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# **MSC SUSTAINABLE FISHERIES CERTIFICATION**

On-Site Surveillance Visit - Report for FBSA Canada Full Bay Sea Scallop Fishery



2<sup>nd</sup> Annual Surveillance October 2015

Prepared For: Prepared By: Full Bay Scallop Association (FBSA) Acoura Marine Ltd.



# **Assessment Data Sheet**

Certified Fishery	FBSA Canada Full Bay Sea Scallop				
Fishery Management Agency	Canada Department of Fisheries and Oceans				
Species	Atlantic Sea Scallop (Placopecten magellanicus)				
Fishing Method	Digby dredge				
Certificate Code	F-FCI-0034				
Certification Date	27.07.2013				
Certification Expiration Date	24.07.2018				
Certification Body	Acoura Marine 6 Redheughs Rigg Edinburgh EH12 9DQ, Scotland, UK				
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Surveillance	Stage:
Surveillance	Date:

2nd Annual Surveillance 15.10.2015



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## 1. Introduction

The purpose of the annual Surveillance Report is fourfold:

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

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



## 2. General Information

## 2.1 Certificate Holder details

Certificate holder:	Full Bay Scallop Association				
Address:	PO Box 517, Yarmouth, Nova Scotia, 85A 4B4, Canada				
Contact Name:	Mr. Dick Stewart				
	Manager				
Tel:	+1 902 742 9101				
Email:	aherring@eastlink.ca				

## 2.2 General Background about the fishery

## 2.2.1 Area Under Evaluation

The Area under evaluation is the Bay of Fundy and Approaches composed of:

- » <u>Bay of Fundy</u>: Scallop Fishing Area 28 (SFA 28) which is composed of a number of Scallop Production Areas for assessment and management purposes.
- » <u>Approaches</u>: Scallop Fishing Area 29 West of Baccaro Point (65° 30'W) which is divided into five subareas for assessment and management purposes.

## 2.2.2 Fishery Ownership & Organisational Structure

The Full Bay Scallop Association (FBSA)

The current Full Bay fleet is comprised of approximately 55 Scallop draggers and 100 licenses with the majority based in Nova Scotia and several in New Brunswick. Vessels in the fleet range between 45' and 65' length overall and traditionally land the majority of Scallops annually from the Bay. This fleet is also eligible to fish Scallops in SFA 29 West of 65° 30' to 43° 40' latitude (referred to as SFA 29 W).

## 2.2.3 History of the Fishery

Scallop beds in the Bay of Fundy and approaches have been fished commercially since the mid - 1880s. The modern fishery started in Digby in the 1930s with development occurring in the 1920s. Scallop stocks off Digby, Nova Scotia and Grand Manan, New Brunswick supported almost all the fishing effort by the various inshore Scallop fleets until the late 1970s.

The Bay of Fundy is fished by three separate scallop fishing fleets. Full Bay scallop license holders are able to fish scallops anywhere in the Bay of Fundy and the portion of SFA 29 West of Baccaro Point (65° 30'W), (SFA 29 W). Mid Bay license holders can fish for scallops on the northern side of the Mid Bay and Upper Bay license holders can fish east of the Upper Bay line (Figure 2.1).

In 1972, limited entry was introduced into the Bay of Fundy Full Bay fleet as a conservation measure and as a means to control harvesting capacity. Between 1972 and 1977, the inshore fleets were restricted to the Bay of Fundy and the adjacent waters on the Scotian Shelf; whereas the offshore Scallop fleet was restricted to Georges Bank, and the Scotian Shelf outside 12 miles. In 1977 and 1978, the depletion of the Bay of Fundy stocks resulted in the Bay of Fundy fleet gaining access to Georges Bank with 2.9% of the previous year's catch as a quota.

After numerous discussions and a series of industry/government seminars in 1985 and 1986, agreement was reached on exclusive access for each of the inshore and offshore fleets with permanent separation of the inshore Bay of Fundy and offshore fleets at the 43° 40' North Latitude line. As part of



the agreement, the Bay of Fundy fleet was phased off fishing on Georges Bank over two years with an 8% quota in 1987, 4% in 1988 and 0% in 1989. The 7-mile New Brunswick (NB) licenses were extended to the mid-bay line in the Bay of Fundy and hence referred to as the Mid Bay Fleet. The inshore vessels that had fished primarily in the area of the Upper Bay and a few of the 7 mile licenses with home ports in the area were established as the Upper Bay of Fundy Scallop Fleet. Following separation, each sector was to "pursue its own conservation and fleet rationalization plans within their exclusive fishing zones".

Under the Aboriginal Fisheries Strategy and in more recent years following the Marshall Decision by the Supreme Court of Canada, Aboriginal organizations have acquired a total of 16 Full Bay commercial Scallop licenses. Representatives from the Aboriginal groups actively participate in industry consultations through the advisory committees and working groups.

Figure 2.1: Map of DFO Scallop Fishing Areas (SFA) and Scallop Production Areas (SPA) in Bay of Fundy.



(Source: Smith et al., 2012)



## 3. Assessment Process

## 3.1 Scope & History of the Assessment

The fishery originally entered the MSC assessment process in October 2012 and was finally certified in July 2013. The original assessment report contains all the details of the original assessment and fully justified scores and should be referred to for further information and background. The original assessment report is available to download at <a href="http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-west-atlantic/fbsa\_canada\_full\_bay\_sea\_scallop/assessment-downloads-1/20130724\_PCR\_SCA355.pdf">http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-west-atlantic/fbsa\_canada\_full\_bay\_sea\_scallop/assessment-downloads-1/20130724\_PCR\_SCA355.pdf</a>. This is the 2<sup>nd</sup> annual surveillance audit for the FBSA Canada Full Bay Sea Scallop fishery and takes place as per the intended routine of surveillance.

The scores for the individual performance indicators are shown in Table 3.1.

#### Table 3.1 - Allocation of weighted scores at Sub-criteria, Criteria and Principle levels

Principle	PI No.	Performance Indicator (PI)	Score
	1.1.1	Stock status	80
	1.1.2	Reference points	75
	1.1.3	Stock rebuilding	NA
One	1.2.1	Harvest strategy	85
	1.2.2	Harvest control rules & tools	75
	1.2.3	Information & monitoring	100
	1.2.4	Assessment of stock status	95
	2.1.1	Outcome	100
	2.1.2	Management	80
	2.1.3	Information	80
	2.2.1	Outcome	80
	2.2.2	Management	80
	2.2.3	Information	75
	2.3.1	Outcome	80
Two	2.3.2	Management	90
	2.3.3	Information	75
	2.4.1	Outcome	60
	2.4.2	Management	60
	2.4.3	Information	95
	2.5.1	Outcome	80
	2.5.2	Management	80
	2.5.3	Information	85
	3.1.1	Legal & customary framework	95
Three	3.1.2	Consultation, roles & responsibilities	95
	3.1.3	Long term objectives	100



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Principle	PI No.	Performance Indicator (PI)	Score		
	3.1.4	3.1.4 Incentives for sustainable fishing			
	3.2.1	Fishery specific objectives	60		
	3.2.2	Decision making processes	90		
	3.2.3	3 Compliance & enforcement			
	3.2.4 Research plan		90		
	3.2.5 Management performance evaluation				

#### Sourced from original assessment

As a result of the assessment, eight conditions of certification were raised by the assessment team, and maintenance of the MSC certificate is contingent on the Full Bay Scallop Association fishery moving to comply with these conditions within the time-scales set at the time the certificate was issued. The conditions are summarized in Table 3.2.

#### Table 3.2. Summary of Conditions

Condition number	Condition	Performance Indicator
1	To define limit reference points to assess stock status in relation to the point where reproductive capacity may be impaired	1.1.2
2	To implement well defined Harvest Control Rules that reduce exploitation rates as the limit reference point is approached	1.2.2
3	Collect data on bycatch data in a regular basis that will allow detecting any increase in risk to main bycatch species	2.2.3
4	Obtain sufficient information that will allow fishery related mortality and the impact of the fishery to be quantitatively estimate for ETP species	2.3.3
5&6	To demonstrate that the fishery is highly unlikely to reduced habitat structure and function to a point where there would be serious or irreversible harm.	2.4.1 & 2.4.2
7	To define explicit short and long term objectives within the management system consistent with achieving the outcomes expressed by MSC's Principle 1 and 2	3.2.1
8	To put in place mechanisms to evaluate key parts of the management system.	3.2.5



In addition, a single recommendation was made which, whilst not obligatory, the client is encouraged to act upon within the spirit of the certification. The recommendation was related to PIs 2.1.2, 2.2.2 and PI 2.3.2, that is managing the risk of interaction with Retained, Bycatch and ETP species. The recommendation stated that if the information collected indicates increasing risk, management should ensure that the impact of the fishery on these species does not increase.

Progress on these conditions and recommendations are detailed in **Section 4.2.1** of this report.

Date certified

25.07.2013

**Certificate expiry** 

24.07.2018

Number of previous audits

One

## 3.2 Details of 2nd Surveillance Audit Process

#### 3.2.1 Determination of surveillance level

Please see Appendix 2

#### 3.2.2 Surveillance team details

The assessment team for this fishery assessment comprised of Dr Antonio Hervás, who acted as Team Leader and primary Principle 1 specialist; Dr Lee Murray who was primarily responsible for evaluation of Principle 2 and Ms Christina Annand who was primarily responsible for evaluation of Principle 3. Paul Macintyre was responsible for traceability / chain of custody considerations.

The on-site surveillance visit was carried out by Julian Addison, Joseph DeAlteris and Christina Annand. The Team Leader was Joe DeAlteris

#### 3.2.3 Date & Location of surveillance audit

The on-site surveillance audit was held on 15 October 2015 in Dartmouth, Nova Scotia, Canada.

#### 3.2.4 Stakeholder consultation & meetings

#### What was inspected

The Full Bay Scallop Association presented a dossier of evidence prepared by Mike O'Connor a consultant to the association. That document is cited in Appendix 4

#### Stakeholder Consultation

A total of one stakeholder organizations and individuals having relevant interest in the assessment were identified and consulted during this surveillance audit. The interest of others not appearing on this list was solicited through the postings on the MSC website.

The Canadian Department of Fisheries and Oceans (DFO) participated in the meeting.

Other documents referred to in this report are cited in Appendix 4.



## 3.3 Surveillance Standards

#### 3.3.1 MSC Standards, Requirements and Guidance used

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

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

No indication was given or suggested during the surveillance audit to suggest that either of these practices is in evidence for this fishery



# 4. Results, Conclusions and Recommendations

## 4.1 Discussion of Findings

## 4.1.1 Changes in fleet structure or operation

#### Updated Vessel List

The Bay of Fundy is fished by three separate scallop fishing fleets: Full Bay, Mid Bay, and Upper Bay. Full Bay scallop license holders are able to fish scallops anywhere in the Bay of Fundy, and the fleet has traditionally been based in Digby. Mid Bay license holders can only fish for scallops on the northern side of the Mid Bay line and the fleet consists mainly of New Brunswick-based vessels with multiple licenses for different species. Upper Bay license holders fish east of the Upper Bay line, and are often Nova Scotia-and New Brunswick-based multi-species vessels. The Full Bay fleet fishes under Individual Transferable Quotas (ITQs) with an October 1 to September 30 season in SFA 28 and SFA 29W, while the Mid and Upper Bay fleets fish a competitive quota with a January 1 to December 31 season in SFA 28. The FBSA Client group consists of 42 member companies as of September 2015. The following is a summary of inshore scallop licences registered, licences fished and vessels landed by area for 2012- 2014.

2012	Scallop	Number of	Number of	Number of	
	<b>Fishing Area</b>	Licenses	Licenses	Vessels	
		Registered	Fished	Landed	
SFA 29 West	SFA 29	164	51	51	
Full Bay	SFA 28	100	69	69	
Mid Bay	SFA 28	190	104	105	
Upper Bay	SFA 28	15	11	11	

2013	Scallop Fishing Area	Number of Licenses Registered	Number of Licenses Fished	Number of Vessels Landed
SFA 29 West	SFA 29	164	56	58
Full Bay	SFA 28	100	69	71
Mid Bay	SFA 28	196	121	120
Upper Bay	SFA 28	16	13	13

2014	Scallop Fishing Area	Scallop Number of Fishing Area Licenses		Number of Vessels	
		Registered	Fished	Landed	
SFA 29 West	t SFA 29	164	52	49	
Full Bay	SFA 28	99	64	65	
Mid Bay	SFA 28	196	133	132	
Upper Bay	SFA 28	16	14	14	

Source: DFO CDD RQ20150636 9/24/15



## 4.1.2 Changes in stock status and exploitation patterns

The Public Certification Report (PCR) for this fishery concluded that the scallop stock in SFAs 28 and 29 was highly likely to be above the point at which recruitment would be impaired. Quantitative model-based estimates were available for 4 of the 6 sub areas in SFA 28, all of which showed that biomass was well above the limit reference point and for the remaining two sub-areas in SFA 28 stock indices did not suggest any impairment of recruitment. For SFA 29W survey estimates of the number of recruits suggested that recruitment had not been impaired. The scallop stock in SFAs 28 and 29 was also considered to be at or fluctuating around its target reference point. However the lack of quantitative estimates for some sub-areas led the assessment team to conclude that there was not a high degree of certainty that the stock was above the point at which recruitment would be impaired, and that there was not a high degree of certainty that the stock had been fluctuating around, or been above, its target reference point.

#### <u>SFA28</u>

At the first surveillance audit in October 2014, a new full stock assessment had been completed in 2013 for SFA 28 for fishing season 2012/2013, providing advice for 2013/2014 (DFO Research Document 2014/016). For all Scallop Production Areas (SPAs) in SFA28 for which a model-based assessment was undertaken, the assessment concluded that the current population biomass was above both the Lower Reference Point (LRP) and the proposed Upper Stock Reference (USR) points. For SPA6, for which there is no model-based assessment, the CPUE index and survey index suggested that recruitment and abundance were both at high levels, although at the time there were no formally defined reference points. Overall the audit team concluded in 2014 that the scallop stocks in SFA28 were in a relatively healthy state and continued to meet the SG80 for PI 1.1.1.

Stock status was updated in 2014 identifying the consequences of different harvest levels in SPA 1A, 1B, 3, and 4 for the 2014/2015 season, and providing advice on the initial harvest levels for the start of the 2015/2016 season for SPA 1A, 1B, 3 and 4 (CSAS SAR 2015/035). The stock assessment uses the population model of Smith and Lundy (2002), with modifications described in Smith et al. (2012b) and Smith and Hubley (2014), applied to the survey biomass data along with the catch data over the 1983 to 2014 period.

**SPA 1A.** Biomass estimates for recruit scallops increased from 47.7 t in 2013 to 166.1 t in 2014, which was well above the long-term (1997-2013) median of 52 t. Model-based estimates of population biomass increased in 2014 to 2005 t which is in the healthy zone well above the USR of 1000 t (Figure 4.1). Catches up to 350 t for 2014/2015 are projected to be at or below the reference exploitation rate of 0.15 (Table 4.1).



Figure 4.1. SPA 1A biomass estimates for commercial size scallops (kt) from the assessment model fit to the survey and commercial data. Dashed lines are the upper and lower 95% credible limits on the estimates. The predicted commercial size biomass for 2015, assuming the 2014/2015 initial TAC (150 t), is displayed as a box plot with median, 50% credible limits (box) and 80% credible limits (whiskers).



Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

Table 4.1. Harvest scenario table for SPA 1A to evaluate 2014/2015 catch levels in terms of resulting exploitation (e), expected changes in biomass (%), probability of biomass decline, probability that after removal the stock will be above the USR (1000 t), and above the LRP (525.5 t). Potential catches (t) in 2015/2016 are evaluated in terms of the posterior probability of exceeding exploitation rate of 0.15.

2014/2015					Potential catch (t) 2015/2016					5	
	2014/2015					Pr	( e 2015/2	<sub>016</sub> ) > 0	.15		
Catch (t)	е	% Change	Pr Decline	Pr > USR	Pr > LRP	0.1	0.2	0.3	0.4	0.5	0.6
150	0.06	12.03	0.31	0.99	>0.99	254	297	333	367	402	438
175	0.07	10.57	0.33	0.99	>0.99	249	295	331	363	398	436
200	0.08	9.15	0.35	0.99	>0.99	248	291	327	359	393	430
225	0.09	8.03	0.36	0.99	>0.99	246	287	322	354	388	427
250	0.10	6.54	0.39	0.99	>0.99	242	284	320	352	385	423
275	0.11	4.96	0.41	0.99	>0.99	236	279	315	348	380	416
300	0.13	4.05	0.43	0.99	>0.99	235	278	312	345	377	414
325	0.14	2.61	0.45	0.99	>0.99	230	272	307	338	371	409
350	0.15	1.29	0.48	0.99	>0.99	227	268	301	333	367	402
375	0.16	0.01	0.50	0.98	>0.99	224	266	299	331	362	398

Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

**SPA 1B.** Biomass estimates for recruit scallops increased from 214.4 t in 2013 to 461.1 t in 2014, which was well above the long-term (1997-2013) median of 123.8 t. Model-based estimates of population biomass increased in 2014 to 2730 t which is in the healthy zone well above the USR of 1800 t (Figure 4.2). Catches up to 550 t for 2014/2015 are projected to be at or below the reference exploitation rate of 0.15 (Table 4.2).



Figure 4.2. SPA 1B biomass estimates for commercial size scallops (kt) from the assessment model fit to the survey and commercial data. Dashed lines are the upper and lower 95% credible limits on the estimates. The predicted commercial size biomass for 2015, assuming the 2014/2015 initial TAC (150 t), is displayed as a box plot with median, 50% credible limits (box) and 80% credible limits (whiskers).



Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

Table 4.2. Harvest scenario table for SPA 1B to evaluate 2014/2015 catch levels in terms of resulting exploitation (e), expected changes in biomass (%), probability of biomass decline, probability that after removal the stock will be above the USR (1800 t), and above the LRP (988.4 t). Potential catches (t) in 2015/2016 are evaluated in terms of the posterior probability of exceeding exploitation rate of 0.15.

		2014	2045			Potential catch (t) 2015/2016					
		2014	2015			Pr ( e 2015/2016) >0.15					
Catch (t)	е	% Change	Pr Decline	Pr >USR	Pr >LRP	0.1	0.2	0.3	0.4	0.5	0.6
150	0.04	28.96	0.13	0.99	>0.99	439	513	577	635	693	758
250	0.07	25.2	0.16	0.98	>0.99	423	497	556	614	674	739
300	0.08	22.95	0.18	0.98	>0.99	417	490	549	602	661	726
350	0.10	20.94	0.20	0.97	>0.99	409	483	541	596	653	716
400	0.11	18.52	0.23	0.97	>0.99	398	472	530	584	639	701
450	0.12	16.50	0.25	0.97	>0.99	395	465	522	578	633	695
500	0.14	14.71	0.27	0.96	>0.99	392	463	520	571	625	686
550	0.15	12.81	0.30	0.95	>0.99	384	452	507	563	617	676
600	0.16	10.77	0.32	0.95	>0.99	377	444	499	553	610	671
650	0.18	8.27	0.36	0.94	>0.99	371	438	492	545	599	659
700	0.19	6.50	0.39	0.93	>0.99	364	430	485	535	588	646
725	0.20	6.09	0.40	0.93	>0.99	362	429	483	536	591	649

Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

**SPA 2**. This area is considered to be marginal habitat for scallops and is not monitored regularly. SPA 2 was last assessed in 2006.



**SPA 3.** Biomass estimates for recruit scallops decreased from 60.20 t in 2013 to 34.54 t in 2014, which was below the long-term (1996-2013) median of 43.7 t. Model-based estimates of population biomass increased in 2014 to 2196 t which is in the healthy zone well above the USR of 1000 t (Figure 4.3). Catches up to 350 t for 2014/2015 are projected to be at or below the reference exploitation rate of 0.15 (Table 4.3).

Figure 4.3. SPA 3 biomass estimates for commercial size scallops (kt) from the assessment model fit to the survey and commercial data. Dashed lines are the upper and lower 95% credible limits on the estimates. The predicted commercial size biomass for 2015, assuming the 2014/2015 initial TAC (125 t), is displayed as a box plot with median, 50% credible limits (box) and 80% credible limits (whiskers).



Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

Table 4.3. Harvest scenario table for SPA 3 to evaluate 2014/2015 catch levels in terms of resulting exploitation (e), expected changes in biomass (%), probability of biomass decline, probability that after removal the stock will be above the USR (1000 t), and above the LRP (590.3 t). Potential catches (t) in 2015/2016 are evaluated in terms of the posterior probability of exceeding exploitation rate of 0.15.

	2014/2015						Potential catch (t) 2015/2016					
		2014	2015			Pr ( e 2015/2016)>0.15						
Catch (t)	е	% Change	Pr Decline	Pr >USR	Pr >LRP	0.1	0.2	0.3	0.4	0.5	0.6	
150	0.06	1.15	0.49	0.98	1.00	190	241	283	325	366	413	
175	0.07	0.73	0.49	0.97	1.00	188	239	281	321	362	407	
200	0.08	-0.70	0.51	0.97	1.00	184	235	276	316	357	400	
225	0.09	-2.04	0.53	0.97	1.00	183	233	275	316	356	400	
250	0.11	-2.96	0.54	0.97	1.00	181	229	268	308	349	393	
275	0.12	-4.96	0.56	0.96	1.00	179	226	265	303	343	388	
300	0.13	-6.10	0.58	0.96	1.00	174	222	260	298	339	383	
325	0.14	-7.50	0.60	0.96	1.00	173	221	260	297	336	379	
350	0.15	-8.68	0.61	0.95	1.00	170	214	252	291	331	375	
375	0.16	-9.70	0.63	0.95	1.00	169	213	252	288	327	369	
400	0.17	-10.59	0.65	0.94	0.99	164	209	248	284	322	363	

Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

**SPA 4 and 5.** Before the start of the 2014 fishing year SPAs 4 and 5 were combined under one TAC. Biomass estimates for recruit scallops increased from 5.6 t in 2013 to 90.8 t in 2014, which was well above the long-term (1983-2013) median of 38.2 t. Model-based estimates of population biomass in 2014 were similar to the estimate in 2013 at 1152 t which is in the healthy zone well above the USR of 750 t (Figure 4.4). Catches of between 180 t and 200 t for 2014/2015 are projected to be at or below the reference exploitation rate of 0.15 (Table 4.4).



Figure 4.4. SPA 4 biomass estimates for commercial size scallops (kt) from the assessment model fit to the survey and commercial data. Dashed lines are the upper and lower 95% credible limits on the estimates. The predicted commercial size biomass for 2015, assuming the 2014/2015 initial TAC (75 t), is displayed as a box plot with median, 50% credible limits (box) and 80% credible limits (whiskers).



Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

Table 4.4. Harvest scenario table for SPA 4 to evaluate 2014/2015 catch levels in terms of resulting exploitation (e), expected changes in biomass (%), probability of biomass decline, probability that after removal the stock will be above the USR (750 t), and above the LRP (546 t). Potential catches (t) in 2015/2016 are evaluated in terms of the posterior probability of exceeding exploitation rate of 0.15.

		201/	1/2015			Potential catch (t) 2015/2016					
		2014	+/2015			Pr ( e 2015/2016)>0.15					
Catch (t)	е	% Change	Pr Decline	Pr >USR	Pr >LRP	0.1	0.2	0.3	0.4	0.5	0.6
75	0.06	3.39	0.46	0.90	0.98	108	134	156	176	198	221
90	0.07	2.18	0.47	0.90	0.98	107	133	154	174	196	221
100	0.08	0.95	0.49	0.89	0.98	106	131	152	173	194	217
110	0.09	0.77	0.49	0.88	0.98	106	130	152	173	194	217
120	0.09	-0.75	0.51	0.88	0.98	104	129	150	169	191	216
130	0.10	-1.80	0.52	0.87	0.97	102	127	148	168	189	214
140	0.11	-2.11	0.53	0.87	0.97	103	128	148	168	189	212
150	0.12	-3.24	0.54	0.86	0.97	102	126	146	165	187	211
160	0.13	-4.00	0.55	0.85	0.97	99	124	145	164	185	209
180	0.14	-4.92	0.57	0.85	0.97	100	123	143	163	183	207
200	0.16	-7.75	0.60	0.83	0.96	98	120	141	161	181	203

Source: DFO Can. Sci. Advis. Sec. Sci. Resp. 2015/002

During the 2104 survey, five exploratory tows were conducted in SPA5. The average number of commercial scallops per tow was 181.2 which was above the long term (1990-2008) median of 79.5 scallops per tow. The average number of recruit scallops per tow was 12.8 which is below the long term (1990-2008) median of 22.3 recruits per tow.

**SPA 6.** There is no model-based assessment for SPA 6. The commercial catch rate for all sub-areas combined is the stock indicator for this area. The LRP is defined as the lowest catch rate observed in the times series (6.2 kg/h) since 1997. The combined catch rate in all areas in 2014 was 25.1 kg/h which is well above the LRP (Figure 4.5).





Figure 4.5. Annual commercial catch rate (kg/h) for all sub-areas and fleets combined.



In summary, the most recent update on stock status for SFA 28 concluded that for SPAs 1A, 1B, 3 and 4, for which there is a model-based estimate of biomass, population biomass is in the healthy zone above the Upper Stock Reference (USR) point. For SPA6, the CPUE index is well above the Limit Reference Point (LRP), but at the time of the assessment there was no defined USR.



### <u>SFA29</u>

At the first surveillance audit in October 2014, a new full stock assessment had been completed in 2013 for SFA29W using a new state-space habitat-based population model (see DFO Res. Doc. 2014/064). The assessment concluded that whilst recruitment rates were low currently in SFA 29W, the high levels of prerecruits suggested that in the short term, densities of commercial size scallops will increase. Overall the audit team concluded in 2014 that the scallop stocks in SFA28 and SFA 29W were in a relatively healthy state and continued to meet the SG80 for PI 1.1.1.

A further full assessment of the SFA 29W scallop fishery was undertaken in March 2015 (CSAS SAR 2015/035) because the extremely strong year class that had caused the closure of subareas C and D in 2014 (in order to protect the high abundance of juvenile scallops) appeared to have diminished. The 2015 assessment underwent peer review during a Regional Assessment on 24 March 2015 in Dartmouth, Nova Scotia (CSAS Res. Doc. 2015/028), at which there was consensus that the assessment should be accepted and published.

A post-season joint industry/departmental research survey has been conducted annually since 2001 when the current fishery started. In 2014, a new survey design based on the assessment approach in Smith et al. (2015) using scallop habitat suitability categories was used to define strata, with habitat suitability probabilities binned into Low, Medium and High categories, and survey estimates from 2001 to 2013 were modified to correspond to the new design. Subarea E has not been consistently covered in the survey and is considered to be marginal habitat for scallops. In 2014, commercial densities were generally similar across habitat suitability categories within subareas and were low compared with earlier in the time series. The number of recruit size scallops in 2014 was relatively low across habitat categories across subareas and are near the lowest of the time series in all areas. In 2013, pre-recruit abundance observed was the highest in the time series, and subareas C and D were closed to protect this strong year class, but this year class was not observed in subareas A, B, and C during the 2014 survey. The most likely reason for the diminishing of this year class is high mortality with the exception of some areas of subarea D, where the year class has survived to reach 50-80 mm. There is also a new year-class of pre-recruits of 20-40 mm shell height in subareas C and D, so that overall pre-recruit abundance in subareas C and D is near the highest of the time series, whereas pre-recruit levels decreased to near the lowest of the time series in subareas A and B across habitat categories.

The state-space habitat-based population model was fit to the commercial catch data, effort data derived from the vessel monitoring system, and survey data. The population biomass density has been reduced over time in the High suitability category to be more similar to densities found in the Medium and Low suitability categories, and currently commercial densities are near the lowest of the time series. Modelled estimates of recruit densities are low across all subareas A–D and numbers are similar across habitat categories, with a slight increase observed in subarea D.

The assessment model was used to determine catch, exploitation, percent change in commercial biomass, and the probability of biomass decline for a range of potential catches for each of the sub-areas A, B, C and D in a series of catch scenario tables (CSAS SAR 2015/035). For sub-area A, the model predicts a decline in stock biomass even with a zero catch in 2015 (Table 4.5). For subareas B, C, and D, overall catches of up to 39 t, up to 27 t, and up to 51 t, respectively, have  $a \ge 50\%$  probability of biomass increases in the High habitat suitability categories (Tables 4.6, 4.7 and 4.8), although the assessment noted that a catch of 51 t in sub-area D would represent an exploitation rate in excess of the reference level of 0.15. However the assessment also concluded that biomass densities across habitat categories in subareas B–D are currently near the lowest of the time series.



For sub-area E, the assessment model cannot be used to provide advice as this sub-area is not covered by the scallop habitat suitability map. Catch rates in sub-area E have remained similar to those in 2013 at 23 kg/h. However a few tows were undertaken in the surveys in 2012, 2013 and 2014 in sub-area E, and although not fully indicative of abundance across the whole sub-area, the survey results suggested that the numbers of both commercial and recruit scallops had declined since 2013 and there were very few pre-recruits observed in this sub-area.

Table 4.5.	Catch scenaric	table for SFA	29A to evaluate	2015 catch	levels in terms	s of expected	changes in
biomass (%	6) and probabili	ty of decline.					

Subarea Catch (t)	Exploitation in Medium Category	Expected change in biomass (%) in Medium Category	Prob. of Biomass Decline in Medium Category	Expected change in biomass (%) in Subarea	Prob. of Biomass Decline in Subarea
0	0	-15.8	0.6	-4.8	0.54
3	0.02	-19.7	0.63	-7.4	0.56
6	0.04	-19.9	0.63	-8.5	0.57
10	0.06	-21.9	0.64	-10.3	0.58
13	0.08	-24	0.66	-11.8	0.6
16	0.1	-24.2	0.65	-12.2	0.6
19	0.13	-27.1	0.68	-14.5	0.62
22	0.14	-27.5	0.67	-15	0.62
25	0.17	-29.8	0.69	-17.1	0.65
29	0.19	-30.9	0.7	-18.7	0.66
32	0.21	-32.5	0.71	-20.9	0.67
35	0.22	-33.4	0.72	-21.8	0.68

Source: CSAS SAR 2015/035



Subarea Catch (t)	Exploitation in High Category	Expected change in biomass (%) in High Category	Prob. of Biomass Decline in High Category	Expected change in biomass (%) in Subarea	Prob. of Biomass Decline in Subarea
0	0	15.6	0.4	14.5	0.36
7	0.02	13.2	0.41	12.8	0.36
13	0.04	12.3	0.43	12.9	0.36
20	0.06	8.6	0.44	11.4	0.38
26	0.08	6.2	0.46	11.1	0.38
33	0.1	4.3	0.47	10.4	0.39
39	0.12	2.8	0.48	9.5	0.39
46	0.14	-1.6	0.51	8.4	0.41
52	0.16	-3.1	0.52	6.3	0.43
59	0.18	-5.1	0.54	6	0.44
66	0.2	-9.2	0.56	6	0.44
72	0.22	-10.1	0.57	2.8	0.47

Table 4.6 Catch scenario for SFA 29B to evaluate 2015 catch levels in terms of expected changes in biomass (%) and probability of decline.

Source: CSAS SAR 2015/035

Table 4.7. Catch scenario for SFA 29C to evaluate 2015 catch levels in terms of expected changes in biomass (%) and probability of decline.

Subarea Catch (t)	Exploitation in High Category	Expected change in biomass (%) in High Category	Probability of Biomass Decline in High Category	Expected change in biomass (%) in Subarea	Probability of Biomass Decline in Subarea
0	0	15.4	0.44	21.4	0.31
4	0.02	13.9	0.43	18.8	0.32
8	0.04	11.3	0.45	17.9	0.34
12	0.06	11	0.45	15.7	0.35
15	0.08	8.5	0.46	13.6	0.36
19	0.1	6.7	0.47	13.3	0.37
23	0.12	3.7	0.49	13.2	0.38
27	0.14	0.6	0.5	10.1	0.4
31	0.16	-1.5	0.51	8.8	0.42
35	0.18	-3.6	0.52	8.5	0.42
38	0.2	-7.1	0.53	5.7	0.44
42	0.22	-12.3	0.56	3.4	0.47

Source: CSAS SAR 2015/035



Subarea Catch (t)	Exploitation in High Category	Expected change in biomass (%) in High Category	Probability of Biomass Decline in High Category	Expected change in biomass (%) in Subarea	Probability of Biomass Decline in Subarea
0	0	28.7	0.29	19	0.26
5	0.02	24.3	0.3	17.3	0.28
10	0.04	21.1	0.32	15.9	0.29
15	0.06	18.9	0.35	13.3	0.32
20	0.08	17.9	0.35	13.3	0.33
25	0.1	15.6	0.37	11	0.35
31	0.12	10.6	0.4	9.3	0.36
36	0.14	9.9	0.41	7.4	0.4
41	0.16	7.2	0.43	6.4	0.41
46	0.18	3.8	0.47	5.1	0.43
51	0.2	2.1	0.47	3.1	0.46
56	0.22	-0.9	0.51	1.1	0.48
61	0.24	-3.5	0.54	0.4	0.49

Table 4.8 Catch scenario for SFA 29D to evaluate 2015 catch levels in terms of expected changes in biomass (%) and probability of decline.

#### Source: CSAS SAR 2015/035

In conclusion, the status of the stock in SFA29W in 2014 seems to have declined since 2013. In the absence of pre-defined LRPs and USRs for SFA29W, the audit team found it difficult to assess the status of the stock against reference points and hence to determine whether or not the stock still met the SG80 for PI 1.1.1. The reasons for the failure to agree LRPs in SFA 29W in advance of this surveillance audit are described in detail in a letter to the audit team from the Client which is reproduced in Appendix 1.3. The audit team did note however that despite the failure to agree suitable reference points for SFA29W. information received from the client during the audit demonstrated that the stock may not be in the healthy zone when assessed against some proposed reference points (see attached letter in Appendix 1.3). In the absence of such pre-defined reference points, at the original certification, the original assessment team considered an exploitation rate of 0.15 and stability in population biomass as target reference points. The catch scenario tables presented above suggest that it is reasonable to conclude that SG80b is still met if an exploitation rate of 0.15 and stability in population biomass are used as target reference points as in the original assessment. In addition the audit team noted that the original assessment team considered that "The scallop biological unit/stock was defined as the Bay of Fundy and Scallop Fishing Area 29W. Therefore PI 1.1.1 was scored by considering scallops in the Bay of Fundy and Scallop Fishing Area 29W as only one stock." On that basis, the audit team notes that both the TAC and the landings in SFA29W are less than 10% of the total for the Bay of Fundy / SFA29W stock, and as the stock is well above the USR in all areas of the Bay of Fundy, it seems reasonable to conclude that for the stock as a whole that SG80b is met for PI 1.1.1. Nevertheless the audit team considers that there is concern that the scallop stock in SFA29W may have declined significantly, and stresses that the implementation of reference points for this area and the assessment of stock status in relation to those reference points must be a priority for the client at next year's audit.



#### 4.1.3 Changes in ecosystem interaction or management

With regard to the bycatch related conditions on the FB sea scallop fishery MSC certificate the FBSA submitted a progress report summarizing their efforts to meet condition 3 and 4 (O'Conner, 2015, Inshore scallop monitoring program, dated 9/18/15). This document was included as Annex B FBSA evidence document. This document is summarized below, and the FBSA noted that the observer monitoring had commenced as of 1 October 2015.

#### **Objectives of Enhanced Monitoring**

A suite of measures is being considered to respond to the following objectives of an enhanced monitoring program for Inshore Scallops in SFA 28 and SFA 29W:

- 1. To collect verifiable bycatch data that will allow detecting any increase in risk to the main bycatch and ETP species.
- 2. To determine areas of concentration of bycatch species with a view to avoiding them.
- 3. To better understand the risks to bycatch and ETP species by applying discard rates against scientifically determined mortality rates.
- 4. To introduce a baseline for variance reporting against Fleet monitoring documents with a view to improving compliance and focused enforcement.
- 5. To monitor annual DFO RV survey catches of bycatch species to better determine stock status and levels of risk.

#### Proposed Inshore Scallop Monitoring

Additional measures are proposed to the existing monitoring program in response to the above objectives and to address MSC conditions, for implementation within the following proposed timeframes. The information collected from the program will be used by industry and DFO to adjust management strategies, when warranted, to ensure the impact of the fishery on these species does not increase.

Enhanced Monitoring	Objectives	Timeframes
At sea observer coverage for SFA 28 pilot project	1,2,3,4	October 2015 to Sept 2017
Annual Questionnaire and Species Identification	2,3	October 2016
VMS location /position in future spatial analysis of the fishery	2	October 2018
Improve logbooks and compliance	1,4	October 2018
Method to determine ETP discard mortality	3	October 2017
Monitor DFO RV Survey Bycatch Species	5	October 2016

#### SFA 28 At Sea Observer Coverage

In SFA 28 the nature of the fishery: number of landing ports, mix of ITQ and competitive fisheries and total number of licence holders adds to the complexity of developing an observer program. Further complexity is added with the operational requirement of vessels landing with non offload landings and with observers joining a vessel at the beginning or during a trip. In view of these complexities the seaday cost of such a program, a matter of great concern to the industry, will likely be higher than in more predictable fisheries. From a MSC perspective multiple monitoring measures (per above) can be used to provide information on the impact of this



fishery; although it is recognized that at sea observer coverage has less bias and is more verifiable. The following principles should be considered: the operational design of the program should be formulated by industry and DFO; observer coverage is one measure within a suite of monitoring measures; start with a modest level of observer coverage and consider a phased level involving various production areas and different fleets over the mid to longterm; design the program to meet fishery monitoring objectives; build in a feedback mechanism for review and evaluation. The FBSA has agreed to begin a 3 year pilot project with at sea observer coverage in scallop fishing area 28 SPA 3 beginning October 1, 2015. Annual target coverage levels are set at 5% of total seadays with no broken trips and with coverage over two seasonal periods: October 1 - November 15 and June 1 - September 30. Following year 1 at sea observer coverage will be rotated to SPA 4 for year 2 and then to SPA 1A for year 3. At the end of year 3 a review and evaluation of the pilot project will be conducted with the FBSA and DFO.

#### Annual Questionnaire

Conduct an annual questionnaire of Captains to capture the following information:

main discard species and quantity, time of year and location, handling, time out of the water, estimate of condition, how to avoid catching. The survey will bring fishermen's expertise to bear and involve them directly in bycatch/discard species issues. The Fishermen's Research Society might be a good fit for helping to develop and analyze survey results and circulate identification pictures and information on key species of potential concern such as skates.

With regard to conditions 5 and 6 designed to address the possible impact of the fishery on habitat, the FBSA submitted a report prepared by Spatialanalysis of Ottawa, Canada that mapped the footprint of the fishery (Footprint of the FBSA Canada Full Bay Sea Scallop Fishery 2009 to 2015, prepared by Spatialanalysis, dated September 2015). The results of the study are summarized below and illustrated in Figure 4.7, where the distribution of catch, presumably related to fishing effort is plotted along with the geological habitat types and the identified sensitive benthic habitat areas. These habitats were identified and described in a 2015 CSAS report 2014/044.

Highlights of the FBSA Canada Full Bay Sea Scallop footprint analysis, as averaged for the period 2009-2014, are summarized below:

- Of the 11,247 cells that make up the FBSA area within the 10 to 300-meter depth contour, on average, scallop vessel tows were initiated in only 1,747 or 15.5% of them.
- On average during the 6-year period, approximately 7.7% of the cells in which tows were initiated account for one third of the annual landed weight. Another 18.1% of the cells account for the next third of the weight. The balance, 74.2%, accounts for the remaining third of the landed weight.
- According to the underlying surficial geology, the Full Bay and Approaches Sea Scallops (FBSA) Unit of Certification area where surveyed is composed of 31% sand, 27% sand-gravel, 23% drift, 17% clay and 2% silt.
- The average figures for the 6-year period suggest that, on average, 81% of the fishing effort occurred on sand or sand and gravel habitats.
- Estimates of swept area, based on average figures for the 2009 to 2014 time period, suggest that only 6.6% of the 8,042 NM<sub>2</sub> habitat area was swept.
- Estimates of swept area also suggest that, on average, 46% of the effective swept area originated from the Bottom 3rd of the fishery, where the effective swept area is only 26% of the sea area of those corresponding grid cells.
- Two Ecological and Biological Significant Areas (EBSAs), one Marine Protected Area (MPA) and one Whale Conservation Area were evaluated for potential overlap with this sea scallop fishery.
- Evidence shows that there has been definite overlap with the Head Harbour West Isles and Passages EBSA with the sea scallop fishery.



- In this analysis minimal fishing effort was detected for the Musquash Estuary MPA.
- There may have been minor fishing effort within the Grand Manan Right Whale Conservation Area, but this can be considered incidental and may well have been the result of miscoded geographic coordinates on catch records from logbooks.
- The footprint analysis, and especially the records from logbooks upon which it was based, cannot say much about the potential overlay with an EBSA aiming to protect Modiolus or northern horse mussel sea-beds. Footprint evidence suggests that these bed areas are not hotspots for the FBSA sea scallop fishery.

The next phase of this project will be to conduct the risk analysis, that is an analysis of the potential impact of fishing on sensitive habitats, and if it is occurring, then what is going to be done to mitigate that impact.



Figure 4.7. Plot of the spatial distribution of catch in the Full bay Scallop fishery, noting surficial geology and sensitive habitat areas.



## 4.1.4 Changes in management

No relevant changes to legislation and regulations have been identified since the last full surveillance audit (October 2014). As part of its evidence package for the second annual audit the FBSA provided to the Audit Team a letter dated October 8, 2015 from the Regional Director General of DFO's Maritimes Region, Morley Knight, confirming that there have been no significant changes to the management regime or compliance since the 1st surveillance audit in October 2014.

The letter further noted that there have been personnel changes: the former head of the Maritimes Regions Scallop program has retired and the current head is now Jessica Sameoto. A new Scallop research scientist David Keith has also joined the team. A scallop survey is done on an annual basis with a full assessment process every third year. In the intervening years the stock is assessed by DFO Science and reported in the Science Special Response Series (SSR) series.

It was also observed that the Senior Advisor for Inshore Scallop has changed with Verna Docherty currently replacing Maureen Butler.



## 4.1.5 Catch data

#### Unit of Certification Quotas 2012-2014

Below is a summary of quotas by Fleet and SFA area. Detailed quota information by Fleet and SPA is included in the DFO supporting information (# 9 above).

			•					
		20	2012		13	2014		
Fleet	Scallop Fishing Area	SFA 28,29W Quota	Percent of Quota	SFA 28,29W Quota	Percent of Quota	SFA 28,29W Quota	Percent of Quota	
*SFA 29 West	SFA 29	160.000	100.0%	170.000	100.0%	125.000	100.0%	
Full Bay	SFA 28	803.250	75.1%	791.315	72.3%	905.925	63.0%	
Mid Bay	SFA 28	226.160	21.1%	252.950	23.1%	345.190	24.0%	
Upper Bay	SFA 28	40.590	3.8%	50.735	4.6%	60.885	4.2%	
Total	SFA 28	1,070.000	100.0%	1,095.000	100.0%	1,312.000	91.3%	
Total	SFA 28,29	1,230.000		1,265.000		1,437.000		

## Inshore Scallop Quotas by Fleet & Area 2012-2014

\* Metric tonnes- meat weight. Source DFO.

#### Unit of Certification Landings 2012-2014

Below is a summary of landings by Fleet and SFA area. Detailed landing information by Fleet and SPA is included in the DFO supporting information (#9 above).

		20	2012		13	2014		
Fleet	Scallop	Total	Percent of	Total	Percent of	Total	Percent of	
	Area	Landings	Landing	Landings	Landing	Landings	Landing	
SFA 29 West	SFA 29	167.557	15.0%	154.052	12.0%	128.500	8.7%	
Full Bay	SFA 28	754.580	67.0%	794.450	61.7%	889.702	60.1%	
Mid Bay	SFA 28	158.595	14.0%	282.940	22.0%	394.474	26.6%	
Upper Bay	SFA 28	39.908	4.0%	56.467	4.4%	68.918	4.7%	
Total		1,120.641	100.0%	1,287.909	100.0%	1,481.595	100.0%	

## Inshore Scallop Landings - Fleet & Area 2012-2014

\* Metric tonnes- meat weight. Source DFO.



## 4.2 Reporting on Conditions & Recommendations

## 4.2.1 Condition 1

Performance Indicator	1.1.2 Reference Points
Score	75
Rationale	Limit Reference Points (LRP) are not defined
Condition	To define Limit Reference Points (LRP) to assess stock status in relation to the point where reproductive capacity may be impaired
Milestones	Year 1-2: To define and estimate LRP Resulting Score: 75 Year 3: To implement LRP within the management system Resulting Score:: 80
Client action plan	As part of its 2009 Sustainable Fisheries Framework (SFF), DFO has introduced policy which states that Reference Points (RPs) to guide management decisions should be determined using standard biomass and harvest metrics (e.g., fishing mortality or exploitation). RPs are to be defined at the biomass level below which removals must be progressively reduced in order to avoid reaching the LRP (Upper Stock Reference, USR) and at a RR indicating the maximum harvest rate (as fishing mortality or exploitation). RPs consistent with the DFO policy have been proposed (DFO, 2012c) and discussed with representatives of the fishing industry. Given that the LRP should correspond to the impact of fishing on reproductive success, a precautionary limit has been proposed as the lowest biomass level belaw that the stock has recovered from. Proposals for the USR of each SPA are under development. <b>Responsible Parties</b> The FBSA will collaborate with DFO Fisheries Management and DFO Science and the two advisory committees (ISAC and WSAC) to ensure that LRPs for the SFA 28 and 29 inshore scallop fisheries are implemented in the setting of TACs. <b>Expected Improvements</b> By the end of year 2 in each fishery, limit reference points will have been defined. Along with the HCR (PI 1.2.2), these will ensure the long-term sustainability of these fisheries. <b>Assessment of Outcomes and Milestones</b> Due to scientific (data and methodology) issues, the setting of LRPs in SFA 29W is slightly behind that in SFA 28. The following schedule recognizes this.  Year 1: LRPs for each SPA in SFA 28 will be estimated and tabled for agreement at ISAC. These will be included in the minutes of ISAC as well as the IFMP.  Year 2: LRPs will be used to guide TAC setting in SFA28. These will be documented in the minutes of ISAC. LRPs will be used to guide TAC setting in SFA29W. These will be documented in the minutes of ISAC. LRPs will be used to guide TAC setting in SFA29W. These will be documented in the minutes of ISAC. LRPs will be used to guide TAC setting in
Consultation on condition	Information required under this condition should be compiled in consultation with relevant stakeholders

#### Progress against interim milestones (as of 1st annual surveillance)

This condition requires that limit reference points (LRPs) will have been defined by the end of year 2 in each fishery, although it is recognized that the development of LRPs in SFA 29W is slightly behind that in SFA 28. On that basis the year 1 milestone requires that LRPs for each SPA in SFA 28 will be estimated and tabled for agreement at ISAC, and that these will be included in the minutes of ISAC as well as the IFMP.



The fishing industry has continued consultations with DFO Science about the implementation of the Precautionary Approach and the development of reference points as specified within DFO's Sustainable Fisheries Framework. For SFA 28, limit reference points have been agreed for those SPAs which have a model-based assessment (SPAs 1A, 1B, 3 and 4). Agreement has been reached to set the LRPs for these areas to the lowest biomass in the time series from which a sustained recovery occurred. These LRPs have been incorporated within the most recent stock assessment of SFA 28, and the assessment calculates the probability of the stock falling below the LRP. In SPA 6, for which there is no model-based assessment, the commercial catch rate series has been proposed as the stock status indicator for this area, and the lowest catch rate in the series (6.7 kg/hr) has been proposed as the LRP. (There is no stock assessment for SPAs 2 and 5, so LRPs are not required for these areas.) Under the proposed harvest control rule (HCR), no fishing would be permitted if the stock indicator dropped below the LRP.

The LRPs for SFA 28 were tabled at the ISAC meeting in December 2013, noted in the minutes and agreed for implementation for the 2014 season. The LRPs have also been incorporated within the draft IFMP.

The assessment team considered that the evidence provided indicates that the client is on target to meet the terms of this condition by the third annual audit as required.

#### Progress against interim milestones (as of 2nd annual surveillance)

Limit reference points (LRP) for those SPAs in SFA28 which have a model-based assessment (SPAs 1A, 1B, 3 and 4) were reconfirmed at the Inshore Scallop Advisory Committee (ISAC) meeting in September 2013, and implemented in 2014. A LRP was also set for SPA 6. At the ISAC meeting in December 2014, the ISAC representatives recommended maintaining these same reference points for the 2015 season. Harvest Control Rules (HCR) have been developed and included within the draft Integrated Fisheries Management Plan (IFMP). (The IFMP has been updated and is in the approval phase, but is not yet ready for public release.) Stock status for SFA28 has been updated (CSAS SAR 2015/035) and the assessment model was fitted to the survey and commercial data to identify the consequences of different harvest levels in SPAs 1A, 1B, 3 and 4. The TACs for each SPA are set to ensure that the stock remains in the healthy zone above both the Upper Stock Reference Point (USR) and the LRP and that the exploitation rate remains below the the reference exploitation rate of 0.15. The TAC in SPA 6 is set to ensure that the catch rate remains above the LRP and USR.

In conclusion the audit team considered that the year 2 milestone had been met for SFA 28.

For SFA 29W LRPs have not yet been agreed. Reference points have been explored by DFO Science (see CSAS Proceedings 2015/028), but it is recognised that discussion on reference points for SFA 29W will need to continue. The reasons for the failure to agree LRPs in SFA 29W in advance of this surveillance audit are described in detail in a letter to the audit team from the Client which is reproduced in Appendix 1.3. The audit team considered that the year 2 milestone had not been met for SFA 29W and that the client is therefore behind target to meet the terms of this condition by the third annual audit as required, and that a revision of milestones is required.

#### **Remedial actions**

The milestones for this condition need to be revised to take into account the delay in agreeing LRPs for SFA 29W.

#### **Changes to condition**

The Client and audit team agreed that the milestones for years 3 and 4 should be revised as follows:

Year 3 - LRP for SFA 29W will be estimated and tabled for agreement and documented at WSAC.

Year 4 - LRP for SFA 29W will be documented in the IFMP and used to guide TAC setting in SFA 29W. These will be documented in the minutes of WSAC.

#### Updated status

Behind target, minor non-conformance.



## 4.2.2 Condition 2

Performance Indicator	1.2.2 Harvest Control Rules
Score	75
Rationale	There are decision rules but not well defined to ensure that the exploitation rate (E) is reduced as the LRP is approached
Condition	To implement well defined Harvest Control Rules that reduce E as the LRP is approached
Milestones	Year 2: Definition of Harvest Control Rules Resulting Score: 75 Year 3: Implementation of Harvest Control Rules Resulting Score: 80
Client action plan	The milestones reflect the need to consult with the fishery in the advisory committees on the Upper Stock Reference (USR) points. This must occur before the definition and implementation of the HCR. Responsible Parties The FBSA will work with DFO Fisheries Science and DFO Science and the two advisory committees (ISAC and WSAC) to ensure that USRs for the SFA 28 and 29W inshore scallop fisheries are agreed to and implemented in the setting of TACs. As well, the LRP and USRs in each area will form the basis of the HCRs required by the certification. Expected Improvements By the end of year 3 in each fishery, HCRs will have been defined which will ensure the long-term sustainability of these fisheries. Assessment of Outcomes and Milestones Year 1: Discussion on USRs in advisory committees. These will be included in the minutes of ISAC and WSAC. Year 2: USRs will be defined for each SPA in SFA 28 and 29W. These will in turn allow definition of a HCR in each area. These will be included in the minutes of ISAC and WSAC.
Consultation on condition	Information required under this condition should be compiled in consultation with relevant stakeholders

#### Progress against interim milestones (as of 1st annual surveillance)

This condition requires the implementation of well-defined harvest control rules (HCRs) that reduce the exploitation rate as the limit reference point is approached. There is no formal milestone for year 1, but the milestones reflect the need to consult with the fishery in the advisory committees on the USR points before an HCR can be defined and implemented. On that basis, the Client Action Plan stated that in Year 1 discussion on USRs would take place within the advisory committees, and these would be included in the minutes of the committees.

Candidate USRs have been discussed in detail within the advisory committees and these are noted in the minutes of ISAC (no minutes yet available for the most recent WSAC meeting). After a series of industry-DFO meetings, it was decided that USRs would be based on the equilibrium biomass and exploitation rate associated with maximum catch. DFO Research Document 2014/016 explains how these USRs were obtained by projecting the assessment model forward by 50 years from the current year for a range of constant exploitation rates, assuming median recruitment because of lack of evidence of any stock-recruitment relationship. Once an appropriate exploitation rate was determined from the projections, a range of candidate biomass levels for the USR were evaluated in terms of a Harvest Control Rule (HCR) similar to that specified in the DFO policy, and performance of the HRC for specific USRs was evaluated over a 50 year time frame in the context of median biomass, exploitation, catch, and percent of time the fishery was closed due to the biomass falling below the LRP. Based on



these projections, ISAC agreed on USR's for those sub-areas with a model-based assessment (SPAs 1A, 1B, 3, 4). The recent stock assessment of scallops in SFA 28 took into account the proposed USRs and calculated the probability of the stock declining below the USR.

In relation to developing reference points for SFA 29 W, the Client advised the assessment team that a new assessment model has been developed and implemented, so USRs will be forthcoming, and are expected in March/April 2015.

The assessment team considered that the evidence provided indicates that the client is ahead of target to meet the terms of this condition by the third annual audit as required.

#### Progress against interim milestones (as of 2nd annual surveillance)

As reported at the 1<sup>st</sup> year surveillance audit, ISAC agreed on USR's for those sub-areas of SFA28 with a model-based assessment (SPAs 1A, 1B, 3 and 4). HCRs for these sub-areas have been developed and are incorporated in section 6 of the draft IFMP. (The IFMP has been updated and is in the approval phase, but is not yet ready for public release.) Stock status for SFA28 has been updated (CSAS SAR 2015/035) and the assessment model was fitted to the survey and commercial data to identify the consequences of different harvest levels in SPAs 1A, 1B, 3 and 4. The TACs for each SPA are set to ensure that the stock remains in the healthy zone above both the Upper Stock Reference Point (USR) and the LRP and that the exploitation rate remains below the the reference exploitation rate of 0.15. For SPA6, agreement was reached at the ISAC meeting in December 2014 following input from DFO Science to set the USR at 9.1 kg/h for this sub-area. HCRs have not yet been developed for SPA 6.

For SFA28 sub-areas 1A, 1B, 3 and 4, the audit team concluded that the client is ahead of target to meet the terms of this condition by the third annual audit as required. However in relation to SPA 6, HCRs have not been defined and so the client is marginally behind target for this sub-area.

For SFA29W, no reference points have yet been agreed within WSAC. Reference points have been explored by DFO Science (see CSAS Proceedings 2015/028), but it is recognised that discussion on reference points for SFA 29W will need to continue. The reasons for the failure to agree LRPs in SFA 29W in advance of this surveillance audit are described in detail in a letter to the audit team from the Client which is reproduced in Appendix 1.3. The audit team considered that the year 2 milestone had not been met for SFA 29W and that the client is therefore behind target to meet the terms of this condition by the third annual audit as required, and that a revision of milestones is required.

#### **Remedial actions**

The milestones for this condition need to be revised to take into account that (a) HCRs have not yet been agreed for sub-area SPA6 in SFA28 and (b) there has been a delay in agreeing reference points for SFA 29W.

#### Changes to condition

The Client and audit team agreed that the milestones for years 3 and 4 should be revised as follows:

Year3 – For sub-areas SPA 1A, 1B, 3 and 4 in SFA28, the HCRs will be used to guide TAC setting. These will be documented in the Annual Fishing Plans for each area as well as being included in the IFMP. HCRs should be defined for SPA 6 in SFA28. These should be agreed by ISAC and documented within the IFMP. USRs for SFA29W will be estimated and tabled for agreement and documented at WSAC.

Year 4 – For SPA6 in SFA28, the HCRs will be used to guide TAC setting. These will be documented in the Annual Fishing Plans as well as being included in the IFMP. For SFA29W, USRs will be documented in the IFMP, HCRs will be defined and documented in the IFMP, and will be used to guide TAC setting.

#### Updated status

Behind target, minor non-conformance.



## 4.2.3 Condition 3

Performance Indicator	2.2.3 Bycatch Information
Score	75
Rationale	While there is information on the interaction of the scallop fleet with bycatch species information is not collected regularly to detect any increase in risk to main bycatch species
Condition	Collect data on bycatch data on a regular basis that will allow detecting any increase in risk to main bycatch species. Collect data on bycatch data in a regular basis that will allow detecting any increase in risk to main bycatch species. Main bycatch species are those listed by either IUCN or COSEWIC including, but not limited to, Winter Skate, Little Skate, Thorny Skate, Smooth Skate, Barndoor Skate, Cusk and American Plaice.
Milestones	Year 1-2: The development of an annual bycatch monitoring program. Resulting Score: 75 Year 3: The implementation of an annual bycatch monitoring program Resulting Score: 80 Year 4-5: On-going
	Milestones
	Two years will be required to fully develop and test the monitoring program associated with this condition. Years 1 and 2 will be devoted to development of a bycatch monitoring system, year 3 to implementation of the system, with years $4 - 5$ being on-going monitoring.
	Year 1-2: The development of an annual bycatch monitoring program. Year 3: The implementation of an annual bycatch monitoring program. Year 4 – 5: Ongoing monitoring
	Activities of Client Action Plan
	The focus of the action plan will be to put in place on-going recording of bycatch (numbers and weight by species).
Client action plan	DFO is currently updating its paper-based logbook system to being electronic-based but the schedule of the changes and their extent are not compatible with the requirements of this condition. This is a DFO National initiative with no timeline set. In lieu of this, the client will use DFO's SARA logbook in which species are recorded by a condition of a DFO fishing license. This will allow the client to monitor on-going removals of the bycatch species until such time as the DFO standard logbook system is capable of collecting and storing these data. Use of the SARA logs will require education of the fleet on at-sea data entry (including species identification), interaction with DFO on data storage requirements as well as consideration of how best to link these data to dockside monitoring records. Dialogue with DFO Science will be required on the details of data analysis and summarization.
	A validation system, based on on-going observer coverage, will be put in place to corroborate the SARA logbook information. During the first year of the CAP, a pilot study will be conducted in SFA 29W to evaluate the level of observer coverage required to ensure effective validation of the SARA logbook observations. The results of this study will be used to establish an observer monitoring program in SFA 28 as well as update the observer program in SFA 29W if necessary.
	Responsible Parties
	FBSA will collaborate with Maritimes Region of Fisheries and Oceans Canada (DFO) as well as ISAC and WSAC (when necessary).
	Expected Improvements
	On-going monitoring of the main bycatch species will allow assessment of the risk to these species posed by the FBSA fishery.
	Assessment of Outcomes and Milestones
	Years 1-2: Development of the appropriate monitoring coverage and identification of the program's administrative arrangements with review of the proposed program at the 2 <sup>nd</sup> surveillance audit.
	Year 3: Implementation of the program with review at the 3rd surveillance audit
condition on	Information required under this condition should be compiled in consultation with relevant stakeholders



During the first year following certification, the fishery submitted sufficient evidence of progress on the development of monitoring coverage and identification of the program's administrative arrangements for main bycatch species: skate species, cusk, plaice. A discussion paper entitled "Monitoring and At Sea Coverage" has been prepared for further discussion by the FBSA and by ISAC.

The condition remains open and will be revisited in future audits as per the Client Action Plan.

#### Progress against interim milestones (as of 2nd annual surveillance)

In section 4.1.3 of this report, the discussion document prepared by the FBSA on its Catch Monitoring Program was summarized. This document was presented for further discussion by the FBSA to ISAC. The FBSA has entered into a contract with a certified Observer company for targeted coverage in SFA 28 SPA 3 beginning October 1, 2015.

The condition remains open and will be revisited in future audits as per the Client Action Plan

#### **Remedial actions**

None

Changes to condition

None

#### Updated status

Open and on target

#### 4.2.4 Condition 4

Performance Indicator	2.3.3 ETP Information
Score	75
Rationale	While there is information on the interaction of the scallop fleet with ETP species, information is not collected regularly to detect any increase in risk to ETP species
Condition	Obtain sufficient information that will allow fishery related mortality and the impact of the fishery to be quantitatively estimated for ETP species
	Year 1-2: The development of an annual ETP monitoring program
Milestones	Resulting Score: 75 Year 3: Implementation of an annual ETP monitoring program and annual estimation of fishery related mortality
	Resulting Score: 80
	Year 4-5: On-going Milestones
Client action plan	Two years will be required to fully develop and test the monitoring program associated with this condition. Years 1 and 2 will be devoted to development of an ETP monitoring system, year 3 to implementation of the system, with years 4 – 5 being on-going monitoring.
	Year 1-2: The development and implementation of an annual ETP monitoring program Year 3: Implementation of an annual ETP monitoring program and annual estimation of fishery related mortality Year 4 – 5: Ongoing
	Activities of Client Action Plan
	This condition will be met using the same approach as indicated under condition 3. In addition, on-going estimates of ETP species catch will be made which will both inform management efforts to protect the species as well as Recovery Potential Assessments conducted by DFO Science. Studies on the Post Capture Mortality of Atlantic Wolffish have been conducted on the Gulf of St. Lawrence Scallop fishery (which uses similar gear to that of the Full Bay fleet) and will allow estimation of discard mortality of this species.



Performance Indicator	2.3.3 ETP Information
	Responsible Parties
	FBSA will collaborate with Maritimes Region of Fisheries and Oceans Canada (DFO) as well as ISAC and WSAC (when necessary).
	Expected Improvements
	On-going monitoring of the ETP species will allow assessment of the risk to these species posed by the FBSA fishery.
	Assessment of Outcomes and Milestones
	Years 1-2: Development of the appropriate monitoring coverage and identification of the program's administrative arrangements with review of the proposed program at the 2nd surveillance audit.
	Year 3: Implementation of the program with review at the 3 <sup>rd</sup> surveillance audit
Consultation on condition	Information required under this condition should be compiled in consultation with relevant stakeholders

During the first year following certification, the fishery submitted sufficient evidence of progress on the development of monitoring coverage and identification of the program's administrative arrangements for obtaining information to estimate fishery related mortality on ETP species. A discussion paper entitled "Monitoring and At Sea Coverage" has been prepared for further discussion by the FBSA and by ISAC.

The condition remains open and will be revisited in future audits as per the Client Action Plan.

#### Progress against interim milestones (as of 2nd annual surveillance)

In section 4.1.3 of this report, the discussion document prepared by the FBSA on its Catch Monitoring Program was summarized. This document was presented for further discussion by the FBSA to ISAC. The FBSA has entered into a contract with a certified Observer company for targeted coverage in SFA 28 SPA 3 beginning October 1, 2015.

The condition remains open and will be revisited in future audits as per the Client Action Plan

#### Remedial actions

None

#### Changes to condition

None

#### **Updated status**

Open and on target

### 4.2.5 Condition 5

Performance Indicator	2.4.1 Habitat Outcome
Score	60
Rationale	It cannot be demonstrated that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm
Condition	To demonstrate that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.



Performance Indicator	2.4.1 Habitat Outcome
Milestones	Year 1: Assemble and collate information for the assessment of risk that the fishery reduces habitat structure and function to a point where there would be serious or irreversible harm Resulting Score: 60 Year 2: Assess the risk of impact Resulting Score: 60 Year 3-4: Demonstrate that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm Resulting Score: 80
Client action plan	A number of activities are already underway which will facilitate meeting this condition. NRCAN has listed all of their OPEN Files on their GEOSCAN website, providing information on bathymetry and listed all of their OPEN Files on their GEOSCAN website, providing information on bathymetry and leackscatter data available for the Bay of Fundy. CHS is the responsible body for the distribution of electronic copies of these data. A 'seascape' map is now available as OPEN File 7028 and contains representations of information on bathymetry, sediments as well as geophysical interpretation available from the multi-beam mapping of the Bay of Fundy. In addition, NRCAN is collating all geophysical data from the Bay of Fundy and Gulf of Maine for access sometime before December 2012. These data will be assembled and collated into a report on Bay of Fundy habitat structure and function in year 1. This will allow mapping of the fishery's footprint in relation to the habitat and thus allow an assessment of risk posed by the fishery in year 2. This assessment will be reviewed by DFO. In year 3, if the risk assessment so indicates, a strategy to manage the risk will be developed with review by DFO. This will provide the objectives, monitoring and management tools required. Full implementation of the strategy will occur in year 4. <b>Responsible Parties</b> FBSA will collaborate with Maritimes Region of Fisheries and Oceans Canada (DFO) as well as ISAC and WSAC (when necessary). <b>Expected Improvements</b> Implementation of the requirements of the condition will lead to the management of the impacts of the fishery on habitat structure and function in the area of both fisheries. <b>Assessment of Outcomes and Milestones</b> Year 1: Assemble and collate information on habitat structure and function in a Client's consultant report for review at 1 <sup>st</sup> surveillance audit Year 2: Assessment of the risk of impact through mapping the fishery's footprint against the collated habitat structure and function, if the assessment of risk of impact deems i
Consultation on condition	Information required under this condition should be compiled in consultation with relevant stakeholders

During the first year following certification, the fishery submitted sufficient evidence of progress on this condition by assembling and collating information on habitat structure and function. A discussion paper entitled "Review of Relevant References, Information and Data on the Impact of Scallop Fishing on Habitat Structure and Function in SFA 28 and 29W" has been prepared for further discussion by the FBSA.



The condition remains open and will be revisited in future audits as per the Client Action Plan.

#### Progress against interim milestones (as of 2nd annual surveillance)

The FBSA presented the results of a study it had commissioned to describe the footprint of the fishery. The Spatialanalysis of inshore scallop fishery footprint in SFA 28 and 29W was then reviewed by DFO. The results of this study have been summarized in section 4.1.3 of this report, and it has been noted by the assessment team that the next step in this project is to conduct the risk analysis, to develop a plan to mitigate any serious fishery related habitat impact if it is occurring.

The condition remains open and will be revisited in future audits as per the Client Action Plan.

#### **Remedial actions**

None

#### Changes to condition

None

#### Updated status

Open and on target

#### 4.2.6 Condition 6

Performance Indicator	2.4.2 Habitat Management Strategy
Score	60
Rationale	A management strategy to ensure that the fishery does not pose a risk to habitat structure and function is not in place.
Condition	To demonstrate that there is a strategy or partial strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types, to have objective confidence that the partial strategy will work and evidence that it is being implemented successfully.
14ilantan as	Year 3: Demonstrate that a robust, cohesive and reactive Management Strategy that mitigates adverse impacts to sensitive habitats has been implemented
willestones	Resulting Score: 75
	Year 4: Provide evidence that the Management Strategy is being implemented and enforced successfully
	Resulting Score: 80
Client action plan	A number of activities are already underway which will facilitate meeting this condition. NRCAN has listed all of their OPEN Files on their GEOSCAN website, providing information on bathymetry and backscatter data available for the Bay of Fundy. CHS is the responsible body for the distribution of electronic copies of these data. A 'seascape' map is now available as OPEN File 7028 and contains representations of information on bathymetry, sediments as well as geophysical interpretation available from the multi-beam mapping of the Bay of Fundy. In addition, NRCAN is collating all geophysical data from the Bay of Fundy and Gulf of Maine for access sometime before December 2012.
	These data will be assembled and collated into a report on Bay of Fundy habitat structure and function in year 1. This will allow mapping of the fishery's footprint in relation to the habitat and thus allow an assessment of risk posed by the fishery in year 2. This assessment will be reviewed by DFO. In year 3, if the risk assessment so indicates, a strategy to manage the risk will be developed with review by DFO. This will provide the objectives, monitoring and management tools required. Full implementation of the strategy will occur in year 4.
	Responsible Parties
	FBSA will collaborate with Maritimes Region of Fisheries and Oceans Canada (DFO) as well as ISAC and WSAC (when necessary).
	Expected Improvements



Performance Indicator	2.4.2 Habitat Management Strategy
	Implementation of the requirements of the condition will lead to the management of the impacts of the fishery on habitat structure and function in the area of both fisheries.
	Assessment of Outcomes and Milestones
	Year 1: Assemble and collate information on habitat structure and function in a Client's consultant report for review at 1 <sup>st</sup> surveillance audit
	Year 2: Assessment of the risk of impact through mapping the fishery's footprint against the collated habitat structure and function data, with review by DFO.
	Year 3: Development of a management strategy with review by DFO that mitigates adverse impacts to habitat structure and function, if the assessment of risk of impact deems it to be necessary
	Year 4: Client to provide evidence that the management strategy is being implemented and enforced successfully, if necessary. This will be documented within the IFMP.
Consultation on condition	Information required under this condition should be compiled in consultation with relevant stakeholders

There are no Year 1 milestones, during the first year following certification, the fishery has submitted evidence of progress on this condition by assembling and collating information on habitat structure and function. A discussion paper entitled "Review of Relevant References, Information and Data on the Impact of Scallop Fishing on Habitat Structure and Function in SFA 28 and 29W" has been prepared for further discussion by the FBSA.

The condition remains open and will be revisited in future audits as per the Client Action Plan.

#### Progress against interim milestones (as of 2nd annual surveillance)

The FBSA presented the results of a study it had commissioned to describe the footprint of the fishery. The Spatialanalysis of inshore scallop fishery footprint in SFA 28 and 29W was then reviewed by DFO. The results of this study have been summarized in section 4.1.3 of this report, and it has been noted by the assessment team that the next step in this project is to conduct the risk analysis, to develop a plan to mitigate any serious fishery related habitat impact if it is occurring.

The condition remains open and will be revisited in future audits as per the Client Action Plan.

## Remedial actions

None

#### **Changes to condition**

None

#### Updated status

Open and on target

#### 4.2.7 Condition 7

Performance Indicator	3.2.1 Fishery Specific Objectives
Score	60
Rationale	There are no clearly defined explicit short and long term objectives available for the scallop fishery.



Performance Indicator	3.2.1 Fishery Specific Objectives
Condition	To define explicit short and long term objectives within the management system consistent with achieving the outcomes expressed by MSC's Principle 1 and 2
Milestones	Year 3: To define explicit short and long term objectives within the IFMP consistent with achieving the outcomes expressed by MSC's Principle 1 and 2. Resulting Score: 80
	It is necessary to undertake full consultation with ISAC and WSAC on the long and short term objectives in the draft IFMP. It will take until year 3 to have this fully completed.
	Years 1-2: To engage with relevant stakeholders to ensure that the definition of explicit short and long term objectives consistent with Principle 1 and 2 are to be included in the Integrated Fisheries Management Plan.
	Year 3: To define explicit short and long term objectives within the Integrated Fisheries Management Plan (IFMP) consistent with achieving the outcomes expressed by MSC's Principles 1 and 2.
	Activities of Client Action Plan
	Short and long-term fishery objectives are included in the draft IFMP. Formal discussion and approval of the draft IFMP by the two advisory committees will form the basis of the action plan.
	Responsible Parties
Client action plan	FBSA will collaborate with Maritimes Region of Fisheries and Oceans Canada (DFO) as well as ISAC and WSAC (when necessary).
	Expected Improvements
	Having short and long-term objectives explicit in the Scallop Integrated Fisheries Management Plan will allow orderly management of the impacts of the fisheries both on the scallop populations and the ecosystems in the area of the two fisheries.
	Assessment of Outcomes and Milestones
	Year 1-2: Explicit short and long term objectives consistent with Principle 1 and 2 will be discussed and approved by the ISAC and WSAC, which will be recorded in the minutes of these meetings.
	Year 3: The IFMP for the SFA 28 and 29W inshore scallop fisheries will be discussed and agreed to by the ISAC and WSAC. This IFMP is to include the short and long-term fishery objectives guiding the fishery.
Consultation on condition	Information required under this condition should be compiled in consultation with relevant stakeholders

This condition requires the engagement of relevant stakeholders to ensure that the explicit short and long term objectives for the target stock (P1) and for managing the impacts of activity in ecologically sensitive areas (P2) are included in the IFMP. The IFMP currently in development offers the opportunity to meet this condition through the review and drafting of the final version of the IFMP by year 3. For the first audit milestone (year 1-2) the client has provided evidence that progress is being made in achieving the condition. Draft sections of the IFMP (Sections 5 and 6 - Objectives, Strategies and Tactics) were provided as were the minutes of the December 13, 2013 ISAC meeting, and a July 4, 2013 Reference Point working group meeting. WSAC minutes were not provided due to the development of a new assessment model, but consultations are planned by March 2015. These documents adequately demonstrate that stakeholder consultations have taken place regarding the adoption and implementation of Reference Points and HCR's demonstrating that progress is being made in defining explicit objectives. This is particularly evident for the productivity objective P1 where reference points and HCR's have been incorporated into the 2014 assessment advice. The discussion paper and planned consultation on Improved Monitoring of Catch (Annex A of the Evidence Document) and the compilation of a paper (Relevant Information on Habitat Structure and Function) and the minutes from a board meeting May 30, 2014 (Observer and Bycatch Requirements and



protocol) indicates progress on defining more explicit P2 objectives concerning biodiversity and habitat objectives to be phased in as information becomes available.

The audit team considers that these steps taken toward defining explicit objectives and the documentary evidence provided demonstrates that the client has taken the appropriate actions to illustrate that they have met Milestone 1 and remain on target in relation to achieving the desired outcome for this condition.

The condition remains open and will be revisited in future audits as explained in the client action plan.

#### Progress against interim milestones (as of 2nd annual surveillance)

Milestones for this condition require the engagement of relevant stakeholders to ensure that the explicit short and long term objectives for the target stock (P1) and for managing the impacts of activity in ecologically sensitive areas (P2) and are included in the IFMP by year 3. For the second audit milestone the client has presented evidence that significant progress has been made on meeting this condition. The evidence included a draft copy of sections 5 and 6 of the new IFMP, minutes of the ISAC (December 14, 2014) and WSAC (May 7, 2015) meetings and a letter (October 8, 2015) from the Director General Maritimes Region confirming that the IFMP has been updated and is in the final stages of approval, although not yet ready for public release. The draft IFMP document (sections 5 and 6) indicate that Maritimes Region has taken the approach of developing longterm objectives that are broad and common to all plans and further defined by explicit short term strategies developed with stakeholders as part of a DFO / industry IFMP working group. These strategies identify the issue being addressed and provide fishery specific tactics or measures to support the strategy according to the circumstances of individual scallop fisheries. For example the first item under Productivity Strategies constitutes Harvest Control Rules and the second under Biodiversity Strategies provides for management of the bycatch and habitat considerations for the fishery. The Advisory Committee minutes further confirm the continuing engagement of stakeholders on meeting the year 2 milestone for the condition. The audit team has reviewed the progress made on this condition and has determined that once the IFMP is officially approved and released the PI could be re- scored to 80. To achieve a score of 80 there must be short and longterm objectives that are consistent with achieving the outcomes expressed by by MSC principles 1 and 2 and these objectives are explicit within the fisheries management system. The evidence described above clearly demonstrates that the fishery remains on target in meeting this condition. With the approval and release of the IFMP over the next year the condition is on track to be closed in year three.

The audit team considers that the evidence presented demonstrates that the client has taken the appropriate steps to ensure the condition remains on target for achieving the desired outcome for this condition in year 3.

# Remedial actions None Changes to condition

None

Updated status

Open and on target

## 4.2.8 Condition 8

Performance Indicator	3.2.5 Management Performance Evaluation
Score	70



Performance Indicator	3.2.5 Management Performance Evaluation
Rationale	While not a formal evaluation process the post-season meetings review the outcomes of the past fishery and discuss proposals to be put forward for the following season. These meetings review key parts of the system including the stock status report, fishing success or lack of, enforcement issues or problems with specific management measures in use etc. However the focus appears to be on productivity and enforcement issues while P2 elements receive little review.
Condition	To put in place mechanisms to evaluate key parts of the management system.
Milestones	Year 3: conduct performance review of the key parts of the management system Resulting Score: 80
Client action plan	The draft IFMP outlines a mechanism to evaluate the performance of the key elements of the management system. The focus of the action plan will be the implementation of this mechanism by the 3 <sup>rd</sup> surveillance audit. <u>Responsible Parties</u> FBSA will collaborate with Maritimes Region of Fisheries and Oceans Canada (DFO) as well as ISAC and WSAC (when necessary). <u>Expected Improvements</u> Implementation of the requirements of the condition will lead to on-going improvements in the overall management of the two fisheries. <u>Assessment of Outcomes and Milestones</u> This will be addressed by the annual performance review of the strategies and tactics identified in the IFMP to address the long and short term objectives and development of plan enhancements. The results of the review will be an appendix to the IFMP. Year 3: conduct performance review and develop plan enhancements with report appended to IFMP. Year 4: review implemented plan enhancements with report appended to IFMP.
Consultation on condition	Information required under this condition should be compiled in consultation with relevant stakeholders

It is understood by the audit team that the completed IFMP (year 3) will include a mechanism to evaluate performance of key elements of the management system against the established objectives. The IFMP is currently under development but has yet to be reviewed by industry and senior DFO management. Evidence has been provided that steps are being taken to ensure the IFMP will be completed by the third audit. These include a draft section of the IFMP (Sections 5 and 6 – Objectives, Strategies, and Tactics) and a record of the ongoing consultations with industry on establishing the objectives to be evaluated. The documentation also includes the minutes of the December 2013 ISAC meeting, the July 4, 2014 Reference Point Working Group and the May 30, 2014 Board meeting excerpt. These all support the ability of the client to deliver the IFMP by the third surveillance audit and implement the required review and evaluation process. Further, the establishment of the ENGO forum provides another mechanism for external evaluation and the ongoing annual checklist (V4) provides for internal evaluation to identify any gaps within the management system for both P1 and P2 elements.

The evidence provided indicates that the client is on track to meet the terms of this condition by the third annual audit as required.

The condition remains open and will be revisited in future audits as per the Client Action Plan.

#### Progress against interim milestones (as of 2nd annual surveillance)

The second audit has no specific milestone requirements for this condition. However with the second audit evidence package it is clear to the audit team that the client continues to make significant

progress in meeting the condition that the fishery will have in place a mechanism to evaluate the performance of key elements of the management system against the established objectives. he DFO/Stakeholder Scallop FMP working group has tabled a draft Performance Review/Evaluation section for the IFMP that demonstrates clear linkages back to the long term objectives and strategies related to P(1) and P(2) using a rigorous and tabular approach for review and plan enhancement. The evidence provided (IFMP draft section 8) and the October 8, 2015 letter from the RDG stating that the IFMP is in the final stages of approval clearly demonstrate that the IFMP is on track to be completed by the third audit. To achieve a score of 80 the fishery must have in place a mechanism to evaluate key parts of the management system. The audit team has reviewed the progress made on this condition and has determined that once the IFMP is officially released the PI could be re-scored to 80.

The evidence presented clearly demonstrates that the fishery is on target to meet this condition in year 3.

#### **Remedial actions**

None

#### Changes to condition

None

#### **Updated status**

Open and on target

## 4.3 New Conditions & Recommendations

No new conditions or recommendations. However, the milestones for conditions 1 and 2 have been extended.

It is recommended that all team members participate in the next audit as there are conditions related to all three principles, and the evidence of progress on the conditions must be evaluated.

## 4.4 Conclusions

#### 4.4.1 Summary of progress on conditions/recommendations

Binding Conditions / Recommendations	Descriptions	Status of Progress
Condition 1 PI1.1.2	To defined limit reference points to assess stock status in relation to the point where reproductive capacity may be impaired	Behind target, minor non- conformance
Condition 2 PI1.2.2	To implement well defined Harvest Control Rules that reduce exploitation rates as the limit reference point is approached	Behind target, minor non- conformance
Condition 3 PI2.2.3	Collect data on bycatch data in a regular basis that will allow detecting any increase in risk to main bycatch species	Open and on target
Condition 4 PI2.3.3	Obtain sufficient information that will allow fishery related mortality and the impact of the fishery to be quantitatively estimate for ETP species	Open and on target
Condition 5 and 6 PI2.4.1 & PI2.4.2	To demonstrate that the fishery is highly unlikely to reduced habitat structure and function to a point where there would be serious or irreversible harm.	Open and on target
Condition 7 PI3.2.1	To define explicit short and long term objectives within the management system consistent with achieving the outcomes expressed by MSC's Principle 1 and 2	Open and on target
Condition 8 PI3.2.5	To put in place mechanisms to evaluate key parts of the management system.	Open and on target



Recommendation 1	With regard to managing the risk of interaction with Retained, Bycatch and ETP species. The recommendation stated that if the information collected indicates increasing risk, management should ensure that the impact of the fishery on these species does not increase	Unchanged
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#### Sourced from original assessment

## 4.5 Status of Certification

The FBSA Canada Full Bay sea scallop fishery **remains certified** to carry the MSC logo for sustainably managed fisheries.



# 5. Catch Data

The quota and landings data for the fishery are presented in section 4.1.5 of this report. The conversion of scallop meat weights landed to green weight of the catch for the fishery requires multiplying the scallop meat catch weight by 8.3.

The catch data for 2014/2015 for the FBSA fishery is summarized below with the following notes and conditions by DFO.

Detail	SFA 28	SFA 29W	Total
Quota Year	2014/15	2014/15	2014/15
Total TAC	1525	87	1612
UoC Share TAC	100%	100%	100%
UoC Catch	1505.239	84.377	1589.616
Client Share TAC	95%	75%	94%
Total Green-weight	11869	525	12402

Notes:

• Data for the years 2014 through 2015 is preliminary and as such may be incomplete and/or subject to change without notice.

Conditions:

- The data is being released for the purpose that was identified in the data request form "The data requested will be used for the MSC."
- The data has been reviewed for confidentiality issues and is suitable for public release.

Table 5.1 - Catch Data			
Total TAC for most recent fishing year (2014/2015):	1612.000 mt		
Unit of Certification share of the total TAC established for the fishery in	n most recent fishi	ng year*	
	UoC 1	1589.616 mt	
	UoC 2		
	UoC 3		
	UoC 4		
Client share of the total TAC established for the fishery in most recent	94%		
		2013/2014 is	
	11,468 mt		
	2014/2015 is		
Total greenweight catch taken by the client group in the two most rece years:	12,402 mt		

\* To be added into MSC database for each Unit of Certification

Source: Fishery client



## Appendix 1 – Written Submissions from Stakeholders

#### 1.1 Letter from Regional Director General Morely Knight

Fisheries and Oceans Canada

eans Pêches et Océans Canada

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

#### OCT 0 8 2015

Mr. Dick Stewart c/o Full Bay Scallop Association P.O. Box 517 Yarmouth, NS B5A 4B4

Dear Mr. Stewart:

Canada

Re: <u>Canada Full Bay Sea Scallop Fishery - Marine Stewardship Council Certification -</u> <u>Second Annual Surveillance Audit</u>

I am writing in relation to your upcoming second annual surveillance audit for the Full Bay Scallop Association Canada Full Bay sea scallop Marine Stewardship Council (MSC) certification. As part of this audit includes a request by MSC to identify any significant changes to the fishery or the way it has been managed, you will find below Fisheries and Oceans Canada's (DFO) response to this request.

The lead DFO biologists on the assessments have not changed, but the former head of DFO Maritimes Region's scallop program, Stephen Smith, has retired. The current head of this program is Jessica Sameoto. Also, a new research scientist, David Keith, has joined the program. With respect to the assessment of the resource, the process is the same as outlined during the first audit in October 2014. The stock is managed according to a multi-year strategy. The stock survey occurs on an annual basis, with full assessments and accompanying Regional Advisory Process meetings conducted every third year. In intervening years, the stock status is assessed by DFO Science and reported in the Science Special Response (SSR) series. Analysis of the survey data is reported annually to licence holders through the Canadian Science Advisory Secretariat's SSR series and at Advisory Committee meetings.

The integrated fisheries management plan has been updated and is in the approval phase but it is not yet ready for public release. Licence conditions, data collection, governance arrangements and consultative processes remain the same. Regarding the compliance regime, there has been no significant change in enforcement effort since the first audit in October 2014.

.../2



-2-

To reiterate, I would like to confirm that no significant changes have been made to various aspects of the management of this fishery since the first audit in October 2014. Should you have any questions concerning this letter, please feel free to contact Colleen Smith, Eco-labelling Coordinator (Maritimes Region) either by phone: 902-426-6384 or by email: Colleen.Smith@dfo-mpo.gc.ca.

Yours sincerely,

Morley Knight Regional Director General Maritimes Region



# Compliance Summary for the Full Bay Scallop Fishery MSC Certification

The following information is provided by Conservation & Protection (C&P) Maritimes Region covering the period from January 1, 2014 to December 31, 2014. Distribution of work effort in the table below is based on data sourced from the Fishery Enforcement Activity Tracking System as of September 9, 2015.

Distribution of Work Effort		
Total Fishery Officer Enforcement Hours expended on the Full Bay Scallop Fishery (includes patrol hours)	4,150.50	

Patrol information in the table below is based on data sourced from the Vessel Utilization Tracking System and the Surveillance Information System for platforms used by Conservation and Protection.

Air and At-Sea Surveillance Platform Hours	2014
Air Surveillance Hours	26.14
At-Sea Patrols (Large Patrol Vessels) Hours	115.25

Violation information provided in the table below is sourced from the Departmental Violation System (DVS) as of September 9, 2015.

Violation Information		2014	
Charge Information			
	Violation type	Number	TOTAL
Charges Laid	Registration / Licence	4	
	Area / Time	2	
	TOTAL		6
Number of	Registration / Licence	1	
Investigations that did not result in prosecution	Area / Time	1	
	Reporting	1	
	TOTAL		3
Warnings Issued	Registration / Licence	27	
	Area / Time	3	
	Reporting	9	
	Gear Conflict	1	
	TOTAL		40
	GRAND TOTAL		49



Value of Seized catch		\$15,555.00

The timeline between investigations/charge and convictions/fines frequently straddles more than one calendar year. The following table contains information sourced from the DVS as of September 9, 2015 regarding convictions that were levied by the Courts during the calendar year as indicated.

	2014
Fine Information Total levied	\$ 3,700.00



# **1.3** Letter from Client to audit team re revision of milestones for conditions 1 and 2

Joseph DeAlteris President DeAlteris Associates Inc. PO Box 366 Onancock, Va 23417

October 21, 2015

Dear Professor DeAlteris,

Re: FBS MSC Audit 2 - Conditions 1 and 2

The Client notes they have a minor non-conformance and are "behind target" for part of conditions 1 and 2 relating to the limit reference points (LRP) for SFA 29W. Although the client has discussed the LRP at the DFO Science assessment and advisory meetings (CSAS Proceedings 2015/028 and WSAC Minutes, May 2015) the industry groups and DFO Fisheries Management have not been able to reach consensus on appropriate LRP for scallop fishing area 29W before the second surveillance audit. The Client agrees that a revised timeline for conditions 1 and 2 milestones will be required as follows:

# Year 3 - LRP for SFA 29W will be estimated and tabled for agreement and documented at WSAC.

# Year 4 - LRP for SFA 29W will be documented in the IFMP and used to guide TAC setting in SFA 29W. These will be documented in the minutes of WSAC.

The Client is continuing to work with DFO Fisheries Management and other industry groups to select appropriate LRP for SFA 29W. In addition to the need to build consensus within the industry there are several reasons why LRP for this area have not yet been agreed to by the 2nd MSC audit.

- A new framework assessment methodology was accepted in February 2014 that uses a habitat-based population model for sub-areas A–D. The state-space habitat-based population model was fit to the commercial catch, effort derived from vessel monitoring system data, and survey data. Sub-area E is not covered by the scallop habitat suitability map; therefore, the model cannot be used for this area. In general the fleet was uncertain about using the new framework for reference points based on concerns that the short duration of the time series did not allow for productivity estimates that agreed with historical knowledge. The industry also wanted to take additional time to understand how the reference points were generated given this assessment uses a novel approach to assess the resource that was unfamiliar.
- DFO and Industry have not concluded on how quickly and with what certainty they want to rebuild the stock, as the proposed candidate reference points place the stock areas in either the cautious or critical zone. For example the highest level of pre-recruits observed in the time series was observed in 2013. This year class was spread throughout SFA 29 W with the highest abundances mainly



concentrated in sub-areas C and D; both areas were closed in 2014 to protect the significant numbers of juveniles. The 2014 survey observed a decline in prerecruit abundance. It was not due to the survey design. There was no fishing in sub-areas C and D in 2014 hence incidental fishing mortality was not a factor in the decline observed in these areas. Environmental conditions, as indicated by the condition index, were poor in 2014 and may have contributed to increased mortality on this year class. Clearly productivity in this area seems to be highly variable inter-annually and there were concerns that the short time series did not allow for proper estimates of productivity. Adjacent scallop populations in this area also have highly variable productivity.

 There is uncertainty not knowing when reproductive capacity might be impaired and therefore it is difficult to determine an appropriate Lower Reference Point.

A working Group of WSAC has been tasked with resolving the issues and concerns on limit reference points for SFA 29W. The next meeting of the Group is scheduled for October 28, 2015. It is hoped they will make progress on the LRP and set the stage for meeting the above milestones for conditions 1 and 2 in year 3 and 4.

Yours Sincerely

Michael O'Connor on behalf of the FBS Client Group

Cc Colleen Smith Alain D'Entremont R. E. Stewart



## Appendix 2 - Surveillance Plan

#### Table A2.1: Fishery Surveillance Plan

Score from CR Table C3	Surveillance Category	Year 1	Year 2	Year 3	Year 4
2 or more	Normal Surveillance	On-site surveillance audit, completed	On-site surveillance audit, completed	On site	On-site surveillance audit & re- certification site visit

## Appendix 2.1 Rationale for determining surveillance score

Annual on-site surveillance of the certification is indicated according to CR v.2 at the default level of 6. In the case of the Full Bay sea scallop fishery there remains 8 open conditions after the 2nd Annual surveillance Audit, so the next surveillance will be on-site.



# **Appendix 3 - Changes to Client Action Plan**

As noted in conditions 1 and 2 the milestones and requirements for these conditions have been modified as follows:

## **Condition 1**

The milestones for this condition need to be revised to take into account the delay in agreeing LRPs for SFA 29W.

The Client and audit team agreed that the milestones for years 3 and 4 should be revised as follows:

Year 3 - LRP for SFA 29W will be estimated and tabled for agreement and documented at WSAC.

Year 4 - LRP for SFA 29W will be documented in the IFMP and used to guide TAC setting in SFA 29W. These will be documented in the minutes of WSAC.

#### Condition 2

The milestones for this condition need to be revised to take into account that (a) HCRs have not yet been agreed for sub-area SPA6 in SFA28 and (b) there has been a delay in agreeing reference points for SFA 29W.

The Client and audit team agreed that the milestones for years 3 and 4 should be revised as follows:

Year 3 – For sub-areas SPA 1A, 1B, 3 and 4 in SFA28, the HCRs will be used to guide TAC setting. These will be documented in the Annual Fishing Plans for each area as well as being included in the IFMP. HCRs should be defined for SPA 6 in SFA28. These should be agreed by ISAC and documented within the IFMP. USRs for SFA29W will be estimated and tabled for agreement and documented at WSAC.

Year 4 – For SPA6 in SFA28, the HCRs will be used to guide TAC setting. These will be documented in the Annual Fishing Plans as well as being included in the IFMP. For SFA29W, USRs will be documented in the IFMP, HCRs will be defined and documented in the IFMP, and will be used to guide TAC setting.



# Appendix 4 - References

Advisory Committee Minutes : ISAC (December 14, 2014) WSAC (May 7, 2015)

CSAS 2014/044 Information on potential sensitive benthic habitats in the Bay of Fundy: Head Harbour/West Isles/Passage, and the Modiolus Reefs, Nova Scotia Shore.

CSAS 2015/002 Scallops in Scallop Production Areas 1 to 6 in the Bay of Fundy Stock Status Update for 2014. http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2015/2015\_002-eng.html

CSAS 2015/13 RV Survey 2014Trends on the Scotian Shelf and Bay of Fundy. http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2015/2015\_013-eng.html

CSAS SAR 2015/035 Assessment of Scallops (Placopecten magellanicus) in Scallop Production Area 29 W. http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2015/2015\_035-eng.html

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CSAS Science Response 2014/044. Information on potential sensitive benthic areas in the Bay of Fundy: Head harbour/West Isles/Passages and the Modiolus Reefs, Nova Scotia Shore.

DFO, Compliance Summary for Full Bay Scallop Fishery 2014.

DFO, letter from Director General Morely Knight

DFO Draft Sections 6 and 8 for 2015 Version of Inshore Scallop IFMP. Draft sections are available for CAB review only. The current draft IFMP report is being reviewed for approval by the DFO Maritimes Region.

DFO 2013, 2014 Area Monitoring Reports: Quotas, Landings, Licences: Commercial Data Request RQ20150636.

DFO Research Document 2014/016 Scallop Production Areas in the Bay of Fundy: Stock Status for 2013 and Forecast for 2014; L Nasmith, B Hubley, S J Smith, A Glass

O'Connor, 2015, Inshore scallop monitoring program, dated 9/18/15

O'Connor, 2015, Evidence Summary for the 2nd annual MSC audit of the FBSA fishery, dated 9/88/15

Smith, S.J., and Lundy, M.J. 2002. DFO Can. Sci. Advis. Sec. Res. Doc. 2002/018. 86 p.

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Smith, S.J., and Hubley, B. 2014. Impact of Survey Design Changes on Stock Assessment Advice: Sea Scallops. ICES J. Mar. Sci. 71: 320–327.

Smith, S. J., Nasmith, L., Glass, A. and Hubley, B. 2015. Framework assessment for SFA 29 West scallop fishery. DFO Can. Sci. Advis. Sec. Res. Doc. 2014/110. v + 71 p.

Spatialanalysis, September 2015, Footprint of the FBSA Canada Full bay Sea Scallop Fishery 2009 to 2015, prepared by Spatialanalysis of Ottawa

