methods and Bluefin Tuna Species Group to Analyse Assessment Methods Developed Under the GBYP and Electronic Tagging, originally outlined under the milestone for year 2, as this work was undertaken in another SCRS committee. These documents also serve to satisfying the requirements of the year 3 milestone by providing evidence that "an update on work undertaken by the SCRS to develop an LRP for North Atlantic swordfish", including evidence that work is ongoing, has taken place. ICCAT Document 13-02, Recommendation by ICCAT for the Conservation of North Atlantic Swordfish, paragraph 4, clearly demonstrates that the SCRS has developed an interim LRP of 0.4*Bmsy for North Atlantic swordfish and this was presented to the Commission and adopted at the 2013 annual meeting, held in Cape Town, South Africa http://www.iccat.es/Documents/Recs/compendiopdf-e/2013-02-e.pdf. Further, paragraph 5, outlines the HRC's consistent with the recommended LRP thus completing the requirements of the year 4 milestone. The following is provided as an update on the development of MSE through the ICCAT process: The albacore Management Strategy Evaluation (MSE) has been developed. It is based on MULTIFAN-CL (an age structured stock assessment model) as the operating model (OM) and ASPIC (a biomass dynamic stock assessment model) as the management procedure (MP). This could easily be transferred to Swordfish, but requires the swordfish group to develop a work plan. The secretariat has spoken with the new swordfish chair Rui Coelho about possibly doing an MSE for the South Atlantic swordfish but this will need to be coordinated with the co-chair of the southern swordfish stock. The Mediterranean swordfish co-chair has been approached regarding developing a bio-economic MSE. According to a report (the report has not been finalized but when it has been it will be found at the following link: http://iccat.int/en/meetingscurrent.htm) provided at the June 22, 2015 Standing Working Group to Enhance Dialogue Between Fisheries Scientists and Managers (SWGSM) meeting, development of MSE for North Atlantic

	swordfish is at a preliminary stage and not ready for providing management advice. Involved scientists must determine which sources of uncertainty are to be considered and which will not be incorporated. Dr. Die suggested that this could be a future topic for discussion at the SWGSM. He noted that it is essential for managers weigh in on the selection of performance measures. The SCRS has developed a number of different alternative estimation models and reference points. A sample Harvest Control Rule (HCR) and interim reference points were selected for the initial analysis; consideration of all hypotheses allows the evaluation of the performance of the harvest strategies (combination of data, assessment method, and HCR and management action). Overall achievement of the different management goals by each harvest strategy can be visualized using a 'spider-web' graph. Using this type of graph, the quantitative objectives associated with the performance indicators can be examined relative to one another. Total time is from 2-3 years depending on work load. Swordfish will be looked at in 2017, when a stock assessment is carried out. However, the stock assessment process will be carried out separately from the development of MSE, HCRs and LRPs. According to the SCRS Science Strategic Plan for 2015-2020: https://www.iccat.int/Documents/SCRS/STRATEGIC-PLAN_EN.pdf A Harmonisation Meeting for North Atlantic Swordfish Fisheries Managed under the Auspices of the International Commission for the Conservation of Atlantic Tuna (ICCAT) was held on August 22-23, 2016 in Washington, D.C., USA. The report of this meeting can be found the following link: https://msc.org/track-a-fishery/fisheries-in-the-program/certified/north-west-atlantic/north_west_atlantic_canada_longline_swordfish/assessment-downloads-1/20160825_iccat_harmonisation_naswordfish_draft-report_v2.pdf and concluded that this condition was not closed and rescored at 75. It is our view that the process failed to consider ICCAT Recommendation 13-02 Recommendation by ICCAT for the Conservation of North Atlantic Swordfish, which outlines various HRC's that are in place for this fishery. Specifically, Paragraph 2.C., which states: "The total TAC's for 2014-2016 shall not be exceeded. For this purpose, it the total annual catch exceeds the TAC of 13,700 t, CPC's who have exceeded their individual adjusted catch limits shall pay back their overharvest. Any amount of overharvest remaining after such adjustment shall be deducted from annual catch limits of each CPC in the year following the excess, on a rotate basis of catch limits in Table 2.b) above" Paragraph 4, which states: "When assessing stock status and providing management recommendations to the Commission in 2016, the SCRS shall consider the interim limit reference (LRP) of 0.4*BMSY or any more robust LRP established through future analysis." Paragraph 5, which states: "The SCRS and the Commission shall begin a dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec 99-02] then management measures should be considered to avoid further decline and begin to rebuild the stock." While it is true that ICCAT is working through the MSE process for the various fisheries under its management and MSE is considered as a relatively new and useful tool for establishing HRC's, it is our view that the Harmonisation Process has relied solely upon MSE to show that HRC's have been established. This is not consistent with the requirements of other certified fisheries, many of which have not under gone the MSE process.

	While the SCRS are proceeding with the MSE process, they are doing so as an alternative modeling approach that will allow them to project future stock status under various management alternatives. In its current form, MSE at ICCAT is not being considered to provide HRC's that will be put into play automatically based on various stock status outcomes. To date there has been no management input into the MSE exercise being undertaken at ICCAT by the SCRS. ICCAT Recommendation 15-07 Approach to MSE and Developing HCR's https://iccat.int/Documents/Recs/compendiopdf-e/2015-07-e.pdf provides guidance on how this process will take place. While the final rendition of MSE in the ICCAT context may lead to well-defined HRC's in the long term, short term use of this process will be for use by the SCRS to test alternative management scenarios to project stock status outcomes through an alternative modeling exercise. While MSE, in its final form, may be the requirement to reach the 100SG, it is our view that the requirements of this condition have been met with respect to the 80SG and that there are HCR's in place for North Atlantic Swordfish, and that this PI should be re-scored. **Audit team observations and conclusions** This PI was reviewed as part of the pilot harmonization meeting in August 2016, described in section 2.2.2 of this audit report. The meeting concluded that the SG 60 had been met but the SG 80 had not been achieved. A score of 75 was confirmed, i.e. the same score assigned at the original assessment. In November 2016, ICCAT held their 20th Special Meeting and subsequently published ICCAT Recommendation 16-03 (ICCAT 2016a), which describes the ICCAT approach to the development of harvest control rules and action that will be taken, in the intervening period, should the swordfish biomass approach a pre-agreed trigger level. As part of the on-going harmonisation process, this Recommendation was discussed with the US North Atlantic Swordfish audit team in January 2017 and it was jointly agreed that the new Recommendation, in combination with previous Recommendations and actions by ICCAT, resulted in the SG 80 being met.
Status of condition	As a result of a new Recommendation by ICCAT and further harmonisation discussions and agreement, this PI has been re-scored at 80. Therefore, the condition has been met and is closed. The revised scoring rationale is provided in Appendix 1 of this report

Condition 3

	PI number	Scoring issue text	Score
Performance Indicator & Score	2.1.1	Main retained species are highly likely to be within biologically based limits, or if outside the limits, there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	**75**
Condition	By the fourth surveillance audit, the client must provide evidence that partial strategies for shortfin mako and porbeagle sharks have demonstrably effective management measures in place such that the fishery does not hinder their recovery or rebuilding.		
Milestones	**Year 1** At the first surveillance audit the client must provide evidence that the methodologies		

	for the calculation of discards and post release mortality estimates, for incorporation in future assessments, for shortfin mako and porbeagle shark have been reviewed. Milestones associated with the first surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 2** At the second surveillance audit the client must provide evidence, of management measures that have been adopted to address the conservation and recovery of porbeagle and shortfin mako sharks and how they have been implemented in the Canadian management framework, e.g. the Shark Integrated Fisheries Management Plan, Shark Conservation Action Plan. Milestones associated with the second surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 3** At the third surveillance audit the client must provide: 1. the results of the SCRS assessment for porbeagle sharks, conducted by the SCRS and any associated management measures adopted by ICCAT or DFO, and implemented in the Canadian management framework; 2. provide an update on post-capture survival work undertaken by the Association and DFO and indicate how the results will be incorporated in future assessments. Milestones associated with the third surveillance have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 4** At the fourth surveillance audit, the client must provide evidence that the partial strategy in place consists of demonstrably effective management measures that ensure that the fishery does not hinder recovery or rebuilding of the main retained species. Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would likely be re-scored at 80 or higher.
Client action plan	By the second surveillance audit, the Nova Scotia Swordfishermen's Association, working with Fisheries and Oceans Canada, through the Canadian Shark Integrated Fisheries Management Plan (IFMP) will outline management strategies and measures for porbeagle sharks that ensure that the swordfish longline fishery does not hinder recovery or rebuilding of these species. The final draft of the IFMP will be available for public review in the fall of 2011. Shortfin mako sharks will be managed through a Conservation Action Plan, which will be completed before the 2013 fishing season. Both the IFMP and Conservation Action Plan will be reviewed through the Atlantic Large Pelagics Advisory Committee (ALPAC) and its sub-committee, the Ecosystem Working Group, so that stakeholder input can be considered. As part of Fisheries and Oceans Canada's work plan for by-catch, methodologies for the calculation of discards and post release mortality estimates, for both species, will be reviewed in 2011 for incorporation in future assessments. A satellite tagging study for shortfin mako sharks will begin in 2011, with a second year of tagging taking place in 2013, to determine post release mortality for the species. A final report is expected to be completed by 2015. Results from this study will be incorporated in the Canadian inputs in future stock assessments for the species when taking into account removals from the stock. Similarly, a satellite tagging study for porbeagle sharks will be conducted in 2013, to determine post release mortality for the species. A final report is expected to be completed by 2015. Results from this study will be incorporated in the Canadian inputs in future stock assessments for the species when taking into account removals from

	the stock. The Nova Scotia Swordfishermen's Association, working with Fisheries and Oceans Canada will, at the second surveillance audit, demonstrate how post capture mortalities for both species will be incorporated in future assessments and demonstrate the impacts on rebuilding. ICCAT assessments for shortfin mako and porbeagle sharks are scheduled for 2012 and 2014, respectively. Management measures taken based on these stock assessments will be incorporated through the domestic management plans for these species. While Canada is one of many member countries at ICCAT, Canada will continue to press for regular stock assessments of these species so that the results of management measures can be reviewed and adjusted, as needed, on a regular basis. Deliverables: **1st Surveillance Audit:** At the first surveillance audit, the NSSA will provide the report of the meeting to explore methodologies for the calculation of discards and post release mortality estimates, for incorporation in future assessments, for both species, that was conducted in July, 2011. **2nd Surveillance Audit:** At the second surveillance audit, the NSSA will provide copies of the Shark Integrated Fisheries Management Plan (IFMP) for porbeagle shark, Swordfish and Other Tunas IFMP, and the Shark Conservation Action Plan (CAP), currently under development by DFO and any other management measures that have been adopted to address the conservation and recovery of porbeagle and shortfin mako sharks. The NSSA will also provide for review, the latest stock assessment for shortfin mako sharks, conducted by the SCRS and any associated management measures adopted by ICCAT, following this stock assessment and demonstrate how such measures were adopted in the Canadian management framework. **3rd Surveillance Audit:** At the third surveillance audit, the NSSA will provide the results of the SCRS assessment for porbeagle sharks, conducted by the SCRS and any associated management measures adopted by ICCAT, following this stock assessment and demonstrate how such measures were adopted in the Canadian management framework. The NSSA will also provide an update on post-capture survival work that has been undertaken by the Association and DFO and how the results will be incorporated in future assessments. **4th Surveillance Audit:** By the fourth surveillance audit, the NSSA will provide evidence that partial strategies for shortfin mako and porbeagle sharks have demonstrably effective management measures are in place such that the fishery does not hinder their recovery or rebuilding.
Progress on Condition **[Year 4]**	**The following text is taken from the client's submission on progress against this condition:** **Shortfin Mako** - Condition closed at a previous surveillance audit. **Porbeagle** - The requirements for the 3rd Surveillance audit, as outlined in the original Certification Report for this fishery, require the NSSA to provide:

	1. The results of the SCRS assessment for porbeagle sharks, conducted by the SCRS and any associated management measures adopted by ICCAT or DFO, and implemented in the Canadian management framework; 2. An update on post-capture survival work undertaken by the Association and DFO and indicate how the results will be incorporated in future assessments. Within the DFO framework, IFMP's are developed for directed fisheries, which applied at the time of Certification of this fishery, for porbeagle and blue sharks, where a directed fishery existed. Based on August 2013 decision by the Minister of Fisheries, when examining the directed porbeagle and blue shark fisheries, under the Developing Fisheries Framework, determined that these fisheries did not meet the requirements under the policy and all directed licenses for porbeagle and blue sharks were subsequently cancelled. With this decision, there will be no Shark IFMP developed. This decision has delayed the development of the Shark CAP, as it will now have to include the species that were originally going to be covered by the IFMP. The Shark CAP has been finalized but is not yet on the DFO website, a final copy is attached separately for review by the audit team. The initial conclusion by the assessment team was that there was a management strategy in place but that they were not convinced that it was not "demonstrably effective". The team also concluded that the scientifically select TAC was at the upper end of the projections, when in fact it was at the lower end and was based on the least optimistic of the four model runs, the one with the worst fit. ICCAT has re-scheduled the next assessment for porbeagle for 2017 so results are not available for this audit as anticipated. DFO conducted a Recovery Potential Assessment (RPA) in the spring of 2015 and the final documents are scheduled for release by August 14, 2015 and will be forwarded separately upon completion. The conclusions of this document were that current take levels in all Canadian fisheries, including estimates of dead discards and post released mortality, were approximately 2% of the vulnerable biomass, half the level that was suggested to support recovery of the species. Based on the Prioritized Threat Table for Porbeagle, found in this document, the assessed fishery was rated as low / medium threat, similar to other certified Canadian fisheries. Documents from this meeting will be attached separately. It is further anticipated, based on this document, with the cancellation of the directed fishery, that the growth projections will be accelerated due to the much lower exploitation rate. A summary of the shark tagging work (for both porbeagle and mako) has been attached separately. Preliminary results from the porbeagle tagging were incorporated in the Porbeagle RPA. A final document on the tagging will not be available until a replacement is found for the recently retired DFO shark scientist. In our view, this clearly demonstrates that the plan is effective and that any concerns with respect to post release mortality are unfounded since the total catch, including releases would be well below the 185 MT TAC recommended by the assessment of this species. This said, in our view, this PI should be rescored and would meet the SG80 requirements. Statements made in the 1st Surveillance Audit by the team regarding a reduction in observer coverage to "minimal levels" were not justified. Please see the attachment entitled "Coverage Statistics", which is a review of observer coverage levels conducted by DFO – Science in 2014, which actually demonstrates that observer coverage levels have increased since the certification of the fishery and have not been reduced. Observer coverage in 2014 was 5.1% (see minutes of the Scotia Fundy Large Pelagics Advisory Committee Meeting). This represented 119 sea-days of coverage in 2014. While the fleet had budgeted for 145 sea-days, a shortage of qualified observers in 2014 left 26-days unused. These estimates were further

updated in the document attached under the heading of Provisional Observer Coverage Estimates for Swordfish Long Line, 2014.

The target for 2015 is, again, 145 sea-days, which may be adjusted in 2016 following the DFO analysis of observer coverage scheduled for January 2016 (see separate attachment entitled TAB7_Workplan to address incidental catch in Atl. Cdn. SWO-OT fishery June 25 2015).

At the 3rd Surveillance Audit, the team drew the following conclusion:

"The condition is on target in relation to this year's audit. Closing of the condition during the fourth surveillance audit will require clear articulation of the management response to changes in stock status and how advised catch takes into account uncertainty to determine that the harvest strategy is demonstrably effective."

Following the adoption of ICCAT Recommendation 15-06, Recommendation by ICCAT on Porbeagle Caught in Association with ICCAT Fisheries, https://iccat.int/Documents/Recs/compendiopdf-e/2015-06-e.pdf, discussions at the 2016 ALPAC Meeting, new management measures became conditions of license for the assessed fishery, (see paragraph 7.B. in the 2016 Swordfish Longline License Conditions and paragraph 10.B in the Tuna Restricted License Conditions).

A recent update on the status of porbeagle shark was released by NMFS in 2016, that takes into account all removals from the North West Atlantic population and concluded the population did not qualify as an endangered species within the US framework. The document also concluded that the population was increasing and was projected to continue to increase under current harvest levels. The document can be found at: http://www.nmfs.noaa.gov/pr/species/Status%20Reviews/porbeagle_sr_2016.pdf

These findings support evidence provided at previous surveillance audits with respect to porbeagle shark.

This clearly demonstrates that management responds to changes in stock status and uncertainty, and incorporate these changes in the management system through the consultative process, both at an international and domestic level.

Audit team observations and conclusions

The Condition states that, by the fourth surveillance audit, the client must provide evidence that partial strategies for shortfin mako and porbeagle sharks have demonstrably effective management measures in place such that the fishery does not hinder their recovery or rebuilding.

The Condition was met for Mako shark at the year 2 audit.

The Condition remained open but on target for porbeagle at the year 3 audit.

Porbeagle was placed on Appendix II of CITES in 2013, and was assessed as 'endangered' by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2004. In 2006, the Governor in Council made the decision to not list porbeagle under Schedule 1 of SARA. Porbeagle was reassessed by COSEWIC as 'endangered' in 2014 (COSEWIC 2014) and the Department is currently undertaking a process to determine whether or not the species should be listed under SARA.

The latest stock assessment information for porbeagle was presented by Campana et al. (2013). The authors ran four variants of a forward projecting, age and sex-structured life history model, fit to catch-at-length and catch per unit effort data to the end of 2008, although some information including catch and discards was updated to the end of 2011. The four variants of the population model differed in their assumed productivity, but all variants of the model predicted porbeagle recovery to 20% of spawning stock numbers (SSN20%) before 2014 if the human-induced mortality rate was kept at or below 4% of the vulnerable biomass (Campana et al., 2013).

Hooking mortality and post-release mortality estimates for porbeagle have been assessed by on-board observers of Canadian fishing vessels since 2010 and were

reported by DFO (2015). Accounting for landings, capture mortality and post-release mortality, the total annual mortality of porbeagle from all commercial fishing activities in Canadian waters from 2009 to 2014 has averaged 107 t (range 88 – 164 t); this represents a mortality rate of approximately 2% (DFO 2015).

Although, following Campana et al. (2013), these catch and mortality data indicate that the porbeagle population status is now likely to be above the SSN20% level, this cannot be confirmed in the absence of an updated assessment for porbeagle; therefore, it is not possible to say that porbeagle meets the SG80 requirement of being "highly likely to be within biologically based limits".

Nevertheless, the alternative requirement at SG80 for the first SI of PI 2.1.1 is that "if (porbeagle is) 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."

In this regard, it is noted that the MSC defines a partial strategy as 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. It may not have been designed to manage the impact on that component specifically" (MSC 2013b).

There are a number of management measures in place for porbeagle in Atlantic Canada, and in the certified swordfish fishery specifically. These include:

1) A National Plan of Action for the Conservation and Management of Sharks (NPOACMS) was published and implemented (DFO 2007);
2) An update on the NPOACMS was published (DFO 2012);
3) There is a Shark Conservation Action Plan in place (DFO 2014), which objectives with tactics including to enhance monitoring and data collection, promote fishing activities that avoid bycatch species, mitigate impacts on bycatch species, and improve knowledge on post-release mortality, across all Canadian fisheries that catch sharks;
4) The directed fishery for porbeagle in Canadian waters was stopped in 2013;
5) Corrodible circle hooks and monofilament leaders must be used in the fishery (DFO 2016a);
6) Longline vessels are required to release all live porbeagle (DFO 2016a);
7) In the longline fishery, all released porbeagle must be recorded in the logbook, and a record made of their status (i.e., dead or alive) (DFO 2016a);
8) Fins may be removed from sharks taken in the longline fishery, but must be landed with the corresponding carcasses and cannot exceed 5% of the weight of the carcasses (DFO 2016a);
9) The fishery is subject to 100% dockside monitoring, and no landings can take place unless a dockside monitor is present (DFO 2016a);
10) There is a recommended maximum porbeagle catch limit for all Canadian fisheries of 185 t (DFO 2013), which represents a mortality rate of approximately 4%;
11) If the 185 t catch limit was exceeded, it was confirmed by DFO (pers. comm., Canadian swordfish fishery site visit, October 2016) that this would be considered at the DFO Post-Season review, and additional measures or restrictions could be brought forward for consideration at the Atlantic Large Pelagic Advisory Council (ALPAC) in order to bring catches down (also stated in DFO 2016e).

It is noted that the landings of porbeagle from the swordfish fishery have declined from 9.7 t and 16.2 t in 2011 and 2012 respectively, to 3.2 t, 2.7 t and 0.5 t in 2013, 2014 and 2015, respectively (DFO 2016b). Total discards of live and dead porbeagle combined in the longline fishery for the 2011-2014 period were estimated to average 61 t annually, while total mortality of porbeagle in all Atlantic Canadian fisheries for 2009-2014 was estimated to average 107 t (DFO 2015).

	For the Year 3 audit, the audit team commented on the need to understand how advised catches take into account uncertainty. For this Year 4 audit, it was confirmed by DFO that the longline fishery has been subject to average annual observer coverage of 5.8% of the sea days for the period 2011-2015 (range 3.3% - 7.8%), exceeding the 5% target level (DFO 2016c). A workshop was held in February 2016 to review the approach to incidental catch monitoring in the longline fishery, but the results were inconclusive (DFO 2016d). However, operational aspects of the observer programme for the longline fishery were revised in 2013; subsequently, observers have been tasked to longline vessels on a random basis, and only after the vessel captain has 'hailed-out' with information on the trip, including the intended region of fishing (DFO pers. comm., Canadian swordfish fishery site visit, October 2016). Therefore, whilst it cannot be confirmed that the observer coverage is representative of the fleet activities or catches, the programme is intended to be randomised and is meeting its target sea day coverage levels (with the exception of 2013, when 3.3% of sea days were covered following the revision to the observer programme – DFO 2016c). DFO has commented that the observer coverage level is currently considered to be 'sufficient' (DFO 2016e). For the Year 3 audit, the audit team also commented on the need for an articulation of the management response to changes in stock status. In this regard, the measures in place in Canada and in the longline fishery specifically are clearly targeted at porbeagle, and are intended to ensure mortality rates do not exceed 4% in response to information on stock status indicating the stock required rebuilding. The measures have been effective in bringing annual mortality rates from all Canadian fisheries down to around 2% (DFO 2015). Whilst there has not been a recent update to the porbeagle stock assessment (noting that, in the absence of fishery landings and associated sampling of porbeagle, or a dedicated porbeagle sampling study, a new stock assessment cannot be produced – DFO pers. comm., Canadian swordfish fishery site visit, October 2016), this is approximately half of the mortality rate that was expected to support a recovery of the stock back to SSN20% by 2014, even under the most pessimistic productivity assumption tested in the model (Campana et al., 2013). Overall, the audit team considers that the measures in place for managing the impact of the swordfish longline fishery on porbeagle constitute at least a partial strategy, and it is demonstrably effective in maintaining the impact of the swordfish longline fishery at a level that will not hinder recovery and rebuilding (i.e., mortality is less than 4%). As such, the SG80 requirement is met, PI 2.1.1 is rescored at 80, and the condition is closed. A higher score is not achieved because the SG100 requires that there is, "a high degree of certainty that retained species are within biologically based limits", and this cannot be confirmed.
Status of condition	The SG80 requirement for PI 2.1.1 is met, and Condition 3 is closed. The revised scoring rationale is provided in Appendix 1 of this report. A non-binding Recommendation is made, as follows: It is recommended that the client provide any future audit and assessment team with an annual update on catches and releases of porbeagle in the fishery, and estimated total mortality. It is noted that a condition may be introduced in future if there is an indication that the recommended catch limit has been breached and appropriate action to reduce the mortality rate has not been introduced following the DFO post-season review and any subsequent discussion at the ALPAC.

Condition 4

	PI number	Scoring issue text	Score
	2.1.2	There is some objective basis for confidence that the partial strategy	**75**

Performance Indicator & Score		will work, based on some information directly about the fishery and/or species involved.	
Condition	By the fourth surveillance audit, the client must provide evidence that there is a partial strategy for conservation of sharks (porbeagle and shortfin mako) that takes account of all sources of fishing related mortality (landings and discards by the assessed fishery, other Canadian fisheries), and international fisheries. There must be an objective scientific basis to conclude that the strategy will maintain these shark stocks within biological limits or ensure that the fishery does not hinder their recovery and rebuilding. The partial strategy must be in place for the assessed fishery so that, at a minimum, it achieves its proportionate share to conserve sharks.		
Milestones	**Year 1** At the first surveillance audit the client must provide evidence to confirm that methodologies for the calculation of discards and post release mortality estimates, for incorporation in future assessments for both species, have been reviewed. Milestones associated with the first surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of the score at this surveillance audit. **Year 2** At the second surveillance audit the client must provide for review, the latest stock assessment for shortfin mako sharks, conducted by the SCRS and any associated management measures adopted by ICCAT and the Canadian fishery. Milestones associated with the second surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements and would likely not result in a change of score at this surveillance. **Year 3** At the third surveillance audit client must provide the results of the SCRS assessment for porbeagle sharks, and any associated management measures adopted by ICCAT and the Canadian fishery. The client must also provide an update on post-capture survival work that has been undertaken and how the results will be incorporated in future assessments and management. Milestones associated with the third surveillance audit have been defined as means to monitor progress in meeting the condition, meeting milestone requirements would likely not result in a change of score at this surveillance audit. **Year 4** By the fourth surveillance audit, the client must provide evidence that there is a partial strategy for conservation of sharks (porbeagle and shortfin mako) that takes account of all sources of fishing related mortality (landings and discards by the assessed fishery, other Canadian fisheries), and international fisheries. There must be an objective scientific basis to conclude that the strategy will maintain these shark stocks within biological limits or ensure that the fishery does not hinder their recovery and rebuilding. The partial strategy must be in place for the assessed fishery so that, at a minimum, it achieves its proportionate share to conserve sharks. Provided the actions defined in the milestones and the deliverables in the client action plan are met this PI would be re-scored at 80 or higher. (This milestone has been amended from the year 4 milestone that appears in the Public Certification Report to more accurately reflect the required outcome of this		

	condition).
Client action plan	By the second surveillance audit, the Nova Scotia Swordfishermen's Association, working with Fisheries and Oceans Canada, through the Canadian Shark Integrated Fisheries Management Plan (IFMP) will outline management strategies and measures for porbeagle sharks that ensure that the swordfish longline fishery does not hinder recovery or rebuilding of these species. The final draft of the IFMP will be available for public review in the fall of 2011. Shortfin mako sharks will be managed through a Conservation Action Plan, which will be completed before the 2013 fishing season. Both the IFMP and Conservation Action Plan will be reviewed through the ALPAC and its sub-committee, the Ecosystem Working Group, so that stakeholder input can be considered. As part of Fisheries and Oceans Canada's work plan for by-catch, methodologies for the calculation of discards and post release mortality estimates, for both species, will be reviewed in 2011 for incorporation in future assessments. A satellite tagging study for shortfin mako sharks will begin in 2011, with a second year of tagging taking place in 2013, to determine post release mortality for the species. A final report is expected to be completed by 2015. Results from this study will be incorporated in the Canadian inputs in future stock assessments for the species when taking into account removals from the stock. Similarly, a satellite tagging study for porbeagle sharks will be conducted in 2013, to determine post release mortality for the species. A final report is expected to be completed by 2015. Results from this study will be incorporated in the Canadian inputs in future stock assessments for the species when taking into account removals from the stock. The Nova Scotia Swordfishermen's Association, working with Fisheries and Oceans Canada will, at the second surveillance audit, demonstrate how post capture mortalities for both species will be incorporated in future assessments and demonstrate the impacts on rebuilding. ICCAT assessments for shortfin mako and porbeagle sharks are tentatively scheduled for 2012 and 2014, respectively. Management measures recommended based on these stock assessments will be reviewed and incorporated through the domestic management plans for these species. While Canada is one of many member countries at ICCAT, Canada will continue to press for regular stock assessments of these species so that the results of management measures can be reviewed and adjusted, as needed, on a regular basis. Deliverables: **1st Surveillance Audit:** At the first surveillance audit, the NSSA will provide the report of the meeting to explore methodologies for the calculation of discards and post release mortality estimates, for incorporation in future assessments, for both species, that was conducted in July, 2011. **2nd Surveillance Audit:** At the second surveillance audit, the NSSA will provide copies of the Shark Integrated Fisheries Management Plan (IFMP) for porbeagle shark, Swordfish and Other Tunas IFMP, and the Shark Conservation Action Plan (CAP), currently under development by DFO and any other management measures that have been adopted to address the conservation and recovery of porbeagle and shortfin mako sharks. The NSSA will also provide for review, the latest stock assessment for shortfin mako sharks, conducted by the SCRS and any associated management measures adopted by ICCAT, following this stock assessment and demonstrate how such

	measures were adopted in the Canadian management framework. **3rd Surveillance Audit:** At the third surveillance audit, the NSSA will provide the results of the SCRS assessment for porbeagle sharks, conducted by the SCRS and any associated management measures adopted by ICCAT, following this stock assessment and demonstrate how such measures were adopted in the Canadian management framework. The NSSA will also provide an update on post-capture survival work that has been undertaken by the Association and DFO and how the results will be incorporated in future assessments. **4th Surveillance Audit:** At the fourth surveillance audit, the NSSA will provide evidence of an effectively implemented strategy for both shortfin mako and porbeagle sharks, which demonstrates that the fishery does not hinder recovery or rebuilding.
Progress on Condition **[Year 4]**	The following text is taken from the client's submission on progress against this condition: Shortfin Mako - Shortfin Mako was removed from this condition at the second surveillance audit. Porbeagle - The requirements for the 3rd Surveillance audit, as outlined in the original Certification Report for this fishery, require the NSSA to provide the results of the SCRS assessment for porbeagle sharks, and any associated management measures adopted by ICCAT and the Canadian fishery. The client must also provide an update on post-capture survival work that has been undertaken and how the results will be incorporated in future assessments and management. Within the DFO framework, IFMP's are developed for directed fisheries, which applied at the time of Certification of this fishery, for porbeagle and blue sharks, where a directed fishery existed. Based on August 2013 decision by the Minister of Fisheries, when examining the directed porbeagle and blue shark fisheries, under the Developing Fisheries Framework, determined that these fisheries did not meet the requirements under the policy and all directed licenses for porbeagle and blue sharks were subsequently cancelled. With this decision, there will be no Shark IFMP developed. This decision has delayed the development of the Shark CAP, as it will now have to include the species that were originally going to be covered by the IFMP. The Shark CAP has been finalized but is not yet on the DFO website, a final copy is attached separately for review by the audit team. The initial conclusion by the assessment team were that there was a management strategy in place but that they were not convinced that it was not "demonstrably effective". The team also concluded that the scientifically select TAC was at the upper end of the projections, when in fact it was at the lower end and was based on the least optimistic of the four model runs, the one with the worst fit. ICCAT has re-scheduled the next assessment for porbeagle for 2017 so results are not available for this audit as anticipated. DFO conducted a Recovery Potential Assessment (RPA) in the spring of 2015, and the final documents are scheduled for release by August 14, 2015 and will be forwarded separately upon completion. The conclusions of this document were that current take levels in all Canadian fisheries, including estimates of dead discards and post released mortality, were approximately 2% of the vulnerable biomass, half the level that was suggested to support recovery of the species. Based on the Prioritized Threat Table for Porbeagle, found in this document, the assessed fishery was rated as low / medium threat, similar to other certified Canadian fisheries.

	A summary of the shark tagging work (for both porbeagle and mako) has been attached separately. Preliminary results from the porbeagle tagging were incorporated in the Porbeagle RPA. A final document on the tagging will not be available until a replacement is found for the recently retired DFO shark scientist. It is further anticipated, based on this document, with the cancellation of the directed fishery, that the growth projections will be accelerated due to the much lower exploitation rate. In our view, this clearly demonstrates that the plan is effective and that any concerns with respect to post release mortality are unfounded since the total catch, including releases would be well below the 185mt. TAC recommended by the assessment of this species. This said, in our view, this PI should be rescored and would meet the SG80 requirements. Statements made in the 1st Surveillance Audit by the team regarding a reduction in observer coverage to "minimal levels" were not justified. Please see the attachment entitled "Coverage Statistics", which is a review of observer coverage levels conducted by DFO – Science in 2014, which actually demonstrates that observer coverage levels have increased since the certification of the fishery and have not been reduced. Observer coverage in 2014 was 5.1% (see minutes of the Scotia Fundy Large Pelagics Advisory Committee Meeting). This represented 119 sea-days of coverage in 2014. While the fleet had budgeted for 145 sea-days, a shortage of qualified observers in 2014 left 26-days unused. These estimates were further updated in the document attached under the heading of Provisional Observer Coverage Estimates for Swordfish Long Line, 2014. The target for 2015 is, again, 145 sea-days, which may be adjusted in 2016 following the DFO analysis of observer coverage scheduled for January 2016. For details, see separate attachment (CSA-Incidental By-Catch – TOR-DRAFT_Aug 2015 (Draft)). In our view, this clearly demonstrates that the plan is effective and that any concerns with respect to post release mortality are unfounded since the total catch, including releases would be well below the 185 MT TAC recommended by the assessment of this species. This said, in our view, this PI should be rescored and would meet the SG80 requirements. A workshop, hosted by WWF Canada, and attended by DFO science and management, industry, and various ENGO's was held in March 2012 to standardize observer data collection in all fisheries that incidentally catch sharks. The conclusions of this workshop are attached under the title "Shark_Body_Condition-Briefing_Document March 2012.doc" and have been incorporated in the Canadian observer program to improve the determination of actual removals from various shark populations. At the 3rd Surveillance Audit, the team drew the following conclusion: "The condition is on target in relation to this year's audit. Closing of the condition during the fourth surveillance audit will require clear articulation of the management response to changes in stock status and how advised catch takes into account uncertainty to determine that the harvest strategy is demonstrably effective." Following the adoption of ICCAT Recommendation 15-06, Recommendation by ICCAT on Porbeagle Caught in Association with ICCAT Fisheries, https://iccat.int/Documents/Recs/compendiopdf-e/2015-06-e.pdf, discussions at the 2016 ALPAC Meeting, new management measures became conditions of license for the assessed fishery, (see paragraph 7.B. in the 2016 Swordfish Longline License Conditions and paragraph 10.B in the Tuna Restricted License Conditions).

	A recent update on the status of porbeagle shark was released by NMFS in 2016, that takes into account all removals from the North West Atlantic population and concluded the population did not qualify as an endangered species within the US framework. The document also concluded that the population was increasing and was projected to continue to increase under current harvest levels. The document can be found at: http://www.nmfs.noaa.gov/pr/species/Status%20Reviews/porbeagle_sr_2016.pdf These findings support evidence provided at previous surveillance audits with respect to porbeagle shark. This clearly demonstrates that management responds to changes in stock status and uncertainty, and incorporate these changes in the management system through the consultative process, both at an international and domestic level. **Audit team observations and conclusions** The Condition requires that, by the fourth surveillance audit, the client must provide evidence that there is a partial strategy for conservation of sharks (porbeagle and shortfin mako) that takes account of all sources of fishing related mortality (landings and discards by the assessed fishery, other Canadian fisheries), and international fisheries. There must be an objective scientific basis to conclude that the strategy will maintain these shark stocks within biological limits or ensure that the fishery does not hinder their recovery and rebuilding. The partial strategy must be in place for the assessed fishery so that, at a minimum, it achieves its proportionate share to conserve sharks. remained open but on target for porbeagle at the year 3 audit. The Condition was met for mako shark at the year 2 audit. The Condition remained open but on target for porbeagle at the year 3 audit. The observations for this Condition on PI 2.1.2 are the same as those for Condition 3 on PI 2.1.1 (see above). In summary, the audit team considers that there are a number of management measures in place for porbeagle in Atlantic Canada, and in the certified swordfish fishery specifically, that constitute at least a partial strategy, and it is demonstrably effective in maintaining the impact of the swordfish longline fishery at a level that will not hinder recovery and rebuilding (i.e., mortality is less than 4%). As such, the SG80 requirement is met, PI 2.1.2 is rescored at 80, and the condition is closed. A higher score is not achieved because the second SI of PI 2.1.2 requires at SG100 that “testing supports high confidence that the strategy will work”, and testing has not been conducted to the Year 4 audit team’s knowledge, while the third SI of PI 2.1.2 requires at SG100 that “there is clear evidence that the strategy is being implemented successfully”, and some measures within the partial strategy/strategy have yet to be in place for sufficient time to be confident that this is the case.
Status of condition	The SG80 requirement for PI 2.1.2 is met, and Condition 4 is closed. The revised scoring rationale is provided in Appendix 1 of this report. The non-binding Recommendation made against Condition 3 is reiterated, here: It is recommended that the client provide any future audit and assessment team with an annual update on catches and releases of porbeagle in the fishery, and estimated total mortality. It is noted that a condition may be introduced in future if there is an indication that the recommended catch limit has been breached and appropriate action to reduce the mortality rate has not been introduced following the DFO post-season review and any subsequent discussion at the ALPAC.

Condition 6

	PI number	Scoring issue text	Score
Performance Indicator & Score	**2.3.1**	Direct effects are highly unlikely to create unacceptable impacts to ETP species.	**75**
Condition	Within four years of certification, the client must provide evidence that demonstrates that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtles. The client should refer to Section 7 of the FAM for the specific performance requirements associated with the term "highly unlikely" that pertain to this PI.		
Milestones	**Year 1** By the first surveillance audit the client must: 1. Provide evidence that confirms that training and certification in the use of safe handling and release equipment has been completed; that the requirement for the training and use of this equipment has been incorporated in the license condition; and, provide evidence that other aspects of the Loggerhead Turtle Conservation Action Plan (LCAP) have been adopted within the management plan or license conditions for the fishery. 2. Provide an update on the activities conducted in relation to the examination of the precision and stratification of observer data. Milestones associated with the first surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements and would likely not result in a change of score at this surveillance audit. **Year 2** By the second surveillance audit, the client must provide an update on fieldwork to determine post-capture survival of loggerhead turtles, which interact with the longline fishery. The update is to include the number of loggerhead turtles tagged to date and available updates on survival rates. Milestones associated with the second surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements and would likely not result in a change of score at this surveillance audit. **Year 3** By the third surveillance audit, the client is required to provide: 1. An update on fieldwork and research completed to determine post-capture survival of loggerhead turtles. This update will include the number of loggerhead turtles tagged to date and available updates on survival rates. 2. An update of the information, additional data or research that will be considered in the analysis to demonstrate that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtle. Milestones associated with the third surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements and would likely not result in a change of score at this surveillance audit. **Year 4** By the fourth surveillance audit the client must provide the results of the completed post- capture survival study and information on how the results of this study will be incorporated in an analysis to demonstrate that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtle. The client will be required to provide an updated Loggerhead Turtle Recovery		

	Potential Assessment (RPA) or other scientific assessment, as conducted by DFO or other scientific party, which will demonstrate the impacts to loggerhead turtles that result from interactions with the swordfish longline fishery. Within four years of certification, the client must provide evidence that demonstrates that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtles. Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would be rescored at 80 or higher
Client action plan	The Atlantic Canadian Loggerhead Turtle Conservation Action Plan (LCAP) will introduce regulatory and process / protocol changes aimed at reducing both the interaction and post release mortality of loggerhead turtles. Some of the operational aspects of the LCAP will come into force immediately while others will not be implemented until year two of the plan. An evaluation of the LCAP performance alone may not be sufficient to demonstrate a reduction in mortality estimates within such a short time period. Updated information on post-release survival is required. DFO Science, collaborating with the swordfish longline industry, is proposing to develop new estimates of post-release survival after being hooked in pelagic longline fishing gear by conducting work between 2011 and 2013; final results are expected to be available in 2014. Other planned research that could lead to potential regulatory changes, proposed by the regulator is outlined in both the LCAP and the Loggerhead Turtle RPA. Details of this research and scheduling time lines are covered under the Client Action Plan for Condition 8, below. While the introduction of gear changes and handling protocols outlined in the LCAP, may allow us to meet the condition, depending on the definition of “highly unlikely” and the actual performance requirements, it may be difficult to evaluate / measure the effectiveness of the gear / handling protocol changes, as these could be offset by other factors. A RAP review was held on 11, 12 July 2011 to evaluate the precision and stratification of observer data and to recommend changes, if required, to improve monitoring, deployment strategies and schedules, including coverage. Additional observer training and protocols are currently under development by the regulator and will be implemented for the 2011 fishing season. The aim of these changes is to use a data collection and recording system consistent with that used in the U.S. to help better understand the life stages of loggerhead turtles that are encountered in the Canadian fishery. A training and certification program, in the proper use of safe handling and release equipment, and data recording protocols was conducted in March of 2011. Training was mandatory for vessel operators and at-sea observers. Deliverables: **1st Surveillance Audit:** At the first surveillance audit, the NSSA will confirm that training and certification in the use of safe handling and release equipment has been completed, that the requirement for the training and use of this equipment has been incorporated in the license condition for this fishery and demonstrate that other aspects of the LCAP have been adopted within the management plan or license conditions for the fishery. The NSSA will also provide an update on the meeting to examine the precision and stratification of observer data, recommendations from this meeting to improve monitoring and deployment, and changes resulting from these recommendations.

	2nd Surveillance Audit: At the second surveillance audit, the NSSA will provide an update on fieldwork to determine post-capture survival of loggerhead turtles, which interact with the longline fishery. This update will include the number of loggerhead turtles tagged to date and available updates on survival rates. **3rd Surveillance Audit:** At the third surveillance audit, the NSSA will provide a further update on fieldwork to determine post-capture survival of loggerhead turtles, which interact with the longline fishery. This update will include the number of loggerhead turtles tagged to date and available updates on survival rates. **4th Surveillance Audit:** At the fourth surveillance audit the NSSA will provide the results of the completed post-capture survival study and provide information on how the results of this study and other data collected will be incorporated in an analysis to determine the likelihood that the fishery is within limits of national and international requirements. The NSSA will also provide an updated Loggerhead Turtle Recovery Potential Assessment (RPA) or other scientific assessment as conducted by DFO or other scientific party, that will demonstrate the impacts to loggerhead turtles that result from interactions with the candidate fishery.
Progress on Condition **[Year 4]**	**The following text is taken from the client's submission on progress against this condition:** Attached separately, as, "Loggerhead_study_James_July_7_2015", is a report prepared by Mike James, DFO Science, outlining the progress made on the loggerhead turtle tagging program and the results from these tagging activities to date. The following information was provided by DFO with respect to scheduling an update to the Loggerhead Turtle RPA: *According to the North West Atlantic Canada Longline Swordfish, Client Action Plan, DFO Work Planning. Wherein it states, "If DFO conducts an assessment to demonstrate impacts to loggerhead Turtles resulting from interactions with the fishery, this will be provided to the client." The status of this deliverable is that the DFO Swordfish Team is currently awaiting the CSAS office call for science advice requests in Fall 2015. As an RPA was already completed in July 2010; the proposed 2016 science request would be an update to the July 2010 RPA given results of the post-capture survival project. Please note that the request has not yet been submitted and approval of this request is subject to alignment with sectoral work plans and resources.* At the 3rd Annual Surveillance audit, the team concluded as follows: The audit team concludes that the third-year milestone has been met. However, the team recognizes that the condition will not be met by the fourth surveillance audit due to technical difficulties with the field-work. The condition will need to be completed and rescored prior to the recertification of the fishery by the 5th year anniversary. Condition 6 states that "Within four years of certification, the client must provide evidence that demonstrates that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtles". The phrase "highly unlikely" means that there is no more than a 30% probability that the true status of the component is within the range where there is risk of serious or irreversible harm. The audit team is concerned about the outlook for the fishery satisfying this condition because the framework for determining if there is an unacceptable

	impact is unclear or does not exist. The milestone for the fourth surveillance audit calls for an updated Loggerhead Recovery Potential Analysis or other scientific assessment. Presumably an assessment will provide the framework in the form of an acceptable number of loggerhead turtle interactions with the fishery and/or activities (e.g., research, monitoring, practices to minimize interactions) that are deemed sufficient to prevent an unacceptable impact. If the assessment does provide a framework for assessing the acceptability of the impact of the fishery, it will also be necessary for the fishery to demonstrate that it is in compliance with the framework. The audit team is also concerned that there isn't yet a basis for determining if monitoring of the fishery is statistically robust as called for in the current LCAP. Without a basis for concluding otherwise, the Audit Team considers the relatively low precision of current estimates insufficient. It would appear that the conclusion drawn during the original certification and subsequent audits failed to take into account information from the original Recovery Potential Assessment as well as information presented in the Atlantic Canadian Loggerhead Turtle Conservation Action Plan (2010), paragraph two of the section "Comparison of Canadian Fishery Bycatch with Bycatch Elsewhere in the North Atlantic". The US Recovery Plan provides mortality estimates in units of "adult equivalencies", wherein mortalities at each life stage are adjusted for expected lifetime reproductive contribution, given the individual's age, probability of reaching maturity and expected life span (Table A1-4 in National Marine Fisheries Service and US Fish and Wildlife Service 2008). This conversion takes into account the relatively high age at maturity exhibited by loggerhead sea turtles, and that individual turtles are likely to die before achieving maturity and producing offspring (i.e. deaths occurring at younger ages do not have the equivalent impact of mortalities to adult, breeding females). Conversion of the life stages caught in the Canadian tuna and swordfish longline fisheries (oceanic and neritic juveniles) to adult equivalents using survivorship rates provided in the US Recovery Plan results in an estimate of 5-15 adult equivalent mortalities annually for 2002 - 2008. For comparison, estimates of total annual mortalities in adult equivalents for the North Atlantic overall are 9,417 individuals for trawl fisheries and 872 individuals for pelagic longline fisheries. The significance of adult female equivalent mortalities is key in that within this species only adult females return to the nesting beaches and that all population estimates are based on adult females. Further, based on our consultations with various stock assessment scientists, it has been brought to our attention that the 5-15 adult equivalent mortalities per year associated with the assessed fishery would be "statistically undetectable" within the errors associated with the estimates of the population size for this species. One can then only conclude that since the removals by the assessed fishery are undetectable within the overall population estimates that they cannot pose an unacceptable impact or risk to the population. It is our view that this PI should be rescored, considering this previously overlooked information and that it meets the 80 scoring requirements. **Audit team observations and conclusions** Loggerhead sea turtle was assessed as 'Endangered' by COSEWIC (COSEWIC 2010) and was recommended for listing under the Species At Risk Act (SARA) (Canada Gazette 2016) and a final listing decision will be made within nine months of that date. Loggerhead sea turtle is therefore considered to be an ETP species within this MSC assessment because it is listed on CITES Appendix I, rather than because it is listed under the SARA. With this in mind, it is noted that the requirements of the first SI at SG100 for the original assessment of the swordfish fishery were as follows:

	"*The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species*." (Intertek Moody Marine, 2012). For the original certification, the assessment team stated against the first SI: "*The assessed fishery satisfies the CITES requirements as loggerhead turtle are not permitted to be retained or landed by the fishery. Canada does not allow trade of turtle products, internationally or domestically. Thus, the international requirement stated in the first scoring issue is met at the 100 SG. There are no current national protection requirements for loggerhead turtle so the national protection requirement for the first scoring issue under the 100 SG is not applicable to loggerhead.*" Condition 6 on the swordfish fishery, therefore, is focused on meeting the second SI of PI 2.3.1, at SG80, which is: "*Direct effects are highly unlikely to create unacceptable impacts to ETP species*" (Intertek Moody Marine 2012). The original assessment of the swordfish fishery was made against the MSC Fisheries Assessment Methodology (FAM) v.1 (July 2008), but this version of the FAM is no longer available on the MSC website. The earliest version of the FAM that is available is v2.1 (MSC 2010), but this document provides no specific guidance on the interpretation for PI 2.3.1, SIb. Guidance on SIb was first provided in the Certification Requirements v1.1 (MSC 2011), which stated: "*CB3.11.4 Where there are no requirements for protection and rebuilding, provided through national legislation or binding international agreements defined in CB3.11.1, the team shall not score the first element in SG 2.3.1, which refers to such requirements.* *CB3.11.4.1 The term shall interpret "unacceptable impact" as impacts which hinder recovery or rebuilding of ETP species/stocks, using the following:* *a. At SG60, known direct effects of the fishery are unlikely to hinder recovery or rebuilding of ETP species/stocks* *b. At SG80, known direct effects of the fishery are highly unlikely to hinder recovery or rebuilding of ETP species/stocks*" (CB3.11.4.1, MSC 2011). As has been reported annually through the audit process for the swordfish fishery, DFO has been undertaking a turtle tagging and post-capture survival monitoring study, in an attempt to more reliably establish post-capture mortality rates in loggerhead sea turtles following capture in the swordfish longline fishery. An update was provided to the Year 4 audit team (DFO 2016f), and this is discussed in more detail in considering Condition 8 (which is focused specifically on PI 2.3.3, ETP Species information). Notwithstanding the continuing collection of more information on loggerhead sea turtle post-capture mortality, there is existing information on the estimated number of loggerhead sea turtles encountered by the fishery, and on their potential fate, together with the potential impact of the fishery on the loggerhead population. This information addresses the requirements of the second SI directly, and was detailed in the original assessment (Intertek Moody Marine 2012), which stated: "*Based on the two years with high observer coverage (2001 & 2002), approximately 75% were released alive and uninjured, approximately 20% were released alive and injured, and 2% were released dead or observers were unable to determine their release status (Javitech 2003).*" Further, Intertek Moody Marine (2012) stated: "*According to the DFO RPA, the assessed fishery interacted with an estimated average of 1,200 loggerhead turtles between 2002 and 2008. While there is mandatory release, post hooking mortality does occur, and is estimated to range between 20 and 45%. This results in 200-500 loggerhead deaths annually in the Canadian longline fishery (DFO, 2010). While the Atlantic adult population (females) has been demonstrated to be*

	declining since 1998, it is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species, and Atlantic pelagic longline fisheries is one of several current threats (based on the analyses in the US Recovery Plan for the species. In this regard, the US Recovery Plan provides mortality estimates in units of "adult equivalencies", wherein mortalities at each life stage are adjusted for expected lifetime reproductive contribution, given the individual's age, probability of reaching maturity and expected life span. Conversion of the life stages caught in the Canadian tuna and swordfish longline fisheries (oceanic and neritic juveniles) to adult equivalents using survivorship rates provided in the US Recovery Plan results in an estimate of 5-15 adult equivalent mortalities annually for 2002-2008. For comparison, estimates of total annual mortalities in adult equivalents for the North Atlantic overall are 9,417 individuals for trawl fisheries and 872 individuals for pelagic longline fisheries." In reviewing the information available for this audit, the assessment team went back to the US Recovery Plan (NMFS & USFWS 2008). The estimated total annual adult equivalent mortality for loggerhead sea turtles in all fisheries was estimated to be 12,434 animals, such that the annual take in the swordfish longline fishery in terms of adult equivalent values is estimated to equate to 0.04 - 0.12% of the total. An important consideration during the course of auditing the North West Atlantic Canada longline swordfish fishery has been observer coverage, and specifically the representability of the data collected by observers with respect to spatial coverage and catches of the swordfish longline fishery as a whole. On this issue, a workshop was held in February 2016 to review the approach to incidental catch monitoring in the longline fishery, but the results were inconclusive (DFO 2016d); as such, it is not confirmed if observer coverage on vessels in the swordfish longline fishery provides a representative understanding of the spatial distribution of effort or the catch profile of the fishery. Nevertheless, with the exception of 2013 when the observer programme was revised and only 3.3% of the sea days were observed, the 5% target observer coverage level has been achieved (DFO 2016c) and the observer programme is now randomised with the aim of minimising the potential for bias (DFO pers. comm., Canadian swordfish fishery site visit, October 2016). Further, skippers are required to undertaken turtle release training as a condition of licence (DFO 2016a), and emphasis is being placed on minimising the amount of line left on hooks if animals are released by cutting the traces, which is understood to be key in promoting long-term survivability for turtles (DFO pers. comm., Canadian swordfish fishery site visit, October 2016). A further important consideration is the comments made by the Year 3 audit team, in particular where it was stated: "*The audit team is concerned about the outlook for the fishery satisfying this condition because the framework for determining if there is an unacceptable impact is unclear or does not exist. The milestone for the fourth surveillance audit calls for an updated Loggerhead Recovery Potential Analysis or other scientific assessment. Presumably an assessment will provide the framework in the form of an acceptable number of loggerhead turtle interactions with the fishery and/or activities (e.g., research, monitoring, practices to minimize interactions) that are deemed sufficient to prevent an unacceptable impact. If the assessment does provide a framework for assessing the acceptability of the impact of the fishery, it will also be necessary for the fishery to demonstrate that it is in compliance with the framework*." This statement, and specifically the focus on a framework for the determination of an acceptable impact, including an acceptable number of loggerhead turtle interactions is, however, within the purview of the first SI of PI 2.3.1, where the requirement at SG80 is:

	"*The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species*." As already noted, though, the fishery was considered to meet SIa at SG100 (Intertek Moody Marine, 2012). As such, the Year 4 audit team considers that this statement is erroneous with respect to the Condition on SIb. In summary, the information available is that the fishery is responsible for an estimated 5-15 adult equivalent loggerhead sea turtle mortalities per year (or 0.04 – 0.12% of the total annual adult equivalent mortalities), and noting that Intertek Moody Marine (2012) stated in the original PCR that, "*It is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species*", together with the information on observer coverage and turtle release training supports a conclusion that, "*Direct effects are highly unlikely to create unacceptable impacts to ETP species*", so meeting the SG80 requirements. Therefore, the Condition on PI 2.3.1 is closed. **Addendum (added June 2017).** In consideration of complaints made by the EAC (letter dated May 4th 2017) and WWF (e-mail dated 2nd May 2017) to Acoura (see Appendix 3) with respect to the determination that this Condition (and Condition 8) be closed on the basis of evidence that was already available to the original assessment team, Acoura asked the Year 4 audit team to review any new information. In this regard, it is noted that the SARA status of loggerhead sea turtle was confirmed as 'Endangered' in May 2017, and a threat assessment was published at the same time (DFO 2017). The swordfish longline fishery was identified as 'medium' risk. The IUCN status assessment for loggerhead sea turtles was also updated recently (Ceriani & Meylan 2015). This latest status assessment now lists loggerhead sea turtle subpopulations individually, rather than simply showing an overall global status for the species. The Northwest Atlantic subpopulation of loggerhead sea turtle is the subpopulation of relevance to the swordfish longline fishery, and this is listed as being 'Least Concern', with the available long-term series of annual nest counts (used as an index of population abundance) showing an overall increase over the past three generations. The 'Least Concern' status reflects that the Northwest Atlantic subpopulation did not trigger any of the thresholds and options for a threatened category under criteria A (Declining population – past, present and/or projected), B (Geographic range size, and fragmentation, decline or fluctuations), C (Small population size and fragmentation, decline, or fluctuations), or D (Very small population or very restricted distribution). A further recent review of loggerhead sea turtles in the Northwest Atlantic by Chapman & Seminoff (2016) reported that, "*With the exception of lower totals for 2014 in Georgia and the Carolinas, the last five years appear to have a positive trend in all areas. Florida's wealth of data show a dip in the loggerhead sea population around the early 2000's but also a definite rebound in the past decade.*" The audit team considers that, together with the existing information on bycatch levels in the swordfish longline fishery, this new information supports the determination that there is evidence that direct effects are highly unlikely to create unacceptable impacts to loggerhead sea turtle. It is confirmed that SG80 is met.
Status of condition	The SG80 requirements of PI 2.3.1 are met in full, and Condition 6 is therefore closed. The revised scoring rationale is provided in Appendix 1 of this report. A non-binding Recommendation is made with respect specifically to Condition 8, but it is also relevant here: It is recommended that the client provide DFO with clear and well-publicised support for the timely completion of the loggerhead sea turtle tagging study through advocating to the swordfish longline fishermen of the need to identify and

	fulfil suitable opportunities to take DFO tagging staff on swordfish and combined swordfish and tuna longline trips in 2017. In the event that the study is completed, a higher score should be possible for PI 2.3.3 and, probably, PI 2.3.1.

Condition 7 (Closed Year 3)

	PI number	Scoring issue text	Score
Performance Indicator & Score	**2.3.2**	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimize mortality, that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. There is evidence that the strategy is being implemented successfully	**80**
Condition	By the first surveillance audit, the client must provide evidence that the Loggerhead Turtle Conservation Action Plan (LCAP) is in place for managing the fishery's impact on ETP species, including measures to minimize mortality, that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. Additionally, by the fourth surveillance audit evidence must be presented to show that the strategy is being implemented successfully.		
Milestones	**Year 1** By the first surveillance audit the client must provide evidence that the LCAP is in place. Milestones associated with the first surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at the surveillance audit. **Year 2** By the second surveillance audit the client must provide evidence that LCAP measures have been included in the fishery management plan or license conditions and that measures are in place to monitor the effectiveness of implementation. Milestones associated with the second surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 3** By the third surveillance audit the client must provide evidence that demonstrates the fleets conformance with the LCAP measures. Milestones associated with the third surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at the surveillance audit.		

	Year 4 By the fourth surveillance audit the fishery client must provide evidence that the strategy has been implemented successfully and includes measures to minimize loggerhead mortality. Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would be rescored at 80 or higher.
Client action plan	The Atlantic Canadian Loggerhead Turtle Conservation Action Plan (LCAP) was finalized in October of 2010. Measures outlined in the LCAP are scheduled to be included in the 2011 Conditions of License for Swordfish and Other Tunas, the Swordfish Longline Conservation / Harvesting Plan (CHP) and the Swordfish / Other Tuna Integrated Fisheries Management Plan (IFMP). A copy of these documents will be available for review for the first surveillance audit to demonstrate that the measures have been implemented successfully. Other planned research that could lead to potential regulatory changes, proposed by the regulator are outlined in both the LCAP and the Loggerhead Turtle RPA. Details of this research and scheduling time lines are covered under the Client Action Plan for Condition 8, below. A RAP review was conducted on 11, 12 July 2011 to evaluate the precision and stratification of observer data and to recommend changes, if required, to improve monitoring, deployment strategies and schedules, including coverage. **Deliverables:** *1st Surveillance Audit:* At the first surveillance audit, the NSSA will provide evidence that LCAP is in place for managing the fisheries impact on ETP species, particularly loggerhead turtles. *2nd Surveillance Audit:* At the second surveillance audit, the NSSA will confirm that identified LCAP measures have been included in the fishery management plan or license conditions and what measures are in place to monitor the effectiveness of implementation. *3rd Surveillance Audit:* At the third surveillance audit, the NSSA will provide evidence that demonstrates conformance of these measures identified in the strategy with the fleet. *4th Surveillance Audit:* At the fourth surveillance audit, the NSSA will confirm that the strategy has been implemented successfully and includes measures to minimize loggerhead mortality.
2014 Audit Team Comment	The 2014 Audit Team concluded that Condition 7 had been met and the condition was closed out. In their audit report commentary, the 2014 Audit Team stated, "…there is a strategy in place (the Loggerhead Conservation Action Plan) for managing the fishery's impact on ETP species, including measures to minimize mortality, that is designed to be highly likely to achieve national and international requirements for the protection of ETP species. Evidence to now support this includes the client's submission for the Year 3 audit, the information presented in the updated "Workplan to Address Incidental Catch in the Atlantic Canadian Swordfish/ Other Tuna Longline Fishery" and the terms of reference for the upcoming Regional Peer Review ("Assessment of Incidental Catch in the Atlantic Canadian Swordfish/ Other Tuna Longline Fishery), scheduled for February 2016. The audit team will review the outcome of this peer review at the next audit to determine if the findings elaborate on the requirements for statistically robust

	observer coverage for the swordfish pelagic longline fishery and if the coverage level is adequate or requires adjustment."
2015 Audit Team Observations and Comments	Further to the 2014 Audit Team's recommendation, a workshop was held in February 2016 to review the approach to incidental catch monitoring in the longline fishery. Unfortunately, the discussion at the workshop indicated that the terms of reference for the analysis were too broad, such that the results were considered to be inconclusive (DFO 2016d). However, it was noted that operational aspects of the observer programme for the longline fishery were revised in 2013; subsequently, observers have been tasked to longline vessels on a random basis, and only after the vessel captain has 'hailed-out' with information on the trip, including the intended region of fishing (DFO pers. comm., Canadian swordfish fishery site visit, October 2016). Therefore, whilst it cannot be confirmed that the observer coverage is representative of the fleet activities or catches, the programme is intended to be randomised and is meeting its target sea day coverage levels (with the exception of 2013, when 3.3% of sea days were covered following the revision to the observer programme – DFO 2016c). DFO has commented that the observer coverage level is currently considered to be 'sufficient' (DFO 2016e). Confirmation was sought during the Year 4 audit as to whether any further information was available with respect to the statement: "It was agreed that continuation of this research in a timely manner was viewed as a priority for the Department to pursue. The meeting Chair noted that this message would be communicated to senior science managers for consideration within the 2016-2017 science work plan (there was no resolution by the end of the meeting about if, how, or when this research may be completed)." (DFO 2016d). No further information was available at the Year 4 site visit, however, although it was noted that the DFO internal call for science projects occurs in the Autumn; the Assessment Team noted that the Recommendation was in place and that it would still be useful to pursue this work.

Condition 8

	PI number	Scoring issue text	Score
Performance Indicator & Score	**2.3.3**	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts.	**70**
Condition	By the fourth surveillance audit, the client must present information considered sufficient to determine whether the fishery poses a threat to protection and recovery of the ETP species, specifically loggerhead turtle. Information must be sufficient to not only measure trends but also to support a full strategy to manage impacts.		
Milestones	**Year 1** By the first surveillance audit the client must to provide: 1. A confirmed work plan, including an outline of the information to be collected and examined to determine whether the fishery poses a threat to protection and recovery of ETP species,		

	specifically loggerhead turtles. 2. A final version of the RAP report conducted on observer coverage and by-catch. 3. As outlined under other conditions pertaining to loggerhead turtles, an update on changes to at-sea observer protocols and deployment strategies. Milestones associated this surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 2** By the second surveillance audit, the client must provide an update on the deployment of satellite tags to determine post release survival of loggerhead turtles as well as any results of the post release survival work conducted to date. Milestones associated with the second surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 3** By the third surveillance audit, the client must provide a further update on fieldwork to determine post-capture survival of loggerhead turtles, which interact with the longline fishery. It is expected that the update will include details on the number of loggerhead turtles tagged to date and any available updates on survival rates. Milestones associated with the third surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 4** By the fourth surveillance audit the client must: 1. Present the results of the completed post-capture survival study and provide information on how the results of this study and other data collected will be incorporated in an analysis to determine the likelihood that the fishery is within limits of national and international requirements. 2. Provide an updated Loggerhead Turtle Recovery Potential Assessment (RPA) or other scientific assessment as conducted by DFO or other scientific party that will demonstrate the impacts to loggerhead turtles that result from interactions with the candidate fishery. 3. Present information considered sufficient to determine whether the fishery poses a threat to protection and recovery of the ETP species, specifically loggerhead turtle. Information must be sufficient to not only measure trends but also to support a full strategy to manage impacts. Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would be rescored at 80 or higher (This milestone has been amended from the year 4 milestone that appears in the Public Certification Report to more accurately reflect the required outcome of this condition).
Client action plan	The swordfish longline industry, through the at-sea observer program and data collected in the SARA logbooks, will continue to collect information that will assist Fisheries and Oceans Canada to determine whether the fishery poses a threat to protection and recovery of loggerhead turtles. As part of the LCAP adopted in October 2010, a RAP review was held on 11, 12 July 2011 to evaluate the precision and stratification of observer data and to recommend changes, if required, to improve monitoring, deployment strategies and schedules, including coverage. Deliverables:

	1st Surveillance Audit: At the first surveillance audit, the NSSA will provide a work plan, including an outline of the information to be collected and examined to determine whether the fishery poses a threat to protection and recovery of ETP species, specifically loggerhead turtles. Also, a final version of the July 2011 RAP report conducted on observer coverage and by-catch in this fishery will be provided. As outlined under other conditions pertaining to loggerhead turtles, the NSSA will also provide an update on changes to at-sea observer protocols and deployments. **2nd Surveillance Audit:** At the second surveillance audit, the NSSA will provide an update on the deployment of satellite tags to determine post release survival of loggerhead turtles and any results to date. **3rd Surveillance Audit:** At the third surveillance audit, the NSSA will provide a further update on fieldwork to determine post-capture survival of loggerhead turtles, which interact with the longline fishery. This update will include the number of loggerhead turtles tagged to date and available updates on survival rates. **4th Surveillance Audit:** At the fourth surveillance audit, the NSSA will provide the results of the completed post- capture survival study and provide information on how the results of this study and other data collected will be incorporated in an analysis to determine the likelihood that the fishery is within limits of national and international requirements. The NSSA will also provide an updated Loggerhead Turtle Recovery Potential Assessment (RPA) or other scientific assessment as conducted by DFO or other scientific party, that will demonstrate the impacts to loggerhead turtles that result from interactions with the candidate fishery.
Progress on Condition **[Year 4]**	**The following text is taken from the client's submission on progress against this condition:** Attached separately, as, "Loggerhead_study_James_July_7_2015", is a report prepared by Mike James, DFO Science, outlining the progress made on the loggerhead turtle tagging program and the results from these tagging activities to date. The following information was provided by DFO with respect to scheduling an update to the Loggerhead Turtle RPA: *According to the North West Atlantic Canada Longline Swordfish, Client Action Plan, DFO Work Planning. Wherein it states, "If DFO conducts an assessment to demonstrate impacts to loggerhead Turtles resulting from interactions with the fishery, this will be provided to the client." The status of this deliverable is that the DFO Swordfish Team is currently awaiting the CSAS office call for science advice requests in Fall 2015. As an RPA was already completed in July 2010; the proposed 2016 science request would be an update to the July 2010 RPA given results of the post-capture survival project. Please note that the request has not yet been submitted and approval of this request is subject to alignment with sectoral work plans and resources.* At the 3rd Annual Surveillance audit, the team concluded as follows: The audit team concludes that the third-year milestone has been met. However, the team recognizes that the condition will not be met by the fourth surveillance audit due to technical difficulties with the field work. The condition will need to be

	completed and rescored prior to the recertification of the fishery by the 5th year anniversary. Condition 6 states that "Within four years of certification, the client must provide evidence that demonstrates that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtles". The phrase "highly unlikely" means that there is no more than a 30% probability that the true status of the component is within the range where there is risk of serious or irreversible harm. The audit team is concerned about the outlook for the fishery satisfying this condition because the framework for determining if there is an unacceptable impact is unclear or does not exist. The milestone for the fourth surveillance audit calls for an updated Loggerhead Recovery Potential Analysis or other scientific assessment. Presumably an assessment will provide the framework in the form of an acceptable number of loggerhead turtle interactions with the fishery and/or activities (e.g., research, monitoring, practices to minimize interactions) that are deemed sufficient to prevent an unacceptable impact. If the assessment does provide a framework for assessing the acceptability of the impact of the fishery, it will also be necessary for the fishery to demonstrate that it is in compliance with the framework. The audit team is also concerned that there isn't yet a basis for determining if monitoring of the fishery is statistically robust as called for in the current LCAP. Without a basis for concluding otherwise, the Audit Team considers the relatively low precision of current estimates insufficient. It would appear that the conclusion drawn during the original certification and subsequent audits failed to take into account information from the original Recovery Potential Assessment as well as information presented in the Atlantic Canadian Loggerhead Turtle Conservation Action Plan (2010), paragraph two of the section "Comparison of Canadian Fishery Bycatch with Bycatch Elsewhere in the North Atlantic". The US Recovery Plan provides mortality estimates in units of "adult equivalencies", wherein mortalities at each life stage are adjusted for expected lifetime reproductive contribution, given the individual's age, probability of reaching maturity and expected life span (Table A1-4 in National Marine Fisheries Service and US Fish and Wildlife Service 2008). This conversion takes into account the relatively high age at maturity exhibited by loggerhead sea turtles, and that individual turtles are likely to die before achieving maturity and producing offspring (i.e. deaths occurring at younger ages do not have the equivalent impact of mortalities to adult, breeding females). Conversion of the life stages caught in the Canadian tuna and swordfish longline fisheries (oceanic and neritic juveniles) to adult equivalents using survivorship rates provided in the US Recovery Plan results in an estimate of 5-15 adult equivalent mortalities annually for 2002 - 2008. For comparison, estimates of total annual mortalities in adult equivalents for the North Atlantic overall are 9,417 individuals for trawl fisheries and 872 individuals for pelagic longline fisheries. The significance of adult female equivalent mortalities is key in that within this species only adult females return to the nesting beaches and that all population estimates are based on adult females. Further, based on our consultations with various stock assessment scientists, it has been brought to our attention that the 5-15 adult equivalent mortalities per year associated with the assessed fishery would be "statistically undetectable" within the errors associated with the estimates of the population size for this species. One can then only conclude that since the removals by the assessed fishery are undetectable within the overall population estimates that they cannot pose an unacceptable impact or risk to the population. It is our view that this PI should be rescored, considering this previously overlooked information and that it meets the 80 scoring requirements. **Audit team observations and conclusions**

	Information provided at the Year 4 audit for Condition 8 included a copy of the new licence conditions for the fishery (DFO 2016a), an analysis of observer coverage levels (DFO 2016c), and a proceedings document from a workshop on incidental catch monitoring (DFO 2016d), as well as general information on the performance of the fishery gathered in discussions with DFO staff, fishery representatives and environmental NGO staff. The Client also provided the summary report, '*Progress Report: Loggerhead turtle post-release survival study*' (DFO 2016f), a report prepared by Mike James, DFO Science, outlining the progress made on the loggerhead turtle tagging program and the results from these tagging activities to date. This report indicated that tagging efforts detailed in previous audits had continued in 2016, but had not been successful in getting all the remaining tags attached to turtles because only three hooked turtles were encountered on the six trips taken with observers, covering 54 sets of the gear. Condition 8 is focused on the first SI of PI 2.3.3 at SG80, which requires the following: "*Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts*." In 2012, the original assessment team stated: "*The assessment team is concerned that there may be insufficient observer coverage, particularly when the numbers of animals sampled go down and that the robustness of the sampling design for the observer coverage has not been evaluated. The team considered that the first requirement of the first scoring issue under the 80SG, (i.e. information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species), was not fully met.*" (Intertek Moody Marine, 2012). It is noted that there are observer data available since at least 2002 (it is understood that data collected prior to 2001 were stored in a database that is not compatible with current systems – fishery client, pers. comm.), and it was confirmed by DFO that the longline fishery has been subject to average annual observer coverage of 5.8% of the sea days for the period 2011-2015 (range 3.3% - 7.8%), exceeding the 5% target level (DFO 2016c). A workshop was held in February 2016 to review the approach to incidental catch monitoring in the longline fishery, but the results were inconclusive (DFO 2016d). However, operational aspects of the observer programme for the longline fishery were revised in 2013; subsequently, observers have been tasked to longline vessels on a random basis, and only after the vessel captain has 'hailed-out' with information on the trip, including the intended region of fishing (DFO pers. comm., Canadian swordfish fishery site visit, October 2016). Therefore, whilst it cannot be confirmed that the observer coverage is representative of the fleet activities or catches, the programme is intended to be randomised and is meeting its target sea day coverage levels (with the exception of 2013, when 3.3% of sea days were covered following the revision to the observer programme – DFO 2016c). DFO has commented that the observer coverage level is currently considered to be 'sufficient' (DFO 2016e). It is useful to consider existing information in reviewing the status of this Condition, and Paul *et al*. (2010) estimated that approximately 1,200 loggerhead sea turtles (95% confidence range of 700-1,800) were caught annually in Canadian tuna and swordfish longline fisheries during the period of 2002-2008. DFO (2010) then noted that conversion of the life stages caught in the Canadian tuna and swordfish longline fisheries (oceanic and neritic juveniles) to adult equivalents using survivorship rates provided in the US Recovery Plan (NMFS and USFWS 2008) results in an estimate of 5-15 adult equivalent mortalities annually for 2002 - 2008 – this equates to 0.04 – 0.12% of the total annual adult equivalent mortalities. The original assessment noted that, "*it is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species*" (Intertek Moody Marine, 2012).

	In this regard, then, whilst the on-going DFO turtle tagging study should yield valuable data in terms of better understanding the fate of loggerhead sea turtles captured in the swordfish fishery, it is clear that there is already sufficient information to determine whether the fishery may be a threat to protection and recovery of the ETP species (i.e., the SG80 requirement of the first SI of PI 2.3.3), and the new data being collected through the on-going tagging study would tend towards supporting a score of 100 for this first SI of PI 2.3.3, where the SG100 requirement is that, "*Information is sufficient to quantitatively estimate outcome status with a high degree of certainty*". In summary, together with the information already available on the annual number of interactions with loggerhead sea turtles at 5-15 adult equivalent mortalities per year (or 0.04 – 0.12% of the total annual adult equivalent mortalities), and noting that Intertek Moody Marine (2012) stated in the original PCR that, "*It is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species*", the information on observer coverage and turtle release training supports a conclusion that, "*Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts",* so meeting the SG80 requirements. Therefore, the Condition on PI 2.3.3 is closed. **Addendum (added June 2017).** In consideration of complaints made by the EAC (letter dated May 4th 2017) and WWF (e-mail dated 2nd May 2017) to Acoura (see Appendix 3) with respect to the determination that this Condition (and Condition 6) be closed on the basis of evidence that was already available to the original assessment team, Acoura asked the Year 4 audit team to review any new information. In this regard, it is noted that the SARA status of loggerhead sea turtle was confirmed as 'Endangered' in May 2017, and a threat assessment was published at the same time (DFO 2017). The swordfish longline fishery was identified as 'medium' risk. The IUCN status assessment for loggerhead sea turtles was updated recently (Ceriani & Meylan 2015). This latest status assessment now lists loggerhead sea turtle subpopulations individually, rather than simply showing an overall global status for the species. The Northwest Atlantic subpopulation of loggerhead sea turtle is the subpopulation of relevance to the swordfish longline fishery, and this is listed as being 'Least Concern', with the available long-term series of annual nest counts (used as an index of population abundance) showing an overall increase over the past three generations. The 'Least Concern' status reflects that the Northwest Atlantic subpopulation did not trigger any of the thresholds and options for a threatened category under criteria A (Declining population – past, present and/or projected), B (Geographic range size, and fragmentation, decline or fluctuations), C (Small population size and fragmentation, decline, or fluctuations), or D (Very small population or very restricted distribution). A further recent review of loggerhead sea turtles in the Northwest Atlantic by Chapman & Seminoff (2016) reported that, "*With the exception of lower totals for 2014 in Georgia and the Carolinas, the last five years appear to have a positive trend in all areas. Florida's wealth of data show a dip in the loggerhead sea population around the early 2000's but also a definite rebound in the past decade.*" In addition, while the EAC complaint contested that the audit team had taken a comment by a DFO manager out of context, the audit team went back to the manager and asked if the statement was not just specific to monitoring porbeagle, but bycatch in general. The manager confirmed their recollection as being in line with the audits team interpretation, that the statement followed the 2015 fishing season and its intent was to confirm that the Department was of the view that the 5% observer coverage in the pelagic longline fishery was sufficient for determining all bycatch, not just sharks.

	The audit team considers that, together with the existing information on bycatch levels in the swordfish longline fishery, this new information supports the determination that information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts. It is confirmed that SG80 is met.
Status of condition	The SG80 requirements of PI 2.3.3 are met in full, and Condition 8 is therefore closed. The revised scoring rationale is provided in Appendix 1 of this report. Two non-binding Recommendations are made: 1) It is recommended that the client provide DFO with clear and well publicised support for the timely completion of the loggerhead sea turtle tagging study through advocating to the swordfish longline fishermen of the need to identify and fulfil suitable opportunities to take DFO tagging staff on swordfish and combined swordfish and tuna longline trips in 2017. In the event that the study is completed, a higher score should be possible for PI 2.3.3 and, probably, PI 2.3.1. 2) PI 2.3.3, SIa: It is recommended that the client support and pursue a re-running of the Regional Peer Review assessment of incidental catch in the Atlantic Canadian swordfish/other tuna longline fishery (i.e., DFO 2016k), or a similar process, to review the approach to incidental catch monitoring in the longline swordfish fishery. A key aim should be to determine what, if any, changes are needed to the observer programme to ensure that the data collected are adequately representative of the fishery.

Condition 9

	PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator & Score	**3.1.3**	Clear long-term objectives that guide decision making, consistent with MSC Principles and Criteria, and the precautionary approach, are explicit within the management policy.	**75**
Condition	By the third surveillance audit, evidence that clear long-term objectives which guide decision-making, are consistent with MSC Principles and Criteria, and the precautionary approach, must be explicit within the Canadian longline swordfish management policy.		
Milestones	**Year 1** At the first surveillance audit the client must provide documented evidence to confirm that a request has been made to both ALPAC and SFLPAC for the adoption of an explicit policy for application of the precautionary approach to management decisions for the longline swordfish fishery. The policy should address both MSC Principles 1 and 2. Milestones associated with the first surveillance audit have been defined as a means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit.		

	Year 2 At the second surveillance audit the client must provide a copy of the Swordfish and Other Tunas IFMP and other relevant management measures, to document that the precautionary approach to management has been implemented for this fishery. Milestones associated with the second surveillance audit have been defined as means to monitor progress in meeting the condition, meeting the milestone requirements would likely not result in a change of score at this surveillance audit. **Year 3** At the third surveillance audit the client must provide evidence of: 1. Canadian efforts at ICCAT to encourage the adoption of a policy for application of the precautionary approach to fishery management decisions. 2. The Canadian longline swordfish management policy has explicit and clear long-term objectives which guide decision-making, that are consistent with MSC Principles and Criteria, and the precautionary approach. Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would be rescored at 80 or higher (This milestone has been amended from the year 4 milestone that appears in the Public Certification Report to more accurately reflect the required outcome of this condition).
Client action plan	The swordfish longline industry will raise this issue at the first meeting of both ALPAC and SFLPAC following certification. The industry will recommend that Canada adopt an explicit policy consistent with MSC Principles 1 and 2 and the precautionary approach within the Canadian Swordfish IFMP. While the recommendation will be made by industry within the time period suggested by this condition, the adoption within the Canadian Swordfish IFMP will be dependent upon the timing of final certification of the fishery. It is anticipated that the new Canadian Swordfish IFMP will be completed in 2011. Canada has been a leader in putting forward the use of the precautionary approach at the ICCAT level in recent years and will continue to do so in future. Canada has hosted an ICCAT precautionary approach workshop and continues to work within the ICCAT precautionary approach working group to work towards the adoption of the precautionary approach to management of ICCAT species. A meeting of this working group was held in April 2010 with Canadian participation and Canada will continue to participate in future working group meetings to forward the adoption of the precautionary approach by ICCAT. **Deliverables:** 1st Surveillance Audit: At the first surveillance audit, the NSSA will provide documentation of its request at both ALPAC and SFLPAC that Canada should adopt an explicit policy for application of the precautionary approach to management decisions for the longline swordfish fishery. The policy must address both MSC Principles 1 and 2 components. A copy of the Swordfish and Other Tunas IFMP will be provided to document that this approach to management has been implemented domestically for this fishery. 2nd Surveillance Audit: At the second surveillance audit, the NSSA will provide a copy of the Swordfish and Other Tunas IFMP and other relevant management measures, will be provided to document that this approach to management has been implemented domestically for this fishery as evidence that clear long-term objectives which guide decision-making, are consistent with MSC Principles and Criteria, and the precautionary approach, must be explicit within the management policy.

	3rd Surveillance Audit: At the third surveillance audit, the NSSA will provide evidence of Canadian efforts at ICCAT to encourage the adoption of a policy by ICCAT for application of the precautionary approach to fishery management decisions within its competency. This would include, but not be limited to, the report of the 2011 Joint Meeting of the ICCAT Working Group on Stock Assessment Methods and Bluefin Tuna Species Group to Analyze Assessment Methods Developed Under the GBYP and Electronic Tagging (Madrid, Spain – June 27-July 1, 2011), where discussions were to include applying the precautionary approach to species managed by ICCAT.
Progress on Condition **[Year 4]**	**The following text is taken from the client's submission on progress against this condition:** Within the DFO framework, the "precautionary approach" to management for "commercially harvested" species is covered in the fishery IFMP. As such, this approach is outline within the Swordfish and Other Tuna IFMP that is in place for the assessed fishery and covers all P1 and some P2 species. For non-commercial species, DFO uses the "ecological approach", i.e. sea turtles, which is also "precautionary" but by the DFO definition is not entitled "precautionary approach". Please see the ICCAT document, http://www.iccat.int/Documents/Recs/compendiopdf-e/2011-13-e.pdf, which was adopted at the 2011 ICCAT Annual Meeting. This document outlines the decision-making process that is applied to all ICCAT managed species, which include both P1 and P2 species and addresses the year 3 milestone for this condition. It is the view of the NSSA that the SG80 level has been met for this PI and that it should be re-scored. This condition was closed at the second surveillance audit. **Audit team observations and conclusions** This condition was rescored at 80 and closed at the 2014 annual audit by the Intertek audit team (Intertek 2014). However, the audit team for the overlapping certified US swordfish longline fishery did not agree that the desired outcome had been achieved and so did not close their same condition. A consensus between the two audit teams was not achieved at the 2014 or 2015 audit cycles and so this condition was left open in order that it could be reviewed and considered as part of the MSC harmonisation meeting described in section 2.2.2 in this audit report. The meeting concluded that the SG 80 had been met and therefore this condition can be closed.
Status of condition	As a result of the MSC harmonisation meeting, the previous decision by the 2014 audit team to close out this condition has been affirmed. Therefore, the condition has been met and is closed. A revised scoring rationale agreed at the harmonisation meeting is provided in Appendix 1 of this report.

5. Conclusion

5.1 Summary of findings

The seven open conditions of certification were rescored at 80 and closed out at this audit.

The audit team made a non-binding recommendation:

It is recommended that the client provide DFO with clear and well publicised support for the timely completion of the loggerhead sea turtle tagging study through advocating to the swordfish longline fishermen of the need to identify and fulfil suitable opportunities to take DFO tagging staff on swordfish and combined swordfish and tuna longline trips in 2017. In the event that the study is completed, a higher score should be possible for PI 2.3.3 and, probably, PI 2.3.1.

The fishery remains certified and has entered the reassessment process[2].

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[2] Fisheries that are already certified using a FAM based assessment tree are eligible to use MSC CR v1.3 before 1st October 2017, after which, any fishery must use v2.0 (See page 9 of the CR v2.0 at https://www.msc.org/documents/scheme-documents/fisheries-certification-scheme-documents/fisheries-certification-requirements-version-2.0

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Appendix 1 – Re-scoring evaluation tables

The following is the revised scoring rationales and score for PIs 1.1.2, 1.2.2, 2.2.1, 2.1.2, 2.3.1, 2.3.3 and 3.1.3.

PIs 1.1.2 and 3.1.3 represent the scoring rationales that were agreed by the CAB assessment teams involved in the MSC harmonization pilot meeting described in section 2.2.2 of this audit report.

PI 1.2.2 includes the scoring rational that was agreed at the pilot harmonization meeting and subsequently amended following agreement between the US North Atlantic Swordfish audit team and the North West Atlantic Canada Longline and Harpoon audit team.

The MSC CR v2.0 surveillance audit report template requires that the evaluation table used in the "relevant Full Assessment Reporting Template" is replicated and changes to the original rationales should be identified in some way…".

The format of the original scoring table in the PCR is presented in a pre-MSC template and so, for ease of comparison, the original scoring rationales are shown in black text, while the revised scoring rationales are shown in blue text.

PI 1.1.2	60	80	100
Limit and target reference points are appropriate for the stock	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated. The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome. For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues. The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.
Issues on 6 September 2010, in Section 4 of Policy Advisory 18 the MSC clarified that: "In the PISG tables, where identical scoring issues are repeated at different SG levels (in PIs 1.1.2, 1.2.2, 3.1.1, 3.2.2, 3.2.3), the text at the higher SG level/s is hereby deleted, leaving the text to appear only once at the lowest current SG level." This new guidance removes the first scoring issue at the 100SG of this PI, thus removing the impact of this issue on the final score. In relation to generic target and limit reference points (RP) under SG60, stock rebuilding was initiated in 1999 when the biomass was 65 percent of B_{MSY} or about 33 % of virgin biomass. This is taken as evidence of an implied generic limit RP. Target RPs developed for the stock are based upon a Schaefer Production Model (ICCAT, 2009), are generally considered appropriate for the stock and can be estimated. B_{MSY} (61.9 kt) and F_{MSY} (0.22), the target RPs, are provided in ICCAT (2009). A variety of age-based RPs are also available, although these are not used in management. Thus, this PI is scored at least 60.			

In relation to the first scoring issue, (appropriateness of RPs), under SG80, the assessment team was concerned with the low (13%) Spawner per Recruit (SPR) associated with target fishing mortality, F_{MSY}. Commonly used F_{MSY} proxies are associated with SPR in the order of 40%. The low SPR is likely a consequence of the domed stock / recruitment relationship. Such relationships are due to cannibalism, crowding in preferred habitat or some other density-dependent process. It is not apparent what process would cause domed stock / recruitment relationships in swordfish. Although the team had concern about the low SPR, the team concluded the first scoring issue was met.

In relation to the (the second scoring issue, limit RP), under SG80, MSC Fishery Assessment Methodology (FAM) scoring guidance Section 6.2.19 states that when there is no explicitly defined LRP, a default can be used in the scoring of PI 1.1.1, this dependent on whether or not B_{MSY} is smaller or larger than 40% of virgin biomass ($B_{40\%}$ or 49.5 kt). Since B_{MSY} is greater than $B_{40\%}$, the default LRP is $B_{25\%}$ or 31.0 kt which is lower than the biomass when the stock rebuilding action was taken in 1999. The default LRP is likely above the level at which there is an appreciable risk of impairing reproductive capacity although this is uncertain. The team considered that this scoring issue was not met, therefore a condition was imposed.

As noted above, a target RP is defined which is consistent with B_{MSY}. Thus, the third scoring element of SG80 is met.

As swordfish occupies a higher trophic level, the fourth scoring element is not applicable to the scoring of this PI.

The first and third scoring issues were met, the second was not and the fourth was not applicable. A score of 75 was awarded.

The key reference point used is stock biomass as a proportion of Bmsy. Bmsy is estimated analytically using a range of models subject to sensitivity testing (see PI 1.2.4) with appropriate data inputs and model fitting using a range of appropriate diagnostics. Assessments are not conducted annually but outlook updates of the stock relative to Bmsy are provided by considering projections given updated catch estimates. The reference points used are appropriate for the stock and can be (and are) estimated. As a result, the first scoring issues for SG60 and SG80 requirements are met.

ICCAT is yet to establish by Recommendation or Resolution an explicit LRP for NA swordfish. However, CR v1.3 CB2.3.2.1 allows for the use of an implicit LRP (and TRP) for managing the stock. ICCAT (2015b) Recommendation 15-07 is on the development of HCR (see also PI 1.2.2) and includes specifications for the SCRS to advise the Commission on setting, amongst other things, LRPs for all stocks, including a 5-year schedule for the establishment of species-specific HCRs. At this stage, therefore, ICCAT planning for HCR development, including LRP, TRP and other settings, is well developed and in-train.

Management action on NA swordfish relates to ensuring the stock is at or above the objectives laid out in the Convention; that is, Bmsy (see also PI 1.1.2). This is well exemplified in ICCAT (1999) Recommendation 99-02 which established a rebuilding program for NA swordfish when the stock was estimated to be at 0.65 Bmsy and with fishing mortality estimated as 1.34Fmsy. The Commission adopted rigorous measures (catch reductions and various technical measures) and has followed through since that time to ensure rebuilding, with the stock currently above Bmsy with a high probability (see PI1.1.1), going beyond the rebuilding objective of achieving Bmsy with a greater than 50% probability.

The Commission introduced rebuilding measures in response to stock and fishing mortality status estimates, effectively treating either or both of those estimates as triggers, or thresholds for action. The trigger was to rebuild to meet Convention objectives but implicitly also to avoid further stock decline. These 1999 status estimates might generally be interpreted as management threshold reference points but it is not unreasonable here to treat them as LRPs which the Commission sought to avoid with a high probability by rebuilding to Bmsy within a specified timeframe and taking appropriate, sustained action to meet that goal.

This is further emphasized by Recommendation 13-02 by ICCAT for the Conservation of North Atlantic Swordfish, which at paragraph 5 states: *The SCRS and the Commission shall begin a dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec 99-02] then management*

measures should be considered to avoid further decline and begin to rebuild the stock.

The MSC CR v1.3 CB2.3.3 paragraphs do not easily cover default reference points when Bmsy is defined by the model but not, as such, analytically determined. The common interpretation, however, for stocks other than low productivity ones, is that a default LRP of 20%B0 is adequate for SG80 scoring. The trigger level of 0.65Bmsy is by definition 33.66%B0, exceeding the MSC requirements.

The same Recommendation (13-02), at paragraph 4, states: *When assessing stock status and providing management recommendations to the Commission in 2016, the SCRS shall consider the interim limit reference (LRP) of 0.4*BMSY or any more robust LRP established through further analysis*. This paragraph appears to specify a more explicit LRP (as 0.4Bmsy = 20%B0) but leaves open options for "more robust" alternatives even within 2016. For purposes of scoring at this time, paragraph 4 is not used, relying on the implied LRP from Recommendation 99-02 and Recommendation 13-02, paragraph 5. The second scoring issue for SG80 is therefore met.

There is no explicit rationale presented in ICCAT documentation that precautionary matters (such as environmental variability, CR2.3.10), were considered when developing the rebuilding plan in 1999. Therefore, the first scoring issue of SG 100 is not met.

The ICCAT Basic Texts (2007) include repeated language reflecting the preambular reference to "*maintaining the populations of these fishes at levels which will permit the maximum sustainable catch*". Article VIII states that "*The Commission may, on the basis of scientific evidence, make recommendations designed to maintain the populations of tuna and tuna-like fishes that may be taken in the Convention area at levels which will permit the maximum sustainable catch. These recommendations shall be applicable to the Contracting Parties under the conditions laid down in paragraphs 2 and 3 of this Article.*"

All evidence from SCRS and Commission reports, Recommendations and Resolutions, including rebuilding provisions for North Atlantic swordfish (ICCAT, 1999, Rec 99-2) supports that the ICCAT core objective follows the Basic Texts, with clear use of Bmsy as a TRP used in management decisions for swordfish. The SG80 requirements are met.

There is no explicit rationale presented in ICCAT documentation that the ecological role of the stock, or other precautionary matters, is considered in setting the TRP.

SG100 requirements are not met.

Swordfish is not considered to be a LTL and so the fourth scoring issue of SG 80 is not applicable.

An overall score of 80 is achieved.

PI 1.2.2	60	80	100
There are well defined and effective harvest control rules in place.	Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached. There is some evidence that tools used to implement harvest control rules are	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. The selection of the harvest control rules takes into account the main uncertainties.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. The design of the harvest control rules take into account a wide

	appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	range of uncertainties. Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	Issues on 6 September 2010, in Section 4 of Policy Advisory 18 the MSC clarified that: "In the PISG tables, where identical scoring issues are repeated at different SG levels (in PIs 1.1.2, 1.2.2, 3.1.1, 3.2.2, 3.2.3), the text at the higher SG level/s is hereby deleted, leaving the text to appear only once at the lowest current SG level." This new guidance removes the first scoring issue at the 100SG of this PI, thus removing the impact of this issue on the final score. The focus of this PI is how fishing mortality and associated management actions (e.g. quotas) are established in order to ensure that limit reference points (e.g. default B25%) are avoided. The harvest control rule (HCR) stated in the rebuilding plan focuses on attainment of the B_{MSY} target rather than avoidance of a biomass limit (ICCAT, 1999). While reference is made in the rebuilding plan to the stock being over-exploited at $F > F_{MSY}$, there is no explicit HCR which reduces fishing mortality as the default limit reference point is approached. ICCAT did reduce fishing mortality when biomass was 65% of B_{MSY} or B33%, which implies that ICCAT has a generally understood HCR which acts to limit exploitation as the limit biomass is approached. However, it is not obvious what ICCAT would do if the resource once again declined towards B33%. The assessment incorporates some of the main observation, process and model uncertainties. The main management tool is an annual TAC and there is some evidence (ICCAT, 2009) this is effective at achieving reduced fishing mortality. However, the TAC has not been caught since 2001. ICCAT (2009) considers that if the realized catches had reached the catch limits allowed by the recommendations to the ICCAT Commission, the stock biomass would have declined. Thus, all scoring issues of SG 60 are met. The team considered that the second and third scoring issues of the 80 SG were met. The selection of the control rules takes into account the major uncertainties and there is available evidence that the harvest control rules used were appropriate to achieve the rebuilding goal for the stock. The team concluded that there was no clear evidence or definition of how exploitation rate would be reduced as limit reference points are approached. Thus, the first scoring element under the 80SG was not met and this PI is scored at 75. The MSC Interpretation on Harvest Control Rules (HCRs) distributed to CABs on 16 December 2015, explains that "…*'generally understood' HCRs do not need to be well defined or explicitly agreed, but there should be at least some implicit agreement supported by past management actions from which to understand that 'generally understood' rules exist, and there should be no reason to expect that management will not continue to follow such generally understood rules in future and act to be responsive to changes in indicators of stock status with respect to explicit or implicit reference points."* ICCAT has a history of taking management action to reduce the exploitation rate in the NA swordfish fishery in response to stock and fishing mortality status estimates. In 1999 ICCAT implemented a rebuilding plan under Recommendation 99-2 (see PI1.1.2) and has set TACs, catch limits, and other		

	technical regulations regularly since that time, following advice from the SCRS, to rebuild and maintain the North Atlantic swordfish stock above Bmsy. There is no reason to expect that this management responsiveness to SCRS advice, showing status and projections in relation to indicators (see PI1.1.2), will not continue. In 2011, ICCAT adopted Recommendation 11-13 setting out principles of decision making for ICCAT conservation and management measures (ICCAT 2011). This describes a generally understood decision-making framework based on a harmonized format for tuna RFMO science bodies to convey advice (Strategy Matrix) agreed at the Second Joint Meeting of Tuna RFMOs in June 2009 in San Sebastian, Spain. Recommendation 11-13 guides the Commission in developing management measures responsive to stock status as represented on the Kobe Plot (a standardized "four quadrant, red-yellow-green" format, which is widely embraced as a practical, user-friendly method to present stock status information). The Recommendation sets out clearly how management measures should be designed depending on where status is estimated in the Kobe quadrants, generally codifying the type of action taken in Recommendation 99-2. In all cases, the requirement set out is that management measures should be designed to maintain the stock at, or rebuild to, Bmsy, with a high probability. Where appropriate (overfishing and overfished) the adoption of a rebuilding plan is required. The framework does not specify actions with respect to approaching limits but is designed around achieving targets with high probability, considering both stock status and exploitation rate with requirements to reduce exploitation rate when it is above Fmsy. By definition, as the framework is designed to achieve the TRP with high probability and maintain fishing mortality below Fmsy, it will also act to maintain the stock above the implicit LRPs (see PI1.1.2 si(b)). This represents generally understood HCR that is consistent with the harvest strategy. Further, ICCAT recommendation 13-02 (ICCAT, 201b) on the conservation of North Atlantic swordfish, specifies at paragraph 5 that: *The SCRS and the Commission shall begin a dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec 99-02] then management measures should be considered to avoid further decline and begin to rebuild the stock.* A new recommendation in 2016 (recommendation 16-03; ICCAT, 2016a) is more explicit, specifying at paragraph 7: In line with the provisions of the Recommendation by ICCAT on the Development of Harvest Control Rules and of Management Strategy Evaluation [Rec. 15-07], paragraph 3, the SCRS and the Commission shall begin a dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec. 99-02], then the Commission shall adopt a 10-year rebuilding plan, with harvest levels, as recommended by the SCRS, that will meet the Commission's objectives of maintaining or rebuilding stocks to Bmsy within the defined time period. The requirements of the first scoring issue of SG60 are met. SG80 scoring requires that HCR be "well-defined". Only for MSC CR v2 is there Guidance on what this means. However, interpretation of the term has been reasonably consistent through previous CR versions, including CR v 1.3, as used here. The interpretation is that to be considered well-defined, HCR must exist in some written form that has been agreed by the management agency, with clearly stated actions that will be taken at specific trigger points.

	ICCAT Rec 16-03, para 7., constitutes a written agreement by the management agency, filling part of the interpretation. It also includes a specification of a trigger point – that which was previously responded to by implementation of a rebuilding plan (0.65Bmsy; see PI1.1.2 si(b)). It also clearly states the action(s) to be taken – adoption of a (new) ten year rebuilding plan such that SCRS advice on harvest levels will be used to meet the objective of rebuilding or maintaining the stock at Bmsy. The SG80 requirements are met. NOTE: A process to develop HCR using Management Strategy Evaluation (MSE) is in effect. Recommendation 15-07 (ICCAT 2015) is on the development of HCR using MSE and includes specifications for the SCRS to advise the Commission on setting reference points for all stocks, including a 5-year schedule for the establishment of species-specific HCRs. At this stage, therefore, ICCAT planning for HCR development, including LRP, TRP and other settings, is in-train. Once completed, it is possible that SG100 might be achieved at PI1.2.2(b). MSE is not a requirement to specify actions in a well-defined HCR and SG80 may in principle be achieved without it (at PI1.2.2(a) and/or (b)). The SCRS assessments provide the Commission with estimates of projected biomass for a range of TAC options along with the associated probability of being at or above BMSY. It has also advised the Commission on TACs that would achieve a specified probability of being at or above Bmsy (e.g. 75% in ICCAT, 2012). These probabilities are based upon the main uncertainties in the stock assessment, with consideration of alternative assessment approaches and multiple sensitivity tests (see PI 1.2.4). The HCR can therefore be considered to take account of the main uncertainties (due to data, assumptions and assessment model) in setting harvest levels. The requirements of the second scoring issue of SG80 are met. The HCR framework is an instruction to the Commission on how to proceed given status estimates and outlook advice from the SCRS. It naturally incorporates uncertainties due to the scientific processes but does not account for other uncertainties related, for example, to implementation error or issues not considered in the stock assessment processes, such as environmental or ecological processes. The requirements of the first scoring issues of SG100 are not met. ICCAT relies on its CPCs to constrain domestic harvesting within each country's or entity's catch limit. In addition, minimum size regulations have been established for the Convention area. Countries can implement domestic controls above and beyond these limits to further the conservation of NA swordfish. For example, US-specific tools include fleet quotas, individual quotas, time/area closures, observer coverage requirements, VMS requirements, dockside monitoring requirements, hail in/out requirements, logbook requirements, season, transfer processes and bycatch reduction measures. There is evidence that clearly shows these tools used to implement harvest control rule is appropriate and effective in achieving the required exploitation levels (ICCAT, 2009b; 2012a). While there is evidence that the catch was reduced further than required by the TAC reductions implemented as part of the rebuilding plan, the successful rebuilding of the stock to Bmsy between 1999 and 2009 nevertheless shows that these tools are appropriate and effective in controlling exploitation. The consistent decline in fishing mortality from 1999 to recent years (since when it has been stable) is shown in the stock assessment outputs (for example, Figure 8 of ICCAT, 2015a). The Commission is committed to implementing the TACs (ICCAT, 2011) and has put in place carryover mechanisms to ensure this (see above).

	The requirements of the third scoring issue of SG80 are met. As a result, the overall score is 80.

PI 2.1.1	60	80	100
The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species.	Main retained species are likely to be within biologically based limits or if outside the limits, there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species. If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.	Main retained species are highly likely to be within biologically based limits, or if outside the limits, there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	There is a high degree of certainty that retained species are within biologically based limits. Target reference points are defined and retained species are at or fluctuating around their target reference points.

As noted in Section 3.7, the MSC defines main retained species as those that a) are >5% of overall catch volume, b) are commercially valuable or c) because they are required to be retained by management rules. Based on this definition, the main retained species in the fishery under assessment are, bluefin tuna, bigeye tuna, yellowfin tuna, albacore tuna, blue and white marlins, shortfin mako shark and porbeagle shark. Longfin Mako, Mahi mahi, escolar, and wahoo are retained. However, they constitute less than 5% of the overall catch volume and are not required to be retained by management rules. Similarly, these species are also not considered either valuable or vulnerable, and therefore do not require scoring as 'main' retained species.

Many of the Principle 2 performance indicators in the MSC FAM (ver.1) default tree seek to evaluate the management strategy in place for the candidate fishery impacts on P2 components. In order to score PIs referring to management strategy concepts for each scoring element, the assessment team needed to consider the management strategy components being implemented by the fishery. As per FAM, version 1, guidance 7.1.20 – 7.1.26, a strategy is considered to be composed of linked monitoring, analyses, measures and responses. The team interpreted these components as being analogous to the monitoring (e.g. dockside or at-sea observation of landings or catch), assessment (e.g. evaluation of stock status by ICCAT or DFO), tools (e.g. quotas, closed areas, etc.) and harvest control rules (e.g. change in harvest rate in response to stock status) used in Principle 1. The team noted that whereas measures (i.e. tools) can exist in the absence of a strategy, as per FAM 7.1.21, a strategy (partial or comprehensive) requires that all components exist. Monitoring informs analyses which lead to measures based upon a management response.

In PI 2.1.2 below, the team has identified the various management strategy components for all the main species considered in the scoring of the retained species PIs. The scoring rationale provided for the status outcome makes reference to Table 17 in PI 2.1.2. Development of the table of management strategy components is in response to concerns identified by a number of stakeholders.

Main Species

Tuna (Bluefin Tuna, Bigeye Tuna, Yellowfin Tuna, Albacore Tuna)

ICCAT is responsible for the conservation of tuna and tuna-like species in the Atlantic Ocean and its adjacent seas. Each of the tuna species identified as main retained species, has been subject to an ICCAT assessment, which was used to assess the outcome PI for each species.

Bluefin Tuna

ICCAT (2010a) assessed status against B_{MSY} proxy reference points (RPs) estimated using low and high recruitment scenarios. As well, sensitivity runs were conducted through removal of influential indicators (i.e. Canadian GSL and US RR > 177 cm indices) to bracket uncertainty in spawning stock biomass (SSB) and fishing mortality (F). As ICCAT does not recognize limit RPs, to be consistent with the guidelines on PI 1.1.2, the assessment team interpreted biological limits (B_{LIM}) as being 50% of B_{MSY} for each recruitment scenario. Using the low recruitment RP, SSB is 20% - 60% above B_{MSY}, implying that SSB is well above B_{LIM}. Under the high recruitment scenario, SSB is 60% to 80% below B_{MSY} or 30 – 40% below B_{LIM}. Further, ICCAT (2010) noted that the assessment did not capture the full degree of uncertainty. An important factor contributing to this is mixing between fish of eastern and western origin. Limited analyses were conducted of the two stocks with mixing in 2008, but little new information was available in 2010. Based on earlier work, the estimates of stock status can be expected to vary considerably depending on the type of data used to estimate mixing (conventional tagging or isotope signature samples) and modeling assumptions made. Another important source of uncertainty is recruitment, both in terms of recent levels (which are estimated with low precision in the assessment), and potential future levels (the "low" vs "high" recruitment hypotheses which affect management benchmarks). Therefore, the weight of evidence suggests that it is thus not likely (at 60% probability level) that Bluefin tuna is above biologically based limits. Notwithstanding this, the Bluefin strategy laid out in the Canadian Atlantic swordfish and other tunas integrated fishery management plan (herein referred to the SWO management plan) is interpreted as measures to ensure that the NS swordfish longline fishery does not hinder recovery and rebuilding, and are expected to result in the fishery not causing Bluefin to be outside biologically based limits. As such, the SG60 is met for this species. The strategy outlined in the SWO management plan (See PI 2.1.2 rationale) is also interpreted as a partial strategy of demonstrably effective measures (e.g. time/ area closures (BEZ and Hell Hole), daily catch notification for BFT, reduction of dead BFT discards and the letter notifying ALPAC members of the minister's approach to bluefin management as presented in the SWO management plan Appendix IIIB letter to ALPAC members, ICCAT assessment, and HRCs used to inform the management response. Therefore, SG80 is met.

Bigeye Tuna

The Atlantic stocks were last assessed by ICCAT (2010). Based upon a variety of models, biomass at the beginning of 2010 was estimated to be nearly 100% of B_{MSY} and by inference likely to be within biologically based limits. Also, there are measures defined in the SWO management plan, outlined in Table 17 in PI 2.1.2, expected to result in the fishery not causing bigeye to be outside biologically based limits. Based upon this, the SG 60 is met, as well the SG80 is also met given that the stock is highly likely (P> 70%) to be above 50% of B_{MSY}, resulting in a score of 80 for bigeye tuna.

Yellowfin Tuna

ICCAT (2008) applied both an age-structured (VPA) model and a non-equilibrium production (ASPIC) model to the available data through 2006. Status was assessed against SSB expected when fishing at F_{MAX} rather than F_{MSY}. The assessment team interpreted these as being close enough to allow inference of the biological limit (50% of B_{MAX}). Both VPA and a range of ASPIC models suggest that SSB_{2006} is close to B_{MAX} and by inference likely to be within biologically based limits. Further, recent trends indicate declining effective effort and some recovery of the stock. Also, there are measures in the SWO management plan, see PI 2.1.2, expected to result in the fishery not causing yellowfin tuna to be outside biologically based limits. SG 60 is met. SG80 is also met given that the stock is highly likely (P> 70%) to be above 50% of B_{MAX}, therefore this species scores 80.

Albacore Tuna

ICCAT (2009) indicated that the North Atlantic stock has been below B_{MSY} (current SSB_{2007} is approximately 62% of SSB at MSY) since the late 1960s but has generally not dropped below 50% of B_{MSY}. While northern albacore tuna is below its target reference point, it is likely within biologically based limits. Also, there are measures in the SWO management plan, see PI 2.1.2, that are expected to result in the fishery not causing albacore tuna to be outside biologically based limits. As such, the

SG 60 is met. The assessment team considers that the hard TACs on northern albacore tunas constitute a partial strategy to maintain those species within biologically based limits. The strategy is mainly based on information directly from the longline fishery and/or species involved, there is clear evidence that the strategy is being implemented successfully, and intended changes are occurring and there is some evidence that the strategy is achieving its overall objective for those species. Therefore, while albacore may not be considered to be highly likely to be within biologically based limits, there is a partial strategy in place of demonstrably effective management measures such that the fishery under consideration does not hinder recovery and rebuilding. This species scores 80.

Sharks (Shortfin Mako and Porbeagle Shark)

Shortfin Mako

Multiple assessment models (ICCAT, 2008) indicated that North Atlantic stock depletion by 2008 to about 50% of virgin biomass (1950s levels) whereas other models estimated considerably lower levels of depletion. In light of biological information that places the point at which B_{MSY} is reached with respect to the carrying capacity at levels higher than for blue sharks and many teleost stocks, there is some non-negligible probability that the stock could be below B_{MSY}. On the other hand, SSB is likely to be above 50% of B_{MSY}. Measures, through a 100t TAC are in place so as not to allow the fishery to result in hindering recovery. SG60 is met.

It is not possible to state that the North Atlantic stock is highly likely (P>70%) to be above biologically based limits, as required in the first part of the SG80. However, while there is a partial strategy (see PI 2.1.2), the assessment team is concerned with its effectiveness. Recognizing that landings are within the bounds of the suggested 100t, and in fact landings have been significantly less than this in most years (See Table 14 of ICCAT, 2008), the catch limit in place is not a hard TAC. Further, there are no estimates of post-capture mortality, so the fate of the significant portion of shortfin mako released alive (based on observer reports) is unknown. Notwithstanding this, Campana et al. (2005) states that while the fishery under assessment accounts for the main source of mako landings from Canadian fisheries, annual catches average 60-80t which is about 4% of that reported for the North Atlantic population (ICCAT, 2004). Campana et al (2005) concluded that it appears unlikely that current exploitation rates in Canada are having an appreciable impact on the population. Furthermore, the shortfin mako shark RPA (DFO 2006a) states that “bycatch by foreign fleets in the North Atlantic are the most significant source of mortality for the population. While it is unlikely that a reduction in bycatch of shortfin makos by the Canadian pelagic longline fishery would have any detectable or biologically significant influence on the population, it would be prudent not to exceed 100 t annually” in the Canadian fisheries.

On balance, the assessment team considered that while the partial strategy was considered appropriate, it was not fully effective; given the unknown impact of post capture mortality. The partial score of 70 is assigned.

Porbeagle Shark

ICCAT (2010) indicates that the 2009 biomass of the Northwest Atlantic stock is below B_{MSY} and that recent fishing mortality is near or above F_{MSY}. Furthermore, ICCAT (2010) reiterates the findings of the Canadian assessment of the Northwest Atlantic porbeagle stock which found that biomass is depleted to well below B_{MSY}. However, the latter indicated that recent fishing mortality is below F_{MSY} and recent biomass appears to be increasing. It is not possible to state that the stock is within biologically based limit. There are measures, through annual TACs, to ensure that the fishery does not hinder recovery. SG60 is met.

While there is a partial strategy for porbeagle shark (see PI 2.1.2), the team is not convinced that it is demonstrably effective as required by the 80 SG. There are two issues in this regard. Firstly, porbeagle shark was assessed by COSEWIC in 2004 as endangered. The Canadian landings of porbeagle shark (192.9t in 2006 under a TAC of 250t) were above that subsequently considered necessary for rebuilding (185t) in 2007 (the candidate fishery being assessed contributes approximately 39t to the Canadian TAC). While the TAC was reduced to 185t in 2007, it was set at the upper range of the scientific advice (Gibson and Campana 2005). Assuming that mid-range of the confidence interval for the proposed TAC is risk neutral, setting the TAC at the upper end of the range, without taking account of discards and mortality caused by non-Canadian fleets, implies that there is more than 50% probability that TAC will hinder recovery. The assessment team considers that a lower, more precautionary TAC for this endangered species would have been prudent.

Secondly, the TAC is based on landings. Based on catch data available (see Table 6), a significant number of porbeagle are released from the candidate fishery, some of which experienced post capture mortality (PCM). There are no estimates of PCM for this fishery, which is a significant source of uncertainty in the management of the fishery's impact on this species. It is acknowledged that there is a high percentage use of circle hooks in the fishery, which implies high survivorship of released porbeagle (Carruthers, 2009). Notwithstanding this, there is concern for unobserved post capture mortality. Given that there is monitoring of the fishery's interactions with the species, assessment of stock status and management decisions based on HCR outlined in the recovery potential assessment (Campana et al., 2006), the assessment team considers that there is a partial strategy, see PI 2.1.2, in place for the species such that the fishery does not hinder recovery and rebuilding. However, it does not consider that the strategy is demonstrably effective. Thus, while all the scoring issues of the SG60 are met, the team considers that SG80 is only partially met. PI 2.1.1 for this species scores 70.

Marlins (Blue Marline and White Marlin)

Blue Marlin

ICCAT (2006) stated that biomass of the Atlantic stock was below 50% of B_{MSY}. Analysis of several abundance indicators suggests that the decline of this species had partially arrested, however, there were other indicators that suggest that abundance continued to decline. It is not possible to state that the stock is likely within biologically based limits. There are measures in place which are expected to ensure that the fishery does not hinder recovery and does not cause it to result in the stock declining further below biologically based limits. These measures are outlined in ICCAT Recommendation 06-09 and include the release of all live marlins which are caught by longline or purse seine vessels as well as limiting the amount of blue marlin which can be harvested and retained for landing by pelagic longline and purse seine vessels to not exceed 50% and 33% respectively of landings in 1996 or 1999 whichever is greater. At-sea observer data for the fishery has confirmed that live release of marlin is occurring. Additionally, ICCAT (2006) indicated that measures invoked by ICCAT to address declining status were being implemented, and the catch of both species were declining. The assessment team notes that in the past there has been low observer coverage in the assessed fishery, therefore making it difficult to evaluate the effectiveness of the rule requiring that live marlins be released. However, the assessment team recognizes that the fishery under consideration has been subject to increased observer coverage in recent years. Additional monitoring (e.g. through on-board video surveillance) would provide greater confidence that measures are being effectively applied. Other measures, such as closed areas, could be used if it could be demonstrated that marlins occur more frequently in some areas. SG60 is met. These measures are considered a partial strategy of demonstrably effective management to not to hinder recovery, see Table 17 in PI 2.1.2, in that management measures are reviewed and implemented based upon ICCAT assessments of the species. Given that the measures comprising the strategy in place both nationally and internationally are effective, and the 'marginal contribution' of the candidate fishery on blue marlin, the assessment team has considered the SG80 as met.

White Marlin: same as for Blue Marlin, SG80 met.

This PI was scored 75 in the original assessment (Intertek Moody Marine 2012), with the porbeagle element scoring 70. Since then, new information has been collected and the management approach refined. These changes are detailed below.

The latest stock assessment information for porbeagle was presented by Campana et al. (2013). The authors ran four variants of a forward projecting, age and sex-structured life history model, fit to catch-at-length and catch per unit effort data to the end of 2008, although some information including catch and discards was updated to the end of 2011. The four variants of the population model differed in their assumed productivity, but all variants of the model predicted porbeagle recovery to 20% of spawning stock numbers (SSN20%) before 2014 if the human-induced mortality rate was kept at or below 4% of the vulnerable biomass (Campana et al., 2013).

Hooking mortality and post-release mortality estimates for porbeagle have been assessed by on-board observers of Canadian fishing vessels since 2010 and were reported by DFO (2015). Accounting for landings, capture mortality and post-release mortality, the total annual mortality of porbeagle from all commercial fishing activities in Canadian waters from 2009 to 2014 has averaged 107 t (range 88 – 164 t); this represents a mortality rate of approximately 2% (DFO 2015).

Although it is not possible to say that it is highly likely that porbeagle is highly likely to be within biologically-based limits, there are management measures in place for porbeagle in Canada and in the

longline swordfish fishery, specifically; these now include:

1) A National Plan of Action for the Conservation and Management of Sharks (NPOACMS) was published and implemented (DFO 2007);
2) An update on the NPOACMS was published (DFO 2012);
3) There is a Shark Conservation Action Plan in place (DFO 2014), which objectives with tactics including to enhance monitoring and data collection, promote fishing activities that avoid bycatch species, mitigate impacts on bycatch species, and improve knowledge on post-release mortality, across all Canadian fisheries that catch sharks;
4) The directed fishery for porbeagle in Canadian waters was stopped in 2013;
5) Corrodible circle hooks and monofilament leaders must be used in the fishery (DFO 2016a);
6) Longline vessels are required to release all live porbeagle (DFO 2016a);
7) In the longline fishery, all released porbeagle must be recorded in the logbook, and a record made of their status (i.e., dead or alive) (DFO 2016a);
8) Fins may be removed from sharks taken in the longline fishery, but must be landed with the corresponding carcasses and cannot exceed 5% of the weight of the carcasses (DFO 2016a);
9) The fishery is subject to 100% dockside monitoring, and no landings can take place unless a dockside monitor is present (DFO 2016a);
10) There is a recommended maximum porbeagle catch limit for all Canadian fisheries of 185 t (DFO 2013), which represents a mortality rate of approximately 4%;
11) If the 185 t catch limit was exceeded, it was confirmed by DFO (pers. comm., Canadian swordfish fishery site visit, October 2016) that this would be considered at the DFO Post-Season review, and additional measures or restrictions could be brought forward for consideration at the Atlantic Large Pelagic Advisory Council (ALPAC) in order to bring catches down (also stated in DFO 2016e).

It is noted that the landings of porbeagle from the swordfish fishery have declined from 9.7 t and 16.2 t in 2011 and 2012 respectively, to 3.2 t, 2.7 t and 0.5 t in 2013, 2014 and 2015, respectively (DFO 2016b). The total mortality of porbeagle in all Atlantic Canadian fisheries for 2009-2014 was estimated to average 107 t (DFO 2015).

The longline fishery has been subject to average annual observer coverage of 5.8% of the sea days for the period 2011-2015 (range 3.3% - 7.8%), exceeding the 5% target level (DFO 2016c). It cannot be confirmed that the observer coverage is representative of the fleet activities or catches, but the observer programme is intended to be randomised and is meeting its target sea day coverage levels (with the exception of 2013, when 3.3% of sea days were covered following the revision to the observer programme – DFO 2016c). DFO has commented that the observer coverage level is currently considered to be ‘sufficient’ (DFO 2016e).

The measures in place for porbeagle have been effective in bringing annual mortality rates from all Canadian fisheries down to around 2% (DFO 2015). Whilst there has not been a recent update to the porbeagle stock assessment (noting that, in the absence of fishery landings and associated sampling of porbeagle, or a dedicated porbeagle sampling study, a new stock assessment cannot be produced – DFO pers. comm., Canadian swordfish fishery site visit, October 2016), this is approximately half of the mortality rate that was expected to support a recovery of the stock back to SSN20% by 2014, even under the most pessimistic productivity assumption tested in the model (Campana et al., 2013).

Overall, the audit team considers that the measures in place for managing the impact of the swordfish longline fishery on porbeagle constitute at least a partial strategy, and it is demonstrably effective in maintaining the impact of the swordfish longline fishery at a level that will not hinder recovery and rebuilding (i.e., mortality is less than 4%). As such, the SG80 requirement is met. A higher score is not achieved because the SG100 requires that there is, “a high degree of certainty that retained species are within biologically based limits”, and this cannot be confirmed.

An overall score of 80 is achieved.

PI 2.1.2	60	80	100
There is a strategy in place for managing retained species that are designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.	There are measures in place, if necessary, that are 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. The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	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. 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. There is some evidence that the partial strategy is being implemented successfully.	There is a strategy in place for managing retained species. The strategy is mainly based on information directly about the fishery and/or species involved, and testing supports high confidence that the strategy will work. There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its overall objective.
Throughout Principle 2 outcome and management strategy performance indicators, the MSC FAM default tree seeks to evaluate the management strategy in place for the candidate fishery impacts on non-target species. In order to score PIs 2.1.1 to 2.2.3 for each scoring element, the assessment team needed to consider the management strategy being implemented by the fishery. As per FAM version 1 guidance 7.1.20 – 7.1.26, a strategy is considered to be composed of linked monitoring, analyses, measures and responses. The team interpreted these components as being analogous to the monitoring (e.g. dockside or at-sea observation of landings or catch), assessment (e.g. evaluation of stock status by ICCAT or DFO), tools (e.g. quotas, closed areas, etc.) and harvest control rules (e.g. change in harvest rate in response to stock status) used in Principle 1. The team noted that whereas measures (i.e. tools) can exist in the absence of a strategy, as per FAM 7.1.21, a strategy (partial or comprehensive) requires that all components exist. Monitoring informs analyses which lead to			

measures based upon a management response.

To clarify the team's interpretation of currently implemented management strategy components, the team has identified the relevant components.

Main Species

Tuna (Bluefin Tuna, Bigeye Tuna, Yellowfin Tuna, Albacore Tuna)

Bluefin Tuna

The 2004 – 2006 Canadian Atlantic Swordfish and Other Tunas Integrated Management Plan (still in force) describes measures for minimizing impacts of the swordfish longline fishery on bluefin tuna. These are expected to ensure that the fishery does not hinder recovery. These measures are likely to work based upon general experience, therefore SG60 is met. The measures outlined in the SWO management plan, see table above, are also interpreted as at least a partial strategy of demonstrably effective measures (e.g. time/ area closures (BEZ and Hell Hole), daily catch notification for BFT, reduction of dead BFT discards and SWO management plan Appendix IIIB letter to ALPAC members, linked with ICCAT assessment which informs the HCR used to set quotas. The strategy is mainly based on information directly from the longline fishery and/or species involved with some evidence that it is being implemented successfully. As a result, the SG80 is met in relation to bluefin tuna.

Bigeye Tuna

Same as Bluefin; scores 80

Yellowfin Tuna

As part of the 2010 yellowfin stock assessment report, the SCRS provided a review of effects of current regulation and management recommendations. This report did not lead to a specific Management Committee recommendation as the indications were that stock status had showed improvement, there was no current perceived requirement to change the effort controls already established. The strategy is mainly based on information directly from the longline fishery and/or species involved, there is clear evidence that the strategy is being implemented successfully, and intended changes are occurring and there is some evidence that the strategy is achieving its overall objective for those main retained species, therefore, the 80SG is attained for yellowfin tuna.

Albacore Tuna

Same as bluefin tuna; scores 80

Sharks (Shortfin Mako and Porbeagle Shark)

Shortfin Mako

The shortfin mako shark RPA (DFO 2006a) states that "bycatch by foreign fleets in the North Atlantic are the most significant source of mortality for the population. While it is unlikely that a reduction in bycatch of shortfin makos by the Canadian pelagic longline fishery would have any detectable or biologically significant influence on the population, it would be prudent not to exceed 100 t annually" in the Canadian fisheries. The Canadian fisheries have not exceeded 100 t in recent years and there is observer evidence that a significant portion of shortfin mako is being released alive. The measures that are in place in relation to this species, as outlined above, are considered to meet the requirements of a partial strategy, and there is some evidence that the strategy has been implemented successfully (though the observer and dockside monitoring data available), therefore meeting 2 of the 3 scoring issues of the SG80. However, the assessment team is not confident that there is an objective basis for confidence that the partial strategy will work. Observer coverage is low and there is little information available or consideration of post capture mortality in the management strategy. In order to meet the second scoring issue of the SG80, information regarding the total mortality on the species would be required. As such the second scoring issue is not met and the species scores 75.

Porbeagle Shark

Based on the same rationale as provided for shortfin mako, this species scores 75. With respect to porbeagle shark, the assessment team notes that the TAC in place has been set at the upper limit of the advice, despite what is known about species abundance, which contributes to the concerns on whether or not the strategy in place will work. As well, there is little information available on or consideration of post capture mortality in the management strategy. Based on a similar rationale as

provided for shortfin mako, this species scores 75.

Marlins (Blue Marline and White Marlin)

Blue Marlin and White Marlin

As outlined in the table above, with respect to blue and white marlin, there is monitoring is in place, an ICCAT assessment was conducted in 2006 and generic and mandatory measures have been implemented. Based upon the assessment of 2006, ICCAT in Rec 2006-09 stated that "all contracting parties and non-contracting parties, entities or fishing entities shall promote the voluntary release of live blue marlin and white marlin". Taking this as evidence that there is a response provide upon the review of the assessment, the assessment team considers that there is a partial strategy in place. As such, blue and white marlin both attain the SG80, as there is a partial strategy in place that is considered likely to work based on the available at-sea observer information.

This PI was scored 75 in the original assessment (Intertek Moody Marine 2012), with the porbeagle element scoring 75. Since then, new information has been collected and the management approach refined. These changes are detailed below.

The management approach in place for porbeagle in Canada, and in the longline swordfish fishery, specifically, comprises the following:

1) A National Plan of Action for the Conservation and Management of Sharks (NPOACMS) was published and implemented (DFO 2007);
2) An update on the NPOACMS was published (DFO 2012);
3) There is a Shark Conservation Action Plan in place (DFO 2014), which objectives with tactics including to enhance monitoring and data collection, promote fishing activities that avoid bycatch species, mitigate impacts on bycatch species, and improve knowledge on post-release mortality, across all Canadian fisheries that catch sharks;
4) The directed fishery for porbeagle in Canadian waters was stopped in 2013;
5) Corrodible circle hooks and monofilament leaders must be used in the fishery (DFO 2016a);
6) Longline vessels are required to release all live porbeagle (DFO 2016a);
7) In the longline fishery, all released porbeagle must be recorded in the logbook, and a record made of their status (i.e., dead or alive) (DFO 2016a);
8) Fins may be removed from sharks taken in the longline fishery, but must be landed with the corresponding carcasses and cannot exceed 5% of the weight of the carcasses (DFO 2016a);
9) The fishery is subject to 100% dockside monitoring, and no landings can take place unless a dockside monitor is present (DFO 2016a);
10) There is a recommended maximum porbeagle catch limit for all Canadian fisheries of 185 t (DFO 2013), which represents a mortality rate of approximately 4%;
11) If the 185 t catch limit was exceeded, it was confirmed by DFO (pers. comm., Canadian swordfish fishery site visit, October 2016) that this would be considered at the DFO Post-Season review, and additional measures or restrictions could be brought forward for consideration at the Atlantic Large Pelagic Advisory Council (ALPAC) in order to bring catches down (also stated in DFO 2016e).

Overall, these measures together comprise at least a partial strategy to ensure the fishery does not hinder recovery and rebuilding or porbeagle. There is also some objective basis for confidence that the partial strategy will work, based on information about the total catches in the fishery and the subsequent mortality levels that mean the mortality rate from all Canadian fisheries is estimated to be about half of that expected to support a recovery of the stock back to SSN20% by 2014, even under the most pessimistic productivity assumption tested in the model (Campana et al., 2013). Finally, there is some evidence that the partial strategy is being implemented successfully, based on the landings data and the observer data. As such, the SG80 level of performance is met.

The fishery does not meet the SG100 level of performance because, to the audit team's knowledge, testing has not been conducted to support high confidence that the strategy will work, and an updated stock assessment would be needed to provide evidence either that intended changes are occurring or

that the strategy is achieving its overall objective.

An overall score of 80 is achieved.

PI 2.3.1	60	80	100
The fishery meets national and international requirements for protection of ETP species. The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species. Known direct effects are unlikely to create unacceptable impacts to ETP species.	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species. Direct effects are highly unlikely to create unacceptable impacts to ETP species. Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species. There is a high degree of confidence that there are no significant detrimental effects (direct and indirect) of the fishery on ETP species.

The MSC Fisheries Assessment Methodology, Version 1, July 2008 provides the following guidance in relation to categorization of endangered, threatened and protected (ETP) species.

ETP (endangered, threatened or protected) species are those that are recognized by national legislation and/or binding international agreements (e.g. CITES) to which the jurisdictions controlling the fishery under assessment are party. The SGs refer to 'national and international requirements' and 'unacceptable impacts'. These terms relate to the requirements or impacts specified in relevant national legislation or binding international agreements.

Noting this MSC guidance, it is important to identify which national and international requirements have triggered species evaluations within the ETP performance indicators. Canada's international requirements stem from its signatory status to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Within Canada, the implementation and administration of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) are shared among federal and provincial/territorial agencies to make the best use of existing organizational structures. (CITES in Canada web site, http://www.cites.ec.gc.ca/ (March 29, 2010)).

As the representative of Canada, the Canadian Wildlife Service is responsible for managing CITES species in Canada vis à vis the international community. Fisheries and Oceans Canada (DFO) is responsible for CITES activities in Canada that relate to species managed under the Fisheries Act.

DFO advises on matters regarding marine and freshwater species. In addition, regional DFO officers issue CITES Export Permits for marine and freshwater species. DFO's responsibilities are divided within the department between the Science and Fisheries Management sectors. Their respective responsibilities can be summarized as follows:

The science sector assumes the role of the Scientific Authority for CITES marine and freshwater species.

- it participates in biennial Conferences of Parties where proposal to list species in the Appendices and policy matters are debated,
- it formulates Canada's positions and policies on listing of CITES marine and freshwater species in the Appendices,
- it contributes to CITES debate on criteria for listing species that are at risk due to commercial

trade in the Appendices,

- it assesses status of stocks and, when appropriate, issues non-detriment findings for exports of Appendix I and II species.

The Fisheries Management Sector assumes the role of Management Authority for CITES marine and freshwater species,

- it issues export permits,
- it maintains a permit-issuing service across the country (and recruits and trains a network of individuals in major population centers),
- it compiles and maintains a database of CITES export permit issuance,
- it reports annually to the CITES Management Authority at the Canadian Wildlife Service on permit issuance and related activities, monitors trade to ensure compliance with Canada's obligations to CITES,
- it circulates information on CITES requirements to potential exporters, and responds to public inquiries on import and export matters. [Information above cited (CITES in Canada web site, http://www.cites.ec.gc.ca/ (March 29, 2010)]. Nationally, Canada proclaimed the Species at Risk Act (SARA) in 2003. The purpose of SARA is to protect wildlife species at risk in Canada. Within the Act, COSEWIC (Committee on the Status of Endangered Wildlife in Canada) was established as an independent body of experts responsible for identifying and assessing wildlife species considered to be at risk. This is the first step towards protecting wildlife species at risk. Subsequent steps include COSEWIC reporting its results to the Canadian government and the public, and the Minister of the Environment's official response to the assessment results. Wildlife species that have been designated by COSEWIC may then qualify for legal protection and recovery under SARA. It is up to government to legally protect wildlife species designated by COSEWIC. COSEWIC assessments do not take into account political, social or economic factors. The potential impacts of legal listing are for Government to analyze, and the Act applies only to wildlife species on the SARA legal list. (see COSEWIC and the Species At Risk Act. (http://www.cosewic.gc.ca/eng/sct6/sct6_6_e.cfm, March 29, 2010).

All marine turtle and whale species identified here are listed under CITES, either in Appendix I (Species threatened with extinction; trade in specimens of these species is permitted only in exceptional circumstances) or Appendix II (species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival).

The leatherback turtle and the northern bottlenose whale Scotian Shelf population are listed under the SARA. Loggerhead sea turtles were assessed as Endangered by COSEWIC in April 2010. DFO is currently considering whether or not to list it under SARA. It has implemented a Loggerhead Conservation Action Plan (LCAP) with the following objective:

“Ensure that human-induced harm in Canadian waters does not exceed levels that would impede population recovery and encourage increases in abundance toward what might be considered to be historical levels, through implementation of practical solutions, with industry cooperation, for monitoring and mitigating incidental capture and post-release mortality of sea turtles by Canadian commercial fleets”.

Kemp’s Ridley sea turtle are currently identified as a low priority candidate for COSEWIC evaluation and are not scheduled to be evaluated.

Following guidance from FAM Version 1, the assessment team scored each species individually and the final scores were determined in accordance with the scoring guidance identified in Section 4 of the FAM.

Leatherback Turtle

Leatherback turtles were assessed as Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2001 and are listed on under SARA Schedule 1. The species is also listed under CITES. An allowable harm assessment was completed in 2004. Leatherback turtles are not retained or landed from the fishery, the team considered that the requirements of CITES were met.

The recovery strategy defined for Atlantic leatherback sea turtles states:

The Canadian contribution to incidental captures is largely unknown, but available data from the Canadian offshore pelagic longline fleet indicates about 170 incidental captures per year. As outlined in the Recovery Strategy for Leatherback Turtles in Atlantic Canadian Waters (DFO, 2006), under '2.8.1 Threats in the Marine Environment', quantitative data on incidental capture exists only for this fleet and on- board observers reported no mortalities in this fishery during the 2001-2003 fishery. However, based on estimated encounter rates from DFO observer data and post-encounter mortality estimates drawn from studies in the US, a small number of leatherback turtle mortalities may have occurred each year in the Canadian fishery.

The Allowable Harm Assessment for Leatherback Turtle in Atlantic Canadian Waters (DFO, 2004) concluded that:

The size of Atlantic leatherback turtle population is unknown, but likely exceeds several hundred thousand animals. The geographic extent of the population has not changed suggesting that suitable habitat is available to permit population growth.

The Canadian contribution to incidental captures is largely unknown. Available quantitative data from the offshore pelagic long-line fleet indicate that about 170 incidental captures occur per year. Sightings data indicate that incidental captures occur in Canadian fixed gear fisheries, but estimates of the level of harm are unknown. Nevertheless, only a small fraction of Atlantic wide incidental captures is likely to occur in Canadian waters. Given that Canadian activities contributing to incidental mortality of the entire Atlantic population are small, Canadian conservation efforts alone will not be sufficient to achieve the interim recovery target.

Assuming current levels of fishing effort within Canadian jurisdiction, the review committee concluded that there was scope for human induced mortality without jeopardizing survival or recovery of this species.

However, the review committee urges that all feasible measures to minimize the impact of human activities on this species be undertaken.

The Moody assessment team concludes that the effects of the pelagic longline fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species, that the direct effects of the fishery are highly unlikely to create unacceptable impacts to leatherback species and that indirect effects have been considered and are thought to be unlikely to create unacceptable impacts. However, the team could not determine these with a high degree of certainty. The assessment team assigns a score of 80 for leatherback turtles.

Loggerhead Turtle

The assessed fishery satisfies the CITES requirements as loggerhead turtle are not permitted to be retained or landed by the fishery. Canada does not allow trade of turtle products, internationally or domestically. Thus, the international requirement stated in the first scoring issue is met at the 100 SG. There are no current national protection requirements for loggerhead turtle so the national protection requirement for the first scoring issue under the 100 SG is not applicable to loggerhead. Therefore, the team considers the first scoring issue under all SGs to be met.

The second scoring issue of PI 2.3.1, ETP outcome status, requires a determination of whether or not the direct effects of the candidate fishery are considered to be unlikely (SG60) or highly unlikely (SG80) to create unacceptable impacts to ETP species.

According to the DFO RPA, the assessed fishery interacted with an estimated average of 1,200 loggerhead turtles between 2002 and 2008. While there is mandatory release, post hooking mortality does occur, and is estimated to range between 20 and 45%. This results in 200-500 loggerhead deaths annually in the Canadian longline fishery (DFO, 2010). While the Atlantic adult population (females) has been demonstrated to be declining since 1998, it is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species, and Atlantic pelagic longline fisheries is one of several current threats (based on the analyses in the US Recovery Plan for the species. In this regard, the US Recovery Plan provides mortality estimates in units of "adult equivalencies", wherein mortalities at each life stage are adjusted for expected lifetime reproductive contribution, given the individual's age, probability of reaching maturity and expected life span. Conversion of the life stages caught in the Canadian tuna and swordfish longline fisheries (oceanic and neritic juveniles) to adult equivalents using survivorship rates provided in the US Recovery Plan results in an estimate of 5-15 adult equivalent mortalities annually for 2002-2008. For comparison, estimates of total annual

mortalities in adult equivalents for the North Atlantic overall are 9,417 individuals for trawl fisheries and 872 individuals for pelagic longline fisheries.

The 2009 US assessment of loggerhead turtles indicates that individuals taken in pelagic longline fisheries are primarily juveniles, not breeding age adults or even large sub-adults. Mortality of juveniles is higher and only a fraction of pelagic juveniles is expected to contribute to the population through reproduction; thus, pelagic juveniles were not deemed as important to the population as breeding age adults in the US assessment. The loss of a certain number of pelagic juveniles, therefore, is less of a threat to the species' survival and recovery compared to an equal loss of sexually-mature adults. The growth of the population, however, would be expected to be sensitive to changes in the mortality rates of juveniles.

In addition, according to the Canadian RPA:

- Published population modeling studies suggest that the Northwest Atlantic loggerhead sea turtle population is likely to continue to decline given current estimates of population growth rates and the effects of human-induced mortality. However, these studies also indicate scope for recovery if total mortality is reduced.
- Reduction or elimination of mortality in Canadian waters alone is highly unlikely to be sufficient to achieve recovery. In addition to minimizing threats to loggerhead sea turtles in Canadian waters, international cooperation to reduce threats to the population as a whole is needed to achieve recovery of this species. Based on the fact that current mortality from the candidate fishery is only a fraction of a percent of the total mortality on the Atlantic population, it is recognized that the candidate fishery is neither the sole cause of the endangered status of the species nor the primary threat. The assessment team concludes that impacts are marginal such that reduction of mortality by this fleet alone would not significantly change recovery prospects of the species. Thus, the assessment team considers that the second scoring issue of the SG60 has been met. It is 'unlikely' that the direct effects of the fishery are creating unacceptable impacts to loggerhead turtles. The RPA is clear that reducing or eliminating mortality in Canadian waters is not enough to recover the species. However, the RPA does not state whether the species can recover without reducing bycatch by the Canadian swordfish longline fishery or how much bycatch by this fishery would delay loggerhead recovery if all other sources of mortality were eliminated. While the marginal impact of the Canadian fishery is small, the LCAP outlines a set of regulations designed to reduce Canadian impact. Based on the fact that there is no national statement of acceptable impact, the assessment team does not consider the second scoring issue of the 80SG to be met – that is, it is not 'highly likely' that direct effects of the candidate fishery are considered to create unacceptable impacts. Measures for Atlantic wide reduction of turtle bycatch by pelagic longliners are being considered by ICCAT. The assessment team does not consider the need for international cooperation as rationale to postpone additional Canadian regulations to further reduce bycatch in the Canadian swordfish longline fishery.

The assessment team considered the indirect effects of the candidate fishery due to the loggerhead bycatch, such as disruption of the food chain, habitat alternation and trophic interactions are unlikely to create unacceptable impacts. The species spends only a portion of its life cycle in the area of the candidate fishery.

In summary, the assessment team concludes that the effects of the candidate fishery on loggerhead turtles are highly likely to be within limits of national and international requirements for protection of ETP species, as required by the first scoring issue under the SG 80. Similarly, the assessment team agrees that the third scoring issue of the SG80 has been met, in that the indirect effects of the fishery are considered unlikely to create unacceptable impacts on loggerhead sea turtles. However, it has been concluded that the second scoring issue has not been met under the SG80. Therefore, a score of 75 has been assigned to this scoring element of ETP outcome status.

Green Turtles

Green turtles are listed under CITES. Turtles are not permitted to be retained or landed, hence the international requirement of the first scoring issue under SG100 is met.

There are no national requirements for protection of green sea turtle. COSEWIC currently considers green sea turtles in the Pacific Ocean as a low priority candidate species for assessment, and there is no priority for listing Atlantic green sea turtle. The national requirement of the first scoring issue under

SG100 is met.

It is unlikely or quite infrequent that there would be green turtles in Atlantic Canadian waters, and those reported by at-sea observers are likely to be misidentification of juvenile loggerheads due to similar shell patterns (Chris Sasso, NMFS, pers. comm.). Interactions with green turtles are believed to be rare.

The assessment team concludes that all scoring issues of SG80 are met or exceeded (the effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species, direct effects are highly unlikely to create unacceptable impacts to ETP species and, indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.

The team did not conclude that the second scoring issue of SG100 was met. The assessment team therefore assigns a score of 90 to green turtle.

Kemp Ridley Turtles

Kemp's Ridley turtles are listed under CITES. Turtles are not permitted to be retained or landed in Canada, hence the international requirement of the first scoring issue under SG100 is met.

There are no national requirements for protection of Kemp's Ridley sea turtle. COSEWIC currently considers Kemp's Ridley sea turtles in the Atlantic as a low priority candidate species for assessment. The national requirement of the first scoring issue under SG100 is met.

Interactions with Kemp's Ridley turtles are believed to be rare, with a total of four observed between 2000 to 2008. The assessment team concludes that all scoring issues of SG80 are met or exceeded (the effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species, direct effects are highly unlikely to create unacceptable impacts to ETP species and, indirect effects have been considered and are thought to be unlikely to create unacceptable impacts).

The second scoring issue under the SG100, that there is high of confidence that there are no significant detrimental effects (direct and indirect) of the fishery on ETP species, is not considered to be met. The assessment team therefore assigns a score of 90 to Kemp's Ridley turtle.

Pilot Whales

Pilot whales are listed under CITES. Whales are not permitted to be retained or landed, hence the international requirement of the first scoring issue under SG100 is met as the species is not available for sale. Pilot whales are not currently listed under SARA. There was a COSEWIC evaluation of the Atlantic population status in 1994 which concluded that there were no immediate threats to the population. The fishery meets both the national and international requirements of the first SG100 scoring issue.

Interactions with pilot whales are rare, approximately five have been observed between 2001 and 2008, with at least one clearly released with no visible injury. The assessment team concludes that the second and third scoring issues of SG80 are met or exceeded - direct effects are highly unlikely to create unacceptable impacts to ETP species and indirect effects have been considered and are thought to be unlikely to create unacceptable impacts) The second scoring issue of the SG100 is not met as it is not possible to state that there is high of confidence that there are no significant detrimental effects (direct and indirect) of the fishery on ETP species. The assessment team therefore assigns a score of 90 to pilot whales for this PI.

Northern Bottle Nose Whale

The northern bottle nose whale is listed under CITES and the Scotian Shelf population is also listed under SARA (assessed by COSEWIC in 2002 as endangered and listed under SARA schedule 1). Figure 8 of the client's narrative above suggest that the Gully MPA established in 2004 provides full protection for the listed species. Only one interaction was documented by observers in the past 25 years, and it was off Newfoundland on the Grand Banks, not in the area commonly occupied by the listed population. No interaction between bottlenose whale and longlines have been observed or reported on the Scotian Shelf. Swordfish is not a prey of bottle nose whale and the assessment team is not aware of a plausible indirect effect likely to have a negative impact.

The assessment team concludes that all scoring issues of SG80 are met and exceeded (the effects of

the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species, direct effects are highly unlikely to create unacceptable impacts to ETP species and, indirect effects have been considered and are thought to be unlikely to create unacceptable impacts. The assessment team has high certainty that that the effects of the fishery are within limits of national and international requirements for protection of ETP species, and it has high degree of confidence that there are no significant detrimental effects (direct and indirect) of the fishery on the Scotian Shelf bottlenose whale population. The assessment team assigns a score of 95 to northern bottle nose whales.

This PI was scored 75 in the original assessment (Intertek Moody Marine 2012), with the loggerhead sea turtle element scoring 75. Since then, existing information has been reconsidered in the context of the requirements and some new information on catch and post-capture mortality that has been collected. This is detailed below.

Condition 6 is focused on meeting the second SI of PI 2.3.1, at SG80, which is: “Direct effects are highly unlikely to create unacceptable impacts to ETP species” (Intertek Moody Marine 2012).

The methodology for the collection of observer information changed in 2012 to better assess the level of harm to loggerhead turtles at release. Since this time some observers have been trained specifically in turtle sampling methods. Data collected from these trained observers will be used to assess the survivability of loggerhead turtles that are incidentally hooked from the fishery. Results of this study will reduce the uncertainty pertaining to the loggerhead population estimates. This will allow a better understanding of the overall impact of the fishery on the population. DFO requires continued support from the swordfish longline fleet to ensure successful completion of the study (Mike James, pers. Comm. 2016). Notwithstanding the continuing collection of more information on loggerhead sea turtle post-capture mortality, there is existing information on the estimated number of loggerhead sea turtles encountered by the fishery, and on their potential fate, together with the potential impact of the fishery on the loggerhead population. This information addresses the requirements of the second SI directly, and was detailed in the original assessment (Intertek Moody Marine 2012), which stated: “Based on the two years with high observer coverage (2001 & 2002), approximately 75% were released alive and uninjured, approximately 20% were released alive and injured, and 2% were released dead or observers were unable to determine their release status (Javitech 2003).”

In reviewing the information available for this audit, the assessment team went back to the US Recovery Plan (NMFS & USFWS 2008). The estimated total annual adult equivalent mortality for loggerhead sea turtles in all fisheries was estimated to be 12,434 animals, such that the annual take in the swordfish longline fishery in terms of adult equivalent values is estimated to equate to 0.04 - 0.12% of the total.

While it is not confirmed if observer coverage on vessels in the swordfish longline fishery provides a representative understanding of the spatial distribution of effort or the catch profile of the fishery, with the exception of 2013 when the observer programme was revised, the 5% target observer coverage levels are being achieved (DFO 2016c) and the observer programme is now randomised with the aim of minimising the potential for bias (DFO pers. comm., Canadian swordfish fishery site visit, October 2016). Further, skippers are required to undertaken turtle release training as a condition of licence (DFO 2016a), and emphasis is being placed on minimising the amount of line left on hooks if animals are released by cutting the traces, which is understood to be key in promoting long-term survivability for turtles (DFO pers. comm., Canadian swordfish fishery site visit, October 2016).

Importantly, the IUCN status assessment for loggerhead sea turtle was updated recently (Ceriani & Meylan 2015). This latest status assessment now lists loggerhead sea turtle subpopulations individually, rather than simply showing an overall global status for the species (from 1995 to 2015, the global loggerhead sea turtle status was ‘Endangered’, driven principally by the status of the South Pacific subpopulation, which experienced strong declines in the 1970s and is still listed as Critically Endangered (Limpus & Casale 2015); however, this population is of no relevance to the certified swordfish longline fishery). In fact, the loggerhead sea turtle population of relevance to the fishery is the Northwest Atlantic subpopulation, and this is now listed individually as being ‘Least Concern’, with the available long-term series of annual nest counts (used as an index of population abundance) showing an overall increase over the past three generations (Ceriani & Meylan 2015). The ‘Least Concern’ status reflects that the Northwest Atlantic subpopulation did not trigger any of the thresholds and options for a threatened category under criteria A (Declining population – past, present and/or projected), B (Geographic range size, and fragmentation, decline or fluctuations), C (Small population

size and fragmentation, decline, or fluctuations), or D (Very small population or very restricted distribution).

A further recent review of loggerhead sea turtles in the Northwest Atlantic by Chapman & Seminoff (2016) reported that "*With the exception of lower totals for 2014 in Georgia and the Carolinas, the last five years appear to have a positive trend in all areas. Florida's wealth of data show a dip in the loggerhead sea population around the early 2000's but also a definite rebound in the past decade.*"

In summary, the existing information demonstrated that the fishery is responsible for an estimated 5-15 adult equivalent loggerhead sea turtle mortalities per year (or 0.04 – 0.12% of the total annual adult equivalent mortalities), while new information now shows that there has been a change in IUCN status for loggerhead sea turtles in 2015, from 'Endangered' globally to 'Least Concern' for the Northwest Atlantic subpopulation of relevance to the swordfish longline fishery, recognising that the Northwest Atlantic subpopulation of loggerhead sea turtles is growing. Noting that Intertek Moody Marine (2012) stated in the original PCR that, "It is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species", together with the information on observer coverage and turtle release training supports a conclusion that, "Direct effects are highly unlikely to create unacceptable impacts to ETP species", so meeting the SG80 requirements. Therefore, the Condition on PI 2.3.1 is closed.

The fishery was already deemed to meet the SG100 requirements for the first SI for loggerhead sea turtle, Kemp's Ridley sea turtle, pilot whales and northern bottlenose whales, but not for leatherback sea turtle. All ETP species other than loggerhead sea turtle were scored 80 for the second SI. As such, and with most ETP elements scoring 90 overall but some scoring just 80, an overall score of 85 is now awarded for the PI.

PI 2.3.3	60	80	100
Relevant information is collected to support the management of fishery impacts on ETP species, including: - Information for the development of the management strategy; - Information to assess the effectiveness of the management strategy; and - Information to determine the outcome status of ETP species.	Information is adequate to broadly understand the impact of the fishery on ETP species. Information is adequate to support measures to manage the impacts on ETP species. Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts. Sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty. Information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives. Accurate and verifiable information is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.
Qualitative and some quantitative information is available on the amount of ETP species affected by the fishery. This information is sufficient to estimate outcome status with respect to biologically based limits for some but not all main ETP species. The information is adequate to support a partial strategy to manage the fishery, but the assessment team considers that there is insufficient data collected to			

detect any increase in risk to ETP species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy). The team considers that all the 60 scoring guideposts are met.

The assessment team is concerned that there may be insufficient observer coverage, particularly when the numbers of animals sampled go down and that the robustness of the sampling design for the observer coverage has not been evaluated. The team considered that the first requirement of the first scoring issue under the 80SG, (i.e. information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species), was not fully met. The team's assessment was that the current information is not sufficient to determine whether the fishery may be a threat to the recovery of loggerhead turtle. The assessment team assigns a score of 70 for this PI.

This PI was scored 70 in the original assessment (Intertek Moody Marine 2012), with the loggerhead sea turtle element scoring 70. Since then, existing information has been reconsidered in the context of the requirements and new information on catch and post-capture mortality that has been collected. This is detailed below.

Information provided at the Year 4 audit for Condition 8 included a copy of the new licence conditions for the fishery (DFO 2016a), an analysis of observer coverage levels (DFO 2016c), and a proceedings document from a workshop on incidental catch monitoring (DFO 2016d), as well as general information on the performance of the fishery gathered in discussions with DFO staff, fishery representatives and environmental NGO staff. The Client also provided the summary report, '*Progress Report: Loggerhead turtle post-release survival study*' (DFO 2016f), a report prepared by Mike James, DFO Science, outlining the progress made on the loggerhead turtle tagging program and the results from these tagging activities to date. This report indicated that tagging efforts detailed in previous audits had continued in 2016, but had not been successful in getting all the remaining tags attached to turtles because only three hooked turtles were encountered on the six trips taken with observers, covering 54 sets of the gear.

Condition 8 is focused on the first SI of PI 2.3.3 at SG80, which requires the following:

"*Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts*."

In 2012, the original assessment team stated: "*The assessment team is concerned that there may be insufficient observer coverage, particularly when the numbers of animals sampled go down and that the robustness of the sampling design for the observer coverage has not been evaluated. The team considered that the first requirement of the first scoring issue under the 80SG, (i.e. information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species), was not fully met.*" (Intertek Moody Marine, 2012).

It is noted that there are observer data available since at least 2002 (it is understood that data collected prior to 2001 were stored in a database that is not compatible with current systems – fishery client, pers. comm.), and it was confirmed by DFO that the longline fishery has been subject to average annual observer coverage of 5.8% of the sea days for the period 2011-2015 (range 3.3% - 7.8%), exceeding the 5% target level (DFO 2016c). However, although a workshop was held in February 2016 to review the approach to incidental catch monitoring in the longline fishery, the results were inconclusive (DFO 2016d). DFO has commented that the observer coverage level is currently considered to be 'sufficient' (DFO 2016e).

Nevertheless, Paul *et al*. (2010) estimated that approximately 1,200 loggerhead sea turtles (95% confidence range of 700-1,800) were caught annually in Canadian tuna and swordfish longline fisheries during the period of 2002-2008. DFO (2010) then noted that conversion of the life stages caught in the Canadian tuna and swordfish longline fisheries (oceanic and neritic juveniles) to adult equivalents using survivorship rates provided in the US Recovery Plan (NMFS and USFWS 2008) results in an estimate of 5-15 adult equivalent mortalities annually for 2002 - 2008 – this equates to 0.04 – 0.12% of the total annual adult equivalent mortalities. The original assessment noted that, "*it is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species*" (Intertek Moody Marine, 2012).

In this regard, then, whilst the on-going DFO turtle tagging study should yield valuable data in terms of better understanding the fate of loggerhead sea turtles captured in the swordfish fishery, it is clear that there is already sufficient information to determine whether the fishery may be a threat to protection and recovery of the ETP species (i.e., the SG80 requirement of the first SI of PI 2.3.3), and the new

data being collected through the on-going tagging study would tend towards supporting a score of 100 for this first SI of PI 2.3.3, where the SG100 requirement is that, "*Information is sufficient to quantitatively estimate outcome status with a high degree of certainty*".

Importantly, the IUCN status assessment for loggerhead sea turtle was updated recently (Ceriani & Meylan 2015). This latest status assessment now lists loggerhead sea turtle subpopulations individually, rather than simply showing an overall global status for the species. The Northwest Atlantic subpopulation of loggerhead sea turtle is the subpopulation of relevance to the swordfish longline fishery, and this is now listed as being 'Least Concern', with the available long-term series of annual nest counts (used as an index of population abundance) showing an overall increase over the past three generations. The 'Least Concern' status reflects that the Northwest Atlantic subpopulation did not trigger any of the thresholds and options for a threatened category under criteria A (Declining population – past, present and/or projected), B (Geographic range size, and fragmentation, decline or fluctuations), C (Small population size and fragmentation, decline, or fluctuations), or D (Very small population or very restricted distribution).

A further recent review of loggerhead sea turtles in the Northwest Atlantic by Chapman & Seminoff (2016) reported that "*With the exception of lower totals for 2014 in Georgia and the Carolinas, the last five years appear to have a positive trend in all areas. Florida's wealth of data show a dip in the loggerhead sea population around the early 2000's but also a definite rebound in the past decade.*"

An important consideration for this audit is that the information requirements for Principle 2 species, including ETP species, is to some extent dependent on the risk posed to the species by the fishery. GSA3.6.3 (MSC 2014) states: "*At SG80, the information adequacy required for the estimation of the impact of the UoA on the outcome of the species should be balanced against the likely impact on that particular species.*" Given that, for this audit, there is now new information showing the swordfish longline fishery cannot be hindering recovery of the Northwest Atlantic loggerhead sea turtle subpopulation. As such, the information expectation with regard to understanding fishery impacts is lower than it was previously.

In summary, together with the existing information already available on the annual number of interactions with loggerhead sea turtles at 5-15 adult equivalent mortalities per year (or 0.04 – 0.12% of the total annual adult equivalent mortalities), and noting that Intertek Moody Marine (2012) stated in the original PCR that, "*It is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species*", the new information on observer coverage and turtle release training, together with the updated information on the status of the Northwest Atlantic subpopulation over time, supports a conclusion that, "*Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts",* so meeting the SG80 requirements. Therefore, the Condition on PI 2.3.3 is closed, and **the PI rescored at 80**.

A non-binding Recommendation is made:

It is recommended that the client provide DFO with clear and well-publicised support for the timely completion of the loggerhead sea turtle tagging study through advocating to the swordfish longline fishermen of the need to identify and fulfil suitable opportunities to take DFO tagging staff on swordfish and combined swordfish and tuna longline trips in 2017. In the event that the study is completed, a higher score should be possible for PI 2.3.3 and, probably, PI 2.3.1.

PI 3.1.3	60	80	100
The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by

approach.		policy.	management policy.

A key difference between indicator 3.1.1 and indicator 3.1.3 is the latter's implicit or explicit application of the precautionary approach within the management policy. As noted for 3.1.1, ICCAT and Canadian fishery management objectives are generally consistent with MSC principles. However, this does not necessarily mean that decision making applies the precautionary approach.

It is the judgment of the Assessment Team that Canada implicitly applies the precautionary approach as a high-level policy guiding domestic management and in the policy positions it advocates at ICCAT. Canada was one of "forces" behind the UN Fish Stocks Agreement, which formalizes the precautionary approach for Highly Migratory Species and Straddling Stocks. It took the initiative to convene an ICCAT workshop on the application of the precautionary approach to Atlantic bluefin tuna. The precautionary approach is stated as one of the guiding principles and approaches of the Eastern Scotian Shelf Integrated Ocean Management Plan (ESSIM). However, the area of the Canadian longline and harpoon swordfish fisheries extends beyond the boundaries of the ESSIM.

The explicit application of the precautionary approach as a matter of high level policies required for a score of 80 or more is lacking for ICCAT. Furthermore, the precautionary approach should be applied to decisions associated with both principles 1 and 2. ICCAT has been slow to respond to uncertainty information on the status of some stocks under its jurisdiction. In the candidate fishery, there is little evidence of the application of the precautionary approach in the face of uncertain scientific information on the potential threat to vulnerable species (e.g., sea turtles, sharks) posed by longline bycatch. The fishery scores 75 for this PI, there are long term objectives within both ICCAT and Canada which are consistent with MSC P1. Canada implicitly applies the precautionary approach in its management decisions. A score of 80 was not achieved because there are not clear long term objectives which are applied in relation to P2 species for which there is still high uncertainty.

This PI scored 75 in the original assessment (Intertek Moody Marine 2012).

The long-term objective set out in Article VIII of the ICCAT Convention is to maintain the populations of tuna and tuna-like fishes that may be taken in the Convention area at levels which will permit the maximum sustainable catch. Subsequent texts have elaborated on this overarching objective. ICCAT Recommendation 11-13 sets out a series of principles of decision making for ICCAT conservation and management measures, based on the status of stocks as represented by the Kobe Plot. This applies to both Principle 1 species (swordfish) and Principle 2 species such as other tunas, marlins, and sharks, even when information is limited
(see https://www.iccat.int/Documents/SCRS/Presentation/2013/Panel4-2013.pdf).

Most recently, at its 2015 meeting, ICCAT adopted two resolutions which state that when making recommendations pursuant to Article VIII of the Convention, the Commission should (a) apply a precautionary approach, in accordance with relevant international standards (Resolution 2015-12[1]) and (b) apply an ecosystem-based approach to fisheries management (Resolution 2015-11[2]). The formulation of these resolutions is consistent with the UN Fish Stock Agreement and the FAO Code of Conduct for Responsible Fisheries. These and other ICCAT texts make explicit within management policy clear long term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach.

SG80 requirements are met.

Of the two main types of instruments used by ICCAT in implementing management policy (recommendations and resolutions), recommendations are binding on ICCAT Contracting Parties under the terms of Article VIII, however, resolutions are non-binding. In their respective preambles, Resolutions 2015-11 and 2015-12 make reference to the discussions taking place within the Convention Amendment Working Group on the incorporation of an ecosystem approach to fisheries management and a precautionary approach in the proposed amendments to the ICCAT Convention. These resolutions can be regarded as an interim step pending the outcome of the Convention Amendment Working Group. Pending that outcome, the precautionary approach is not yet required by management policy within ICCAT.

SG 100 requirements are not met.

An overall score of 80 is achieved.

Appendix 2 - Stakeholder submissions

Ecology Action Centre

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October 6th, 2016

EAC Submission to 2016 MSC audit of the North West Atlantic Canada longline and harpoon swordfish

Dear Paul, Kevin, and Rob,

Attached here is our written submission as a follow up to what we discussed at the stakeholder meeting with you. Please note the document you received at the meeting were only rough notes to guide our discussion, the attached is our official submission for the audit process.

Our comments on the outstanding harpoon fishery conditions have been captured in the submission we made on the Atlantic Swordfish P1 Harmonization report. We have no outstanding concerns in the harpoon fishery on their P2 scores.

We would like to note the focus of our comments is on tracking the progress of the longline fishery client. Specifically, whether they have met the final year milestones that were reaffirmed at last year's audit as outstanding and the outstanding issues that last year's assessment team noted would need to be fulfilled before scoring could be changed.

We have made past detailed submissions over the last 6 years, including an objection proceeding, that focused on the assessment of the science and data, each of the scoring guideposts and scoring rationale that we did not feel were justified, related action plans from DFO and the client, and the wording of conditions and milestones. Previous teams at each audit and reviews of scoring have considered all of these. Suggestions for data improvement and bycatch mitigation have been discussed at the advisory committee and with this fishery for many years and at the outset of this certification process.

We have also included in our comments an excerpts from our objection to this fishery certification filed in 2011, not to argue that a particular mitigation measure or action should have been put in place, but rather to demonstrate that the concerns voiced 6 years ago about the longline fishery's ability and willingness to improve its practices within in the certification timeframe have proven true. We also would like the team to note that the conditions and milestones wording and agreement were the result of the objection procedure and there would need to be new information and solid rationale if any of the open conditions are closed despite the fishery not fulfilling these stated milestones. The CB explicitly argued during the objection that the success of the client in meeting their action plan could not be prejudged, but would be assessed against the milestones during the audits. We are following this process now

We look forward to your response.

Sincerely,

Shannon Arnold Marine Policy Coordinator, Ecology Action Centre

Conditions 1 and 2	**Please refer to our comments on the North Atlantic Swordfish Harmonization Report**
Condition 3 and 4 **Porbeagle shark**	**The final milestones for these conditions have not been met and the conditions should not be closed. The score of 75 for both 2.1.1 and 2.1.2 should remain unchanged.**
The Assessment team notes in the Year 3 audit: Notwithstanding this, it is not clear how management considers this and other sources of uncertainty (e.g. non-Canadian catch) in its decisions on harvest levels. There needs to be evidence that management sets TACs, which recognize sources of uncertainty and the need for precaution in the face of these. The audit team notes that DFO management and ALPAC has not had an opportunity to consider the results of the 2015 RPA which DFO indicated would occur in 2016 and before the next surveillance audit. The 2016 DFO review of observer coverage, which is to consider issues of precision and accuracy, will further inform estimation of bycatch and will be very relevant to the management decision-making process. In relation to the second issue, the inclusion of the estimates of PRM in the evaluation of the sustainability of the current TAC is a significant development and largely addresses the concern raised in the PCR.	We have compiled our comments on the RPA on Incidental Catch and observer coverage in a section below as it pertains to a number of conditions for this fishery. In summary, there was no outcome of this RPA with new recommendations or better certainty on data collection and monitoring coverage. The 2011 RPA on observer coverage, which was considered insufficient for the needs of the original assessment scoring is still the best analysis available. As of yet, there are no defined harvest control rules for porbeagle that would dictate response to changes in stock status. There are also no defined rules for enforcing the 185 TAC for porbeagle that is across all Atlantic Canadian fisheries. None of the relevant IFMPs, including the swordfish and other tunas IFMP, nor the Shark Conservation Action Plan, have any rules for action if the landing TAC was approached or exceeded during the year. It is uncertain that the TAC is enforceable. There is also still uncertainty as to whether the observer coverage is sufficient to signal whether there are excessive incidental catches of porbeagle and numbers released while fishing. There is still outstanding concern about catches in Emerald Basin, an identified hotspot area for porbeagle and potential mating area. There is considerable uncertainty that the full removals and mortality is being captured for this species. See also comments below on Shark Conservation Action Plan. This cannot be considered harvest rules for sharks or an action plan for recovery. The required articulation of management responses and harvest strategy is absent. Scoring should not be changed.
The condition is on target in relation to this year's audit. Closing of the condition during the fourth surveillance audit will require clear articulation of the management response to changes in stock status and how advised catch takes into account uncertainty to determine that the harvest strategy is demonstrably effective. The audit team notes: To paraphrase the initial certification assessment, a management strategy is composed of monitoring (e.g. observers), analysis (e.g. assessment), a management response based on the assessment, and measures (e.g. tools)	

to achieve the objectives of the response. The audit team also notes: while a removal maximum that should not be exceeded has been set for porbeagle shark, i) confidence that removals are estimated adequately needs to be increased and ii) actions that will be taken if the maximum removal are exceeded need to be specified.	
Year 4 Audit Team response	In providing a commentary on Conditions 3 and 4 this year, the audit team has carefully reviewed the original requirements of the PI, as well as the comments of the original assessment team and the audit team in the PCR and subsequent audits. The relevant SG80 requirement for Condition 3 is: "*Main retained species are highly likely to be within biologically based limits, or if outside the limits, there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding*." And for Condition 4 the relevant SG80 requirement is: "*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*." We note in our commentary against the two conditions (please see the relevant sections, above), that the available evidence shows that there is now at least a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding (with a range of measures that are ether Canada-wide or fishery-specific, noting that a full 'harvest strategy' is not required by the MSC for P2 species), and that 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. In essence, the modeling work undertaken indicated that porbeagle would recover back to 20% of spawning stock numbers (SSN20%) before 2014 if the human-induced mortality rate was kept at or below 4% of the vulnerable biomass, even under the most pessimistic productivity assumption tested in the model (Campana et al., 2013). The measures have, however, been effective in bringing annual mortality rates from all Canadian fisheries down to around 2% (DFO 2015), so around half the level that was estimated to lead to recovery to within biological limits. It is noted that, in the absence of a new stock assessment, it will not be possible to confirm that the porbeagle stock has recovered back to being within biological limits. However, the Year 4 audit team was informed that in the absence of fishery landings and associated sampling of porbeagle, or a dedicated porbeagle sampling study, a new stock assessment cannot be produced – DFO pers. comm., Canadian swordfish fishery site visit, October 2016. It is noted that the recently recertified Scotia-Fundy haddock fishery was scored 80 for porbeagle as a main discard species (i.e., scored

	under PI 2.2.1), on the basis of the existing management for shark species in Canadian waters (Mateo et al., 2016).
Audit team notes from Audit Year 2: The audit team concludes that the second year milestone has been met. Management measures have been adopted to address the conservation and recovery of porbeagle sharks and they have been implemented in the Canadian management framework. The most important management measures are 1) live release of sharks and 2) 50 mt cap for landings of porbeagle sharks for the swordfish and other tunas fishery	The EAC would like to point out that there is no 50 mt cap for porbeagles in the client fishery. We wonder where this information from? There is only an overall 185t TAC for porbeagle in all Atlantic Canada fisheries. ICCAT Recommendation 15-06 now requires live release of porbeagle and limiting porbeagle of landings to 2014 levels for all ICCAT fisheries, which was about 40t for all ICCAT fisheries combined.[3] Canada's current TAC would be well above this if caught. It is also unclear how the live release of porbeagle is enforced in the fishery. Live release of other sharks is voluntary in the client fishery.
Year 4 Audit Team response	The audit team notes that the 50t cap on porbeagle bycatch for the swordfish longline fishery is listed in the current IFMP (DFO 2013). We also note the longline swordfish fishery is now required to release all live porbeagle by licence condition (DFO 2016a). Although it is not possible to be absolutely certain that all live porbeagle are released from the fishery, it is highlighted that swordfish vessels are required to hail in in advance of coming in to port and that all landings are subject to dockside monitoring. Actual landings of porbeagle in 2013, 2014 and 2015 amounted to 3.2 t, 2.7 t and 0.5 t, respectively (DFO 2016b), indicating there is minimal incentive to kill live porbeagle.
Porbeagle and DFO 'Do Not List Default Policy'	
	In 2014, DFO adopted a new policy with guidelines for how to manage the recovery of marine animals that are assessed by COSEWIC as special concern, threatened, or endangered, but a decision is taken by Cabinet not to list them under the Species at Risk Act. Aquatic species that are 'at-risk' but not listed under SARA are instead managed through measures under the Fisheries Act with recovery planning and action. The Rationale for the 'do not list' decision must include: • results in the greatest overall benefit (called net benefits in Cabinet Directive on Regulatory Management); • meets the regulatory objectives for the issue (e.g. purpose of SARA); and • is proportionate to the degree and type of risk presented by the issue. The full details of the required recovery planning and alternative approach to be pursued under the Fisheries Act can be found here:

[3] http://iccat.int/Documents/Recs/compendiopdf-e/2015-06-e.pdf

	http://www.dfo-mpo.gc.ca/species-especes/policy-politique-eng.htm#AB and https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/policies/policy-politique-eng.pdf Porbeagle should fall under this directive as an official decision not to list the species was made by Cabinet in 2006. It has since been waiting for a comprehensive recovery action plan. The required workplan, recovery actions, and monitoring are much more extensive than the Shark Conservation Action Plan.
Year 4 Audit Team response	DFO Species at Risk Management Division provided the following information in the course of the audit: ○ The decision to not add porbeagle to Schedule 1 of SARA was made in 2006 and the "Do Not List Default Policy" was not adopted by DFO until 2014. The species was reassessed by COSEWIC in 2014 and the Department is currently undertaking a process to determine whether or not porbeagle should be listed under SARA, taking into account any new or existing scientific or socioeconomic information, and management measures. ○ Since the 2006 decision to not add porbeagle to Schedule 1 of SARA, DFO has implemented a number of new management measures to reduce mortality of porbeagle, including the closure of the directed porbeagle fishery and implementation of the Shark Conservation Action Plan.
Short Fin Mako Condition 4	
	Though, the conditions for Short Fin Mako were closed, we have a couple of comments for the team to consider in their work. In year 2 audit report, the client information notes: "Furthermore, a similar team from the same Certifier, concluded that the SSLLC US North Atlantic Swordfish Longline Fishery met these criteria based on the fact that there was a quota in place, which there is in Canada " There is no quota for short fin mako in Canada. The Shark Conservation Action Plan (SCAP) says there is a 'non-restrictive quota'. There is no further information about how this is enforced or who it applies to. The SCAP also notes discards are managed. How are they managed? Though the most recent ICCAT assessment has found short fin make to not be overfished, the SCRS noted that this finding is uncertain and recommended catch levels not exceed current levels. There is no domestic measure limiting catch in Canada to current levels. There are no defined rules in place for actions should any levels be exceeded. Nor is there certainty that the observer levels and data are sufficient yet to fully account for all hooking and mortality. Having no hard limits on catch and no harvest control rules would not happen for a commercially important species in fisheries management today and it is not a precautionary way to manage

	species, such as sharks that are inherently vulnerable. This should be noted in assessing the evidence that the precautionary principle is being applied in P3 scoring.
Year 4 Audit Team response	The Audit Team notes that the Shark Conservation Action Plan (SCAP) is in place, but that the quota for mako is a bycatch provision of 100 t for all Canadian fisheries. Similar to the bycatch provision for porbeagle, the Audit team understands that if the 100t bycatch limit was exceeded, this would be considered at the DFO Post-Season review, and additional measures or restrictions could be brought forward for consideration at the Atlantic Large Pelagic Advisory Council (ALPAC) in order to bring catches down. We also note that a full 'harvest strategy' is not required by the MSC for P2 species. The latest ICCAT advice (ICCAT 2012) stated: "*The 16 models gave very consistent results. All found that the median of the current stock abundance was above B_{MSY}. All found the median F was less than F_{MSY}, except for the run that used estimated catches from effort before 1997".* We agree that the recommendation was, "…*as a precautionary approach, that the fishing mortality of shortfin mako sharks should not be increased until more reliable stock assessment results are available for both the northern and southern stocks.*"
Blues Condition 5	
Audit team notes in Year 2: DFO verbally confirmed that management measures would be implemented to manage excessive discards of blue shark, should they occur. Further, the audit team notes that ICCAT has been more pro-active in recent years on shark conservation.	EAC has advocated for measures on blue sharks for many years. There are none in place. The DFO has no definition of 'excessive discards'. There are no limits or defined rules in place for the fishery at all for blue sharks aside from voluntary release of live sharks. How is DFO going to 'manage excessive discards of blue sharks, should they occur'? There is still no comprehensive reporting of the amount of shark discards in this fishery nor of the condition of sharks upon release. The measures described as in place for blue shark include hail in and out and dockside monitoring. This is especially concerning for our confidence in assessing the impact of this fishery on blue shark since they are rarely landed in this fishery though blue sharks are caught in much high numbers that the target species. The dockside monitoring is not an effective way to monitor and enforce blue shark catch and mortality. Only robust monitoring and reporting out on the water will fully capture the impact on blue sharks. Again, please refer to our comments below on the RPA for Incidental Catch. The fishery still has too much data uncertainty to properly manage bycatch and retained species. The Shark Conservation Action Plan lists a 'precautionary allocation of 250t' for blue sharks. This is not an enforced measure, it is just a number that has been chosen without a scientific basis. The tonnage of mortality is well above that at an estimated 495t[4] and it is not clear if this is an allocation that includes all mortality or only for landed blue sharks.

[4] Campana, S.E., Brading, J. and Joyce, W. (2011). Estimation of Pelagic Shark Bycatch and Associated Mortality in Canadian Atlantic Fisheries. DFO Can. Sci. Advis. Sec. Res. Doc. Available online at: http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2011/2011_067-eng.html.

	EAC notes these concerns have been in place since the original assessment and were part of our objection to the certification. They continue to be an issue and have not been adequately addressed after 4 years of certification. Though latest ICCAT SCRS blue shark assessments show that blue sharks are not overfished or experiencing overfishing[5], it also indicates that the assessment is uncertain. The SCRS has been under considerable pressure to produce data that can be used for clear management advice for blues and, though, they have produced reports, they stress it should be taken with caution. We must keep in mind that there is pressure from some nations with blue shark fisheries to increase catch. The 2015 SCRS assessment attempted to bring in some new data and work with sensitivity analysis and new modeling. However, ultimately feel that they results are still uncertain: Considerable progress was made on the integration of new data sources (in particular size data) and modeling approaches (in particular model structure). Uncertainty in data inputs and model configuration was explored through sensitivity analysis, which revealed that results were sensitive to structural assumptions of the models. The production models had difficulty fitting the flat or increasing trends in the CPUE series combined with increasing catches. Overall, assessment results are uncertain (e.g. level of absolute abundance varied by an order of magnitude between models with different structures) and should be interpreted with caution. P12 For the North Atlantic stock the assessment does state the blue shark is not experiencing overfishing, but again this is combined with heavy caveats about uncertainty and there was no management advice put forward: Based on the scenarios and models explored, the status of the North Atlantic stock is unlikely to be overfished nor subject to overfishing. However, due to the level of uncertainty, the Group could not reach a consensus on a specific management recommendation. Some participants expressed the opinion that fishing mortality should not be increased while others thought this was not necessary. P13[6] Having no hard limits on catch and no harvest control rules would not happen for a commercially important species in fisheries management today and it is not a precautionary way to manage species, such as sharks that are inherently vulnerable. This should be noted in assessing the evidence that the precautionary principle is being applied in P3 scoring.
Year 4 Audit Team response	The Audit team notes these comments, and considers that a response similar to the points on mako is pertinent. The latest ICCAT assessment of North Atlantic blue shark (ICCAT 2015) indicated that the stock was not overfished and that overfishing was not occurring (BSP: B_{2013}/B_{MSY} = 1.50 to 1.96 and F_{2013}/F_{MSY} = 0.04 to 0.50; SS3: SSF_{2013}/SSF_{MSY} = 1.35 to 3.45 and F_{2013}/F_{MSY} = 0.15 to 0.75). Comparison of results obtained in the assessment conducted in 2008 and the latest assessment also showed that, despite significant

[5] http://iccat.int/Documents/Meetings/Docs/2015_BSH%20ASSESS_REPORT_ENG.pdf

[6] ibid

	differences between inputs and models used, stock status results did not change drastically (B_{2007}/B_{MSY} = 1.87 to 2.74 and F_{2007}/F_{MSY} = 0.13 to 0.17 for the 2008 base runs using the BSP and a catch-free age-structured production model). The management recommendation for the North Atlantic stock was that "*the status of the North Atlantic stock is unlikely to be overfished nor subject to overfishing. However, due to the level of uncertainty, the Group could not reach a consensus on a specific management recommendation. Some participants expressed the opinion that fishing mortality should not be increased while others thought this was not necessary*" (ICCAT 2015). In essence, the most precautionary approach considered necessary was to maintain fishing mortality at current levels, but that increases in fishing mortality (F) may be justified (rather than that a reduction in F is required). Importantly, there is no reason to suspect that F of blue sharks in the swordfish fishery will increase, and fishermen of course do not intend to catch blue shark as this species has very little commercial value.
Loggerhead Turtle Conditions 6 & 8	**The final milestones for these conditions have not been met and the conditions should not be closed. The scores of 75 for 2.3.1 and 70 for 2.3.3 should remain unchanged.**
The audit team notes in Year 3: By the fourth surveillance audit the client must provide the results of the completed post-capture survival study and information on how the results of this study will be incorporated in an analysis to demonstrate that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtle.	This study has not been completed. The tagging was able to tag a sample of 9 loggerheads. The data is not yet enough to be able to incorporate it into an analysis. The tagging has been hampered by technical difficulties, however see comments below on proactive measures the fishery could have taken long ago to help research and assess their impact on loggerheads. The failure to meet the milestone and condition at this time is a reflection of an overly ambitious client action plan and years of delay on proactively implementing a research and data collection scheme.
Year 4 Audit Team response	As with the Conditions on porbeagle, in providing a commentary on Conditions 6 and 8 this year, the audit team has carefully reviewed the original requirements of the PIs, as well as the comments of the original assessment team and the audit team in the PCR and subsequent audits. The relevant SG80 requirement for Condition 6 is: • "*Direct effects are highly unlikely to create unacceptable impacts to ETP species.*" And for Condition 8 the relevant SG80 requirement is: • "*Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts*." In summary, the information available is that the fishery is responsible for an estimated 5-15 adult equivalent loggerhead sea turtle mortalities per year (or 0.04 – 0.12% of the total annual adult equivalent mortalities), and noting that Intertek Moody Marine (2012) stated in the original PCR that, "*It is highly unlikely that the assessed candidate fishery is the cause of the endangered status of the species*". Observer data are also available since at least 2002, and it was confirmed by DFO that the longline fishery has been subject to average annual observer coverage of 5.8% of the sea days for the period 2011-

	2015 (range 3.3% - 7.8%), exceeding the 5% target level (DFO 2016c). The Audit team notes that a workshop was held in February 2016 to review the approach to incidental catch monitoring in the longline fishery, and that the results were inconclusive (DFO 2016d). Nevertheless, DFO has commented that the observer coverage level is currently considered to be 'sufficient' (DFO 2016e). We appreciate that tagging work is ongoing, and this should yield valuable data in terms of better understanding the fate of loggerhead sea turtles captured in the swordfish fishery. However, the available evidence already supports a conclusion that the SG80 requirements for loggerhead sea turtle have been met. The new data being collected should tend towards supporting a score of 100 for this first SI of PI 2.3.3, where the SG100 requirement is "*Information is sufficient to quantitatively estimate outcome status with a high degree of certainty*".
The audit team notes in Year 3: The client will be required to provide an updated Loggerhead Turtle Recovery Potential Assessment (RPA) or other scientific assessment, as conducted by DFO or other scientific party, which will demonstrate the impacts to loggerhead turtles that result from interactions with the swordfish longline fishery. Within four years of certification, the client must provide evidence that demonstrates that direct effects of the fishery are highly unlikely to create unacceptable impacts to loggerhead turtles. Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would be rescored at 80 or higher. Presumably an assessment will provide the framework in the form of an acceptable number of loggerhead turtle interactions with the fishery and/or activities (e.g., research, monitoring, practices to minimize interactions) that are deemed sufficient to prevent an unacceptable impact. If the assessment does provide a framework for assessing the	Mike James, DFO Science, presented an update at the Incidental Catch RPA.[7] There is no assessment for loggerheads yet that can demonstrate impact, nor evaluate the effectiveness of the only measures that are currently in place – voluntary handling guidelines. This does nothing to reduce the number of turtles being hooked. The estimated interaction number is still at least 1200 loggerheads per season[8]. There has been no change in the amount of information available for characterizing the fisheries interaction - the hooking location, state of the animal, areas hooked, etc. This is data the fishery could have been providing for the last decade, however they chose not to cooperate fully with researchers or to proactively provide this information. The presentation by James at the observer RPA notes: There is a need for detailed coding of hooked turtles with fishery interactions (e.g. hook location, anatomy impacted, type of bait, etc.), as it is difficult to obtain biological samples and have confidence in observer scoring; particularly on larger pelagic longline vessels.[9] The fishery could have tracked this data with their own logbooks, standardized with the help of the loggerhead scientists; through electronic video monitoring; or increased observer coverage with time allowed for data collection on hooked turtles. There is no new information provided since the last audit to demonstrate the effect the impacts of the fishery on loggerhead turtles. There is no new assessment framework since the last audit that has provided guidance for acceptable numbers of loggerheads interacted with. Though, this is a complicated task, other jurisdictions and fisheries have managed to choose a precautionary level of turtle interactions that lead to the shut down of fisheries (US Hawaii longline for example) The fishery has not provided, as asked, evidence that demonstrates the direct effect of their fishery in unlikely to create unacceptable harm to loggerheads. There has been no change in the evidence provided since the last audit and the score should not be changed for Conditions 6 and 8.

[7] Proceedings of the regional peer review assessment of incidental catch in Atlantic Canadian swordfish/other tuna longline fishery, Feb 24-25, 2016; to be published on CSAS

[8] http://www.dfo-mpo.gc.ca/csas-sccs/publications/sar-as/2010/2010_042_e.pdf

[9] Proceedings of the regional peer review assessment of incidental catch in Atlantic Canadian swordfish/other tuna longline fishery, Feb 24-25, 2016; to be published on CSAS

acceptability of the impact of the fishery, it will also be necessary for the fishery to demonstrate that it is in compliance with the framework.	
Year 4 Audit Team response	The Audit team fully accepts that the data for loggerhead sea turtle interactions could be better. However, as specified, the data indicate that the number of adult equivalent mortalities in the swordfish fishery represent a small proportion of all harvesting-related mortalities (5-15 adult equivalent loggerhead sea turtle mortalities per year, or 0.04 – 0.12% of the total annual adult equivalent mortalities). Nevertheless, any mortalities are clearly undesirable, and the fishery has taken steps to introduce measures to reduce mortality, including through using circle hooks, shallow sets (that allow turtles to reach the surface) and, as licence conditions, to carry de-hooking/disentangling equipment and to be trained in its use. The tagging study and subsequent results should support higher scores for 2.3.1 and 2.3.3, and the Audit Team is very conscious that, having been started, the study should be completed. As such, a Recommendation has been set: "*It is recommended that the client provide DFO with clear and well-publicised support for the timely completion of the loggerhead sea turtle tagging study through advocating to the swordfish longline fishermen of the need to identify and fulfill suitable opportunities to take DFO tagging staff on swordfish and combined swordfish and tuna longline trips in 2017.*"
The audit team notes in Year 3: The audit team is also concerned that there isn't yet a basis for determining if monitoring of the fishery is statistically robust as called for in the current LCAP. Without a basis for concluding otherwise, the Audit Team considers the relatively low precision of current estimates insufficient. The audit team is concerned that loggerhead turtle by-catch are poorly estimated given the observer coverage (CVs for observer estimation are significantly higher than 30%) that DFO has not identified maximum harm nor the probability that harm could be caused. In addition, the audit team notes that several actions in the LCAP have not been completed or are behind schedule (e.g. maintain or increase observer coverage, item 2f on catch reduction proposals following the Kobe workshop, and 3d on time and	See EAC comments below on the Incidental Catch RPA. There is no basis yet for determining if the monitoring is statistically robust, maximum allowable removals, and reliability of observer data. The key point to take away here is that although DFO has had little resources to support this work and there have been technical issues with the loggerhead tagging research, the fishery client has known for at least a decade that they have data gaps and issues with turtle bycatch. They could have proactively sought to address this. For example, they could have done their own research through a consultant or with the conservation groups like the Sea Turtle Action Network. This is what the groundfish and shrimp trawl fishery clients have done in order to fulfill their MSC certification conditions for research and reduction of bottom impact – they have created research plans, hired expert consultants, and undertaken sophisticated research that has been open for peer review. They could have opted for video monitoring, a solution that has been brought to them for at least the last six years (EAC and DSF presented our observer data analysis and proposed research and mitigation options at ALPAC in 2009, this is just one example). Other longline fisheries around the world have voluntarily adopted this technology to work on their bycatch and to reduce their observer costs. There have been no catch reduction proposals pursued for this fishery – such as bait changes, hook size, gear set and soak changes, or encounter protocols. Instead, this fishery client actively obstructed researchers (even DFO scientists) from accompanying them on their fisheries trips for years.

area closures), these should be urgently pursued. Additional action by DFO is required to identify maximum allowable removals, including dead discards, by species, taking into account the reliability of removal estimates given an agreed observer coverage. This applies not only to loggerhead turtles but to other bycatch and ETP species. The audit team will review the outcome of this peer review at the next audit to determine if the findings elaborate on the requirements for statistically robust observer coverage for the swordfish pelagic longline fishery and if the coverage level is adequate or requires adjustment.	They have put paper measures in place hoping these would look like changes on the water. While the current handling and release guidelines for turtles may be acceptable under the current domestic fishery management requirements, it should not be acceptable for achieving or retaining MSC certification. The objective of the certification is to recognize and reward fisheries that are willing to improve identified shortcomings and bring it up to a sustainable level. The US Atlantic swordfish longline fleet now has 100% electronic video monitoring primarily due to uncertainty around their blue fin tuna bycatch. It was made mandatory in 2015 and is now being implemented across the fleets. [10] The Day Boat swordfish fleet had this technology in place at the time of their MSC certification. This leaves the Canadian fleet as the only MSC certified swordfish fleet without video monitoring in place to monitor and manage their interaction with highly migratory species such as blue fin tuna and ETP species such as loggerhead sea turtles.
Year 4 Audit Team response	The Audit team is not in a position to comment on practices in place on other fisheries, including some (e.g., the Hawaiian longline fishery) that are not MSC certified. However, the evidence for the Atlantic Canada longline fishery, as discussed above and in the main body of this report is that it meets the requirements at SG80.
	EAC notes that the same concerns about loggerhead impact remain for this fleet that were identified in our objection to the fishery certification in 2011. The items listed as completed in the LCAP excerpt found in the audit reports, do not 'minimize mortality' of loggerheads. The fishery has not implemented any of the best practices found in longline fisheries around the world and continues to argue that it does not need to, despite having higher levels of interaction than other fleets due to the environmental condition where it sets its gear and the overlap with preferred loggerhead feeding grounds. Below is an excerpt from the EAC objection in 2011: Measures currently in place in other countries (including the U.S. Northeast Distant management area immediately adjacent to Canadian waters) that would meet the SG 60 and actually aim to minimize mortality include: • strict bycatch/interaction limits that shut down the fishery • bait restrictions • depth restrictions • spatial closures geared towards reduction of bycatch • temporal closures geared towards reduction of bycatch • temperature based regulations

[10] http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am7/

	• meaningful hook restrictions • soak time restrictions • incentives for changing fishing gears There is no evidence that these practices have been considered, and no justification for reasons they have not been considered. Furthermore, without meaningful catch data from the fishery (provided by comprehensive observer coverage) it is not possible to determine what measures would be necessary to minimize mortality. Strategy 3.5 of the LCAP involves 3.5. Possible changes to gear configuration and fishing practices based on results of research. No timeline is given for introduction of these 'possible changes', and yet it is the most meaningful change that the LCAP suggests. If changes to gear configuration and/or fishing practices are not introduced, we question the conclusion that measures are "in place" to "minimize mortality". We also note with regard to changing the hook size to 16/0 circle for minimizing hooking of turtles – Strategy 3.2 in the LCAP is not the best practice. Harris et al (2010) summarizes available studies on circle hook size. Overall larger circle hook sizes (i.e., 18/0) appear to have an effect in reducing catch rates, and therefore working toward minimizing mortality, while 16/0 does not reduce hooking incidents. 16/0 circle hooks also do not reduce severity of injury (Carruthers et al 2009). It is unclear whether this practice was introduced for turtle mitigation specifically. [11] The EAC notes that we can states the same concerns as above for this audit – now 2016, as nothing has changed in terms of fishing practices that reduce the number of loggerheads encountered to minimize mortality. The Conditions in place to achieve 2.3.1 and 2.3.3 have not been met. The score of 75 and 70, respectively should remain unchanged. For the credibility of the MSC process, the fishery cannot not be rescored when it has clearly failed to meet the milestones and conditions put in place precisely to help it achieve a score of 80.
Year 4 Audit Team response	The audit team notes that under the MSC CR v.2.0, there is a requirement in Principle 2 for continuous improvement and the reduction of bycatch where feasible (e.g., PI 2.3.2, SIe, SG80: "*There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate*." However, there is no similar requirement in earlier versions of the assessment tree, including the version that the fishery was certified against in 2012. As such, if the fishery is deemed to meet the requirements as specified in the Standard at the time (and the Audit Team consider that it does) then that is sufficient for the period of the certification. It is noted that the fishery is being reassessed against CR v1.3, as is permitted under the MSC requirements.

[11] http://www.dfo-mpo.gc.ca/csas-sccs/publications/sar-as/2010/2010_042_e.pdf

The audit team notes in observations under condition 11 for Year 3: However, the Audit Team is concerned about follow-up on research conducted under the plan, such as implementation of statistically reliable observer coverage and additional studies on potential ETP bycatch mitigation methods. The Audit Team expects these concerns to be addressed under Conditions 6-8.	EAC notes that a key point under the client research plan that could go towards addressing the audit team's concern has been outstanding since 2010 when the Loggerhead Conservation Action Plan was adopted: Best practices for by-catch estimation: a. Work with U.S. counterparts on a consistent approach to by-catch estimation (this is on-going work using existing data) The EAC is familiar with the US counterpart fisheries and NGOs that work with them. We are not aware of any fleet to fleet work to share approaches for bycatch estimation or mitigation. The US Atlantic swordfish longline fleet now has 100% electronic video monitoring. It was made mandatory in 2015 and is now being implemented across the fleets. The Day Boat handline swordfish fleet had this technology in place at the time of their MSC certification. This leaves the Canadian fleet as the only MSC fleet without video monitoring in place to monitor and manage their interaction with highly migratory species such as blue fin tuna and ETP species such as loggerhead sea turtles.
Year 4 Audit Team response	As noted earlier, the Audit team is not in a position to comment on practices in place on other fisheries. However, the evidence for the Atlantic Canada longline fishery, as discussed above and in the main body of this report is that it meets the requirements at SG80.
Loggerhead sea turtles to be listed under SARA	
	The DFO official advice to list loggerhead sea turtles under the Species as Risk Act was published in Canada Gazette on August 27th, 2016.[12] This means loggerheads officially listed as endangered under Canada's Species at Risk Act by April 2017 at the latest and there will be extra requirements under this law the fishery will need to comply with.
Year 4 Audit Team response	We note this information. Any changes to loggerhead status or management resulting from its SARA listing will be addressed within the MSC process, as and when that decision is taken.
Incidental Catch RPA (Feb 2016)	
Many of the condition milestones for bycatch species rely heavily on the outcome of the Incidental Catch RPA that was held in February 2016. The audit team of Year 3 anticipated possible scoring changes based on the outcome of the RPA that would show improved confidence in the current observer coverage scheme in place for the fishery.	EAC participated in this RPA. It is important to note that this was not successful process. In fact, the reviewers felt the problems with the meeting were significant enough that no Regional Advisory Report or Research Document could be completed. The working papers that were reviewed at the meeting were not accepted and the proceedings clearly note that they should not be used for reference outside of the meeting. [13] This means that the 2011 incidental catch meeting report and observer coverage analysis is still the best analysis available to answer assessment concerns about data collection, monitoring, and coverage. There are no further definitive outcomes or advice of observer coverage requirements.

[12] http://www.gazette.gc.ca/rp-pr/p1/2016/2016-08-27/pdf/g1-15035.pdf

[13] Proceedings of the regional peer review assessment of incidental catch in Atlantic Canadian swordfish/other tuna longline fishery, Feb 24-25, 2016; to be published on CSAS

	The original assessment and audit both say that this is insufficient for meeting the requirements of the scoring. Therefore, conditions that were relying on improved outcomes from this process cannot be rescored based on this latest attempt. Key issues with the RPA meeting that are detailed in the proceedings[14]: • the reviewers did not think the models and analysis used were the most appropriate • the working paper circulated before the meeting was not what was presented at the meeting • the TOR was not properly thought out and were not addressed anyway by the content • the science lead had little time and limited data • for the loggerheads the science lead did not know how to access SARA logbooks for inclusion • the full-time series of data for the fishery was not included, though one peer reviewer points out how that could have been done fairly easily • tuna discards were not addressed • juvenile swordfish post release mortality was not included and a peer reviewer noted this is a known significant issue The science lead agreed with reviewers that other methods could be used but stresses that the result will only be as good as the input. This point is the crux of the issue. The fishery client has known that the data is not sufficient for years and has not been proactive to address this research and data gap. The fishery client insists that their impact is acceptable, however has not helped answer this question, instead they have obstructed movement forward on this for many years. This is not only true for sea turtle bycatch, but also for other animals. ICCAT shark assessments continue to note that the data is still lacking and that is does not provide a consistent signal to inform the stock assessments. It is clear there is still uncertainty about data being collected in the client fishery and if there are significant enough levels of observer coverage to detect changes in the species status. This is a concern for all bycatch species. Allowing this fishery to be rescored and close the related conditions means rewarding a lack of action and stalling tactics. Now a further 6 years has passed with no change in fishing practice to mitigate impact on vulnerable and depleted species – they have simply moved the goalposts further down the road and there is still a data deficit. This is the exact opposite of the precautionary approach, which is in place to ensure that a lack of data is not an excuse for inaction. No condition rely on outcomes from the Incidental Catch RPA should be rescored to a high number.
Year 4 Audit Team response	As noted elsewhere, the Year 4 Audit Team rescored Condition 8 at 80, on the basis that the SG80 requirement is:

[14] ibid

	• "*Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts*." We note that the results of the review of incidental catch monitoring in the longline fishery were inconclusive (DFO 2016d). All stakeholders were asked by the Audit Team during the site visit if this was considered to be a bad result (i.e., that it showed observer coverage was insufficient) or whether there was simply no result (i.e., the analysis was not able to indicate a result one way or the other). In all cases, stakeholders responded that it was simply no result. It is noted, though, that the fishery has been subject to observer coverage since at least 2002 and is meeting its observer coverage requirements, and that DFO considers the observer coverage level to be sufficient (DFO 2016e). On that basis, whilst there continues to be a question over the true representativeness of the observer coverage, the information is considered to be adequate to meet the SG80 requirement. Improvements in the observer regime in 2013, including through randomising the allocation of observers to vessels, and only allocating observers only after captains have indicated where they are fishing, provide some assurance that potential issues of not covering some of the fleet or some areas fished are being addressed.
The Shark Conservation Action Plan (SCAP)	
Some milestones and scoring justification also rely on the completion and release of the SCAP and the actions to be taken therein.	EAC has reviewed the latest draft and passed our comments to DFO. The SCAP should not be considered an action plan. It is without timelines, measurable outcomes, actions or activities to be implemented, plans or budgets. It is mainly a descriptive document on what is being done for 5 shark species. It does not address all elasmobranch species in a comprehensive document that put into action both precautionary and ecosystem based approaches to conserving and recovering elasmobranch populations. The SCAP also lists generic fishery management measures that are not specific or applicable to sharks and is misleading. The SCAP should not be considered sufficient in terms of enforceable measures and harvest control rules for sharks caught in the client fishery to change the related scoring on conditions 3 and 4.
Year 4 Audit Team response	The audit team has noted the existence of the SCAP, but there are other measures in place which enable the fishery to meet the SG80 level requirement of, "*Main retained species are highly likely to be within biologically based limits, or if outside the limits, there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding*"; these are listed in several places in this report. It is noted that there is no MSC requirement for a harvest strategy for P2 species.
Fins Attached Policy	
	At the recently concluded NAFO meeting, Canada announced it would be implementing a fins attached policy (sharks must be landed with their fins naturally attached to their body) for all domestic fisheries. It is effective already. [15]

[15] See Letter to EAC dated September 26th, 2016 from Minister of Fisheries and Oceans Canada given to the Assessment team.

	The longline swordfish fleet will need to have this new policy in their license conditions and will need to show compliance. The groundfish fleets, who also catch a significant amount of sharks, have had a fins attached policy in their license conditions since the 1990s.
Year 4 Audit Team response	Thank you for this update.

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September 30th, 2016

EAC Submission on Draft Outcomes of MSC Harmonization Meeting for NA Swordfish Fisheries under ICCAT

We are pleased to have the opportunity to comment on the Harmonization Report of NA Swordfish fisheries certifications and scoring tables therein.

It is important to recognize this harmonization pilot is precedent setting in terms of how MSC's standard will be applied to RFMO managed fisheries around the world. The rationale given for scoring must be thorough and clear, since CBs from around the world will look to this pilot to guide their scoring of RFMO management and performance in the future. It is with this in mind that we have scrutinized the scoring rationale and justifications used.

We engage as a stakeholder in MSC policy improvements and certification assessments in order to help ensure the MSC objective of improving fisheries sustainability is realized. Rather than simply rewarding fisheries for achieving status quo, MSC can be a lever to effectively raise the bar.

We recognize that it is a difficult process to balance scoring for fisheries that are ultimately managed at the RFMO level. We also recognize that fisheries clients do not have full control over decision making at RFMOs and can therefore face challenges meeting conditions. However, since MSC has set its standard to include the RFMO level in its scoring of management, it is important that even ICCAT decisions are held to the MSC standard for certification purposes. Thus, we urge MSC and the CBs involved to be thoughtful about decisions made during harmonization process as there are implications for the application of the standard and for the future of MSC's relationship to RFMO managed fisheries.

We have attended ICCAT for the past seven years as the only Canadian civil society observer and we are very familiar with the body and its procedures. It is ultimately a political body and the decision making is fraught with the uncertainty that comes with international negotiations. Until a recommendations passed it is not a binding decision and there have been many instances where the plenary has not found consensus, has acted against science advice, and has delayed progress on management.

While RFMOs can be slow to adopt and implement measures creating situations where the timelines of RFMO decision making does not meet certification timelines, we must be careful to ensure the MSC certification standard remains an incentive for action rather than the standard allowing for exceptions when things move too slowly.

Response from CABs represented at the harmonization meeting

The CABs note the concerns expressed by the EAC re MSC certification of fisheries managed by RFMOs and recognize difficulties being faced in multiple regions. We are sensitive to the issues and are aware that they are under constant consideration by the MSC, stakeholders, CABs. For this harmonization, we have attempted to apply best practice, cognizant of assessments on other RFMO-managed fisheries, but in line with the MSC CR, interpretations and guidance.

Performance Indicator 1.1.2

The rescoring of the Scoring Issue B resulted in the overall PI rescoring at 80 and the closure of Condition 1 for all fisheries. As this harmonization pilot is precedent setting, we feel that it is very important for MSC to ensure that their established procedures for closing conditions is followed and the rationale used is clear and robust. We have two areas of concern about scoring not adequately justified in the report write up: the rescoring of 1.1.2b leading to the closure of the condition and the closure of this condition without the achievement of the final milestone by the clients.

Sib revised scoring rationale

We do not think that the revised rationale supports the change in scoring of this indicator. The rationale acceptably justifies the recognition of 65 percent of Bmsy or about 33% of virgin biomass as an implicit LRP used to trigger the rebuilding plan put in place in 1999. The original rationale in each fishery assessment also found there to be acceptable implicit LRP in place.

However, this was not the reason given for not meeting 80 in Sib. in the original scoring of the fisheries All of the assessments noted that while it is likely the implicit LRP it is was "uncertain" (Canadian SWO, LLC SWO) or "very uncertain" (Dayboat). The MRAG 2013 assessment of Day Boat Seafood goes on to say, "additionally, these reference points have not been formally adopted so it is unclear whether they would be used in management." It is for this uncertainty that the score of 80 was not met.

These parts of the original scoring rationales have been omitted from the report's revised rationale without explanation.

Part of the uncertainty and concern remains since ICCAT has yet to adopt explicit LRP. The commission has pushed the goal posts on this work a number of times. There is no evidence that they will not continue to push the decision making back. It is important to hold ICCAT accountable when it does not achieve its timelines. Recommendation 2010-02 was used in the original assessment of Canadian NW Atl. Swordfish to justify the CBs confidence that Condition 1 would be fulfilled during the certification period. The recommendation states:

6. In advance of the next assessment of North Atlantic swordfish, the SCRS shall develop a Limit Reference Point (LRP) for this stock. Future decisions on the management of this stock shall include a measure that would trigger a rebuilding plan, should the biomass decrease to a level approaching the defined LRP as established by the SCRS.

The latest stock assessment was completed in 2013, however no LRP was adopted by the commission, instead an interim LRP was adopted. In 2015, recommendation 15-07 started a new process for setting reference points and harvest control rules that will take another number of years. We recognize the difficulties fishery clients face trying to influence the ICCAT process or move it forward in order to meet conditions of MSC certification. However, It is clear that MSC certification has acted a one, amongst other, levers of pressure to improve ICCAT. We see evidence of this, as noted in the scoring rationale of PI 3.1.3, in the explicit resolutions to apply the precautionary and ecosystem approaches.

Response from CABs represented at the harmonization meeting

The CABs have taken the approach of rationalizing and scoring using CR v1.3. The scoring is not an update or an audit of previous scoring. The SG language is clear that the requirement is for the existence of an LRP, and CR v1.3 CB2.3.2.1 makes clear that any LRP (or TRP) may be implicit or explicit. Issues of uncertainty of status with respect to RPs are covered at PI 1.1.1. Issues of uncertainty as to whether or how management will respond are not covered in the SG at PI 1.1.2. Implementation issues and effectiveness, including dealing with uncertainty, are covered at PI 1.2 and in P3. Because management actions since adoption of the implicit LRP have all resulted in the fishing mortality remaining below Fmsy and biomass rebuilding and stabilizing above Bmsy, there has been no test of whether or not the implicit LRP would in practice trigger management action. The implied LRP has, however, been reaffirmed in Recommendation 2013-02, paragraph 5.

It is therefore, important at this stage of rolling out harmonization processes for MSC to consider how the CBs rationale and scoring justification is made, especially when closing a condition whose milestones were not achieved due to ICCAT failing to fulfill its own recommendations. The precedents set in this pilot may influence and guide similar processes with certification harmonization of RFMO fisheries.

We would ask for a fuller justification in the scoring rationale that addresses how the uncertainty or concerns with ICCAT not using the reference points (even interim or implicit ones) in management

practice has changed since the original assessments of these fisheries. This is especially important, as ICCAT does not have the best track record when it comes to following scientific advice consistently across species. The scoring rationale rests largely on assuming that the past actions taken by ICCAT during the rebuilding plan will be continued into the future.

Response from CABs represented at the harmonization meeting

Please see above. The scoring rationale at PI 1.1.2 (b) has been expanded to explain better the recognition of an implicit LRP consistent with MSC CR v1.3 SG80. The issue of uncertainty as raised by EAC is not included in the SG or in CR v1.3 text and Guidance.

Closure of Condition 1

The scoring change of 1.1.2 Sib to 80 closes Condition 1 for all the fisheries despite the fact that the fisheries have not achieved the final milestone of this condition. The condition was:

> By the 4th surveillance audit, evidence must be provided to show that the Limit Reference Point (LRP) is set above the level at which there is an appreciable risk of impairing reproductive capacity for the North Atlantic Swordfish stock.

The final milestone (year 3 for some clients, year 4 for others):

NW Atlantic Canadian:

> By the fourth surveillance audit the client must provide evidence to indicate that that the SCRS has developed an appropriate LRP for North Atlantic swordfish, as requested by ICCAT and that the LRP has been implemented and is set above the level at which there is an appreciable risk of impairing reproductive capacity for the North Atlantic Swordfish stock.
>
> Provided the actions defined in the milestones and the deliverables in the client action plan are met, the PI would likely be re-scored at 80 or higher.

North Atlantic U.S. Swordfish Pelagic Longline and Headgear Buoy Line Fishery:

> Prior to recertification, the SG80 scoring requirements must be met in full. ICCAT must adopt an explicit LRP for the North Atlantic swordfish stock. This LRP must be set above a stock biomass (t) at which there is an appreciable risk of recruitment being impaired. The client will submit evidence that this is the case. At this point, the fishery will score at least 80 for PI 1.1.2.

US North Atlantic LLC:

> By third annual audit, the client must provide evidence that the LRP has been implemented and is set above the level at which there is an appreciable risk of impairing reproductive capacity for the North Atlantic Swordfish stock. If this milestone is met, the fishery will be rescored at ≥ 80.
>
> Each milestone explicitly states that the LRP must have been implemented and it is only once this milestone is met that the fishery will be rescored. It is clear that despite the proposed decision to change the scoring of this SG, the requirement of the milestone has not been met.

It is an important for maintaining consistency in the MSC standard that there is clear and explicit rationale to justify closing a condition when the milestone has not been met. What are the implications for the standard when milestones are not met?

This is a procedural issue also since the specific wording of the condition was put in place as an outcome of the Ecology Action Centre's objection to this fishery certification. The CB had to create clear conditions and milestones that met the Methodology guidance of the time. Part of our concerns raised in the objection was the likelihood that the condition was not something that could be met in the certification timeline due to inaction at ICCAT. The accepted response by the CB was that 'we cannot prejudge the outcomes' progress and full completion would be assessed during audits and if the fishery was unable to meet the condition, the MSC process would be followed. However, we now see a closure of a condition that was not fully met without proper justification.

This rationale, not just the rescoring rationale, needs to be included in this harmonization report since it is at this meeting that the decision to close the condition was taken. While the milestones progress and decisions to closed conditions are usually addressed in the individual fishery audits, it does not make sense to wait until the audits to address this serious process point. As stated in our comment above, our concern is about ensuring

MSC has considered the future implication of decisions taken in this pilot harmonization project that will impact certification of RFMO fisheries around the world.

Response from CABs represented at the harmonization meeting

The harmonization is for P1 scoring and, where an SG is less than 80, setting harmonized conditions and milestones. The harmonization process and resulting justifications and scoring may have implications for closing conditions (as at PI 1.1.2 (b)) but it is the audit process for each certification that needs to deal with the matter appropriately. This harmonization report does not address the issue as raised by EAC.

Response from Acoura Year 4 Audit team.

Taking into account the CABs response above, the audit team notes the generic condition applied across all the certified swordfish fisheries, which adopts the SG 80 text for PI 1.1.2 (b) and the slightly different milestones that were set for each of the fisheries.

In order to meet a condition, the client fishery must present evidence that the desired outcome has been achieved. The harmonization process has determined that there is evidence that PI 1.1.2 (b) has been met. While the 4th milestone for the Canadian longline fishery is more explicit in how the original assessment team expected the condition to be met, the key point is the desired outcome has been achieved.

Since the original assessment of the fishery, the MSC certification requirements and guidance have evolved with a number of iterations. This has resulted in greater clarity in the way that CABs set conditions and milestones. The audit team notes that, in most instances, the text for a 4th milestone now mirrors the condition text, thereby clearly re-iterating the required outcome.

Performance Indicator 3.1.3

Our concern lies in this case with the scoring rationale used to justify a score of 100 for this guidepost. Again, as noted above, we would like to ensure that MSC and the CBs are very cautious with wording and scoring justifications in this pilot harmonization in light of the future guidance it may lead to.

Given ICCAT Resolutions 2015-11 and 2015-12 a score of 80 is now justified as stated in the scoring rationale. However, concerns noted by the CBs in the original assessment of the fisheries related to the evidence of application of the precautionary and ecosystem approaches are not addressed in the revised rationale. We argue that without this evidence of application a score of 100 cannot be achieved.

Each original assessment of 3.1.3 of these fishery clients' states:

> The explicit application of the precautionary approach as a matter of high level policies required for a score of 80 or more is lacking for ICCAT. **Furthermore, the precautionary approach should be applied to decisions associated with both principles 1 and 2**. ICCAT has been slow to respond to uncertainty information on the status of some stocks under its jurisdiction. In the candidate fishery, there is **little evidence of the application of the precautionary approach in the face of uncertain scientific information on the potential threat to vulnerable species (e.g., sea turtles, sharks) posed by longline bycatch**. (emphasis added)

It is important to ensure that improvements are not merely paper improvements, but that policies actually translate into management actions. It should be noted that these were ICCAT Resolutions and are, therefore, not binding as a Recommendation would be. They were passed only as resolutions due to the opposition, on the record, of some countries at ICCAT to enshrine these approaches. This is concerning and creates further uncertainty that the precautionary and ecosystems approach will be operationalized in management decisions.

To date, ICCAT still does not have a strong record of applying the precautionary or ecosystem approaches in their management decisions or recommendations. This has been the case for tuna species, bill fish, and especially in the case of shark catch and turtle bycatch. We would like to see at most partial scoring to 90 for this SG with a rationale that discusses evidence of application of the approaches.

Having clear scoring rationale is especially important in this case as it closes a condition.

As MSC continues to certify ICCAT managed fisheries, the credibility of the standard will be tested. The objectives of MSC will only be met if we can ensure fisheries actually apply best practices for sustainability on the water and in management decisions and do not get away with paper changes only.

Response from CABs represented at the harmonization meeting

Following the circulation of the draft scoring and rationale for PI 3.1.3, the CABs undertaking harmonization reconsidered this PI and amended the score to SG80, using an updated rationale. The updated rationale makes the clear distinction of force between ICCAT recommendations and resolutions, as does the EAC submission. We note, however, that the CAB justification for not scoring SG100, consistent with the SG text, relates to the distinction between ICCAT Recommendations and Resolutions rather than to the lack of evidence of application which the submitter regards as a requirement to achieve the SG100.

We look forward to a reply on the above concerns from the harmonization working group. Since many of our points speak more broadly to the future of the standard and broader impact of this pilot, it would also be good to hear how MSC is approaching these challenges as they continue to refine their theory of change.

Sincerely,

Shannon Arnold

Marine Policy Coordinator
Ecology Action Centre

Appendix 3 – Stakeholder letters of complaint to Acoura Marine and Acoura Marine Response

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Billy Hynes
MSC Fisheries Manager
Acoura
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May 4th, 2016

Dear Mr Hynes,

We are writing to register a complaint with respect to the recent final Surveillance Audit on the NW Atlantic Canada Longline Swordfish fishery for their first MSC certification period. The final revised version of the Audit Report was published on April 18th, 2017. We have a number of procedural concerns about this audit that we have brought to the attention of MSC technical oversight and we would like to discuss with Acoura through your official complaint process.

In the light of the extensive and unanticipated scoring changes and new rationale presented by Acoura in the Final Surveillance Audit, the timeline for re-assessment should be re-examined. Stakeholder comments submitted in October 2016 would no longer be relevant for the re-assessment. Numerous procedure concerns need to be addressed, information released, and time should be given for stakeholders to review and submit input based on this new scoring and information before the re-assessment PCDR is released.

This complaint is about procedural concerns and does not include details as to the material findings and scoring rational of the Acoura team.

While the below is not exhaustive in terms of details, our main concerns are as follows:

1) **Use of Old Information and Rescoring of Original Assessment Findings**

   The rationale used for closing Conditions 6 related to loggerhead sea turtle impact. The audit team reviewed research information that is now more than 10 years old and was part of the original information presented in the 2011-2012 assessment process. Acoura came to the conclusion that the original assessment CAB, Intertek Moody Marine, had made errors in their original analysis and scoring. Therefore, the Acoura team seems to argue the fishery never needed conditions to show they were 'highly unlikely' to have an impact on loggerhead recovery. Therefore, the remaining condition milestones that are incomplete and noted in Year 3 are moot.

   The information and research reviewed by the Acoura team was taken into account during the initial assessment and discussed in depth between the CAB, stakeholders, the client, and DFO. Key points including the proportional impact of the fishery on the sea turtle population, the number of turtles being hooked, the adult equivalency 'ideal put forward in the NMFS 2009 paper, definition of 'unlikely' and 'highly unlikely' according to MSC and the CAB, and the uncertainty around the statistical significance of the observer coverage (not the percentage of cover) – these points and many more details were discussed in detail during the two years of assessment and, subsequent objection process.

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The objection process resulted in negotiation on the specific language of the conditions and new, clear milestones for this fishery. This result was presided over by an independent adjudicator. The CAB, the client and, ourselves all responded with new wording and milestones that resulted in the final report and commitments to those planned actions.

The process Acoura took in rescoring this condition ignores the original discussions, the IA decisions, the objection, and the years of work since then devoted to ensuring progress was made against the conditions and client action plan.

It is unprecedented in our experience for a full reversal using old information by a CAB in an audit or assessment. It seems to undermine both the standard audit process and the objection procedures.

2) **Rationale for Condition 8**

Rationale used for closing Condition 8 is also a concern for both the above procedure reasons we outline in relation to Condition 6 and due to the use of a specific statement by a DFO manager that was taken out of context. The condition is related to loggerhead turtle impact and the ability to assess that impact through available information from observer data. The original assessment scoring and ongoing audits were not satisfied that the information collected through the observer program, the LCAP, and other research is statistically robust enough to answer outstanding questions about the fisheries impact on recovery.

The Acoura team has relied heavily on a statement made verbally by a DFO manager at a fishery advisory committee meeting. This statement was in the context of a discussion about porbeagle shark measures after the completion of porbeagle RPA and whether the fishery was meeting its 5% by sea days observer coverage targets. The statement is not in reference to loggerhead turtles nor was the word 'sufficient' in reference to the ongoing questions about the representative nature of the observer coverage – spatially and temporally. This statistical significance analysis continues and has not been answered – it is not a matter of ensuring 5% coverage is met (indeed that was never the main point of contention in the assessment). The analysis has been funded by DFO and is a priority for the department – they have undertaken two incidental catch RPA workshops (2011, 2016) and since those have been inconclusive they have included this fishery in a current review of fishery observer coverage statistical robustness under their DFO Catch Monitoring Policy analysis and have identified concerns that will lead to next steps.

3) **Incomplete milestones and conditions**

The process followed by Acoura in this rescoring and closing of conditions undermines the objection process, the role of client action plan commitments, and audits. Aside from the above concerns with the rationale used, this process has the effect of changing the rules of the game at the last whistle. In this particular assessment, a main concern brought up by stakeholders and in our objection was that the conditions and milestones did not meet MSC guidance set out to ensure conditions were realistically able to bring fisheries up to the 80 score within five years. The EAC consistently argued that the fishery client and the DFO management did not have the capacity or planned funding and timeline to pursue the client actions and condition milestones needed.

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This concern was reviewed in the objection with the following response:

> "it is not appropriate to make such a judgment *a priori*. Progress in addressing the Condition will be evaluated through annual surveillance audits."

As stakeholders, we have thus engaged at each audit and followed the progress closely. The MSC audit team also reviewed progress each year and concluded at the end of 3rd year that there were still many outstanding actions not completed by the client and they had concerns these would not be met.

The Acoura team has not justified why many of these actions have not been completed or used 'exceptional circumstances' to leave conditions open – instead they have shifted the goal posts entirely to dismiss the planned actions and milestones as unnecessary. How can stakeholders engage meaningfully in a process such as this? What is the point of review, client action plans, stakeholder input, or objection procedures if these can be wiped away at will?

4) **Availability of significant information for stakeholders**

The minutes of the 2016 meeting were circulated to the Advisory Committee meeting, including the EAC, only on March 14th, 2017 – one day before the ALPAC 2017 meeting. It seems from the audit report the Acoura team were given the ALPAC minutes sometime in the fall of 2016.

Due to the delay of the Audit report release, we were not able to review how the 2016 minutes were used to lead to significant scoring changes and closing of conditions in the Audit. Had we already seen the audit report, we would not have accepted the 2016 minutes at the 2017 Committee meeting. In light of the audit, we would have asked for clarification on the record of that particular statement.

5) **Availability of significant information for stakeholders**

These minutes and other DFO documents referenced in the Audit were not available to us as stakeholders to inform our input. Since these have not been made available going into the re-assessment process, this is also cause for concern since the CAB has relied on them heavily for closed at least two conditions.

6) **The timing and delay of Audit and Re-Assessment process**

The timing of the audit and re-assessment has not been appropriate to ensure full stakeholder participation. Not having the results of the final audit public before closing input on a fishery re-assessment is undermining the process of stakeholder participation. The long delay on the Audit report publishing further exacerbated that.

The final surveillance audit was announced on Spetember 1st 2016 at the same time as the re-assessment process on with a deadline of December 8th, 2016 for the publication of the report. On December 5th, 2016 Acoura requested the first of four variation requests to extend the Audit Report deadline. The final report was published eventually on April 18th, 2017.

The EAC met with the Acoura audit team on October 4th to discuss the fishery. At that meeting, we were told that we must submit our comments for both the audit and re-assessment as soon as possible as the team planned to do the bulk of the work on the reports by the end of the month to accommodate their other workplans. As we had not expected submitted our reassessment comments so soon, we

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negotiated to submit our audit comments that week (submitted on Oct 26) and our reassessment comments at the end of the month (submitted Nov 2).

This meant that we submitted our input for the re-assessment of the fishery before seeing the result of the Final Surveillance Audit. The fishery entered the final surveillance audit with 6 open conditions the EAC had significant concerns about 4 of them not meeting the required milestones and submitted substantial comments addressing this and other issues for both the audit and re-assessment.

The Final Surveillance Audit resulted in all remaining conditions being closed with some surprising rationale that could not have been anticipated from reviewing the 3rd Audit Surveillance comments nor from the October 4th meeting with the Acoura team or from our extensive work on regulatory policies with this fishery.

This makes our comments for the reassessment, which took a considerable amount of time, quite irrelevant. These comments, which will be published in the PCDR, will appear unrelated to the scoring rationale and off point, making the EAC appear uninformed when, in fact, we are part of the Advisory Committee for this fishery and have worked on large pelagic fishery issues for more than 10 years. Indeed, we have been the only stakeholder to consistently engage in the MSC Certification processes for this fishery over the last 8 years.

We look forward to your reply and actions on this,

Shannon Arnold
Marine Policy Coordinator
Ecology Action Centre

22nd June 2017

North West Atlantic Canada Longline Swordfish

Acoura response to the Ecology Action Centre (EAC) Letter of Complaint

Dear Ms Arnold,

Further to your letter dated 4th May 2017, registering a complaint with respect to "procedural concerns", regarding the 4th surveillance audit for the above fishery.

We apologise for the delay in responding, this was caused by limited availability of our audit/re-assessment team members and on-going harmonisation discussions with the overlapping US swordfish audit/assessment team and MSC Science and Standard team that has direct relevance to the outcome of the 4th audit. An update on this is provided at the end of this response.

With respect to the procedural concerns you raise in your letter, we followed up with the audit team and have tried to extract, summarise and address each of them below in relation to your points:

1. Use of old information and Rescoring of Original Assessment Findings

It is contended that in closing Condition 6 (and 8), the audit team used old information that was considered in the initial assessment and has ignored the original discussions, the objection, the IAs decision, and the work that has been undertaken since. In so doing, the objection process, the role of the client action plan and subsequent audits have been undermined.

As you are aware, the recent audit of the Canadian longline swordfish fishery was undertaken by a new audit team. This new team referred to the original rationale to understand why the original team felt the SG80 for PIs 2.3.1 (Condition 6) and 2.3.3 (Condition 8) had not been achieved, and also reviewed the subsequent annual audit reports. Having completed that review process, the new audit team was satisfied that the information available demonstrated that the fishery met the SG80 requirements; their approach and justification for closing the conditions are clearly laid out within the 4th annual surveillance audit report (in the 'Audit team observations and conclusions' for Conditions 6 and 8, and in the revised scoring rationales for PIs 2.3.1 and 2.3.3).

Nevertheless, we note your concern that the evidence presented in the audit report was available to the previous audit team, and that the new team's rationale did not include consideration of new information. As such, Acoura asked the audit team to review any new information that may be available. The audit team has revised the audit report by adding in new information from two sources – 1) the IUCN Redlist status assessment for the Northwest Atlantic subpopulation of loggerhead turtle by Ceriani & Meylan (2015)[16], and 2) the NOAA report on the status of loggerhead turtles within nations of the Inter-American Convention for the Protection and Conservation of Sea Turtles by Chapman & Seminoff (2016)[17].

Briefly, the IUCN Redlist overall status assessment for loggerhead turtle was updated recently, and for the first time this assessment now lists loggerhead turtle subpopulations individually, rather than simply showing an overall global status for the species. Importantly, the Northwest Atlantic subpopulation of loggerhead turtle is listed as being 'Least Concern', with the available long-term series of annual nest counts (used as an index of population abundance) showing an overall increase over the past three generations. In fact, the Northwest Atlantic subpopulation did not trigger any of the thresholds and options for a threatened category under criteria A (Declining population – past, present and/or projected), B (Geographic range size, and fragmentation, decline or fluctuations), C (Small population size and fragmentation, decline, or fluctuations), or D (Very small population or very restricted distribution).

The review of loggerhead turtles by Chapman & Seminoff (2016) included additional useful information on adult populations, and reported that "*According to the IUCN Red List website (accessed August 2016), the northwest Atlantic DPS is doing well, so logically, the locations with the majority of the nests for this population segment would also be doing well in nesting trends. With the exception of lower totals for 2014 in Georgia and the Carolinas, the last five years appear to have a positive trend in all areas. Florida's*

[16] http://www.iucnredlist.org/details/84131194/0

[17] https://swfsc.noaa.gov/publications/CR/2016/2016Chapman.pdf

wealth of data show a dip in the loggerhead population around the early 2000's but also a definite rebound in the past decade."

Given the positive population trend (i.e., showing that the population is recovering / rebuilding), these data and analyses support the original assertion by the Audit Team that the swordfish longline fishery does meet the PI 2.3.1 SIa SG80 requirement that "*Direct effects are highly unlikely to create unacceptable impacts to ETP species*" (noting that CB3.11.4.1 states: "*The term shall interpret "unacceptable impact" as impacts which hinder recovery or rebuilding of ETP species/stocks.*").

Acoura is satisfied that SG80 is met and Conditions 6 and 8 can be closed.

2. Rationale for Condition 8.

In addition to procedural concerns (as addressed against Point 1, above), it is contended that in closing Condition 8 the audit team relied heavily on a statement by a DFO manager that was taken out of context.

Acoura acknowledges the procedural concerns and highlights that the audit team clearly laid out the approach and justification for closing the conditions within the 4th annual surveillance audit report

Nevertheless, because of the EAC complaint, the audit team went back to the DFO manager to clarify the statement in the ALPAC minutes. In so doing, the team highlighted their understanding and interpretation of the minutes, i.e., that the statement was not just specific to monitoring porbeagle, but bycatch in general. The manager confirmed their recollection as being in line with the audits team interpretation, that the statement followed the 2015 fishing season and its intent was to confirm that the Department was of the view that the 5% observer coverage in the pelagic longline fishery was sufficient for determining all bycatch, not just sharks.

Acoura is satisfied that the audit team has not taken the comment out of context.

3. Incomplete milestones and conditions

It is contended that the audit team has undermined the MSC process by closing Conditions through dismissing planned actions and milestones.

The MSC standard does not preclude the possibility that an incumbent assessment team may have a different opinion to the original assessment team and allows for modification to condition milestones, for example, with a rationale provided in the surveillance report. It is true that this may allow for the risk that efforts invested during the initial assessment can be overlooked but it also ensures that a team isn't unreasonably bound by decisions made in an earlier context.

As noted earlier in this response, the audit team did refer to the original rationale to understand why the original team felt the SG80 for PIs 2.3.1 (Condition 6) and 2.3.3 (Condition 8) had not been achieved, and reviewed the subsequent annual audit reports. Having completed that review process, the new audit team was satisfied that the information available demonstrated that the fishery met the SG80 requirements; their approach and justification for closing the conditions are clearly laid out within the 4th annual surveillance audit report.

Acoura is satisfied that the rationale provided against each of the Conditions is appropriate.

4. (and 5) Availability of significant information for stakeholders

It is contended that the audit report used evidence (minutes of the 2016 ALPAC meeting which referred to 5% observer coverage being adequate) that was not available to the EAC at the time of the audit, and (as covered under Point 2, above) that the evidence was misinterpreted by the audit team in that the minutes referred to porbeagle bycatch only.

During the audit/re-assessment site visit, the team requested a copy of the 2016 ALPAC minutes. These were provided to the team on 6th October 2016. The audit team were not aware that these minutes had not been made available to ALPAC members until prior to the March 2017 ALPAC meeting. Providing the minutes to ALPAC members at that time appears to be a result of the normal administrative process of ALPAC.

Acoura accepts that this is unfortunate but is satisfied that the audit team did nothing to deliberately mislead any stakeholder.

6. The timing and delay of the Audit and Re-Assessment process

It is contended that the timing and the delay of the audit and re-assessment was not

appropriate to ensure full stakeholder participation, in that providing the re-assessment submission prior to the 4th surveillance report being available makes the re-assessment comments irrelevant and appear unrelated when published in the PCDR. EAC would like additional time for stakeholders to review and submit responses on the surveillance before the PCDR is released.

We propose that your comments are presented in the PCDR with clarification as to the timing and information available at the time of submission to provide context. The alternative would be a request to the MSC to withhold those comments but we feel this wouldn't do justice to the time and effort invested.

The audit and re-assessment has followed a normative process, however, there was a delay in the publication of the 4th surveillance report which has largely been beyond the control of the audit team and Acoura Marine. The process and explanation for the delay in publication is included in the introductory section of the 4th surveillance report. In summary, the report was completed and submitted within the required 60-day period.

Acoura is satisfied that MSC process was followed. We highlight that an additional period has now been made available to stakeholders to submit new information[18]. This has been caused by the delay in publishing the re-assessment report to resolve a MSC "Technical Oversight" finding with respect to the closing of Condition 2. MSC considered the revised scoring rationale did not adequately meet the SG80 requirements. This scoring rationale was agreed (harmonised) between the Acoura audit/re-assessment team and the US audit/re-assessment team and so, further discussions have taken place. A revised scoring rationale that better articulates how the SG80 requirements are met will be provided and included in an amended surveillance audit report.

We thank you for your continued active involvement in the MSC process.

Regards,

Billy Hynes

Fisheries Manager

18 (https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=bmyglYCVFHFcbyQulHrblWPoST47GSyOX4JlF3dl6KRXlbyLfiWpSAsnkew1xUbp).

From: Philipp.Kanstinger@wwf.de [mailto:Philipp.Kanstinger@wwf.de] **Sent:** 02 May 2017 08:56 **To:** Acoura Fisheries <fisheries@acoura.com> **Subject:** Complaint about the outcome of the 4th Surveillance audit of the North West Atlantic Canada Longline Swordfish Fishery

Dear Acoura Team,
we hereby raise a complaint about the outcome of the 4th Surveillance audit of the North West Atlantic Canada Longline Swordfish Fishery.
Specifically, we are highly concerned about the justification to close condition 6 and 8 (regarding PI 2.3.1 and PI 2.3.3).

At the 3rd Surveillance audit, the Acoura assessment team already recognized that the conditions will not be met by the 4th surveillance audit because Milestones can not be achieved (e.g. completed post-capture survival study, updated scientific assessment which will demonstrate the impacts to loggerhead turtles).
However, now the audit team closed those conditions during the 4th audit based on a reinterpretation of existing information (Canadian and US fisheries management documents from 2008 and 2010) while there were no changes to the scientific base of information nor relevant changes in the management system.

The Canadian and US fisheries documents referenced in the 4th surveillance audit were already cited and thoroughly discussed during the initial certification process including a strong stakeholder participation, a peer review and an objection process.

Rescoring of PIs solely based on reinterpretation of existing information should not be in the scope of surveillance audit activities.

From our perspective as a stakeholder, such an activity damages the integrity and credibility of the MSC certification system.

We therefore ask Acoura to re-assess the rationale and conclusions for condition 6 and 8.

Yours sincerely,

Dr. Philipp Kanstinger
Referent Seafood Zertifizierungen
Program Officer Seafood Certifications

WWF Deutschland
Internationales WWF-Zentrum für Meeresschutz
Mönckebergstraße 27
20095 Hamburg

23rd June 2017

North West Atlantic Canada Longline Swordfish

Acoura response to the WWF Germany Letter of Complaint

Dear Dr Kanstinger,

Further to your letter dated 2nd May 2017, registering a complaint with respect to the outcome of the 4th surveillance audit for the above fishery.

We apologise for the delay in responding. This was caused by limited availability of our audit/re-assessment team members and on-going harmonisation discussions with the overlapping US swordfish audit/assessment team and MSC Science and Standard team that has direct relevance to the outcome of the 4th audit. An update on this is provided at the end of this response.

It is contended that in closing Condition 6 (and 8), the audit team used old information that was considered in the initial assessment and has ignored the original discussions, the objection, the IAs decision, and the work that has been undertaken since. In so doing, the objection process, the role of the client action plan and subsequent audits have been undermined.

As you are aware, the recent audit of the Canadian longline swordfish fishery was undertaken by a new audit team. This new team referred to the original rationale to understand why the original team felt the SG80 for PIs 2.3.1 (Condition 6) and 2.3.3 (Condition 8) had not been achieved, and also reviewed the subsequent annual audit reports. Having completed that review process, the new audit team was satisfied that the information available demonstrated that the fishery met the SG80 requirements; their approach and justification for closing the conditions are clearly laid out within the 4th annual surveillance audit report (in the 'Audit team observations and conclusions' for Conditions 6 and 8, and in the revised scoring rationales for PIs 2.3.1 and 2.3.3).

Nevertheless, we note your concern that the evidence presented in the audit report was available to the previous audit team, and that the new team's rationale did not include consideration of new information. As such, Acoura asked the audit team to review any new information that may be available.

Rationale

The audit team has revised the audit report by adding in new information from two sources – 1) the IUCN Redlist status assessment for the Northwest Atlantic subpopulation of loggerhead turtle by Ceriani & Meylan (2015)[19], and 2) the NOAA report on the status of loggerhead turtles within nations of the Inter-American Convention for the Protection and Conservation of Sea Turtles by Chapman & Seminoff (2016)[20].

Briefly, the IUCN Redlist overall status assessment for loggerhead turtle was updated recently, and for the first time this assessment now lists loggerhead turtle subpopulations individually, rather than simply showing an overall global status for the species. Importantly, the Northwest Atlantic subpopulation of loggerhead turtle is listed as being 'Least Concern', with the available long-term series of annual nest counts (used as an index of population abundance) showing an overall increase over the past three generations. In fact, the Northwest Atlantic subpopulation did not trigger any of the thresholds and options for a threatened category under criteria A (Declining population – past, present and/or projected), B (Geographic range size, and fragmentation, decline or fluctuations), C (Small population size and fragmentation, decline, or fluctuations), or D (Very small population or very restricted distribution).

The review of loggerhead turtles by Chapman & Seminoff (2016) included additional useful information on adult populations, and reported that "*According to the IUCN Red List website (accessed August 2016), the northwest Atlantic DPS is doing well, so logically, the locations with the majority of the nests for this population segment would also be doing well in nesting trends. With the exception of lower totals for 2014 in Georgia and the Carolinas, the last five years appear to have a positive trend in all areas. Florida's wealth of data show a dip in the loggerhead population around the early 2000's but also a definite rebound*

[19] http://www.iucnredlist.org/details/84131194/0

[20] https://swfsc.noaa.gov/publications/CR/2016/2016Chapman.pdf

in the past decade."

Given the positive population trend (i.e., showing that the population is recovering / rebuilding), these data and analyses support the original assertion by the Audit Team that the swordfish longline fishery does meet the PI 2.3.1 SIa SG80 requirement that "*Direct effects are highly unlikely to create unacceptable impacts to ETP species*" (noting that CB3.11.4.1 states: "*The term shall interpret "unacceptable impact" as impacts which hinder recovery or rebuilding of ETP species/stocks.*").

Acoura is satisfied that SG80 is met and Conditions 6 and 8 can be closed.

Incomplete milestones and conditions

The MSC standard does not preclude the possibility that an incumbent assessment team may have a different opinion to the original assessment team and allows for modification to condition milestones, for example, with a rationale provided in the surveillance report. It is true that this may allow for the risk that efforts invested during the initial assessment can be overlooked but it also ensures that a team isn't unreasonably bound by decisions made in an earlier context.

As noted earlier in this response, the audit team did refer to the original rationale to understand why the original team felt the SG80 for PIs 2.3.1 (Condition 6) and 2.3.3 (Condition 8) had not been achieved, and reviewed the subsequent annual audit reports. Having completed that review process, the new audit team was satisfied that the information available demonstrated that the fishery met the SG80 requirements; their approach and justification for closing the conditions are clearly laid out within the 4th annual surveillance audit report.

Acoura is satisfied that MSC process was followed. We highlight that an additional period has now been made available to stakeholders to submit new information21. This has been caused by the delay in publishing the re-assessment report to resolve a MSC "Technical Oversight" finding with respect to the closing of Condition 2. MSC considered the revised scoring rationale did not adequately meet the SG80 requirements. This scoring rationale was agreed (harmonised) between the Acoura audit/re-assessment team and the US audit/re-assessment team and so, further discussions have taken place. A revised scoring rationale that better articulates how the SG80 requirements are met will be provided and included in an amended surveillance audit report.

We thank you for your continued, active involvement in the MSC process.

Regards,

Billy Hynes, Fisheries Manager

21 (https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=bmyglYCVFHFcbyQulHrblWPoST47GSyOX4JlF3dl6KRXlbyLfiWpSAsnkew1xUbp).

12th July 2017

North West Atlantic Canada Longline Swordfish

WWF response to the Acoura response of 23rd June

WWF COMMENT D 2017

North West Atlantic Canada Longline Swordfish

WWF response to the Acoura Letter regarding WWF Complaints

Dear Mr. Hynes,

thank you very much for the consideration of our complaint by you and your team. We welcome your detailed response (23.06.2017) and that consequently an addendum to the fourth surveillance audit will be published (12.07.2017). Please note that the "new" version of the fourth surveillance audit uploaded to the MSC website (11.7.2017) is still the "old" April 2017 version without addendum.

However, we still uphold our concerns and believe that the updated rationale still does not sufficiently justify closing Conditions 6 and 8 and that MSC process procedures and requirements were not fulfilled during the fourth annual audit and during the complaint procedure.

Rationale

Based on our complaint (02.05.2017) Acoura asked the audit team to review any new information that may be available and the audit team added to two new sources of information a) the IUCN Redlist status assessment by Ceriani & Meylan (2015) b) the NOAA report by Chapman & Seminoff (2016) which is mainly based on the IUCN data/report.

However, the audit team oversaw or ignored the most relevant new information regarding Loggerhead turtles in Canadian waters. The species was recommended (2016[1]) for addition to Schedule 1 of the Species at Risk Act (SARA) in Canada and is now (2017[2]) officially listed as endangered in Canadian waters. In the regulatory impact analysis statement in respect to the proposed listing (2016[3]), the assigned commission already explicitly included the data of the IUCN report (2015), that for the Northwest Atlantic population nesting numbers have improved in some locations in recent years. Nonetheless, the Canadian commission still recommended listing the species as endangered and this recommendation was followed by the government. The most recent threat assessment for loggerhead sea turtles published by the Canadian Science Advisory Secretariat (2017[4]) identified longline bycatch as the biggest known thread in Canadian waters and recommended to address data limitations and uncertainties. Their specific recommendations highly coincidence with the (uncompleted) conditions and milestones that were set during the first assessment of the North West Atlantic Canada Longline Swordfish Fishery e.g. post-release survival study, a new analysis of observer data, refine incidental catch rates and mortalities in Canadian waters, help to identify new mitigation measures for the pelagic longline fishery. The Canadian Science Advisory Secretariat concluded that "recovery efforts within Canada are needed to increase survivorship of juveniles that occur in Atlantic Canada into the reproductive stage" and that "mitigations in Atlantic

[1] Order Amending Schedule 1 to the Species at Risk Act [Proposed] (2016)
[2] Order Amending Schedule 1 to the Species at Risk Act, Part II, Vol. 151, No. 9 (2017)
[3] http://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=8571A222-1
[4] http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2017/2017_014-eng.pdf

1 Comments

Canada to reduce bycatch and post-release mortality are important for the recovery of the population".

In conclusion, the rationale and findings of the Acoura assessment team, that were used to close condition 6 and 8, highly contradict the findings of the original CAB and the more recent findings of the Canadian Science Advisory Secretariat and the Canadian Department of the Environment.

Resolving the issues regarding the fourth surveillance audit report is time sensitive due to the fact that the re-certification of the fishery is progressing. We would therefore welcome if the Acoura team could response to this letter within the next two weeks. If these issues cannot be resolved, we plan to forward our complaint to ASI at the end of July.

We thank you for your continued consideration.
Regards,

Hamburg, 12.07.2017

Dr. Philipp Kanstinger
Program Officer Seafood Certifications
WWF Deutschland
Internationales WWF-Zentrum für Meeresschutz
Mönckebergstraße 27
20095 Hamburg

Tel.: +49 40 530 200-325

2 Comments

1st August 2017

Dear Dr. Kanstiger,

Thank you for your continuing interest in the surveillance of the Canada swordfish longline fishery.

To provide a response, we have summarised our understanding of your concerns below, and have followed those points with our response.

1) That the updated surveillance report did not include the addendum that was referred to in the Acoura response of June 23rd 2017.

   This is correct, and was a version control error on our part. The latest version of the report, which includes the addenda within the report for Conditions 6 and 8, has now been uploaded to the MSC website. We apologise for the inconvenience.

2) That the team ignored the most relevant new information in the rationale does not justify closing Conditions 6 and 8 because it did not refer to listing of loggerhead sea turtle on SARA, nor the regulatory impact analysis.

   We note that the audit report was initially completed in December 2016, and then a revised version was published in April 2017, prior to the SARA designation being confirmed for loggerhead sea turtle in May 2017. Both versions of the report noted that the SARA designation was under consideration. As such, it is not that SARA was ignored, it was simply that the SARA status of loggerhead sea turtle was not updated in the later versions of the report. Its status (SARA – 'Endangered') has now been noted in the revised version of the report.

   We note that it is stated in the loggerhead regulatory impact analysis (http://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=8571A222-1):
   (with **bold** added for emphasis)
   "*Benefits and costs*

   ***As a recovery target for Loggerhead Sea Turtles has not been established**, there is no information available to determine the extent of the recovery that may occur as a result of listing Loggerhead Sea Turtles under SARA. Therefore, it is not possible to estimate the potential stream of market and non-market benefits associated with such a listing. A review of the literature indicates that Canadians value the preservation and conservation of aquatic species in and of itself. As a result, some level of benefit to Canadians is expected.*

   *It is anticipated that there will be no significant socio- economic costs associated with listing this species under SARA. There is no directed fishery for Loggerhead Sea Turtles, and **fisheries with known bycatch of Loggerhead Sea Turtles may be issued a permit or exempted subject to all the conditions under the Act. As a result, no additional management measures beyond those currently committed to or required for Leatherback Sea Turtles are anticipated**.*

   Rationale

   *Listing the Loggerhead Sea Turtle under SARA is consistent with the approach taken for a similar species, the Leatherback Sea Turtle. It is not anticipated that there will be any incremental economic impacts or administrative costs to business associated with listing this species under SARA. **Measures implemented under a listing scenario are likely to be aligned with what is already required of industry due to management and mitigation efforts related to activities that impact the Leatherback Sea Turtle**."

   Given the text of the regulatory impact analysis, the Assessment Team is of the opinion that the information provided was not of key relevance to PIs 2.3.1 (outcome – Condition 6) and 2.3.3 (information – Condition 8), although it does support the Assessment Team's conclusion that the swordfish longline fishery is performing at the SG80 level overall for ETP species.

3) That the recent threat assessment for loggerhead sea turtles identified the longline fishery as the biggest known threat in Canadian waters, and provided recommendations that were highly coincidence with those detailed for Conditions 6 and 8.

The review of new information that was conducted in response to the original WWF complaint (dated May 2nd 2017) was undertaken using information that was available to the assessment team in completing the original surveillance report (published January 2017). As such, this considered the IUCN status update for loggerhead sea turtle (Cerianai & Meylan 2015) and the NOAA review of loggerhead sea turtle for the Inter-American Convention for the Protection and Conservation of Sea Turtles (Chapman & Seminoff 2016).

The change of SARA status (confirmed in the Canada Gazette of May 3rd 2017) and the CSAS threat assessment (DFO 2017, published May 2017) were not originally considered in the new information review because they were published after the original surveillance report. Nevertheless, the change of SARA status and the threat assessment have now been considered in the newly revised surveillance report.

The change in SARA status does not materially affect the assessment, as loggerhead sea turtle was already considered under the ETP criteria, and its listing as 'Endangered' within Canada did not immediately result in the introduction of any measures beyond those that currently apply to the fishery. As noted above, the loggerhead regulatory impact analysis in fact highlighted that "*no additional management measures beyond those currently committed to or required for Leatherback Sea Turtles are anticipated.*"

With respect to the three areas of work listed in the recommendations section of the threat assessment (DFO 2017): i) post release survival study, ii) observer data analysis, and iii) habitat use study), we note that the Assessment Team has made a recommendation that the client actively support the timely completion of the loggerhead sea turtle tagging study, consistent with point i), and have made a recommendation that the client support and pursue a re-running of the Regional Peer Review assessment of incidental catch, consistent with point ii). Point iii) is related to management, and was not consistent with the previous conditions or milestones. We note that the threat assessment states that, "*Addressing the other data limitations will be a long-term and challenging endeavour requiring international collaboration*".

4) That the CSAS threat assessment (DFO 2017) concluded that "recovery efforts within Canada are needed to increase survivorship of juveniles that occur in Atlantic Canada into the reproductive stage" and that "mitigations in Atlantic Canada to reduce bycatch and post-release mortality are important for the recovery of the population".

The Assessment Team has considered the data available in detail, and we have highlighted the measures in place in the swordfish longline fishery which contribute to the increased survival of juveniles that occur in Atlantic Canada. We are content that these are contributing to the recovery of the population.

Thank you once again for the valuable contribution and close scrutiny of our work. Acoura consider that the issues raised in the complaint have been resolved through the information within this letter and the amended surveillance report. Acoura will close the complaint unless we hear to the contrary within 5 working days of the date this letter was sent to the complainant.

Yours Sincerely,

Billy Hynes
Fisheries Manager
0131 335 6662
Fisheries

Appendix 4 - Surveillance audit information

The client provided a submission and a significant quantity of supporting information associated with the 4th audit and re-assessment of the fishery.

This information is available on request from Acoura.

Appendix 5 - Additional detail on conditions/ actions/ results

Not applicable

Appendix 6 - Revised Surveillance Program

This is the fourth audit and the fishery is entering re-assessment. A surveillance program will be confirmed if the fishery is successfully recertified.