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## Canada Northern and Striped Shrimp Fishery



### Surveillance Report

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Assessment team	Rob Blyth-Skyrme, Julian Addison, Paul Knapman
Fishery client	Canadian Association of Prawn Producers
Assessment Type	Third Surveillance



## Assessment Data Sheet

Fishery name	Canada Northern and Striped Shrimp fishery	
Species and Stock	<p>Northern shrimp (<i>Pandalus borealis</i>)</p> <ul style="list-style-type: none"> <li>• Shrimp Fishing Area (SFA) 1: Davis Strait</li> <li>• Eastern Assessment Zone (EAZ): Southeastern Baffin Island</li> <li>• Western Assessment Zone (WAZ): Hudson Strait</li> <li>• SFA 4: Northeastern Labrador</li> <li>• SFA 5: Eastern Labrador</li> <li>• SFA 6: Southeastern Labrador / Northeastern Newfoundland</li> </ul> <p>Striped shrimp (<i>Pandalus montagui</i>)</p> <ul style="list-style-type: none"> <li>• EAZ: Southeastern Baffin Island</li> <li>• WAZ: Hudson Strait</li> <li>• SFA 4: Northeastern Labrador</li> </ul>	
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## Executive Summary

This report outlines the findings of the 3<sup>rd</sup> annual surveillance audit of the Canada Northern and Striped Shrimp Fishery. The scope of the certified fishery and therefore of this surveillance is specified in the Units of Certification (UoC) set out below:

**Table 1. Units of Certification (UoCs) in the Canada Northern and Striped Shrimp Fishery**

<b>UoC 1</b>	<b>Species:</b>	Northern shrimp ( <i>Pandalus borealis</i> )
	<b>Stock:</b>	Shrimp Fishing Area (SFA) 1: Davis Strait
	<b>Geographical area:</b>	SFA 1
	<b>Harvest method:</b>	Otter trawl
	<b>Client Group:</b>	Canadian Association of Prawn Producers (CAPP) Baffin Fisheries Coalition (BFC) Northern Coalition (NC)
	<b>Other Eligible Fishers:</b>	None

<b>UoC 2</b>	<b>Species:</b>	Northern shrimp ( <i>Pandalus borealis</i> )
	<b>Stocks:</b>	Eastern Assessment Zone (EAZ): Southeastern Baffin Island Western Assessment Zone (WAZ): Hudson Strait SFA 4: Northeastern Labrador
	<b>Geographical area:</b>	EAZ WAZ SFA 4
	<b>Harvest method:</b>	Otter trawl
	<b>Client Group:</b>	CAPP BFC NC
	<b>Other Eligible Fishers:</b>	None

<b>UoC 3</b>	<b>Species:</b>	Striped shrimp ( <i>Pandalus montagui</i> )
	<b>Stocks:</b>	Eastern Assessment Zone (EAZ): Southeastern Baffin Island Western Assessment Zone (WAZ): Hudson Strait SFA 4: Northeastern Labrador
	<b>Geographical area:</b>	EAZ WAZ SFA 4
	<b>Harvest method:</b>	Otter trawl
	<b>Client Group:</b>	CAPP BFC NC
	<b>Other Eligible Fishers:</b>	None

<b>UoC 4</b>	<b>Species:</b>	Northern shrimp ( <i>Pandalus borealis</i> )
	<b>Stock:</b>	SFA 5: Eastern Labrador
	<b>Geographical area:</b>	SFA 5
	<b>Harvest method:</b>	Otter trawl
	<b>Client Group:</b>	CAPP Association of Seafood Producers (ASP) Fogo Island Cooperative Society (FICS) NC
	<b>Other Eligible Fishers:</b>	None

<b>UoC 5</b>	<b>Species:</b>	Northern shrimp ( <i>Pandalus borealis</i> )
	<b>Stock:</b>	SFA 6: Southeastern Labrador / Northeastern Newfoundland
	<b>Geographical area:</b>	SFA 6
	<b>Harvest method:</b>	Otter trawl
	<b>Client Group:</b>	CAPP ASP FICS NC
	<b>Other Eligible Fishers:</b>	None

<b>UoC 6 Did not pass re- assessment</b>	<b>Species:</b>	Northern shrimp ( <i>Pandalus borealis</i> )
	<b>Stock:</b>	SFA 7: Southeastern Newfoundland
	<b>Geographical area:</b>	SFA 7
	<b>Harvest method:</b>	Otter trawl
	<b>Client Group:</b>	CAPP ASP BFC FICS NC
	<b>Other Eligible Fishers:</b>	None

As a result of the re-assessment, three conditions of certification were raised by the assessment team. At the 1<sup>st</sup> year's surveillance audit, owing to changes in the stock status of the Northern shrimp stocks in UoC 5 (SFA 6), the scores for PIs 1.1.1 (stock status) and 1.1.2 (reference points) were reduced. This resulted in the scoring of PI 1.1.3 (stock rebuilding) and the setting of three new conditions of certification related to these PIs. Therefore, the fisheries are now subject to six conditions of certification.

MSC certification is contingent on the Canadian Northern and Striped Shrimp Fishery complying with these conditions within the time-scales set.

In addition, at the re-assessment a recommendation was made which, whilst not obligatory, the client is encouraged to act upon within the spirit of the certification.

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 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 at the assessment or subsequent audit stage;

3. to monitor any actions taken in response to any (non-binding) "recommendations" made at the assessment or subsequent audit stage;
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.

The primary focus of this surveillance audit is to assess changes 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 at: [https://fisheries.msc.org/en/fisheries/canada-northern-and-striped-shrimp/@\\_assessments](https://fisheries.msc.org/en/fisheries/canada-northern-and-striped-shrimp/@_assessments)

The audit was announced on the MSC website on 28<sup>th</sup> October 2019 and an off-site audit took place on 29<sup>th</sup> November 2019.

The audit was carried out according to the MSC Fisheries Certification Requirements v1.3 using v2.1 process.

The following was inspected during the audit:

- The scientific base of information and stock assessment;
- Changes to the fishery and its management, e.g. legislation and regulations;
- Changes and updates on ecosystem issues;
- Changes to personnel involved with the science, management and industry;
- Inseparable and Practically Inseparable (IPI) species;
- Compliance;
- Harmonisation with other MSC certified fisheries;
- Any changes that might affect traceability within the fishery and conformity with regulations; and,
- Progress against the conditions of certification.

Prior to the site visit the client provided a submission which included minutes and materials associated with the Northern Shrimp Advisory Committee; TAC and catch data; stock assessment reports; correspondence from DFO - referred to as a, "material change letter" - related to the management of the fishery and the MSC 3<sup>rd</sup> annual audit of the fishery; a DFO compliance report for the fishery. This information is available on request from Lloyd's Register.

With respect to MSC Principle 1, updated stock assessments have been undertaken for all UoCs, details of which are presented in section 1.2.5. Conditions 1, 4, 5 and 6 which were raised against Principle 1 Performance Indicators remain open, and revised milestones were drawn up for Conditions 4, 5 and 6. The audit team accepted a revised Client Action Plan to meet the revised milestones.

With respect to Principle 2, a recent compilation of information from the inshore fishery is now available and provides a snap-shot of the catch and demonstrate that bycatch rates in the fleet are very low. The observer programme is in place and it is apparent that it is able to detect any increase in risk to the main bycatch species. As a result, Condition 2, for UoCs 4 and 5, related to Performance Indicator 2.2.3 and concerning the need for sufficient data collection to detect any increase in risk to main bycatch species, has been met, rescored and closed.

With respect to Principle 3, there have been no significant changes within the management system within the audit period.

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.

The audit concluded that the fishery continues to meet MSC requirements and continues to be certified.



# 1 Report Details

## 1.1 Surveillance information

The following table details the basic information regarding this third audit of the Canada Northern and Striped Shrimp Fishery.

**Table 2. Surveillance Information**

1	Fishery name	
	Canada Northern and Striped Shrimp fishery	
2	Surveillance level and type	
	Level 4, Off-site	
3	Surveillance number	
	3rd Surveillance	X
4	Proposed team leader	
	<p><b>Paul Knapman (P3 Expert)</b></p> <p>Paul is an independent consultant based in Halifax, Nova Scotia, Canada. Paul began his career in fisheries nearly 30 years ago as a fisheries officer in the UK, responsible for the enforcement of UK and EU fisheries regulations. He then worked with the UK government's nature conservation advisors (1993-2001), as their Fisheries Programme Manager, responsible for establishing and developing an extensive programme of work with fisheries managers, scientists, the fishing industry and ENGOs, researching the effects of fishing and integrating nature conservation requirements into national and European fisheries policy and legislation.</p> <p>Between 2001-2004 he was Head of the largest inshore fisheries management organisation in England, with responsibility for managing an extensive area of inshore fisheries on the North Sea coast. The organisation's responsibilities and roles included: stock assessments; setting and ensuring compliance with allowable catches; developing and applying regional fisheries regulations; the development and implementation of fisheries management plans; acting as the lead authority for the largest marine protected area in England.</p> <p>In 2004, Paul moved to Canada and established his own consultancy providing analysis, advisory and developmental work on fisheries management policy in Canada and Europe. He helped draft the management plan for one of Canada's first marine protected areas, undertook an extensive review on IUU fishing in the Baltic Sea and was appointed as rapporteur to the European Commission's Baltic Sea Regional Advisory Council.</p> <p>In 2008, Paul joined Moody Marine as their Americas Regional Manager, with responsibility for managing and developing their regional MSC business. He became General Manager of the business in 2012. Paul has been involved as a lead assessor, team member and technical advisor/reviewer for more than 50 different fisheries in the MSC programme. He returned to fisheries consultancy in 2015.</p> <p>Paul has passed MSC training and has no Conflict of Interest in relation to this fishery. Full CV available upon request.</p>	
Leadership Experience	Paul has conducted multiple MSC assessments as TL and has the required qualifications as set out by the MSC.	
5	Team members	

### **Julian Addison (P1 Expert)**

Dr Julian Addison is an independent fisheries consultant with 30 years' experience of stock assessment and provision of management advice on shellfish fisheries, and a background of scientific research on shellfish biology and population dynamics and inshore fisheries. Until December 2010 he worked at the Centre for Environment, Fisheries and Aquaculture Science (Cefas) in Lowestoft, England where he was Senior Shellfish Advisor to Government policy makers, which involved working closely with marine managers, legislators and stakeholders, Government Statutory Nature Conservation Organisations and environmental NGOs. He has experienced shellfish management approaches in North America as a visiting scientist at DFO in Halifax, Nova Scotia and at NMFS in Woods Hole, Massachusetts. For four years he was a member of the Scientific Committee and the UK delegation to the International Whaling Commission providing scientific advice to the UK Commissioner. He has worked extensively with ICES and most recently was Chair of the Working Group on the Biology and Life History of Crabs, a member of the Working Group on Crangon Fisheries and Life History and a member of the Steering Group on Ecosystems Function.

He has extensive experience of the MSC certification process primarily as a P1 team member but also as a P2 team member and team leader. He has undertaken over 30 MSC full assessments of crustacean and mollusc fisheries worldwide which use a wide range of stock assessment methodologies and fishing gears. He has also undertaken MSC pre-assessments in Europe, North America and Australia and over 60 annual surveillance audits and technical reviews. He is a member of the MSC Peer Review College and has carried out peer reviews of MSC assessments worldwide of a wide range of fisheries. Other recent work includes a review of the stock assessment model for blue crabs in Chesapeake Bay, USA, and an assessment of three Alaskan crab fisheries under the FAO-based Responsible Fisheries Management scheme.

Julian has passed MSC training and has no Conflict of Interest in relation to this fishery. Julian has completed the MSC RBF training in the past 3 years. Full CV available upon request.

### **Rob Blyth-Skyrme (P2 Expert)**

Rob started his career in commercial aquaculture but shifted focus to the sustainable management of wild fisheries, completing his PhD on co-management in the Inshore Potting Agreement off south Devon, UK, in 2004. He then worked at the Eastern Sea Fisheries Joint Committee, one of the bodies managing inshore fisheries around the English coast, where he became the Deputy Chief Fishery Officer, focusing on fisheries management and enforcement. He subsequently moved to Natural England, acting as the organisation's senior advisor to UK Government on fisheries and environmental issues, leading a team dealing with fisheries policy, science and nationally significant fisheries casework.

Rob now runs Ichthys Marine Ecological Consulting Ltd. As well as providing general fisheries and environmental consultancy, he has worked as a Lead Assessor, Principle 2 and Principle 3 expert team member, and peer reviewer across a wide range of MSC fisheries. Rob has also presented at various MSC workshops, is a trainer for the MSC's Capacity Building programme, and is a member of the Peer Review College.

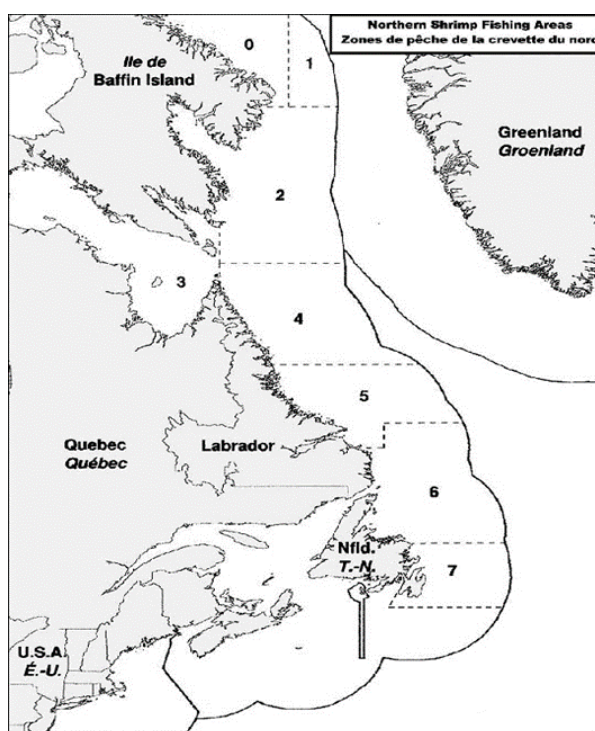
Rob has passed MSC training and has no Conflict of Interest in relation to this fishery. Rob has completed the MSC RBF training in the past 3 years. A full CV is available upon request.

6	Audit/review time and location
	29th November 2019 – Offsite – surveillance carried out via conference call facilities
7	Assessment and review activities
	All relevant data, progress on the Client Action Plan and progress on the 6 open conditions.

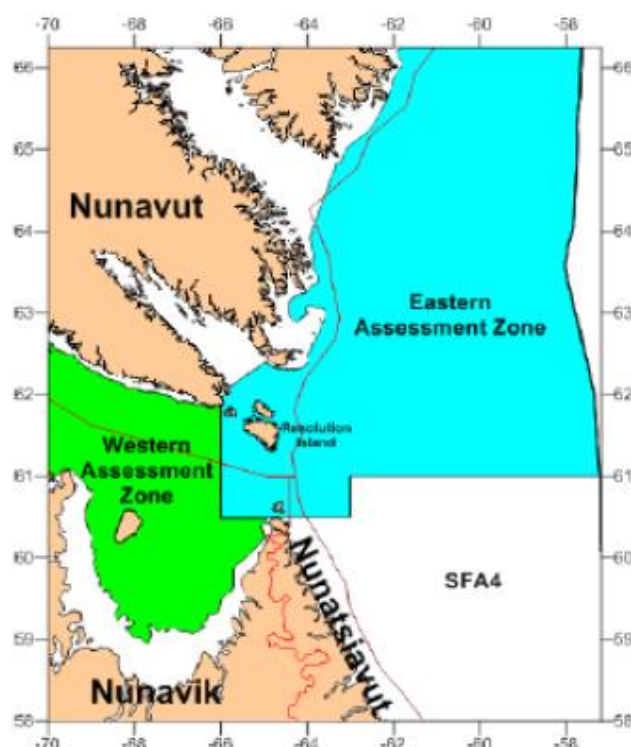
## 1.2 Background

The Canadian Northern and Striped Shrimp Fishery is undertaken by an 'offshore' fleet (Length Over All LOA >100'; >50 0 t) and an 'inshore' fleet (LOA ≤ 100'; ≤ 50 0 t). The offshore fleet operates under an Enterprise Allocation (EA) system, with vessels making long trips with on-board processing. The inshore fleet is conducted on a competitive basis with trip limits and harvesting caps determined and regulated by the industry, and vessels land whole shrimp for shore-based processing. All vessels use demersal otter trawls with a minimum mesh size of 40 mm and, since 1997, the use of Nordmore grates has been a requirement to reduce groundfish bycatch. Northern shrimp (*Pandalus borealis*) is much more abundant and widespread in commercial quantities than striped shrimp (*Pandalus montagui*). In Canadian waters, most catches of striped shrimp occur in 200 - 400 m compared to 300 - 500 m for Northern shrimp. The two species tend to be found mixed in commercial densities in shelf areas near the entrance to Hudson Strait. However, striped shrimp predominates inside Hudson Strait, while Northern shrimp predominates in other areas.

The Canadian Northern and Striped Shrimp Fishery is divided into six different UoCs described above in Table 1, based on the two shrimp species and seven shrimp fishing areas shown in Figure 1 and Figure 2 below. As indicated in the UoC information above, there are five different organisations that make up the client group and which have an interest in some or all of the UoCs. The Canadian Association of Prawn Producers (CAPP) takes the lead on managing the certification on behalf of the client group.



**Figure 1:** Shrimp Fishing Areas (SFAs) 0-7 in the Canadian Atlantic. (Source: DFO)



**Figure 2:** Location of the Eastern Assessment Zone (EAZ) and Western Assessment Zone (WAZ) and SFA4 management units. Boundaries of the Nunavut, Nunavik and Nunatsiavut Land Claims Areas are shown in red.

### 1.2.1 Changes in management system

There were no significant changes reported in the management system for the fishery.

### 1.2.2 Changes in relevant regulations

There were no significant changes reported in the relevant regulations for the fishery.

### 1.2.3 Changes to personnel involved in science, management or industry

There were no changes reported in the personnel involved in science, management or industry that would be material to the way in which the fishery is managed or operated.

Changes in personnel reported by DFO include that Courtney D'Aoust was appointed as the acting DFO officer managing the Northern Shrimp file in July 2019, and will have this role until at least July 2020. Also, it was reported that the senior fisheries management officers in DFO's Central and Arctic region now include Sheri Friesen, Kevin Bill and Angela Young, while in Newfoundland and Labrador region the DFO Science shrimp research scientist is now Krista Baker. David Whorley, Director Resource Management Operations, has assumed the Chair of the Northern Shrimp Advisory Committee. These changes were reported to the Audit Team via a letter from DFO to the client representative (See Section 4.2.1).

### 1.2.4 Compliance

DFO provided a compliance summary report for the fishery covering the period January 1<sup>st</sup> 2003 to October 22<sup>nd</sup> 2019. Information provided in the tables below is based on data sourced from the DFO Fisheries Enforcement Activity Tracking System and the Departmental Violations System. The audit team followed up with some written supplementary questions to Conservation and Protection (C & P).

**Table 3. Total Enforcement Hours**

Year	Total Enforcement Hours
2013	3,156
2014	1,887
2015	2,121
2016	1,387
2017	1,318
2018	1,041
2019	3,156

The audit team queried why there is a significant upward trend in enforcement hours in 2019. C & P confirmed the increase in enforcement hours is a result of a number of in-port inspections that were completed. Fisheries Officers in Newfoundland were able to monitor complete offloads of a couple of vessels which, given the number of hours it takes to complete the inspection, and the number of officers involved, increased enforcement hours significantly.

**Table 4. Number of Patrols for Shrimp**

Year	# of Patrols
2013	87
2014	119
2015	117
2016	76
2017	55
2018	57*
2019	116*

\*does not include aerial surveillance activity in Central and Arctic Region

C & P confirmed the reason for the increase in patrols was due to the Department operating a larger plane, which allowed better coverage of the Northern shrimp fishing areas.

**Table 5. Total Shrimp Occurrences**

Year	# of Occurrences
2013	54
2014	62
2015	60
2016	48
2017	31
2018	39
2019	21

"Shrimp Occurrences" can mean minor complaints through to enforcement actions such as written warnings and charges. All referrals, including those from at-sea observers and dockside monitors, can be entered as "Occurrences" (Heather Buchanan, pers. comm.)

**Table 6. Total Vessel Inspections**

Year	# vessels checked
2013	322
2014	216
2015	172
2016	180
2017	91
2018	44*
2019	59*

\*does not include aerial surveillance activity in Central and Arctic Region

**Table 7. Shrimp Violations**

Year	# of Violations
2013	19
2014	24
2015	24
2016	25
2017	28
2018	16
2019	3

**Table 8. Violation Types**

Violation type	Charges Laid	Warning Issued	Grand Total
Area / Time	3	0	3
Gear - illegal/ used illegally	0	1	1
Registration / Licence	3	5	8
Reporting	1	6	7
<b>2013 Total</b>	<b>7</b>	<b>12</b>	<b>19</b>
Area / time	2	0	2
Gear - illegal/ used illegally		1	1
Registration / Licence	2	11	13
Reporting	0	8	8
<b>2014 Total</b>	<b>4</b>	<b>20</b>	<b>24</b>
Area / time	3	0	3
Registration / licence	0	9	9
Reporting	1	11	12
<b>2015 Total</b>	<b>4</b>	<b>20</b>	<b>24</b>
Area / time	2	0	2
Gear - illegal/ used illegally	1	1	2
Registration / Licence		8	8
Reporting	4	9	13
<b>2016 Total</b>	<b>7</b>	<b>18</b>	<b>25</b>
Area / time	10		10
Registration / licence		4	4
Reporting		14	14
<b>2017 Total</b>	<b>5</b>	<b>6</b>	<b>28</b>
Area / time	4*	0	4



Violation type	Charges Laid	Warning Issued	Grand Total
Gear - illegal/ used illegally	0	2	2
Registration / licence	0	3	3
Reporting	2	5	7
<b>2018 Total</b>	<b>5</b>	<b>10</b>	<b>16</b>
Area / time	0	0	0
Gear - illegal/ used illegally	0	1	1
Registration / licence	0	1	1
Reporting	0	1	1
<b>2019 Total</b>	<b>0</b>	<b>3</b>	<b>3</b>

\*1 violation in Central and Arctic Region pending

Description of "Violation Type" categories:

- Area / Time: means the vessel was either fishing during a closed time or in an area closed to shrimp fishing.
- Gear Illegal / Used Illegally: examples could include a vessel using undersized mesh in the trawl or a deliberate restriction in the efficiency of the Nordmore grate.
- Registration / Licence: examples could include failing to have the correct licence on board or failing to comply with a condition of licence.
- Reporting: usually means failing to submit logs, or submit logs on time, or failing to hail in or out properly.

The audit team queried the outcomes of the 2018 violations and the seriousness of the charges that were laid in 2019. C & P confirmed that the 2018 violations resulted in written warnings and the 2019 violations related to a mesh size problem and some missed daily hail-ins.

## 1.2.5 Changes to scientific base of information, including stock assessments

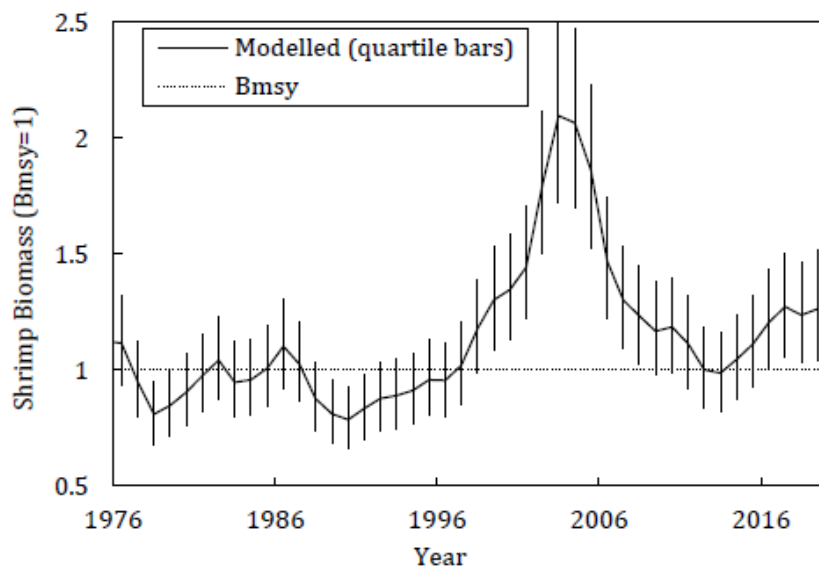
### Principle 1

Since the publication of the 2<sup>nd</sup> annual surveillance audit report (Blyth-Skyrme *et al.*, 2018), the status of the resource in all UoCs has been updated. Following the February 12-14, 2019 Northern and Striped Shrimp Assessment, the most recent assessments were published in Science Advisory Reports for Northern and striped shrimp in the EAZ and WAZ (DFO, 2019a) and for Northern shrimp in SFAs 4-6 and striped shrimp in SFA 4 (DFO, 2019b). The most recent assessment of stock status for Northern shrimp in SFA 1 was undertaken at the NAFO/ICES *Pandalus* Assessment Group (NIPAG) meeting in November 2019 in Tromsø, Norway (NAFO, 2019a).

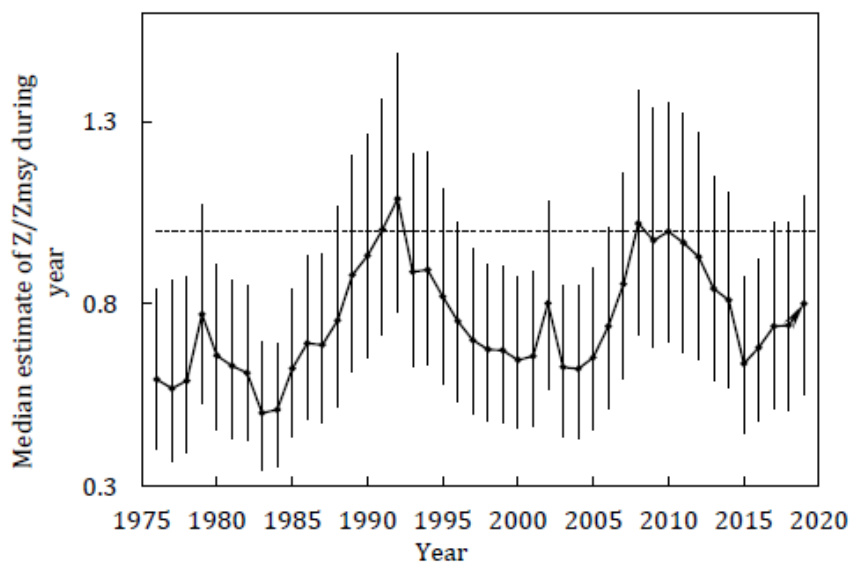
### UoC 1 Northern Shrimp in SFA 1

The shrimp stock in West Greenland is distributed primarily in NAFO Subarea 1, which is exploited by Greenland, but also within the Canadian EEZ in the eastern edge of Division 0A, where it is exploited by Canadian vessels, and it is this area that is defined as SFA1. The stock is assessed by NIPAG as a single population.

A Schaefer surplus-production model of population dynamics was fitted to series of CPUE, catch and survey biomass indices, and the model includes a term for predation by Atlantic cod (NAFO, 2019a). Following concerns about the degree of instability in maximum sustainable yield (MSY) estimates in previous assessments, and changes in perception of stock trajectory in recent years based on a 5-year retrospective analysis, the assessment approach was revised in 2018. A longer time series of data was used and time variant catchability was used for the commercial fleet, because there were periods in the time series when catchability had been influenced by changes in the fleet and changes in water temperatures. These changes, which are described in detail in Riget *et al.* (2018), have resulted in increased stability of the model parameters and a much improved retrospective pattern. The modelled biomass has shown a recent increase following the decline from 2004 to 2013 (Figure 3) and remains above  $B_{MSY}$ . The probability of the biomass being below  $B_{MSY}$  at the end of 2019 is 21%, and the probability of being below  $B_{lim}$  is <1% (NAFO, 2019a). The median modelled estimate of total mortality ( $Z$ ) continues to be well below  $Z_{MSY}$  (Figure 4 and Figure 5). With 2019 catches expected to be 102,000 tonnes, the probability that  $Z$  will exceed  $Z_{MSY}$  in 2019 is 32%. The number of age-2 shrimps are above average and the number of pre-recruits in 2019 are similar to the long-term average from 1993 to 2019. The assessment provides predicted probabilities of exceeding precautionary reference points ( $B_{MSY}$ ,  $B_{lim} = 0.3 \times B_{MSY}$  and  $Z_{MSY}$ ) in 2020-2022 under eight catch options and subject to predation by the cod stock with an effective biomass of 21,000 tonnes (Table 9). Based on this stock assessment, NAFO Scientific Council advise that catches in 2020 should not exceed 110,000 tonnes (NAFO, 2019b).

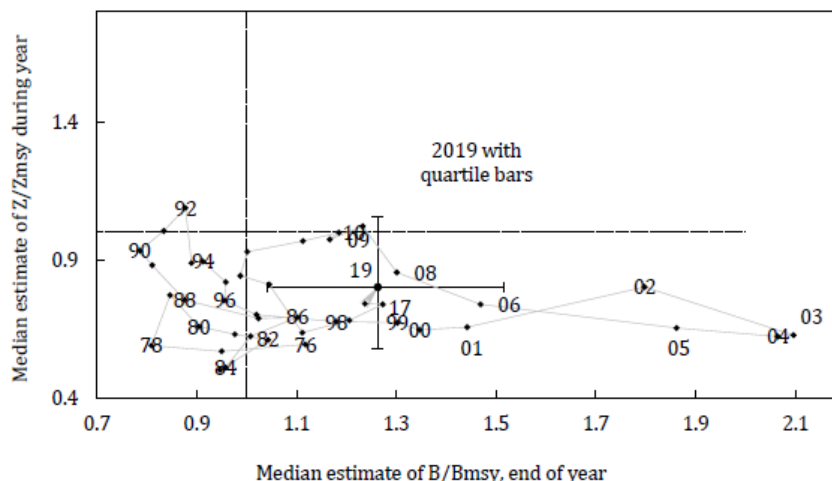


**Figure 3.** Northern shrimp in NAFO SA1 and Division 0A. Modelled estimate of stock biomass relative to  $B_{MSY}$  with quartile error bars from 1976 to 2019. Dotted line corresponds to  $B = B_{MSY}$ . (Source: NAFO, 2019a).



**Figure 4.** Northern shrimp in NAFO SA1 and Division 0A. Trajectory of the median modelled total mortality ( $Z$ ) relative to  $Z_{MSY}$  from 1976 to 2019 with quartile error bars. Dotted line corresponds to  $Z = Z_{MSY}$ . (Source: NAFO, 2019a)





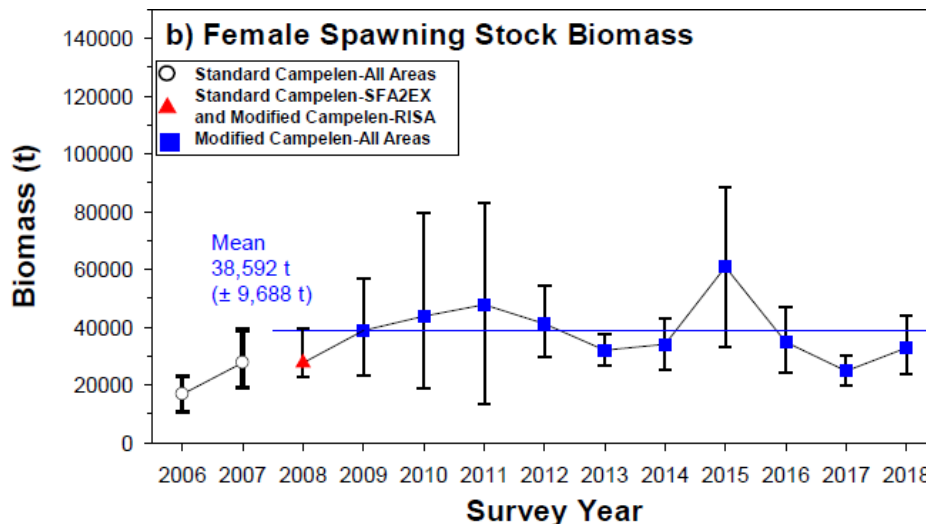
**Figure 5.** Northern shrimp in NAFO SA1 and Division 0A. Trajectory of relative biomass and relative total mortality 1976 to 2019. (Source: NAFO, 2019a)

**Table 9.** Northern shrimp in NAFO SA1 and Division 0A. Predicted probabilities of transgressing precautionary reference points in 2020–2022 under eight catch options and subject to predation by a cod stock with an effective biomass of 21,000 tonnes. (Source: NAFO, 2019a)

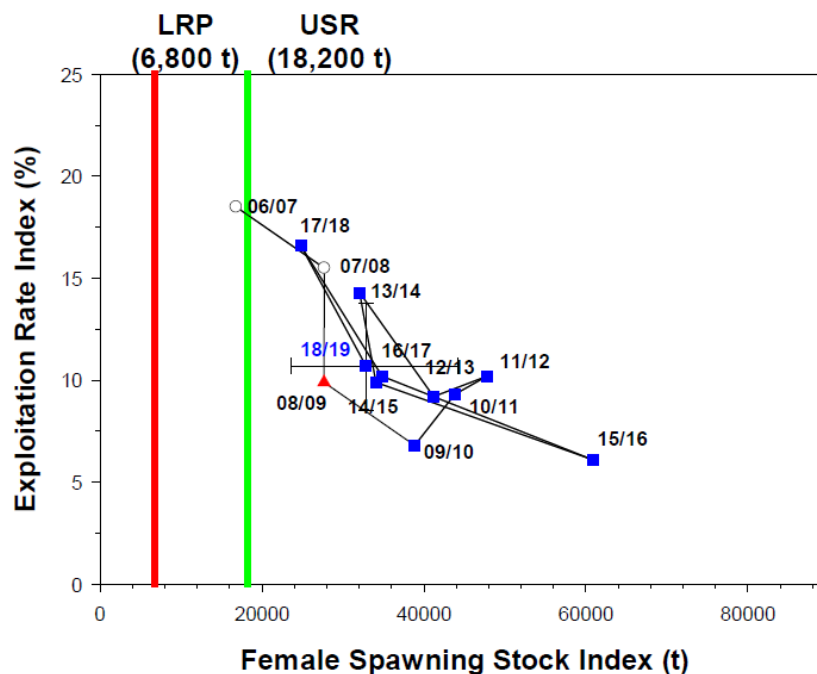
21 000 t cod	Catch option ('000 tons)							
Risk of:	85	90	95	100	105	110	115	120
falling below $B_{MSY}$ end 2020 (%)	23	23	23	24	24	24	24	25
falling below $B_{MSY}$ end 2021 (%)	24	24	25	25	26	27	27	27
falling below $B_{MSY}$ end 2022 (%)	24	25	26	27	29	29	30	31
falling below $B_{lim}$ end 2020 (%)	0	0	0	0	0	0	0	0
falling below $B_{lim}$ end 2021 (%)	0	0	0	0	0	0	0	0
falling below $B_{lim}$ end 2022 (%)	0	0	0	0	0	0	0	0
exceeding $Z_{MSY}$ in 2020 (%)	17	20	24	27	30	34	37	40
exceeding $Z_{MSY}$ in 2021 (%)	18	21	25	28	32	35	38	41
exceeding $Z_{MSY}$ in 2022 (%)	19	22	26	29	33	36	39	43

#### UoC 2 Northern Shrimp in EAZ, WAZ and SFA 4.

Fishable and female SSB indices from scientific surveys form the basis of the stock assessment for northern shrimp in the EAZ and WAZ. Full assessments are carried out every two years with stock status updates in the intervening years. A full assessment was completed in 2019 (DFO, 2019a). Resource status in the EAZ was evaluated within the PA framework and reference points are set out in the Integrated Fisheries Management Plan (IFMP) (DFO, 2017). The Limit Reference Point (LRP) is 30% and the Upper Stock Reference (USR) is 80% of the geometric mean of spawning stock biomass (SSB) for 2006–2008. The time series of survey data show that the female SSB index varied without trend around the long term mean from 2008 to 2016 before dropping to 24,800 tonnes in 2017 which was the lowest value in the time series since 2008, but then increasing by 32.4% to 32,842 tonnes in 2018 (Figure 6, DFO, 2019a). The female SSB is currently well within the Healthy Zone (above the USR) of the IFMP PA Framework (Figure 7). Based on fishery data, the reported exploitation rate index was 10.7% with only 64% of the full TAC taken by December 18, 2018, and with a potential exploitation rate of 16.7% if the full 2018/19 TAC of 7,840 tonnes is taken (DFO, 2019a).

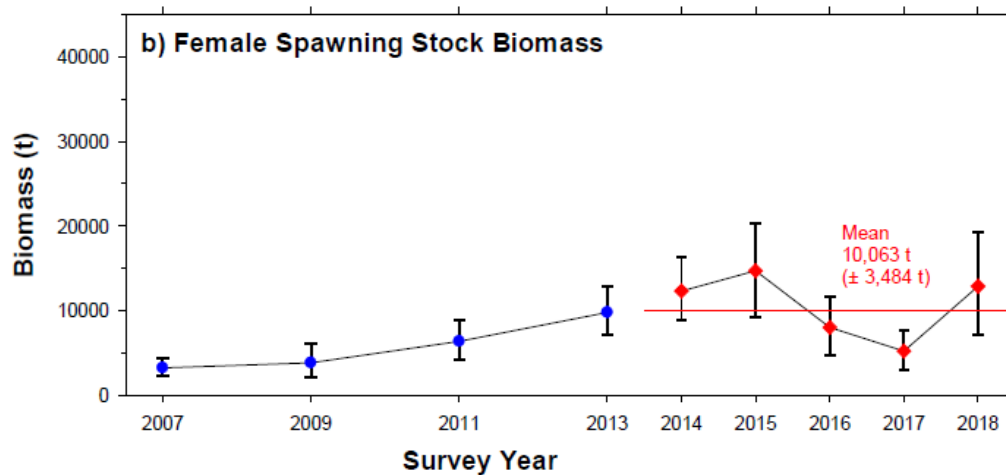


**Figure 6.** Northern shrimp in EAZ. Female SSB indices for 2006-2018. Error bars are 95% confidence ranges. (Note that the data for 2006-2007 are not comparable due to poor trawl performance during part of the survey.) (Source: DFO, 2019a)



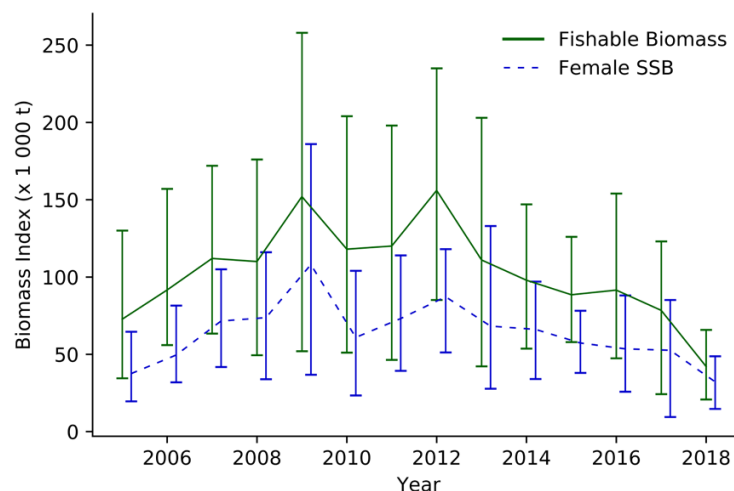
**Figure 7.** Northern shrimp in the EAZ. Trajectory of female SSB and exploitation indices for 2006/7 to 2018/19 in relation to reference points. USR=Upper Stock Reference Point, LRP=Limit Reference Point. Error bars are 95% confidence ranges. (Source: DFO, 2019a)

In the WAZ, reference points were previously developed using the same proxies as for the EAZ but are no longer applicable due to the change in survey approach undertaken since 2014. The 2018 survey was therefore the fifth survey in the new time series. The female SSB index has varied without trend since the new time series commenced in 2014 although there was an increase of 147% from 5,216 tonnes in 2017 to 12,884 tonnes in 2018 (Figure 8). Based on fishery data, the reported exploitation rate index was 6.2% with only 63% of the full TAC taken by December 18, 2018, and with a potential exploitation rate of 9.9% if the full 2018/19 TAC of 2,080 tonnes is taken (DFO, 2019a). The latest assessment does not provide an evaluation of stock status as further stock surveys are required before the stock can be assessed under a PA framework. Work is underway to establish the PA Framework within the next two years (DFO, 2019a).

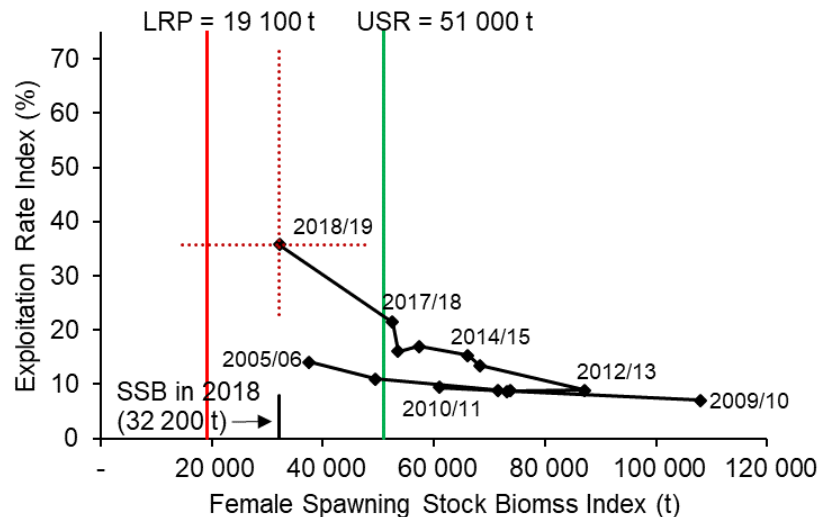


**Figure 8.** Northern shrimp in WAZ. Female SSB indices for 2007-2018. Error bars are 95% confidence ranges. (The 2014-2018 data represent the new time series for the WAZ.) (Source, DFO, 2019a)

In SFA 4 fishable and female SSB indices from scientific surveys form the basis of the stock assessment. Resource status in SFA 4 was evaluated within the PA framework and reference points are set out in the IFMP (DFO, 2017). The LRP is 30% and the USR is 80% of the geometric mean of SSB for 2005–2009. The female SSB index showed little trend between 2007 and 2014 and then declined slowly between 2014 and 2017 (Figure 9). The SSB index declined significantly between 2017 and 2018 and is now at its lowest point in the time series (Figure 9; DFO, 2019b) and for the first time the estimate of SSB was below the USR and in the Cautious Zone of the IFMP PA Framework (Figure 10) with a 7% probability of having been in the Critical Zone. Based on fishery data, the reported exploitation rate index has previously been around 15% but increased to 19.4% in 2017 and then 35.7% in 2018 (DFO, 2019b). The TAC was set for SFA 4 Northern Shrimp in 2018 under the assumption that biomass indices would not change from 2017 to 2018, and the declining biomass has therefore resulted in an increased exploitation rate (DFO, 2019b).



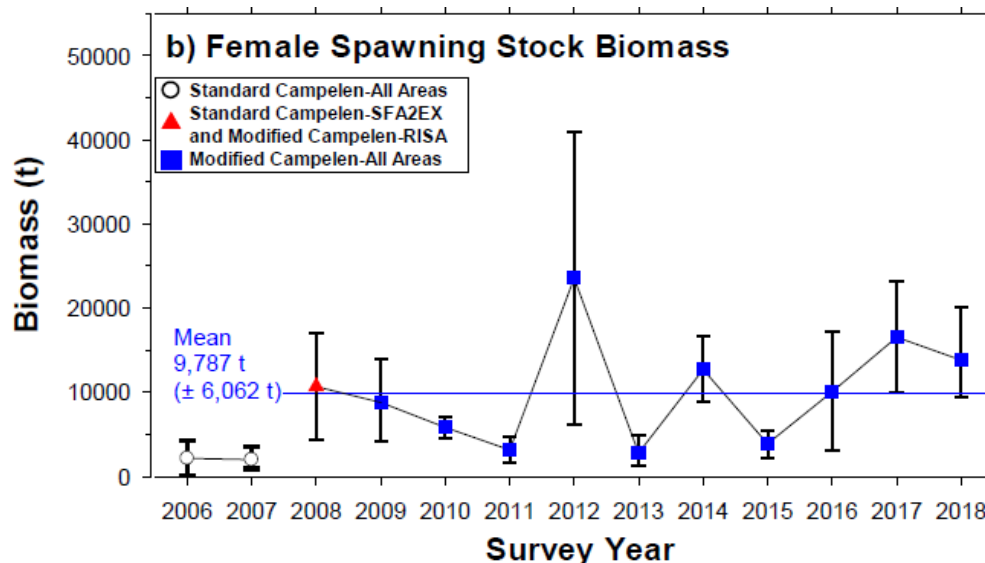
**Figure 9.** Northern shrimp in SFA 4. Fishable biomass index (solid line) and female SSB index (dashed line). Error bars represent 95% confidence intervals. (Source: DFO, 2019b)



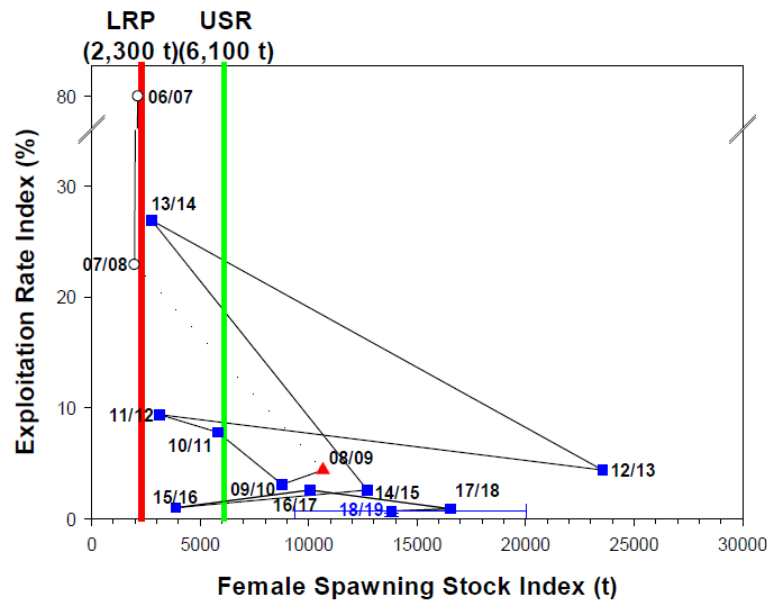
**Figure 10.** Northern shrimp in SFA 4. Trajectory of exploitation rate index against female SSB index. The red cross on the 2018/19 point indicates 95% confidence intervals for the 2018 female SSB index (horizontal) and the 2018/19 exploitation rate index (vertical). (Note that PA reference points have been revised from the previous assessments in accordance with adjustments to a reduced survey area.) (Source: DFO, 2019a)

### UoC 3 Striped Shrimp in EAZ, WAZ and SFA 4

As for UoC 2, fishable and female SSB indices for striped shrimp from scientific surveys form the basis of the stock assessment for the EAZ and WAZ. Resource status in the EAZ was evaluated within the PA framework and reference points are set out in the IFMP (DFO, 2017). The LRP is 30% and the USR is 80% of the geometric mean of SSB for 2006–2008. The female SSB index has fluctuated without trend from 2008 to 2018, and although it decreased from 16,567 tonnes in 2017 to 13,806 tonnes in 2018 (Figure 11; DFO, 2019a), SSB remains well within the Healthy Zone (above the USR) of the IFMP PA Framework (Figure 12). However, the status of the stock within the PA framework is uncertain because of the observed large fluctuations in female SSB observed since 2011 and such fluctuations may be the result of resource transfer across management boundaries rather than local dynamics within a population (DFO, 2019a). Based on fishery data, the reported exploitation rate index in 2018 was 0.7% with only a small proportion of the TAC taken during the fishing season in recent years (DFO, 2019a).

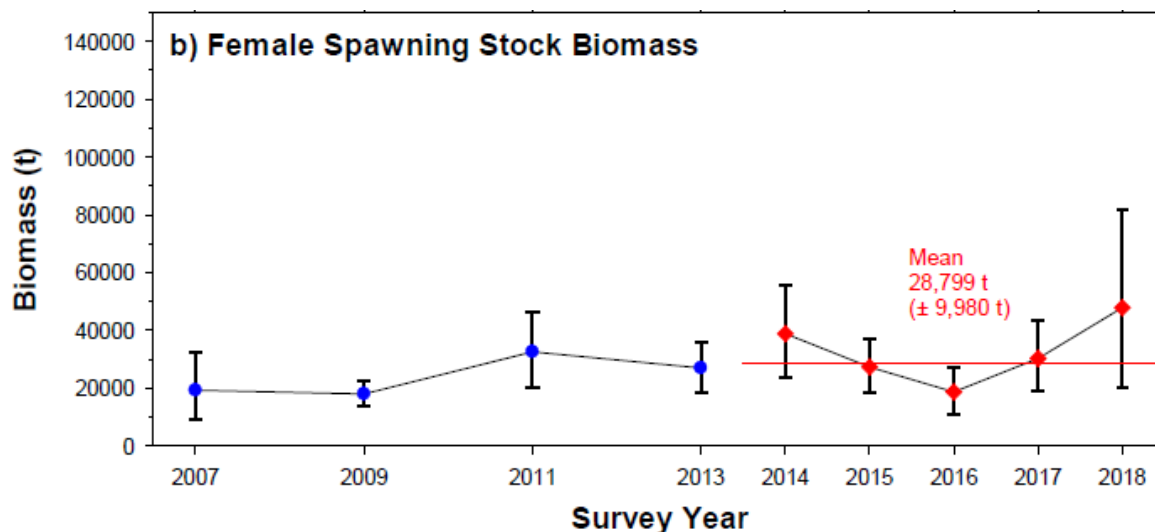


**Figure 11.** Striped shrimp in EAZ. Female SSB indices for 2006-2018. Error bars are 95% confidence ranges. (Note that the data for 2006-2007 are not comparable due to poor trawl performance during part of the survey.) (Source: DFO, 2019a)



**Figure 12.** Striped shrimp in the EAZ. Trajectory of female SSB and exploitation indices for 2006/7 to 2018/19 in relation to reference points. USR=Upper Stock Reference Point, LRP=Limit Reference Point. Error bars are 95% confidence ranges. (Source: DFO, 2019a)

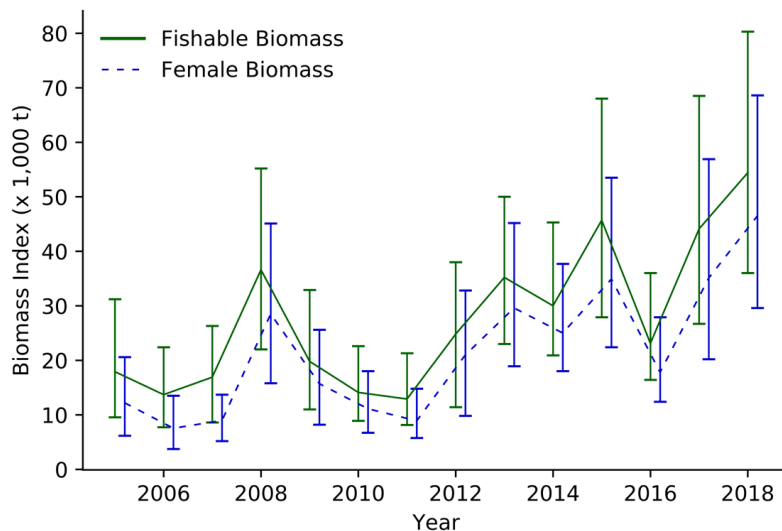
In the WAZ reference points were developed using the same proxies as for the EAZ but are no longer applicable due to the change in survey approach undertaken since 2014. The 2018 survey was therefore the fifth survey in the new time series. The female SSB index increased significantly to 47,834 tonnes in 2018 (Figure 13), which is the highest level since the new survey series commenced but because of the short time series, no trends can be inferred. Based on fishery data, the reported exploitation rate index was 6.9% with almost the full TAC taken during the fishing season (DFO, 2019a). The latest assessment (DFO, 2019a) does not provide an evaluation of stock status as further stock surveys are required before the stock can be assessed under a PA framework. Work is underway to establish the PA Framework within the next two years (DFO, 2019a).



**Figure 13.** Striped shrimp in WAZ. Female SSB indices for 2007-2018. Error bars are 95% confidence ranges. (The 2014-2018 data represent the new time series for the WAZ.) (Source, DFO, 2019a)

In SFA 4, striped shrimp biomass estimates have been highly variable from year to year (Figure 14), mainly because the fishery operates in a boundary zone between areas, where distribution of shrimp concentrations can change quickly (DFO, 2019b). Female biomass increased by 33% from 2017 and was 46,500 tonnes in 2018. DFO (2019b) notes that Figure 14 describes only female biomass and not female SSB, the latter which is difficult to assess for SFA4 because strong currents in the area make it impossible to estimate whether larvae and juveniles in the area originated from the female SSB in the area and whether or not larvae produced from the female SSB in the area actually remain in the area (DFO, 2019b). Striped shrimp is primarily taken as bycatch in the Northern shrimp fishery in this SFA. The assessment

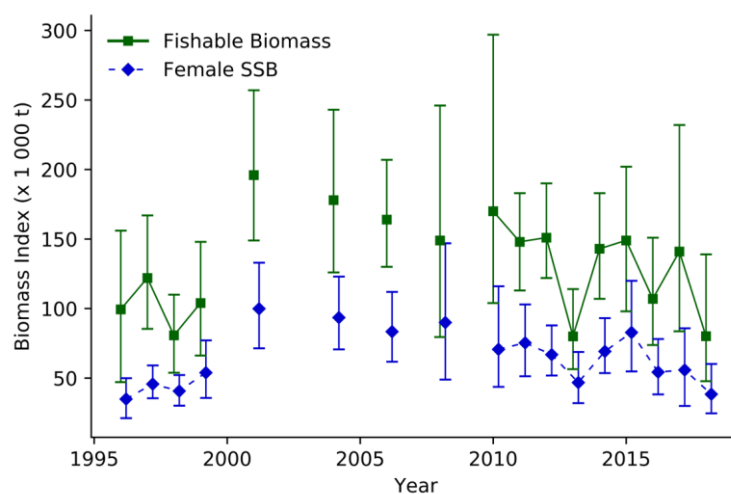
is based on maintaining exploitation rate indices at less than 20%. The reported Exploitation Rate Index for 2018/19 based on fishery data was 4.7% and would have been 7.4% had the full bycatch limit been taken. As there is no IFMP PA framework for this stock, and without a reliable female SSB index, the status of the stock has not been evaluated. However, even if the full bycatch limit is taken, the exploitation rate is still well below the 20% maximum exploitation rate index.



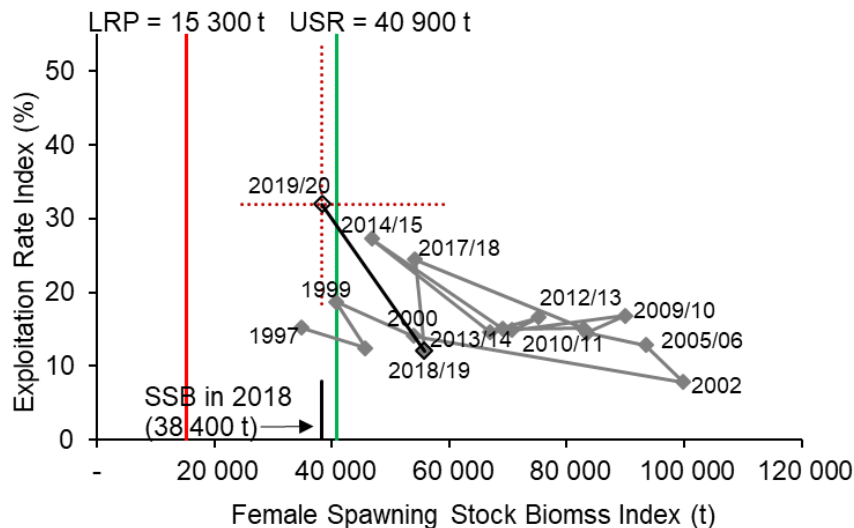
**Figure 14.** Striped shrimp in SFA 4. Fishable biomass index (green solid line) and female biomass index (blue dashed line). Error bars represent 95% confidence intervals. (Source: DFO, 2019b).

#### UoC 4 Northern Shrimp in SFA 5.

In SFA 5 fishable and female SSB indices from scientific surveys form the basis of the stock assessment. Following the latest Northern and Striped Shrimp Assessment held on February 12–13, 2019, Northern shrimp stock status in SFA 5 was evaluated within the PA framework and reference points are set out in the IFMP (DFO, 2017). The LRP is 30% and the USR is 80% of the geometric mean of SSB for 1996–2001. The female SSB index fluctuated without any trend from 2005 to 2017, but in 2018 SSB was 38,400 tonnes representing a 31% decline since 2017 and was the second lowest level in the time series (Figure 15; DFO, 2019b). For the first time since 1997, the SSB index for 2018 dropped below the USR and therefore into the Cautious Zone of the IFMP PA Framework (Figure 16) with a 51% probability of being in the cautious zone. Based on fishery data, the reported exploitation rate index has fluctuated without trend around 15% from 1997 to 2018/19. If the TAC is taken in full in 2018/19, then the exploitation rate will be 18.2%, although this rate may be higher if season bridging is permitted, i.e. if previously unused quota is carried forward into 2018/19 or some of the 2019/20 quota is brought forward to 2018/19 (DFO, 2019b).



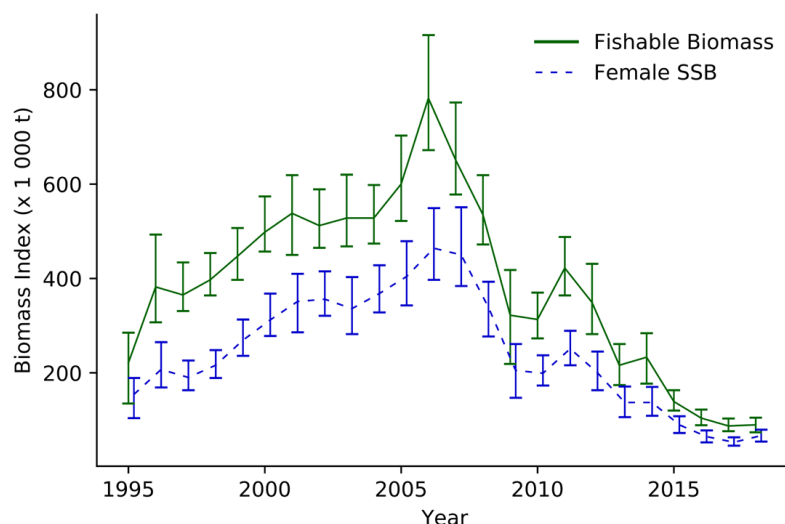
**Figure 15.** Northern shrimp in SFA 5. Fishable biomass index (green solid line) and female SSB index (blue dashed line). Error bars represent 95% confidence intervals. (Source: DFO, 2019b)



**Figure 16.** Northern shrimp in SFA 5. Trajectory of exploitation rate index against female SSB index. The red cross on the 2019/20 point indicates 95% confidence intervals for the 2018 female SSB index (horizontal) and the exploitation rate index (vertical) assuming that the full TAC is taken in 2019/20. (Source: DFO, 2019b)

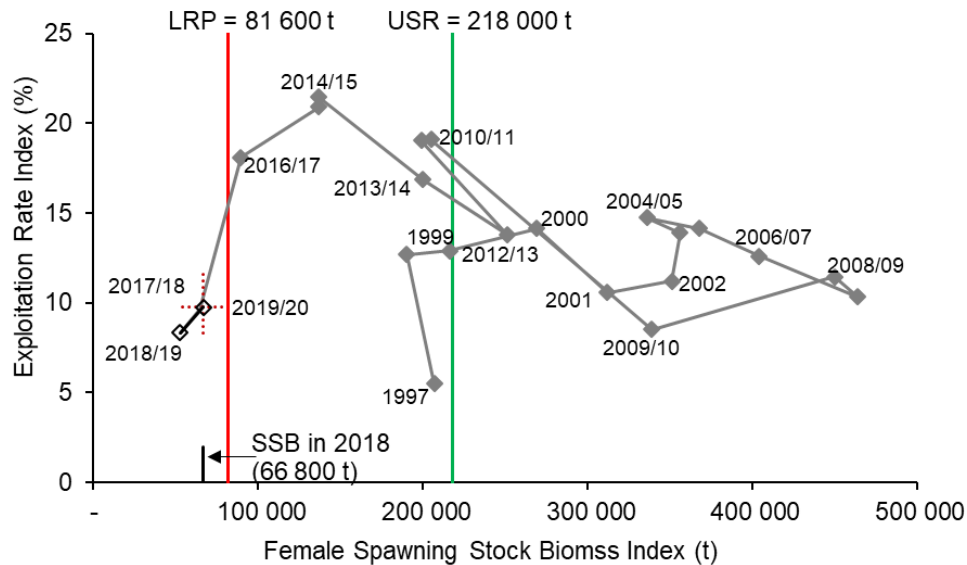
#### UoC 5 Northern Shrimp in SFA 6.

In SFA 6, fishable and female SSB indices from scientific surveys form the basis of the stock assessment. Following the latest Northern and Striped Shrimp Assessment held on February 12–13, 2019, Northern shrimp stock status in SFA 6 was evaluated within the PA framework and reference points are set out in the IFMP (DFO 2017). The LRP is 30% and the USR is 80% of the geometric mean of SSB for 1996–2003. The female SSB index declined from 2007 to 2017 reaching the lowest in the time series in 2017. In 2018 the SSB index was 66,800 tonnes, a 27% increase from 2017 but still amongst the lowest levels in the time series (Figure 17; DFO, 2019b) and the SSB index remains below the LRP and is therefore within the Critical Zone of the IFMP PA Framework (Figure 18) with greater than 99% probability. Based on fishery data, the reported exploitation rate index has averaged 15.7% in the last five years and will be 10% if the TAC is taken in full in 2018/19 which is line with the maximum 10% defined in the IFMP (DFO, 2017) when the female SSB index is in the Critical Zone (DFO, 2019b). To achieve significant reductions in exploitation rate, the TAC was reduced by 42% in 2016/17 to 27,825 tonnes, by 63% in 2017/18 to 10,400 tonnes and by 16% to 8,730 tonnes in 2018/19.



**Figure 17.** Northern shrimp in SFA 6. Fishable biomass index (green solid line) and female SSB index (blue dashed line). Error bars represent 95% confidence intervals. (Source: DFO, 2019b)





**Figure 18.** Northern shrimp in SFA 6. Trajectory of exploitation rate index against female SSB index. The 2018/19 fishery was ongoing and based on reported catch as of 7 February 2019. The red cross on the 2019/20 point indicates 95% confidence intervals for the 2018 female SSB index (horizontal) and the 2019/20 exploitation rate index (vertical) assuming that a 10% exploitation rate is achieved. (Source: DFO, 2019b)

#### Implications of updated stock assessments

For UoCs 1 and 3 the updated stock assessments demonstrate that there has been no substantive change in stock status, and therefore the scores for Principle 1 Performance Indicators remain as they were at the time of the Public Certification Report (PCR) (Powles *et al.*, 2016) and the 2<sup>nd</sup> surveillance audit (Blyth-Skyrme *et al.*, 2019).

For UoC 2 the Northern shrimp stock in the EAZ was still in the healthy zone above the USR. In the WAZ, the stock is not assessed under a PA framework, but the 2018 survey showed a significant increase in stock biomass following the low levels observed in 2017. In these two areas, the latest DFO stock assessment suggests that there has been no change in stock status in 2018 (DFO, 2019a). In SFA 4 the SSB index declined significantly between 2017 and 2018 and is now at its lowest point in the time series (DFO, 2019b) and for the first time the estimate of SSB was below the USR and in the Cautious Zone of the IFMP PA Framework. The latest DFO assessment (DFO, 2019b) notes that *“the female SSB that is relevant to the PA for an area consists of the animals whose spawning products will ultimately be caught in that area (as opposed to the animals that spawn in the area). The strong currents that likely affect all sizes of shrimp, especially larvae, into an area create especially severe problems with estimating female SSB, for SFA 4 in particular.”* There are strong currents in the region - Hudson Strait is a highly dynamic system with strong currents and mixing. Shrimp could be transported a great distance in a relatively short period of time, resulting in rapid shifts of shrimp into and out of SFA 4 (DFO, 2019b). Management boundaries are, to some extent, arbitrary and selected based on factors other than science (DFO, 2019b) and whilst observed SSB may be low in SFA 4 currently, the shrimp stock in SFA 4 is most likely to be driven by shrimp larvae produced to the North of SFA 4 in the EAZ and WAZ and SSB appears to be at a healthy level in these two bordering areas. Taking the three sub-components for UoC 2 as a whole, it seems reasonable to assume that the stock is well above the point at which recruitment might be impaired, and has been fluctuating around its target reference point in recent years. Whilst the original score of 100 given for PI 1.1.1 for UoC 2 in the Public Certification Report (Powles *et al.*, 2016) may now be considered to be too high, the audit team concluded that the UoC still scores at least 80 for this PI. As there has therefore been no material change to the score for this PI, the audit team did not formally rescore this PI at the surveillance audit. However, the audit team stressed that stock status for UoC 2 should be re-evaluated fully at the next surveillance audit and emphasised the need for the development of reference points for all components of the UoC as soon as possible.

For UoC 4, the SSB index for 2018 dropped just below the USR and therefore into the Cautious Zone of the IFMP PA Framework. This is the first time since 1997 that the SSB index for UoC 4 has not been in the healthy zone and therefore this may be part of natural fluctuations or may be the start of a sustained decline. At present the audit team concluded that the stock remains well above the point at which recruitment might be impaired and has been fluctuating around its target reference point in recent years. As with UoC 2 above, whilst the original score of 100 given for PI 1.1.1 for UoC 4 in the Public Certification Report (Powles *et al.*, 2016) may now be considered to be too high, the audit team concluded that the UoC still scores at least 80 for this PI. As there has therefore been no material change to the score for this PI, the audit team did not formally rescore this PI at the surveillance audit.



For UoC 5, Northern shrimp in SFA 6, there has been a significant change in stock status since the original certification report (Powles *et al.*, 2016). At the first year surveillance audit (Blyth-Skyrme *et al.*, 2018) the score for PI 1.1.1 for UoC 5 was revised to 60 because of the decline in the female SSB stock indicator in SFA 6, resulting in the raising of a new condition and the triggering of the scoring of PI 1.1.3 for this UoC. In addition, there was clear evidence that the reference points for SFA 6 may no longer be appropriate resulting in a revision of the score for PI 1.1.2 and the raising of an additional condition. Detailed evidence was presented in the first year surveillance audit report that recruitment had not been impaired. An updated stock assessment presented at the second year surveillance audit showed that the stock had declined further (Blyth-Skyrme *et al.*, 2019). DFO have formally implemented a rebuilding strategy for SFA 6 under which there is a highly precautionary maximum exploitation rate of 10% and plans are in place to revise the reference points so that they are more closely aligned with production and not female SSB. In 2018, the SSB index was 66,800 tonnes, a 27% increase from 2017 but still amongst the lowest levels in the time series (Figure 17) and the SSB index remains below the LRP and is therefore within the Critical Zone of the IFMP PA Framework. This year's survey indicated that the SSB index is increasing back towards the USR, and therefore the audit team concluded that there is no requirement to revise the scores this year for UoC 5.

## Principle 2

An additional year of catch data was provided for the fleets operating in each of the UoC 1 – 5 (SFAs 1 – 6), although this doesn't comprise a material change in the base of information. However, these data, together with the clarification provided by DFO regarding the collection and analysis of catch data, does mean that Condition 2 has been closed at this year's audit. Please see [Table 14](#) for more detail.

It was also reported that a scientific process is underway to consider the risk posed by the SFA 1, EAZ and WAZ shrimp fisheries to Arctic cod (*Boreogadus saida*). This shoaling, benthic-pelagic species is an important forage item in the region, but despite the requirement to use a Nordmore sorting grid, Arctic cod is vulnerable to capture in the shrimp fishery. Currently, a licence condition specifies that a move-on rule will apply where bycatch limits are exceeded, but further consideration of the issues and of potential management approaches was deemed necessary in light of higher than normal bycatches in the shrimp fishery, and with the potential for bycatch to increase if higher quotas for shrimp are set. As such, this new process was intended to determine the following:

- What is a sustainable amount of Arctic Cod bycatch in each area?
- Is it possible for DFO Science to provide one number (i.e., of tonnes of Arctic cod bycatch) for management to set sustainable bycatch levels by?
- Is it possible to predict both geographically and inter-/intra-annually where large aggregations of Arctic Cod will occur?

It was reported to the Audit Team that, in the absence of robust stock data for Arctic cod, the initial approach to determining sustainable bycatch limits has considered limits in the context of ecological demand for Arctic cod in the region. The initial discussions were summarised and published as DFO (2019c), but it is understood that further work is ongoing and additional publications are expected.

### 1.2.6 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)

During the conference call undertaken during the audit, the client noted that more shrimp caught by offshore vessels are being processed in Canadian plants this year than in previous years, but all plants are covered by Chain of Custody certifications and so this is not anticipated to have any impact on traceability.

### 1.2.7 Inseparable / Practically Inseparable (IPI) catches

Striped shrimp are practically inseparable from Northern shrimp during normal fishing operations. In UoCs 1, 4 and 5, therefore, where small quantities of striped shrimp may be landed with Northern shrimp, requires that consideration be given during each surveillance audit as to the ongoing status of striped shrimp as an IPI catch, in accordance with section PA1.5.1 of MSC Fisheries Certification Requirements v1.3 (MSC, 2018).

**Table 9. IPI calculation for the Northern and Striped Shrimp Fishery, UoCs 1 (SFA 1), 4 (SFA 5) and 5 (SFA 6). Logbook data provided by DFO.**

UoC	SFA	Species	Catch (t) 2016/17	Catch (t) 2017/18	Catch (t) 2018/19	Mean % <i>P. montagu</i>
UoC 1	1	Northern shrimp ( <i>P. borealis</i> )	1,171	3,216	1,607	0.00
		Striped shrimp ( <i>P. montagu</i> )	0	0	0	
UoC 4	5	Northern shrimp ( <i>P. borealis</i> )	22,552	26,102	23,257	0.89
		Striped shrimp ( <i>P. montagu</i> )	245	332	72	
UoC 5	6	Northern shrimp ( <i>P. borealis</i> )	25,228	10,080	8,703	0.17
		Striped shrimp ( <i>P. montagu</i> )	85	15	1	

#### UoC 1 / SFA 1

Insignificant quantities of striped shrimp have historically been taken with Northern shrimp in UoC 1 / SFA 1, as the fishing area is well offshore, and is considered to be outside the typical range of striped shrimp (Kingsley, 2011). Data available for the reassessment of the Canada Northern and Striped Shrimp Fishery (Powles *et al.*, 2016) showed that, in 2014, striped shrimp made up 2.81% of the SFA 1 catch, and so striped shrimp was considered under the retained catch PIs (i.e., PIs.2.1.1 – 2.1.3). Logbook data for the recent period show no striped shrimp being taken in UoC 1 (Table 9).

#### UoC 4 / SFA 5

Catches of striped shrimp in the UoC 4 / SFA 5 fishery in 2018/19 comprised <1% of the total catch; this proportion is slightly lower than the levels observed in past years (Table 9). An exemption to the IPI requirements was received from the MSC for the reassessment of UoC 5 in 2016 (noted in Section 5.3, Powles *et al.*, 2016). The situation at this surveillance remains the same (i.e., striped shrimp <2% of the total catch), and so the exemption to the IPI requirements remains in place.

#### UoC 5 / SFA 6

Under the IPI requirements (Annex PA, MSC 2014), striped shrimp was considered as a minor retained species in UoC 5 at the Year 1 surveillance audit (Blyth-Skyrme *et al.*, 2018). Nevertheless, as noted in Powles *et al.* (2016), the small quantities taken and the somewhat different distribution of striped shrimp in comparison to Northern shrimp ensures that the total catch of striped shrimp in UoCs 1, 4 and 5 does not significantly impact the IPI stock. New scoring was undertaken for UoC 5, with striped shrimp included as a minor retained species; UoC 5 scored 80 for PI 2.1.1, 85 for PI 2.1.2, and 80 for PI 2.1.3 (Blyth-Skyrme *et al.*, 2018).

At the Year 2 audit, the proportion of striped shrimp in the catch was shown to have fallen back, such that this species was deemed exempt from the IPI requirements (Blyth-Skyrme *et al.*, 2019). At this Year 3 audit, the proportion of striped shrimp in the catch is lower again (Table 9), such that this species remains exempt from the IPI requirements. There is no change to scoring at this audit.

### 1.3 Version Details

Table 10 lists the versions of the MSC Fishery Programme documents that were used for this audit. It is noted that the fishery was recertified against version 1.3 of the Fisheries Standard, so even though this is not the current MSC Standard, it is the version that the fishery will be audited against until the end of the existing certificate.

**Table 10. Fisheries program documents versions**

Document	Version number
MSC Fisheries Certification Process	<b>Version 2.1</b>
MSC Fisheries Standard	<b>Version 1.3</b>
MSC General Certification Requirements	<b>Version 2.4.1</b>
MSC Surveillance Reporting Template	<b>Version 2.01</b>

## 2 Results

### 2.1 Surveillance results overview

#### 2.1.1 Summary of conditions

Table 11 summarises the status of the three conditions (#1 – #3) raised during the reassessment of the Canada Northern and Striped Shrimp Fishery (Powles *et al.*, 2016), as well as the status of the three conditions (#4 – #6) raised at the first surveillance audit of the fishery (Blyth-Skyrme *et al.*, 2018).

Table 11. Summary of conditions

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
1 (UoC 3 - Striped shrimp EAZ, WAZ & SFA 4)	The client shall demonstrate by the Year 4 audit that the SG80 requirements of PI 1.1.2 are met in full for UoC 3, including for Sla, such that: <i>"Reference points are appropriate for the stock and can be estimated."</i>	PI 1.1.2 (Sla)	On target	75	No change
2 (UoC 4 & 5 - Northern shrimp SFA 5 & SFA 6)	The client shall demonstrate by the Year 4 audit that the SG80 requirements of PI 2.2.3 are met in full for UoCs 4 and 5, including for SId, such that: <i>"Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy)."</i>	PI 2.2.3 (SId)	Closed	75	85
3 (UoC 1 - Northern shrimp SFA 1)	The client shall demonstrate by 2022 that the SG80 requirements of PI 3.1.1 are met in full for UoC 1, including for Sla, such that: <i>"There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2."</i>	PI 3.1.1 (Sla)	On target	75	No change

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
<b>4*</b> (UoC 5 - Northern shrimp SFA 6)	<p>The client shall demonstrate that by year 5 of the certification and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment that the SG80 requirements of PI 1.1.1 are met in full for UoC 5, including for Sla and Slb, such that:</p> <p>Sla: <i>"It is highly likely that the stock is above the point where recruitment would be impaired."</i></p> <p>Slb: <i>"The stock is at or fluctuating around its target reference point."</i></p>	PI 1.1.1 (Slb)	<b>Behind target</b> <b>(Revised milestones set)</b>	<b>60</b>	<b>No change</b>
<b>5*</b> (UoC 5 - Northern shrimp SFA 6)	<p>The client shall demonstrate by year 5 of the certification and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment that the SG80 requirements of PI 1.1.2 are met in full for UoC 5, including for Sia such that:</p> <p><i>"Reference points are appropriate for the stock and can be estimated."</i></p>	PI 1.1.2 (Sla)	<b>On target</b> <b>(Revised milestones set)</b>	<b>75</b>	<b>No change</b>
<b>6*</b> (UoC 5 - Northern shrimp SFA 6)	<p>The client shall demonstrate that by the Year 4 audit the SG80 requirements of scoring issue (c) of PI 1.1.3 is met in full for UoC 5 such that:</p> <p><i>"There is evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a specified timeframe."</i></p>	PI 1.1.3 (Slc)	<b>On target</b> <b>(Revised milestones set)</b>	<b>70</b>	<b>No change</b>

\*Condition set at 1<sup>st</sup> annual surveillance audit

## 2.1.2 Total Allowable Catch (TAC) and catch data

The following table provides the TAC and catch data for the five UoCs in the Canada Northern and Striped Shrimp Fishery for the 2018 and 2017 years.

**Table 12. Total Allowable Catch (TAC) and catch data**

### UoC 1 – Northern Shrimp SFA 1

<b>TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>14,875 mt</b>
<b>UoA share of TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>14,875 mt</b>
<b>UoC share of TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>14,875 mt</b>
<b>Total green weight catch by UoC</b>	<b>Year (most recent)</b>	<b>2018</b>	<b>Amount</b>	<b>1,698 mt</b>
	<b>Year (second most recent)</b>	<b>2017</b>	<b>Amount</b>	<b>3,216 mt</b>

### UoC 2 - Northern Shrimp EAZ, WAZ, SFA 4

<b>TAC*</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>25,645 mt</b>
<b>UoA share of TAC*</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>25,645 mt</b>
<b>UoC share of TAC*</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>25,645 mt</b>
<b>Total green weight catch by UoC</b>	<b>Year (most recent)</b>	<b>2018</b>	<b>Amount</b>	<b>21,269 mt (+ WAZ catch – data not yet available)</b>
	<b>Year (second most recent)</b>	<b>2017</b>	<b>Amount</b>	<b>25,140 mt</b>

### UoC 3 - Striped Shrimp EAZ, WAZ, SFA 4

<b>TAC*</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>11,012 mt *</b>
<b>UoA share of TAC*</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>11,012 mt *</b>
<b>UoC share of TAC*</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>11,012 mt *</b>
<b>Total green weight catch by UoC</b>	<b>Year (most recent)</b>	<b>2018</b>	<b>Amount</b>	<b>2,806 mt (+ WAZ catch – data not yet available)</b>
	<b>Year (second most recent)</b>	<b>2017</b>	<b>Amount</b>	<b>8,524 mt</b>

\*There are separate quotas for striped shrimp in the EAZ (840 t) and WAZ (6,139 t), but the SFA 4 catch allocation for striped shrimp (4,033 t) operates as a bycatch limit.

### UoC 4 – Northern Shrimp SFA 5

<b>TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>25,630 mt</b>
<b>UoA share of TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>25,630 mt</b>
<b>UoC share of TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>25,630 mt</b>
<b>Total green weight catch by UoC</b>	<b>Year (most recent)</b>	<b>2018</b>	<b>Amount</b>	<b>23,257 mt</b>
	<b>Year (second most recent)</b>	<b>2017</b>	<b>Amount</b>	<b>26,102 mt</b>

### UoC 5 – Northern Shrimp SFA 6

<b>TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>8,730 mt</b>
<b>UoA share of TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>8,730 mt</b>
<b>UoC share of TAC</b>	<b>Year</b>	<b>2018</b>	<b>Amount</b>	<b>8,730 mt</b>

<b>Total green weight catch by UoC</b>	<b>Year (most recent)</b>	<b>2018</b>	<b>Amount</b>	<b>8,703 mt</b>
	<b>Year (second most recent)</b>	<b>2017</b>	<b>Amount</b>	<b>10,065 mt</b>

### 2.1.3 Recommendations

A single non-binding recommendation for the Canada Northern and Striped Shrimp Fishery was made at recertification (Powles *et al.*, 2016), as follows:

**Recommendation 1: (UoC 2, PI 1.1.2)** The client should seek to ensure that new reference points are defined for Northern shrimp in the WAZ within 4 years, to replace those used previously but no longer considered valid because the survey time series is considered too short.

**Update Year 2:** DFO Resource Management has submitted a science request to develop the Limit Reference Point for Northern Shrimp in 2020 and this is expected to follow the same process and timelines as outlined for striped shrimp in relation to Condition 1.

**Update Year 3:** A DFO Science peer review process for establishment of an LRP for both northern and striped shrimps in the WAZ is planned for spring 2020. A full assessment of both northern and striped shrimp is scheduled for early 2021, and DFO Resource Management confirmed that they are on track to establish and implement reference points and harvest decision rules for both northern and striped shrimp in the WAZ for the 2021/22 fishery consistent with the agreed consultation procedures with Boards of the Nunavet Settlement Area and Nunavik Marine Region for WAZ.

## 2.2 Conditions

The following tables provide information on the six Conditions set against the Canada Northern and Striped Shrimp Fishery. It is noted that Conditions #1 – #3 were raised during the reassessment (Powles *et al.*, 2016), while Conditions #4 – #6 were raised at the first surveillance audit (Blyth-Skyrme *et al.*, 2018).

**Table 13. Condition 1 – UoC 3 (Striped shrimp in the EAZ, WAZ and SFA 4)**

Performance Indicator	1.1.2 – Limit and target reference points are appropriate for the stock
Score	75
Justification	Reference points are in place for one (the EAZ) of the three fishing areas in UoC 3. Previously, reference points had been established for the WAZ, based on a survey time series with non-comparable vessels (DFO 2013a); while not referred to in the most recent assessment, these are available for guidance. Estimation of reference points for SFA 4 has proved problematical because of very high survey variability from year to year.
Condition	The client shall demonstrate by the Year 4 audit that the SG80 requirements of PI 1.1.2 are met in full for UoC 3, including for Sla, such that:  “Reference points are appropriate for the stock and can be estimated.”
Milestones	<u>Year 1:</u> <ul style="list-style-type: none"> <li>The client shall provide evidence that there is a plan in place to develop reference points appropriate for the stocks in the WAZ and SFA 4.</li> </ul> <b>Resulting score = 75 (no change)</b> <u>Year 2:</u> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points appropriate for the stocks in the WAZ and SFA 4.</li> </ul> <b>Resulting score = 75 (no change)</b>



	<p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points appropriate for the stocks in the WAZ and SFA 4.</li> </ul> <p><b>Resulting score = 75 (no change)</b></p> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>The client shall demonstrate that the SG80 Requirements of PI 1.1.2 are met in full, including for Sla.</li> </ul> <p><b>Resulting score = 80 (requirement met and condition closed).</b></p>
Client action plan	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> <li>The NSRF's annual research survey in these areas will continue to add to the available time series, which reference points will be based upon in the absence of a quantitative assessment model being adopted.</li> </ul> <p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>The NSRF's annual research survey in these areas will continue to add to the available time series, which reference points will be based upon in the absence of a quantitative assessment model being adopted.</li> </ul> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>The NSRF's annual research survey in these areas will continue to add to the available time series, which reference points will be based upon in the absence of a quantitative assessment model being adopted.</li> </ul> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>A DFO Science RAP (Regional Assessment Process) will be convened to establish peer reviewed limit reference points, after which an NSAC meeting will recommend target reference points.</li> </ul>
Consultation on condition	<p>The client has consulted with DFO on its action plan. DFO has confirmed that they will support the plan through the activities of its own annual work plan. The client will need to maintain a close working relationship with DFO to ensure support continues (a letter of support is included in Appendix 9 of the PCR).</p>
Progress on Condition (Year 2)	<p>The NSRF DFO-designed survey was undertaken for both Northern and striped shrimp stocks in the WAZ in 2017 and there are now four points in the time series of biomass estimates. Further stock surveys are required before the stock can be assessed under a PA framework. At the surveillance audit, DFO reiterated the difficulties in establishing reliable spawning stock biomass indices in both SFA 4 and the WAZ. When further stock surveys have been completed, a Framework meeting will be held in 2020 to establish LRPs for these stocks. If it is not possible to develop an LRP for these stocks, a proxy LRP will be implemented in season 2021 to mitigate any risk to the sustainability of the stocks. Following the development of the LRP, consultations will take place with stakeholders (Boards of the Nunavet Settlement Area and Nunavik Marine Region for WAZ and the NSAC for SFA4) to develop an Upper Reference Point (USR) and Harvest Decision Rules. A full stock assessment for these stocks will take place in March 2021 prior to implementation of all reference points in time for the 2021/2022 season.</p> <p>The audit team considered that the Year 2 milestone had been met.</p> <p>The milestone has been met and progress against the Condition is on target. There is no change in score.</p>
Progress on Condition (Year 3)	<p>The Northern Shrimp Research Foundation (NSRF) DFO-designed survey was undertaken for both Northern and striped shrimp stocks in the WAZ in 2018 and there are now five points in the time series of biomass estimates. During the site visit DFO confirmed that an update of the striped shrimp stock assessment will be undertaken in early 2020, and a DFO Science peer review process for establishment of an LRP for both Northern and striped shrimps in the WAZ is planned for spring</p>



	<p>2020. A full assessment of striped shrimp is scheduled for early 2021, and DFO Resource Management confirmed that they are on track to establish and implement reference points and harvest decision rules for both northern and striped shrimp in the WAZ for the 2021/22 fishery consistent with the agreed consultation procedures with Boards of the Nunavet Settlement Area and Nunavik Marine Region for WAZ.</p> <p>For striped shrimp in SFA 4, an updated stock assessment will occur in early 2020 ahead of the March 2020 NSAC meeting, and a full assessment is scheduled for early 2021. DFO reiterated that there are difficulties in establishing appropriate reference points for this SFA given the dynamics in this area. However, DFO scientists have been discussing options for establishing an LRP in order to mitigate risk to the sustainability of this stock, and DFO Science aims to identify an LRP during the winter 2021 stock assessment, and consultations with NSAC will continue to develop a USR and harvest decision rules in time for the 2021/22 season.</p> <p>The audit team considered that the Year 3 milestone had been met and progress against the Condition is on target. There is no change in score.</p>
Status	On target.

**Table 14. Condition 2 – UoC 4 (Northern shrimp in SFA 5) and UoC 5 (Northern shrimp in SFA 6)**

Performance Indicator	2.2.3 – Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch
Score	75
Justification	No recent compilation of information from the inshore fishery was available. This fleet takes a substantial proportion of the total catch in some SFAs (5, 6), and bycatch as a proportion of the total catch has been higher in the inshore fleet than in the offshore fleet (Table 8). Because of the lack of recent information on bycatch in the inshore fleet, a score of 80 is not justified for UoCs 4 and 5.
Condition	<p>The client shall demonstrate by the Year 4 audit that the SG80 requirements of PI 2.2.3 are met in full for UoCs 4 and 5, including for SId, such that:</p> <p><i>“Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).”</i></p>
Milestones	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> <li>The client shall provide evidence that there is a plan in place to collect and report on up-to-date bycatch information for the inshore fleet operating in SFAs 5 and 6. <b>Resulting score = 75 (no change)</b></li> </ul> <p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the collection of up-to-date bycatch information for the inshore fleet operating in SFAs 5 and 6. <b>Resulting score = 75 (no change)</b></li> </ul> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the collection of up-to-date bycatch information for the inshore fleet operating in SFAs 5 and 6. <b>Resulting score = 75 (no change)</b></li> </ul> <p><u>Year 4:</u></p>

	<ul style="list-style-type: none"> <li>The client shall demonstrate that the SG80 Requirements of PI 2.2.3 are met in full, including for SId.</li> </ul> <p><b>Resulting score = 80 (requirement met and condition closed).</b></p>
Client action plan	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> <li>CAPP will provide evidence of discussions with DFO to discuss options to enable MSC bycatch information requirements to be met in the context of DFO's obligations regarding Privacy.</li> </ul> <p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>DFO will be requested to provide bycatch information for consideration by the Annual Surveillance Audit.</li> </ul> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>If shortcomings are identified and defined in the Year 2 audit, CAPP will provide evidence of discussions with DFO to define a revised format, and DFO will be requested to provide bycatch information for consideration by the Annual Surveillance Audit.</li> </ul> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>If shortcomings continue to be identified and defined in the Year 3 audit, CAPP will seek a meeting with the Minister to resolve the problem prior to the 4th Annual Surveillance Audit.</li> </ul>
Consultation on condition	<p>The client has consulted with DFO on its action plan. DFO has confirmed that they will support the plan through the activities of its own annual work plan. The client will need to maintain a close working relationship with DFO to ensure support continues.</p>
Progress on Condition (Year 2)	<p>At the Year 2 audit, the Audit team was provided with observer data for the fishery by DFO, including for the small vessel fleets operating in SFA 5 and SFA 6.</p> <p>For SFA 6, these data cover 2015/16, 2016/17 and 2017/18 (preliminary) in detail, covering on average 6.2% of the catch (2015/16 = 1,473 t <i>P. borealis</i> observed from 31,378 t total logbook landings; 2016/17 = 953 t <i>P. borealis</i> observed from 17,630 t total logbook landings; 2017/18 = 579 t <i>P. borealis</i> observed from 6,819 t total logbook landings).</p> <p>The data for SFA 5 are also detailed for 2015/16 and 2016/17, covering approximately 2.2% of the catch (2015/16 = 96.3 t <i>P. borealis</i> observed from 3,904 t total logbook landings, 2016/17 = 53.9 t <i>P. borealis</i> observed from 2,847 t total logbook landings), but there were no data presented for 2017/18.</p> <p>The small vessel data provided for SFA 5 and SFA 6 demonstrate that work is being undertaken to monitor the inshore fleet working in these parts of the fishery, and show that no species makes up more than 1% of the catch other than <i>P. montagui</i> as an IPI shrimp species in SFA 5 (see Section 3.7 of this report [Blyth-Skyrme et al. 2019]).</p> <p>This condition remains open and on target. The results of the DFO comparison of logbook and observer data, as referred to in the 'Progress on Condition Year 1' for last year's audit, are awaited with interest, particularly for the SFA 5 fishery where the observer data represent a small part of the fishery. Nevertheless, there is no reason to expect that the Condition will not be closed as planned.</p>
Progress on Condition (Year 3)	<p>At this Year 3 audit, the Audit Team was again provided with observer data for the fishery by DFO, including for the small vessel fleets operating in SFA 5 and SFA 6. These new data add to those provided previously, and demonstrate that the fishery continues to be monitored.</p> <p>As noted last year, a key issue in meeting the Condition was the commentary provided by DFO for the Year 1 audit; this noted:</p> <p><i>"For the small vessel Northern shrimp fishery, it is a requirement that all incidental catch is recorded in logbooks and by observers when they are present. Observer coverage is typically less than 10%, therefore the observations need to be adjusted to estimate incidental catch from the entire area. Incidental catch from observers and logbook data will be compared to determine the degree to which logbook data misrepresents incidental catch for this fishery. The comparison will include effort and spatial considerations. Programs are currently being prepared to allow for easy generation of tables</i></p>

	<p>of incidental catch. It is anticipated that by Year 4 (2020), incidental catch for the inshore fleet will be provided during the assessment process.”</p> <p>This was discussed with DFO staff again on the audit call this year, and the following statement was provided (DFO, pers. comm.):</p> <p><i>“Preliminary reviews of incidental catch from observer and logbook data suggest that a more thorough analysis to determine the degree to which logbook data misrepresents incidental catch for this fishery is unnecessary. An at-sea observer is only required to record a complete biological sample once during every fishing day for which they are working on board a commercial shrimp vessel. The set and catch information for the remainder of the day is generally recorded while the observer is able to do so, otherwise the information is taken directly from the vessel logbook. Unlike the large-vessel fleet, which provides detailed data from a daily random sample that covers the entire fishing season and all areas fished, small vessel observer coverage represents less than 10% (in some years in certain SFAs it is 0) of the small vessel catch in any given year. Additionally, there is no consideration in the small vessel observer data for timing within the fishing season or area fished within any given SFA. For this reason, while the observer data does provide a snap-shot of bycatch during part of the fishery, it is highly unlikely to be representative of the bycatch throughout the fishing season in all areas fished by small vessels. It is evident, when looking at the bycatch tables, that in the instances where data from both the observer and logbook data provide bycatch information, the results are very close (less than 1% in difference between the two sources). DFO Science commits to providing the data from both sources to the MSC team for all future auditing purposes. Given the mandatory use of Nordmore Grates in the fishery, together with the evidently low bycatch rates, it is deemed that a full analysis will not reveal any further information about the reporting of bycatch in available data sources. If there are indications of a notable increase in bycatch in future years, this clause could be revisited.”</i></p> <p>For SFA 6, these updated data cover 2016/17 and 2017/18 in detail, covering on average 7.9% of the catch (2016/17 = 1349 t <i>P. borealis</i> observed from 17,630 t total logbook landings; 2017/18 = 560 t <i>P. borealis</i> observed from 6,819 t total logbook landings). Data for 2018/19 were preliminary and showed no catch of <i>P. borealis</i> at this stage.</p> <p>The data for SFA 5 are also updated for 2016/17 and new data were provided for 2018/19, covering approximately 3.2% of the catch (2016/17 = 54.1 t <i>P. borealis</i> observed from 2,847 t total logbook landings, and 2018/169 (Preliminary) = 117.1 t <i>P. borealis</i> observed from 2,641 t total logbook landings).</p> <p>The small vessel data provided for SFA 5 and SFA 6 demonstrate that work is being undertaken to monitor the inshore fleet working in these parts of the fishery, and show that no species now makes up more than 1% of the catch in these fleets.</p>
Status	<p>A recent compilation of information from the inshore fishery is now available, and analysis by DFO shows that, although the data may not be representative of the fleet, they provide a snap-shot of the catch and demonstrate that bycatch rates in the fleet are very low. The observer programme is in place and it is apparent that it is able to detect any increase in risk to the main bycatch species.</p> <p>Overall, <i>‘sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).’</i> It is therefore considered that SG80 is met and this Condition is closed.</p> <p>Rescoring is presented in Table 19, Section 2.4.</p>

**Table 15. Condition 3 – UoC 1 (Northern shrimp in SFA 1)**

Performance Indicator	<p>3.1.1 – The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> <li>• Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</li> <li>• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li> </ul>
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	<ul style="list-style-type: none"> <li>Incorporates an appropriate dispute resolution framework.</li> </ul>
Score	75
Justification	Talks between Canada and Greenland aimed at achieving an agreement on a joint harvest strategy have been ongoing for several years and are expected to continue in 2016. However, the current lack of agreement on harvest strategy including prospective control rules in the two fishery zones could result in exploitation levels that exceed the target and limit reference points should there be an abrupt decline in biomass.
Condition	<p>The client shall demonstrate by the Year 4 audit that the SG80 requirements of PI 3.1.1 are met in full for UoC 1, including for Sla, such that:</p> <p><i>“There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.”</i></p>
Milestones	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><b>Resulting score = 75 (no change)</b></p> <p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><b>Resulting score = 75 (no change)</b></p> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><b>Resulting score = 75 (no change)</b></p> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><b>Resulting score = 75 (no change)</b></p> <p>In order to ensure harmonisation with the overlapping certified West Greenland Coldwater Prawn Fishery, the milestones for meeting this condition have been adjusted so the same outcomes coincide with same audit year as the Greenland fishery.</p> <p><u>Year 2022</u></p> <ul style="list-style-type: none"> <li>The client shall demonstrate that the SG80 Requirements of PI 3.1.1 are met in full, including for Sla.</li> </ul> <p><b>Resulting score = 80 (requirement met and condition closed).</b></p>
Client action plan	<p><u>Year 1:</u></p> <ul style="list-style-type: none"> <li>CAPP will provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>CAPP will provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><u>Year 3:</u></p>

	<ul style="list-style-type: none"> <li>CAPP will provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>CAPP will provide an update on progress towards an agreement between Canada and Greenland.</li> </ul> <p><u>Year 2022</u></p> <ul style="list-style-type: none"> <li>CAPP will provide evidence that Canada and Greenland have reached agreement on a harvest strategy to provide effective control of exploitation rates within compatible target and limit reference points for mortality, particularly in the event of significant biomass decline.</li> </ul>
Consultation on condition	<p>The client has consulted with DFO on its action plan. DFO has confirmed that they will support the plan through the activities of its own annual work plan. The client will need to maintain a close working relationship with DFO to ensure support continues.</p>
Progress on Condition (Year 2)	<p>The year 2 milestone for this condition is, "The client shall provide an update on progress towards an agreement between Canada and Greenland."</p> <p>The client provided a letter from DFO in response to the client's request to provide information for this year's MSC audit. The letter is included in Appendix 4 of this report.</p> <p>The letter confirms that, since the last audit, Canada and Greenland have had a teleconference meeting and also met once to discuss bilateral issues. These meetings provided the opportunity for Canada to informally discuss the possibility of advancing negotiations with Greenland regarding quota share allocations for the shared Northern shrimp stock in SFA 1. Canada and Greenland are now considering the establishment of a bilateral framework for regular discussions on shared stocks.</p> <p>In the absence of any formal agreement, Canada continues to claim a quota share of 14.2% of the NAFO recommended TAC.</p> <p>The milestone has been met and progress against the Condition is on target. There is no change in score.</p>
Progress on Condition (Year 3)	<p>The year 3 milestone for this condition is, "The client shall provide an update on progress towards an agreement between Canada and Greenland."</p> <p>The client provided a letter from DFO in response to the client's request to provide information for this year's MSC audit. The letter is included in Appendix 4.2.1 of this report.</p> <p>The letter confirms the 2018 teleconference, as reported last year.</p> <p>No further meetings/discussions were reported to have taken place in 2019.</p> <p>The letter also confirms that a bilateral meeting with Greenland is being planned for 2020.</p> <p>The audit team noted that the Greenland Coldwater Shrimp Audit report indicates that during 2019 Canada had postponed planned meetings/discussions with Greenland without apparent reason. This had also been brought to the attention of the Lead Auditor by the Lead Auditor for the 2019 Greenland Coldwater audit.</p> <p>DFO confirmed that a meeting had been planned between Canada and Greenland to coincide with their attendance at the North Atlantic Fisheries Conference, however, the conference was postponed until 2020, hence that meeting did not take place.</p> <p>A second opportunity to meet was identified in October 2019, again to coincide with another conference where both Canada and Greenland representatives were expecting to attend. However, a Canadian national general election was called and so no high-level delegation was sent to the conference. DFO confirmed at the site visit their intent to reinvigorate the process.</p> <p>While no substantive progress was made in 2019 on this condition, the milestone has been met as a report was provided on progress towards achieving an agreement between Canada and Greenland. There is no change in score.</p>

Status	On target
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**Table 16. Condition 4 – UoC 5 (Northern shrimp in SFA 6)**

Performance Indicator	1.1.1 – The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing
Score	60
Justification	Female SSB is below the LRP, but there was no evidence that recruitment had been impaired, and the SG60a was met therefore. Whilst female SSB continues to decline, and evidence that current environmental conditions and predation rates are likely to persist in the short to medium term, the audit team were precautionary in concluding that it was not <u>highly</u> likely that the stock was above the point of recruitment impairment, and that the SG80a was not met therefore. As the estimate of female SSB for 2016 has declined to below the LRP, it cannot be concluded that the stock is fluctuating around its target reference point. The SG80b is not met therefore.
Condition	<p>The client shall demonstrate that by year 5 of the certification and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment that the SG80 requirements of PI 1.1.1 are met in full for UoC 5, including for SIa and SIb, such that:</p> <p>SIa: <i>"It is highly likely that the stock is above the point where recruitment would be impaired."</i></p> <p>SIb: <i>"The stock is at or fluctuating around its target reference point."</i></p>
Milestones	<p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>The client shall provide evidence that there is a plan in place to support and monitor the growth of the UoC 5 stock relative to the point where recruitment would be impaired and relative to the TRP if/when these become available.</li> </ul> <p><b>Resulting score = 60 (no change)</b></p> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on UoC 5 stock status relative to the submitted plan and the tools developed to date to enable demonstration that it is highly likely that the stock is above the point where recruitment would be impaired, and is growing towards the TRP if/when these become available.</li> </ul> <p><b>Resulting score = 70 (SIa met at SG80, SIb not met at SG80)</b></p> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on UoC 5 stock status, relative to the submitted plan and the tools developed to date to enable demonstration that it is highly likely that the stock is above the point where recruitment would be impaired, and is growing towards the TRP if/when these become available.</li> </ul> <p><b>Resulting score = 70 (no change)</b></p> <p><u>Year 5</u> (and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment):</p> <ul style="list-style-type: none"> <li>The client shall provide an update on UoC 5 stock status to demonstrate that it is highly likely that the stock (a) is above the point at which recruitment would be impaired, and (b) is at or fluctuating around its target reference point.</li> </ul> <p><b>Resulting score = 80 (requirement met and condition closed)</b></p>



Client action plan	<p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>DFO Science has undertaken to conduct additional research towards the development of a quantitative assessment model for Northern shrimp in the general area of 2J3KL, which would enable evaluation of stock status relative to the point where recruitment would be impaired and relative to its target reference point, and which may enable biomass projections based on the performance of identified drivers including climate, predation and fishing. The DFO Science plan to achieve this objective will be provided.</li> </ul> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>An update on stock status will be provided relative to the submitted plan, and on the tools under development to enable demonstration that the stock is highly likely that the stock is above the point where recruitment would be impaired, and relative to the TRP, if/when these become available.</li> </ul> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>An update on stock status will be provided relative to the submitted plan, and on the tools under development to enable demonstration that the stock is highly likely that the stock is above the point where recruitment would be impaired, and relative to the TRP, if/when these become available.</li> </ul> <p><u>Year 5:</u></p> <ul style="list-style-type: none"> <li>Evidence will be provided that it is highly likely that the stock (a) is above the point where recruitment would be impaired, and (b) is or will be at or fluctuating around its target reference point within two generations.</li> </ul>
Consultation on condition	<p>The client has consulted with DFO on its action plan and DFO have confirmed their support via email.</p>
Progress on Condition (Year 2)	<p>At the surveillance audit DFO provided a copy of the Rebuilding Plan that had been agreed in 2017/18 following consultation with all SFA 6 allocation holders, DFO Science and Resource Management. (Further details can be found in section 4.6 of Blyth-Skyrme <i>et al.</i> (2019) describing progress in relation to condition 6 and the complete plan can be seen in Appendix 4 of Blyth-Skyrme <i>et al.</i> (2019)). Although stock biomass in SFA 6 declined further in 2017, the Rebuilding Plan allows for a maximum exploitation rate of 10% whilst the stock is in the critical zone, and includes development of a quantitative model that simulates the impacts of fishing levels on the SFA 6 stock. The model should be able to identify points such as MSY and the LRP to allow a re-evaluation of the Precautionary Approach framework in SFA 6 to inform management measures (e.g TAC setting) to support sustainability.</p> <p>The audit team concluded that there is a plan in place to support and monitor the growth of the SFA 6 stock, and that the Year 2 milestone had therefore been met.</p> <p>The milestone has been met and progress against the Condition is on target. There is no change in score.</p>
Progress on Condition (Year 3)	<p>At the surveillance audit DFO reported that a CSAS peer review meeting to develop a Precautionary Approach Framework for Northern shrimp in SFAs 4-6 had been held in May 2019. A new quantitative stock assessment model incorporating both predation and environmental factors for these stocks has been conditionally accepted, and following extensive testing, the model is currently undergoing peer review. The aim is to have the new assessment model fully accepted and operational in time for the 2020 stock assessment in order to inform on stock status and the effects of various catch levels for 2020/21. At the May 2019 Framework meeting, reference points within a PA Framework were proposed, but were not accepted. A small DFO internal working group has therefore been tasked with progressing the development of LRPs for SFAs 4-6, with a view to completing the work by January 2022 for incorporation into the 2022 stock assessment.</p> <p>The most recent stock assessment for SFA 6 showed that the SSB index was 66,800 tonnes, a 27% increase from 2017 but still amongst the lowest levels in the time series and the SSB index remains below the LRP and is therefore within the Critical Zone of the IFMP PA Framework. The audit team recognised the Rebuilding Plan appears to be working and that SSB appears to be increasing towards both the LRP and USR. As noted above, there is ongoing research focussed on development of a new LRP for SFA 6 based upon a new analytical stock assessment model. Until</p>

	<p>such time as new reference points within a PA framework have been agreed, DFO Science advised that the current reference points should remain in place. The milestone has been met and so the client is on-target in relation to the existing milestones. However, the audit team recognises the current reference points may no longer be appropriate, and it will be necessary to re-evaluate fully the status of the shrimp stock in SFA 6 against new reference points currently being developed.</p>
Status	<p>On target</p> <p>Until the new reference points are developed, the audit team recognises that it is difficult to assess stock status in relation to the point at which recruitment might be impaired or be able to state that the stock is at or fluctuating around its target reference point. Whilst the audit team concluded that for this condition progress was on target, the team recognises that the new reference points are not expected to be developed and implemented until 2022 and it will not be until 2023 that evidence will be available to show that the condition has been met.</p> <p>The MSC assessment/certification process allows for situations when achieving a PI level of 80 may take longer than the period of certification. These are considered to be “exceptional circumstances” (MSC FCR v2.1 7.18.1.5), an example being, time required for relevant research to be undertaken and published.</p> <p>The audit team considers this situation represents such an “exceptional circumstance” and, as a result, the audit team has set new milestones which extend beyond the current life of the MSC certificate. <b>The revised milestones</b> are as follows:</p> <p><u>Year 4</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on stock status relative to the rebuilding plan, and an update on the development of new stock assessment tools and reference points which will ultimately allow an assessment of whether the stock is highly likely to be above the point where recruitment would be impaired and is at or fluctuating around its target reference point.</li> </ul> <p>Resulting score = 60 (no change)</p> <p><u>Year 5</u> (and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment):</p> <ul style="list-style-type: none"> <li>The client shall provide an update on stock status relative to the rebuilding plan, and an update on the development of new stock assessment tools and reference points which will ultimately allow an assessment of whether the stock is highly likely to be above the point where recruitment would be impaired and is at or fluctuating around its target reference point.</li> </ul> <p>Resulting score = 60 (no change)</p> <p><b>Following re-assessment against v2.0 and, on the assumption that the fishery is recertified:</b></p> <p><u>At the first surveillance audit following recertification (2022)</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on stock status relative to the rebuilding plan and evidence that a new limit reference point has been adopted.</li> </ul> <p>Resulting score = 60 (no change)</p> <p><u>At the second surveillance audit following recertification (2023)</u></p> <ul style="list-style-type: none"> <li>The client shall provide evidence that new limit and target reference points within a PA framework have been implemented and provide an update on UoC 5 stock status to demonstrate that it is highly likely that the stock (a) is above the point at which recruitment would be impaired, and (b) is at or fluctuating around its target reference point.</li> </ul> <p>Resulting score = 80 (requirement met and condition closed).</p> <p>The client has accepted these revised and new milestones and provided a revised action plan. This has been accepted by the team:</p> <p><b>Revised Client Action Plan</b></p> <p><u>Year 4</u></p>



	<ul style="list-style-type: none"> <li>An update will be provided on stock status relative to the rebuilding plan, and on the development of new stock assessment tools and reference points which will ultimately allow an assessment of whether the stock is highly likely to be above the point where recruitment would be impaired and is at or fluctuating around its target reference point.</li> </ul> <p><u>Year 5</u> (and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment):</p> <ul style="list-style-type: none"> <li>An update will be provided on stock status relative to the rebuilding plan, and on the development of new stock assessment tools and reference points which will ultimately allow an assessment of whether the stock is highly likely to be above the point where recruitment would be impaired and is at or fluctuating around its target reference point.</li> </ul> <p><b>Following re-assessment against v2.0 and, on the assumption that the fishery is recertified:</b></p> <p><u>At the first surveillance audit following recertification (2022)</u></p> <ul style="list-style-type: none"> <li>An update will be provided on stock status relative to the rebuilding plan and evidence that a new limit reference point has been adopted.</li> </ul> <p><u>At the second surveillance audit following recertification (2023)</u></p> <ul style="list-style-type: none"> <li>Evidence will be provided that new limit and target reference points within a PA framework have been implemented and an update on UoC 5 stock status will be provided to demonstrate that it is highly likely that the stock (a) is above the point at which recruitment would be impaired, and (b) is at or fluctuating around its target reference point.</li> </ul>
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**Table 17. Condition 5 – UoC 5 (Northern shrimp in SFA 6)**

Performance Indicator	1.1.2 – Limit and target reference points are appropriate for the stock
Score	75
Justification	For UoC 5, TRPs and LRPs have been established as for UoCs 2, 4 and 6 using average female SSB over a productive period as a proxy for Bmsy. These reference points are based on justifiable and reasonable practice for <i>Pandalus</i> stocks, and the SG60 is met. However, the reference points would only remain appropriate if oceanographic conditions and tropho-dynamic conditions did not change substantially or if stock productivity was not significantly influenced by those factors. As the female SSB has declined significantly in SFA 6, DFO has recently reviewed how environmental conditions may have changed since the reference period, and hence, whether the current reference points for SFA 6 are still appropriate (DFO, 2017b). As spawning stock biomass does not correlate with recruitment and that other factors such as predation, timing of the spring phytoplankton bloom, water temperature and habitat availability need to be considered when setting reference points for this stock, and environmental conditions and predation mortality are unlikely to return to the levels seen in the productive period of the shrimp fishery when the current reference points were set, the audit team concluded that that the reference points based on female SSB were not appropriate for the stock in SFA 6. The fishery does not therefore meet the SG80 and a revised condition for PI 1.1.2 is raised.
Condition	The client shall demonstrate by year 5 of the certification and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment that the SG80 requirements of PI 1.1.2 are met in full for UoC 5, including for SIa such that:  <i>“Reference points are appropriate for the stock and can be estimated.”</i>
Milestones	<u>Year 2:</u>

	<ul style="list-style-type: none"> <li>The client shall provide evidence that there is a plan in place to develop reference points appropriate for the stocks in SFA 6. Resulting score = 75 (no change)</li> </ul> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points appropriate for the stock in SFA 6. Resulting score = 75 (no change)</li> </ul> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points appropriate for the stock in SFA 6. Resulting score = 75 (no change)</li> </ul> <p><u>Year 5</u> (and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment):</p> <ul style="list-style-type: none"> <li>The client shall demonstrate that the SG80 Requirements of PI 1.1.2 are met in full for SFA 6. Resulting score = 80 (requirement met and condition closed)</li> </ul>
Client action plan	<p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>UoC 5: DFO Science has undertaken to conduct additional research towards the development of a quantitative assessment model for Northern shrimp in the general area of 2J3KL, which would also enable reference points appropriate for the stock in SFA 6 to be developed. The DFO Science plan to develop reference points appropriate for the stock in SFA 6 will be provided.</li> </ul> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>UoC 5: An update of progress towards the development of reference points appropriate for the stock in SFA 6 will be provided.</li> </ul> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>UoC 5: An update of progress towards the development of reference points appropriate for the stock in SFA 6 will be provided.</li> </ul> <p><u>Year 5:</u></p> <ul style="list-style-type: none"> <li>UoC 5: Evidence will be provided that new reference points appropriate for the stock in SFA 6 have been adopted.</li> </ul>
Consultation on condition	The client has consulted with DFO on its action plan and DFO have confirmed their support via email.
Progress on Condition (Year 2)	<p>At the surveillance audit DFO provided a copy of the Rebuilding Plan that had been agreed in 2017/18 following consultation with all SFA 6 allocation holders, DFO Science and Resource Management. (Further details can be found in section 4.6 describing progress in relation to condition 6 and the complete plan can be seen in Appendix 4 of this report). The Rebuilding Plan includes development of a quantitative model that simulates the impacts of fishing levels on the SFA 6 stock. The model should be able to identify points such as MSY and the LRP to allow a re-evaluation of the Precautionary Approach framework in SFA 6 including the identification of a USR and the development of Harvest Decision Rules, to inform management measures (e.g. TAC setting) to support sustainability. A Framework meeting for the model is planned for April 2019, and following consultation, DFO plans to have all reference points implemented in 2020 such that the new assessment model and LRP can be applied to the 2020 full assessment.</p> <p>The audit team considered that a plan was in place to develop reference points appropriate for the stocks in SFA 6, and so the Year 2 milestone had been met.</p> <p>The milestone has been met and progress against the Condition is on target. There is no change in score.</p>

<p>Progress on Condition (Year 3)</p>	<p>At the surveillance audit DFO reported that a CSAS peer review meeting to develop a PA Framework for Northern shrimp in SFAs 4-6 had been held in May 2019. A new quantitative stock assessment model incorporating both predation and environmental factors for these stocks has been conditionally accepted, and following extensive testing, the model is currently undergoing peer review. The aim is to have the new assessment model fully accepted and operational in time for the 2020 stock assessment in order to inform on stock status and the effects of various catch levels for 2020/21. At the May 2019 Framework meeting, reference points within a PA Framework were proposed, but were not accepted. A small DFO internal working group has therefore been tasked with progressing the development of LRPs for SFAs 4-6, with a view to completing the work by January 2022 for incorporation into the 2022 stock assessment.</p> <p>Whilst the proposed reference points were not accepted at the Framework meeting in May 2019, the audit team recognises that substantial progress has been made against this condition, the 3<sup>rd</sup> year milestone has been met and therefore progress remains on target.</p>
<p>Status</p>	<p>On target.</p> <p>Whilst the audit team concluded that progress was on target for this condition, the team recognised that the process of the development and implementation of new reference points within a PA framework by DFO will not permit the Client to meet the annual milestones as previously set out for this condition. The audit team therefore consider this meets the situation of an “exceptional circumstance” (MSC FCR v2.1 7.18.1.5) and, as a result, has set new milestones for this condition which extend beyond the current life of the MSC certificate. <b>The revised milestones</b> are as follows:</p> <p><u>Year 4</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points within a PA framework appropriate for the stock in SFA 6.</li> </ul> <p>Resulting score = 75 (no change)</p> <p><u>Year 5</u> (and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment in late 2021):</p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points within a PA framework appropriate for the stock in SFA 6.</li> </ul> <p>Resulting score = 75 (no change)</p> <p>N.B. The fishery will be re-assessed against MSC FCR v2.0. PI 1.1.2 SIa (v1.3) has been incorporated into PI 1.2.4b (v2.0), i.e. “<i>The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.</i>” Therefore, the condition will be carried over and be applied to this PI.</p> <p>Following re-assessment against v2.0 and, on the assumption that the fishery is recertified:</p> <p><u>At the first surveillance audit following recertification (2022):</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on stock status relative to the rebuilding plan and evidence that a new limit reference point has been adopted</li> </ul> <p>Resulting score = 75 (no change)</p> <p><u>At the second surveillance audit following recertification (2023)</u></p> <ul style="list-style-type: none"> <li>The client shall demonstrate that the SG80 requirements of PI 1.2.4b are met in full for UoC 5, such that: “<i>The assessment estimates stock status relative to reference points that are appropriate for the stock and can be estimated.</i>”</li> </ul> <p>Resulting score = 80 (requirement met and condition closed)</p> <p>The client has accepted these revised and new milestones and provided a revised action plan. This has been accepted by the team:</p>

	<p><b>Revised Client Action Plan</b></p> <p>Year 4:</p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points appropriate for the stock in SFA 6.</li> </ul> <p>Resulting score = 75 (no change)</p> <p>Year 5:</p> <ul style="list-style-type: none"> <li>The client shall provide an update on progress towards the development of reference points appropriate for the stock in SFA 6.</li> </ul> <p>Resulting score = 75 (no change)</p> <p><u>At the first surveillance audit following recertification (2022):</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on stock status relative to the rebuilding plan and evidence that a new limit reference point has been adopted</li> </ul> <p>Resulting score = 75 (no change)</p> <p><u>At the second surveillance audit following recertification (2023):</u></p> <ul style="list-style-type: none"> <li>The client shall demonstrate that the SG80 requirements of PI 1.2.4b are met in full for UoC 5, such that: "The assessment estimates stock status relative to reference points that are appropriate for the stock and can be estimated."</li> </ul> <p>Resulting score = 80 (requirement met and condition closed)</p>
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**Table 18. Condition 6 – UoC 5 (Northern shrimp in SFA 6)**

Performance Indicator	<b>1.1.3 – Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe</b>
Score	<b>70</b>
Justification	Slc. Stock status of the fishery in SFA 6 is monitored annually through the DFO fall multi-species trawl survey and annual CPUE data from the commercial fishery, both of which will provide evidence on whether or not the stock is being re-built. The SG60 is met. The formal rebuilding strategy will be implemented in time for the 2018/19 season and so there is no evidence yet of re-building and with environmental influences and predation rates currently the main drivers of shrimp production, there is some uncertainty as to whether the rebuilding strategy will be successful in rebuilding the stock within a short timeframe. The SG80 is not met therefore.
Condition	<p>The client shall demonstrate that by the Year 4 audit the SG80 requirements of scoring issue (c) of PI 1.1.3 is met in full for UoC 5 such that:</p> <p><i>"There is evidence that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a specified timeframe."</i></p>
Milestones	<p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>The client shall provide evidence that a formal re-building strategy for SFA6 is in place to support and monitor the re-building of the stock.</li> </ul> <p><b>Resulting score = 70 (no change)</b></p> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>The client shall provide evidence that the re-building strategy has been implemented</li> </ul> <p><b>Resulting score = 70 (no change)</b></p>

	<p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>The client shall provide evidence that the rebuilding strategy is working.</li> </ul> <p><b>Resulting score = 80 (requirement met and condition)</b></p>
Client action plan	<p><u>Year 2:</u></p> <ul style="list-style-type: none"> <li>A Rebuilding Plan adopted by DFO will be provided.</li> </ul> <p><u>Year 3:</u></p> <ul style="list-style-type: none"> <li>An update will be provided demonstrating that the Rebuilding Plan is being implemented.</li> </ul> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>Evidence will be provided that it is highly likely that the stock is or will be at or fluctuating around its target reference point within two generations.</li> </ul>
Consultation on condition	The client has consulted with DFO on its action plan and DFO have confirmed their support via email.
Progress on Condition (Year 2)	<p>At the surveillance audit DFO provided a copy of the Rebuilding Plan that had been agreed in 2017/18 following consultation with all SFA 6 allocation holders, DFO Science and Resource Management (See Appendix 4 of Blyth-Skyrme <i>et al.</i> (2019)). The Rebuilding Plan focuses on developing a model for the stock in SFA 6, which will provide a more solid knowledge base for both Science and Management. The development of a model will allow for a re-evaluation of the PA Framework, including the LRP and Upper Stock Reference Point (USR), which will in turn allow for the further development of management measures (harvest control rules, Total Allowable Catch (TAC) setting) that will support sustainability. Long-term actions and objectives are to be determined and will likely be informed by and predicated on modelling results, including how the management of the Northern shrimp stock in SFA 6 interacts with other species, such as cod and capelin. The Plan includes reviewing exploitation rates through the annual stock assessment process to set the exploitation rate at a level that would be expected to promote rebuilding and not impair future recruitment, subject to climate and ecosystem drivers; development of population models which may be used to determine reference points and evaluate how the stock is expected to change under different environmental conditions. Until a model is available, the Department's planned management approach, based on the best available science, is to maintain compliance with the current PA and Harvest Control Rules for the SFA 6 stock in the Critical Zone, which specifies that the exploitation rate shall not exceed 10%.</p> <p>The 2<sup>nd</sup> year milestone has been met and progress against the Condition is on target. There is no change in score.</p>
Progress on Condition (Year 3)	<p>At the surveillance audit, the client and DFO confirmed that the Rebuilding Plan had been implemented. As part of the Rebuilding Plan, a CSAS peer review meeting to develop a PA Framework for Northern shrimp in SFAs 4-6 had been held in May 2019. A new quantitative stock assessment model incorporating both predation and environmental factors for these stocks had been conditionally accepted, and following extensive testing, the model is currently undergoing peer review. The aim is to have the new assessment model fully accepted and operational in time for the 2020 stock assessment in order to inform on stock status and the effects of various catch levels for 2020/21. At the May 2019 Framework meeting, reference points within a PA Framework were proposed, but were not accepted. A small DFO internal working group has therefore been tasked with progressing the development of LRPs for SFAs 4-6, with a view to completing the work by January 2022 for incorporation into the 2022 stock assessment.</p> <p>The most recent stock assessment for SFA 6 showed that the SSB index was 66,800 tonnes, a 27% increase from 2017. Whilst the SSB index is still amongst the lowest levels in the time series and remains within the Critical Zone of the IFMP PA Framework, the audit team recognised the Rebuilding Plan appears to be working and that SSB appears to be increasing towards both the LRP and USR.</p> <p>With implementation of the Rebuilding Plan, significant progress on developing a new assessment model and new reference points within a PA Framework and some initial evidence that the</p>

	<p>Rebuilding Plan is working, the audit team concluded that the 3<sup>rd</sup> year milestone had been met and that progress against the Condition is on target. There is no change in score.</p>
Status	<p>On target.</p> <p>Until the new reference points are developed, the audit team recognises that it is difficult to assess whether the rebuilding plan is likely to rebuild the stock to the point where it is at or fluctuating around its target reference point within two generations. Whilst the audit team concluded that progress was on target, the team recognises that the new reference points are not expected to be developed and implemented until 2022 and it will not be until 2023 that evidence will be available to show that the condition has been met.</p> <p>The MSC assessment/certification process allows for situations when achieving a PI level of 80 may take longer than the period of certification. These are considered to be “exceptional circumstances” (MSC FCR v2.1 7.18.1.5), an example being, time required for relevant research to be undertaken and published.</p> <p>The audit team consider this situation represents such an “exceptional circumstance” and, as a result, the audit team has set new milestones which extend beyond the current life of the MSC certificate. The revised milestones are as follows:</p> <p><u>Year 4 (2020/21):</u></p> <ul style="list-style-type: none"> <li>The client shall provide evidence that the rebuilding plan is being implemented.</li> </ul> <p>Resulting score = 70 (no change)</p> <p><u>Year 5</u> (and in time to be incorporated into the Preliminary Client Draft report at the next re-assessment in late 2021):</p> <ul style="list-style-type: none"> <li>The client shall provide evidence that the rebuilding plan is being implemented.</li> </ul> <p>Resulting score = 70 (no change)</p> <p><b>N.B. The fishery will be re-assessed against MSC FCR v2.0. PI 1.1.3c Sla (v1.3) has been incorporated into PI 1.1.2.b (v2.0), i.e. “<i>There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.</i>” Therefore, the condition will be carried over and be applied to this PI.</b></p> <p><b>Following re-assessment against v2.0 and, on the assumption that the fishery is recertified:</b></p> <p><u>At the first surveillance audit following recertification (2022)</u></p> <ul style="list-style-type: none"> <li>The client shall provide an update on stock status relative to the rebuilding plan and evidence that a new limit reference point has been adopted.</li> </ul> <p>Resulting score = 70 (no change).</p> <p><u>At the second surveillance audit following recertification (2023)</u></p> <ul style="list-style-type: none"> <li>The client shall demonstrate that the SG80 requirements of scoring issue (b) of PI 1.1.2 is met in full for UoC 5 such that: “There is evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within a specified timeframe.”</li> </ul> <p>Resulting score = 80 (requirement met and condition closed)</p> <p>The client has accepted these revised and new milestones and provided a revised action plan. This has been accepted by the team:</p> <p><b>Revised Client Action Plan</b></p> <p><u>Year 4:</u></p> <ul style="list-style-type: none"> <li>An update will be provided demonstrating that the Rebuilding Plan is being implemented.</li> </ul> <p><u>Year 5:</u></p>



- An update will be provided demonstrating that the Rebuilding Plan is being implemented.
- At the first surveillance audit following recertification (2022):
- An update will be provided demonstrating that the Rebuilding Plan is being implemented, and evidence that a new limit reference point has been adopted.
- At the second surveillance audit following recertification (2023):
- Evidence will be provided that it is highly likely that the stock is or will be at or fluctuating around its target reference point within two generations.

## 2.3 Client Action Plan

The Client Action Plan (CAP) has been updated by the client in light of the revisions to the milestones for Conditions 4, 5 and 6. The CAP has been accepted by the audit team.

## 2.4 Re-scoring Performance Indicators

Where milestones and/or Conditions are met that result in the rescoring of a PI, it is required that the original and revised text for the PI is provided; this is presented below, using the original text from Powles *et al.* (2016). New text is provided in blue highlight.

**Table 19. Evaluation Table for PI 2.2.3, for Condition 2 – UoC 4 (northern shrimp in SFA 5) and UoC 5 (Northern shrimp in SFA 6)**

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Qualitative information is available on the amount of main bycatch species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery.	Accurate and verifiable information is available on the catch of all bycatch species and the consequences for the status of affected populations.
	Met?	All UoCs – Y	All UoCs – Y	UoCs 1, 2, 3 – Y UoCs 4, 5, 6 – N
	Justification	<p>Comprehensive quantitative compilations of bycatch information were conducted for UoCs 1-3 (Siferd 2010) and for UoCs 4-6 (Orr and Sullivan 2008). The offshore fleet was covered for all UoCs, with observer coverage on 100% of trips (approximately 70% of tows), while the inshore fleet was covered for UoCs 4 and 5, with target coverage of 10% of trips. A compilation of recent information on bycatch levels for seven vessels of the offshore fleet confirms the conclusions of the earlier studies (CAPP/Javitech 2016). Scores of 80 are justified for all UoCs.</p> <p>Details of bycatch amounts and impact on depleted populations are provided in the introductory sections (<b>Error! Reference source not found.</b>). Although a wide range of species occurs in the bycatch, annual estimated bycatch of all species combined is in almost all cases (fleet/area/year cells) less than 5% of total catch weight, such that catch of any individual species is well below 5% (Orr and Sullivan 2008; Siferd 2010; CAPP/Javitech 2016). In SFAs 4-7, bycatch species at greatest abundance in 2007-8 varied between areas: redfishes in SFA 4 (0.65%), lanternfishes in SFA 5 (0.4%), capelin in SFA 6 (0.65% of the shrimp catch). All other species were below 0.5% of the shrimp catch (Orr et al 2008). In SFAs 1-3 redfishes and Arctic cod were generally the most abundant species in the bycatch in the period 1999-2007 (Siferd 2010).</p> <p>For the offshore fleet, the information is considered accurate based on the training and materials supplied to observers. Information is considered verifiable because the cited studies were presented</p>		



PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch		
		<p>in DFO or NAFO peer review meetings; although the recent compilation (CAPP/Javitech 2016) has not been peer reviewed it is consistent with earlier studies. Information is considered appropriate to assess consequences for affected populations because it shows that bycatch is extremely low, and for depleted species population assessments are available which allow assessment of the impact of bycatch. Scores of 100 are justified for UoCs in which only the offshore fleet operates, UoCs 1-3</p> <p>For the inshore fleet, observer coverage is relatively low; despite a target of 10% of trips, realised coverage in recent years has been 0-10% depending on SFA and year. A similar level of coverage supported the conclusions of Orr et al (2008) (Table 6). However, this constitutes several hundred days of coverage per year, such that the information is judged to be accurate. Given that recent information on bycatch in the inshore fishery is not available (see below), however, we conclude that a score of 100 is not justified for the inshore fleet, nor for the UoCs in which it operates, UoCs 4-6.</p>		
b	Guidepost	Information is adequate to broadly understand outcome status with respect to biologically based limits	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty.
	Met?	All UoCs – Y	All UoCs – Y	UoCs 1, 4, 5, 6 – Y UoCs 2, 3 – N
	Justification	<p>For all UoCs, information on bycatch is sufficient to show with a high degree of certainty that bycatch of all species is very low. Amounts in the bycatch are well estimated via observer programs (which provide information on bycatch amount per t of catch) and information on total catch.</p> <p>Estimating outcome status requires information on population status of bycatch species in addition to information on amounts of bycatch.</p> <p>No commercial species other than the four 'main' bycatch species have been identified as outside biologically-based limits in the fishery area. Accordingly, it is considered certain that the shrimp fishery is not having an unduly negative impact on these populations. For non-commercial species in the bycatch, bycatch is very small, and these species are common, abundant and widespread (e.g., Scott &amp; Scott 1988), such that it is clear that bycatch is not contributing to a threat environment which is taking these populations outside biologically-based limits.</p> <p>For three of the four 'main' bycatch species identified on the basis of vulnerability (Atlantic cod, redfishes, American plaice), available assessments based on trawl surveys and/or population models show that population abundance has been increasing in recent years in UoCs 1, 4, 5 and 6 (SFAs 1, 5-7) (ICES 2014; COSEWIC 2010b; DFO 2011; DFO 2013b; DFO 2010c; NAFO 2015c), while for the fourth (Atlantic wolffish) trends are stable or increasing (COSEWIC 2012a; Collins et al 2014). Because these trends are consistent over a period of years, they are considered to have a high degree of certainty. A score of 100 is justified for UoCs 1, 4, 5 and 6.</p> <p>For UoCs 2 and 3, abundance trends for 'main' species are not well known, as trawl surveys for the four main bycatch species have not been published or are infrequent. Information from the irregular surveys in NAFO 2GH (SFA 4) suggests that abundance of redfishes at least has not changed substantially (DFO 2011), and COSEWIC (2010b) indicates that deepwater redfish in this area would be genetically similar to those on the Grand Banks, such that the increasing population trends from the latter area would be applicable to this area. Given the generally increasing trend in groundfish abundance in adjacent areas (West Greenland, Labrador Shelf) it appears likely that abundance is not declining in these UoCs. A score of 80 is justified for UoCs 2 and 3.</p>		
c	Guidepost	Information is adequate to support measures to manage bycatch.	Information is adequate to support a partial strategy to manage main bycatch species.	Information is adequate to support a strategy to manage bycatch, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	All UoCs – Y	All UoCs – Y	UoCs 1, 2, 3 – Y

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch		
				UoCs 4, 5, 6 – N
	<b>Justification</b>	<p>For the offshore fleet, observer coverage of bycatch has been maintained at a constant level of 100% of trips over time. For the inshore fleet coverage is lower but because of the number of fishing days sampled each year this is considered to provide accurate bycatch information (see above).</p> <p>A recent compilation of information from the offshore fleet (CAPP/Javitech 2016) is available which confirms earlier detailed assessments of bycatch, such that the information continues to be adequate to support a bycatch management strategy and evaluate with a high degree of certainty whether the strategy is achieving its objective. A score of 100 is justified for this fleet and for the UoCs in which only this fleet operates, UoCs 1-3.</p> <p>Information from the inshore fleet, from earlier detailed studies, and as presented from the observer programme, is adequate to support the bycatch management strategy, such that a score of 80 is justified. However, DFO (pers. comm., 2019) noted that the data are highly unlikely to be representative of the catch in different areas and at different times, so it is not possible to state with a high degree of certainty that the bycatch is achieving its objectives, and a score of 100 is not justified. UoCs in which this fleet operates (4-6) are assigned a score of 80 for this PI.</p> <p>Assessments of status of commercial species, in particular depleted 'main' bycatch species, have been maintained in recent years. Accordingly, information on the impact of bycatch on populations is adequate to support the bycatch minimisation strategy and to evaluate whether it is achieving its objectives.</p>		
<b>d</b>	<b>Guidepost</b>		Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).	Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.
	<b>Met?</b>		All UoCs – Y	UoCs 1, 2, 3 – Y UoCs 4, 5, 6 – N
	<b>Justification</b>	<p>Observer coverage continues at 100% of trips in the offshore fleet and with a target of 10% of trips in the inshore fleet. For the latter, realised coverage has been lower than the target in recent years, from 0% to a maximum over 10% (Table 5).</p> <p>Bycatch information is now routinely compiled and monitored. A compilation of information from the offshore fleet was provided to the assessment team (CAPP/Javitech 2016) covering seven vessels in three years (2012/3-2014/5), which confirms the results of the earlier detailed studies - bycatch is extremely low, vulnerable ("main") species are taken in very small quantities which would not jeopardise their recovery. A score of 80 is justified for this fleet.</p> <p>Recent compilations of information from the inshore fishery was made available to the audit team. These data show that bycatch in the inshore fleet is very low overall, and demonstrate that sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy). DFO (pers. comm., 2019) noted that "there is no consideration in the small vessel observer data for timing within the fishing season or area fished within any given SFA", such that the data are highly unlikely to be representative. In this case, it is considered that monitoring of bycatch data is not conducted in sufficient detail to assess ongoing mortalities to all bycatch species, so SG100 is not met.</p> <p>A Condition of Certification (#5) would normally be set on UoC 6, but in this case it is non-binding because this UoC does not satisfy PI 1.1.3 and so does not meet the minimum MSC requirements for a certified fishery.</p> <p>For the offshore fleet, the compilation of recent bycatch information covers all bycatch species, and</p>		

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch	
		the observer coverage on this fleet continues at a high level. Accordingly, a score of 100 is justified for this fleet, and applies to UoCs 1-3 where there is no inshore fishery.	
References		Orr & Sullivan 2008; Siferd 2010; ICES 2014; Collins et al 2014; COSEWIC 2010b; COSEWIC 2012a; DFO 2011; DFO 2013b; DFO 2010c; NAFO 2015c.	
OVERALL PI SCORE:		UoC 1 (Northern shrimp in SFA 1)	100
		UoC 2 (Northern shrimp in EAZ, WAZ, SFA 4)	95
		UoC 3 (Striped shrimp in EAZ, WAZ, SFA 4)	95
		UoC 4 (Northern shrimp in SFA 5)	75 85
		UoC 5 (Northern shrimp in SFA 6)	75 85
		UoC 6 (Northern shrimp in SFA 7)	75
CONDITION NUMBER (if relevant):		UoC 1 (Northern shrimp in SFA 1)	N/A
		UoC 2 (Northern shrimp in EAZ, WAZ, SFA 4)	N/A
		UoC 3 (Striped shrimp in EAZ, WAZ, SFA 4)	N/A
		UoC 4 (Northern shrimp in SFA 5)	2 (Condition met)
		UoC 5 (Northern shrimp in SFA 6)	2 (Condition met)
		UoC 6 (Northern shrimp in SFA 7)	5 (non-binding as UoC not certified)

As a result of meeting this condition and receiving a score of 85 for PI 2.2.3 the overall Principle 2 score for both UoCs 4 and 5 is increased from 92.0 to 92.7.

## 3 Conclusion

### 3.1 Summary of findings

With respect to MSC Principle 1, updated stock assessments have been undertaken for all UoCs, details of which are presented in section 1.2.5. Conditions 1, 4, 5 and 6 which were raised against Principle 1 Performance Indicators remain open, and revised milestones were drawn up for Conditions 4, 5 and 6. A revised Client Action Plan for meeting the revised milestones has been accepted by the audit team.

With respect to Principle 2, a recent compilation of information from the inshore fishery is now available, and provides a snap-shot of the catch and demonstrate that bycatch rates in the fleet are very low. The observer programme is in place and it is apparent that it is able to detect any increase in risk to the main bycatch species. As a result, Condition 2, for UoCs 4 and 5, related to Performance Indicator 2.2.3 and concerning the need for sufficient data collection to detect any increase in risk to main bycatch species, has been met, rescored and closed.

With respect to Principle 3, there have been limited changes within the management system within the audit period. Condition 3, for UoC 1 and related to PI 3.2.1 remains open.

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.

The audit concluded that the fishery continues to meet MSC requirements and continues to be certified.

## 4 Appendices

### 4.1 Evaluation processes and techniques

#### 4.1.1 Site visits

An off-site audit took place on 29<sup>th</sup> November 2019. Participants in the conference call are listed below:

Conference call - 29 <sup>th</sup> November 2019		
Name	Organisation	Role
Paul Knapman	LR Audit Team Member	Team Lead and P3 Specialist
Julian Addison	LR Audit Team Member	P1 Specialist
Rob Blyth-Skyrme	LR Audit Team Member	P2 Specialist
Bruce Chapman	CAPP	Client Group Representative
Derek Butler	ASP	Client Group Representative
Courtney D'Aoust	DFO (National Capital Region - NCR)	Resource Management
Leigh Edgar	DFO (NCR)	Resource Management
Lis Sondergaard	DFO (NCR)	Resource Management
Gordon Goodkey	DFO (NCR)	Resource Management
Martin Henri	DFO (NL)	Resource Management
Wojciech Walusz	DFO (Central & Arctic - C&A)	Science
Brittany Beauchamp	DFO (NCR)	Science
Katherine Skanes	DFO (Newfoundland & Labrador- NL)	Science
Paul Glavine	DFO (NL)	Policy & Economics
Gillian Janes	DFO (NL)	Policy & Economics

Prior to the site visit the client provided a submission which included minutes and materials associated with the Northern Shrimp Advisory Committee; TAC and catch data; stock assessment reports; correspondence from DFO NCR related to the management of the fishery in relation to the MSC 3<sup>rd</sup> annual audit of the fishery; a Conservation and Protection compliance report for the fishery.

This information was reviewed by the audit team prior to the meeting and formed the basis of questions and clarifications at the meeting. The following key aspects were covered at the meeting:

- The scientific base of information and stock assessment;
- Changes to the fishery and its management, e.g. legislation and regulations;
- Changes and updates on ecosystem issues;
- Changes to personnel involved with the science, management and industry;
- Inseparable and Practically Inseparable species;
- Compliance;
- Harmonisation with other MSC certified fisheries, in particular Greenland Cold Water Prawn;
- Any changes that might affect traceability within the fishery and conformity with regulations; and,
- Progress against the conditions of certification.

#### 4.1.2 Stakeholder Participation

The audit was announced on the [MSC website](#) on 28<sup>th</sup> October 2019. A total of 23 stakeholder organisations and individuals having relevant interest in the assessment were identified and consulted during this surveillance audit. The interest of others was solicited through the posting on the MSC website.

No stakeholders responded or requested to meet/speak with the audit team.

DFO provided the client with a “material change” letter which is appended below.

## 4.2 Stakeholder input

The only stakeholder input received was that provided by DFO in support of the fishery meeting the milestones on the Conditions, and a letter from the DFO Director General, Fisheries Resource Management, provided via the client representative, Mr. Bruce Chapman, highlighting relevant issues and changes for the fishery; for reference, this letter is provided on the following pages.

#### 4.2.1 Letter from the DFO Director General to the Client



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

**NOV 25 2019**

Mr. Bruce Chapman  
Canadian Association of Prawn Producers  
1362 Revell Drive  
Manotick, Ontario  
K4M 1K8  
bchapman@sympatico.ca

Dear Mr. Chapman:

RE: 2019 Northern Shrimp MSC Third Annual Audit

Please find the Department's written response to your request to provide information required for the upcoming Marine Stewardship Council's (MSC) third annual audit since the 2016 recertification of the Northern Shrimp fishery for Shrimp Fishing Areas (SFA) 1 – 6. We understand that, consistent with past practice, this audit will assess this fishery against required certification conditions and the Action Plan, and will also examine if there have been any significant changes in the fishery and/or management approach in the last year. As Director General of Fisheries Resource Management, I am pleased to provide this information as part of our ongoing support to industry towards maintaining certification.

The Department can confirm that there have been no material changes in the management approach to this fishery. Please note the acting appointment of Courtney D'Aoust as officer managing the Northern Shrimp file in the National Capital Region since July 2019 until at least July, 2020. DFO Resource Management and Science personnel working on the files in all regions have remained relatively constant; however, the senior fisheries management officers in DFO's Central and Arctic region now include Sheri Friesen, Kevin Bill and Angela Young, while in Newfoundland and Labrador (NL) region Krista Baker is now the DFO Science shrimp research scientist.

The process used for the assessment of the Northern Shrimp resource in the Eastern and Western Assessment Zones (EAZ and WAZ) and SFAs 4, 5 and 6 has not changed; it continues to encompass the provision of stock status advice via departmental Science Advisory Reports. The assessment of the resource in SFAs 1 and 7 continues to occur by the Northwest Atlantic Fisheries Organization's (NAFO) Scientific Council (SC). Data collection for the Canadian fishery has remained the same.

The governance structure and consultative processes remain the same. Please note that David Whorley, Director Resource Management Operations, assumed the role as Chair of the Northern Shrimp Advisory Committee (NSAC) in 2019. NSAC has met annually in recent years and is scheduled to next meet in early March, 2020.



**RE: Condition 1: *A plan must be in place in 2017 to enable a DFO Science advisory process to adopt reference points appropriate for Striped Shrimp in the Western Assessment Zone (WAZ) and Shrimp Fishing Area (SFA) 4 by Year 4.***

The Department is on track to establish and implement reference points and harvest decision rules for both species in the WAZ for the 2021/22 fishery, consistent with the consultative approach with the Boards as described in the 2018 MSC letter. A DFO Science peer review process for establishment of an LRP for both stocks in the WAZ is planned to occur in Spring 2020.

With regards to reference points for Striped Shrimp in SFA 4, DFO Science has indicated the difficulties in establishing appropriate reference points given the dynamics in the area. However, DFO scientists have been discussing options for establishing an LRP for this resource in order to mitigate risk to the sustainability of this stock. The intent is to identify an LRP during the winter 2021 stock assessment.

An update of the Striped Shrimp stock assessment in SFA 4 and WAZ will occur in early 2020 (in advance of the March, 2020 NSAC meeting), with the full assessment scheduled for early 2021.

**RE: Condition 2: *A plan must be in place in 2017 to resolve the problem of reporting incidental catch information for the small-vessel fleet operating in SFAs 5 and 6 by Year 4.***

From the Department's perspective, this condition has been met. Incidental catch information from observers (large vessels) and logbooks (small vessels) has been provided to the Audit Team and includes effort considerations (i.e. the shrimp catch reported by the same sources for the same time and area as the incidental catch). Previous year's programs were edited by Science NL to include small vessel observer data and shrimp catches represented by the same data source to allow for automatic generation of tables of incidental catch once the data is available. Incidental catch for the inshore fleet will be provided during the assessment process, noting that the last two years presented will always be preliminary.

**Re: Condition 3: *Progress reports on Canada-Greenland discussions must be provided annually, leading to agreement on a compatible harvest strategy by Year 4***

Canada and Greenland have met several times to discuss bilateral issues. In 2018, Canada held a teleconference with Greenland during the month of April, and following this teleconference, Canada and Greenland met in Tórshavn, Faroe Islands in August. A bilateral meeting is currently being planned with Greenland for 2020.

During the 2018 meetings, shared fish stocks, including Northern Shrimp, were discussed. While no decisions were made, these meetings provided an opportunity for Canada to informally discuss the possibility of advancing negotiations with Greenland regarding, *inter alia*, quota share allocations and harvest strategy for the shared transboundary stock of Northern Shrimp in SFA 1.

Although no agreement has been reached to date on quota shares for Northern Shrimp, progress has been made through these bilateral discussions. Accordingly, Canada and Greenland are now considering the establishment of a bilateral framework for regular engagement on the management of shared fish stocks.

It is envisioned that further technical discussions on the management of shared stocks will occur within the context of this bilateral framework. Canada regards an agreement on quota shares as prerequisite to having meaningful and substantive discussions on the establishment of a compatible harvest strategy for the shared Northern Shrimp stock.

Based on the shrimp biomass distribution in the late 1970s, Canada has traditionally claimed a quota calculated at 14.2% of the Total Allowable Catch (TAC) advised by the NAFO SC. This formula is also calculated as 17% of 5/6 (the latter fraction representing the Greenland offshore portion). While recognizing the efforts of Canada and Greenland to establish a bilateral framework for regular engagement on the management of shared stocks, but noting the absence of a formal agreement for this shared stock, Canada accepted an overall TAC of 102,500t, slightly less than the SC recommendation that catches not exceed 105,000t in order to be compliant with Canada's Harvest Control Rules for this stock. The Canadian quota claim for 2019 is 14,520t.

**Re: Condition 4: *A plan must be in place by Year 5 (2021) to support and monitor the growth of the SFA 6 stock relative to the point where recruitment would be impaired and relative to the TRP if/when these become available.***

**Re: Condition 5: *A plan must be in place by Year 5 to develop reference points appropriate for the stock in SFA 6.***

Considering the overlap of these Conditions, the Department will address them together for purposes of simplicity.

A CSAS peer review meeting to develop a Precautionary Approach (PA) Framework for Northern Shrimp in SFAs 4-6 was held in May 2019, during which a quantitative model was conditionally accepted for these stocks. The model is still undergoing edits and model testing and is anticipated to be distributed to external reviewers and framework meeting participants in late November for their review. As such, the intention is to incorporate the model during the 2020 assessment in order to inform on 2020/21 resource status and the effects of various catch levels.

At the May, 2019 Framework meeting, the definition of reference points could not be resolved and the PA framework presented was not accepted. Based on a recommendation at the meeting, a small internal working group has been established to work on moving forward with development of LRPs for stocks in SFA 4, 5, and 6. DFO Science intends to complete this work by January 2022 for incorporation in the 2022 stock assessment (in advance of the March, 2022 NSAC meeting).

In the meantime, DFO Science has advised that the current reference points should remain in place to continue assessments under a PA Framework in order to protect the stock.

**Re: Condition 6: A formal rebuilding plan for SFA 6 is in place to support and monitor the rebuilding of the stock.**

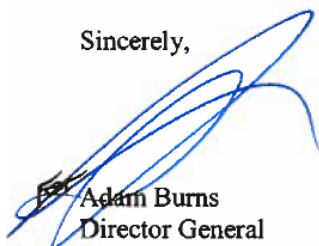
A formal rebuilding plan for SFA 6, developed through a working group that included all SFA 6 allocation holders, DFO Science and Resource Management in 2017/2018 was approved in April, 2018 and was previously provided to the MSC Audit Team. When the new assessment model and PA framework become available, it will inform the development of a revised formal management plan / rebuilding plan.

**Re: Recommendation: Development of an LRP for Northern Shrimp in the WAZ**

A 5<sup>th</sup> data point of the new time series became available in February, 2019 for both Northern and Striped Shrimp stocks in the WAZ. DFO's Resource Management has submitted a science request to develop the LRP and suggest the Upper Stock reference point for Northern Shrimp in 2020 in the same process and timelines as outlined for Striped Shrimp (see Condition 1).

A DFO Science peer review process for establishment of an LRP for both stocks in the WAZ is planned to occur in Spring 2020, as described in Condition 1 above. A full stock assessment will occur for both stocks in the WAZ in February 2021 (in advance of the March, 2021 NSAC meeting).

Sincerely,



for Adam Burns  
Director General  
Fisheries Resource Management  
Fisheries and Harbour Management

### 4.3 Harmonised fishery assessments

One other MSC certified Northern shrimp (*P. borealis*) fishery – [West Greenland Coldwater Prawn Fishery](#) - overlaps with the certified Canadian Northern Shrimp Fishery in SFA 1.

The Greenland fishery was re-certified in August 2018. The assessment concluded that the score and outcome for PI 3.1.1 needed to be harmonised with the Canadian fishery in SFA 1. This resulted in a score of 75 and a condition of certification, i.e. effective cooperation between Canada and Greenland to deliver management outcomes consistent with MSC Principle 1. However, the timeline for the Greenland fishery to achieve this was set at the year 4 annual audit which was not in sync (2 years later) with the required outcome of the equivalent condition set for the Canadian fishery.

Lloyd's Register concluded that the timelines for delivering the same outcome should be the same and extended the timeline for the Canadian fishery to 2022. This will extend delivery of the fishery's Condition 3 to beyond the existing term of the certificate by a year. MSC FCR v 2.0 (7.11.1.3) allows, in "exceptional circumstances", conditions to achieve the 80 level of performance beyond a certification period. Given the international cooperation that will be necessary for achieving this shared condition, Lloyd's Register considered this to be an exceptional circumstance.

### 4.4 References

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