

Marine Stewardship Council 1st Surveillance Report

For The

**Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence
lobster trap fishery**

Facilitated By the

Nova Scotia and New Brunswick Lobster Eco-Certification Society

Assessors: Géraldine Criquet, Lead Assessor
Jean-Claude Brêthes, Assessor

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SAI Global

3rd Floor, Block 3,
Quayside Business Park,
Mill Street,
Dundalk,
Co. Louth,
Ireland.

T + 353 42 932 0912

F + 353 42 938 6864

www.saiglobal.com/

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1. Executive Summary

This report contains the findings of the 1st surveillance audit in relation to the Nova Scotia and New Brunswick (NS-NB) Eco-Certification Society certificate of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery.

The 1st surveillance audit focused on the changes to the fishery and its management since the initial full assessment and monitoring continued compliance with the MSC Principles and Criteria. Also, the assessment team evaluated progress against the 5 conditions (PI 1.2.2 Harvest Control Rules, PI 2.1.1 Retained Species Outcome, PI 2.1.2 Retained Species Management Strategy, PI 2.2.3 Bycatch Species Information and PI 3.2.4 Research Plan).

SAI Global determines that:

- **The Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery continues to operate a well-managed and sustainable fishery and therefore, continued certification to the MSC Principles and Criteria for Sustainable Fishing is awarded.**

Table 1 summarizes conditions status, Performance Indicator (PI) and Principle (P) score changes. Re-scored PI 3.2.4 evaluation table for UoC 1 is presented in Appendix 1.

Table 1. Summary of Assessment Conditions

Unit of Assessment 1 (UoA 1) – Southern Gulf of St Lawrence

Condition number	PI	Status	PI original score	PI revised score	Principle revised score
1	1.2.2	Open-ahead target	65	Not revised	P1: not revised
2	2.1.1	Open-on target	60	Not revised	P2: not revised
3	2.1.2	Open-on target	60	Not revised	
4	2.2.3	Open- ahead target	70	Not revised	
5	3.2.4	Closed-ahead target	70	90 at surveillance 1	P3: revised from 90.8 to 92.8 at surveillance 1

Unit of Assessment 2, 3 and 4 (UoA 2, 3 and 4) – Maritimes

Condition number	PI	Status	PI original score	PI revised score	Principle revised score
1	1.2.2	Open-ahead target	65	Not revised	P1: not revised
2	2.1.1	Open-on target	60	Not revised	P2: not revised
3	2.1.2	Open-on target	60	Not revised	
4	2.2.3	Open- on target	75	Not revised	
5	3.2.4	Open- on target	70	Not revised	P3: not revised

On behalf of the MSC client, the Nova Scotia and New Brunswick Eco-Certification Society, SAI Global would like to extend thanks to the management organisations and stakeholders of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery who took part in this surveillance audit.

- Lead Assessor: Dr. Géraldine Criquet manages technical functions of SAI Global's MSC Fishery Program and is an approved MSC Fishery Team Leader.
- Assessor: Dr. Jean-Claude Brêthes is a contractor for SAI Global with an extensive experience in shellfish and groundfish stock assessment and fisheries in the Atlantic Canada.

Both Géraldine and Jean-Claude were part of the initial full assessment team. Skills and experience are summarized below.

Dr. Géraldine Criquet

Lead Assessor Géraldine is an MSC approved Fisheries Team Leader for SAI Global - experienced fishery scientist in both Finfish and Shellfish fisheries, and ecosystems considerations. Géraldine holds a PhD in Marine Ecology (École Pratique des Hautes Études, France) which focused on coral reef fisheries management, Marine Protected Areas and fish ecology. She has also been involved during 2 years in stock assessments of pelagic resources in the Biscay Gulf, collaborating with IFREMER. She worked 2 years for the Institut de Recherche pour le Développement (IRD) at Reunion Island for studying fish target species growth and connectivity between fish populations in the Indian Ocean using otolith analysis. She served as Consultant for FAO on a Mediterranean Fisheries Program (COPEMED) and developed and implemented during 2 years a monitoring program of catches and fishing effort in the Marine Natural Reserve of Cerbère-Banyuls (France). Géraldine is an experienced full time MSC Lead Assessor with SAI Global, successfully leading MSC certifications and assessment teams and acting as Principle 2 expert for multiple MSC Pre, Full and Surveillance audits.

Dr. Jean-Claude Brêthes

Assessor Jean-Claude is a fisheries biology professional at the Institut des Sciences de la Mer at the Université du Québec à Rimouski. Previously he has held positions at Board, Chair and Director level for University undergraduate and post graduate fishery science/marine/oceanography courses, scientific advisory councils and committees for various government organizations such as the Canadian Atlantic Fisheries Advisory Council. His key experiences have been focused upon the dynamics and ecology of exploited species. In particular, Jean-Claude has conducted various projects on the ecology of snow crab, lobster and cod in locations in Atlantic Canada. He has published and presented several scientific papers in lobster fisheries in key journals and science fora and has also taken part in several MSC and related studies including lobster fisheries in this and other regions.

2. General Information

Fishery name	Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery		
Unit(s) of assessment	<p>UoA 1 Species: <i>Homarus americanus</i>, American lobster Geographical Area: Canada Atlantic coast Lobster Fishing Area LFA 23, 25, 26A and 26B, Southern Gulf of St Lawrence FAO Statistical Area 21 Method of Capture: Baited trap Client group: Nova Scotia and New Brunswick Eco-Certification Society Other eligible fishers: there are other eligible fishers from Prince Edward Island who fish lobster in LFAs 25 and 26A.</p> <p>UoA 2 Species: <i>Homarus americanus</i>, American lobster Geographical Area: Canada Atlantic coast Lobster Fishing Area LFA 27-33, Eastern Scotia, FAO Statistical Area 21 Method of Capture: Baited trap Client group: Nova Scotia and New Brunswick Eco-Certification Society Other eligible fishers: there are no other eligible fishers. All the fishers entitled to fish lobster in LFAs 27-33 are members of the client group.</p> <p>UoA 3 Species: <i>Homarus americanus</i>, American lobster Geographical Area: Canada Atlantic coast Lobster Fishing Area LFA 34, Southwestern Nova Scotia, FAO Statistical Area 21 Method of Capture: Baited trap Client group: Nova Scotia and New Brunswick Eco-Certification Society Other eligible fishers: there are no other eligible fishers. All the fishers entitled to fish lobster in LFA 34 are members of the client group.</p> <p>UoA 4 Species: <i>Homarus americanus</i>, American lobster Geographical Area: Canada Atlantic coast Lobster Fishing Area LFA 35-38, Bay of Fundy, FAO Statistical Area 21 Method of Capture: Baited trap Client group: Nova Scotia and New Brunswick Eco-Certification Society Other eligible fishers: there are no other eligible fishers. All the fishers entitled to fish lobster in LFAs 35-38 are members of the client group.</p>		
Date certified	26 th May 2015	Date of expiry	25 th May 2020

SAI Global, 3rd Floor, Block 3, Quayside Business Park, Mill Street, Dundalk, Co. Louth, Ireland

Surveillance level and type	Surveillance level 6 (Default Surveillance), on-site surveillance audit.	
Date of surveillance audit	13 th -15 th April 2016	
Surveillance stage (tick one)	1st Surveillance	X
	2nd Surveillance	
	3rd Surveillance	
	4th Surveillance	
	Other (expedited etc)	
Surveillance team	Lead assessor: Dr. Géraldine Criquet Assessor: Dr. Jean-Claude Brêthes	
CAB name	SAI Global	
CAB contact details	Address	3rd Floor, Block 3, Quayside Business Park, Mill Street, Dundalk, Co. Louth, Ireland
	Phone/Fax	+353 (0) 42 932 0912
	Email	jean.ragg@saiglobal.com
	Contact name(s)	Jean Ragg
Client contact details	Address	1819 Grandville Street, Unit 302, Halifax NS B3H 1A1 Canada
	Phone/Fax	1-902-482-0984
	Email	pisces@ns.sympatico.ca
	Contact name(s)	Peter Norsworthy

3. Introduction

This report sets out the results of the 1st annual surveillance assessment of:

1st surveillance audit in relation to the Nova Scotia and New Brunswick Eco-Certification Society certificate of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery.

- Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery.

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

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

Announcement of Surveillance Audit

An announcement of the surveillance site visit was published on the MSC website on the 13th march 2016 to provide an opportunity to stakeholders to meet with or submit information on the fishery to the assessment team. Additionally, written notification was sent to the list of stakeholders representing the consultation plan during the initial assessment of this fishery and in many cases follow up mails were also made to ensure that stakeholders had been provided with sufficient opportunity to participate in consultation.

Table 23 (section 5.1) provides a list of the stakeholders and management organizations engaged in the process either through meetings, conference call or submission of information. These consultations focused on the questions and evidence that demonstrates the performance of the fishery throughout the year and measures that supported the fulfilment of the Conditions of Certification placed upon Nova Scotia and New Brunswick Eco-Certification Society at the initial certification decision.

Meetings were held with the following management and scientific organizations responsible for the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery:

- Fisheries and Oceans Canada (DFO), Gulf Region.
- Fisheries and Oceans Canada (DFO), Maritimes Region.

A number of scientific and meeting reports were also examined by the surveillance team in producing this report, as detailed in the information sources section.

4. Background

4.1. Fishery Observations

4.1.1. Landings

The fishery is not TAC managed.

Table 2 shows the NS-NB total lobster landings that has significantly increased. Table 3-6 details lobster landings per UoA and per LFA. Landings in 2014 and 2013-2014 were the highest on record.

Table 2. Total landings (mt) of lobster in NS-NB.

TAC	Year	N/A	Amount	N/A
UoA share of TAC	Year	N/A	Amount	N/A
UoC share of TAC	Year	N/A	Amount	N/A
Total green weight catch by UoC	Year (most recent)	2014	Amount	61,811
	Year (second most recent)	2013	Amount	53,593

Table 3. Lobster landings (mt) in the SGSL by NS-NB harvesters (UoA 1), 2012-2014. Source: DFO, at surveillance audit.

LFA	2012	2013	2014
23	5,038	6,523	7,214
25	2,931	2,855	3,361
26A	1,991	2,431	2,533
26B	1,454	1,727	1,569
TOTAL	11,414	13,536	14,677

Table 4. Lobster landings in the Eastern Scotia (UoA 2), 2012-2014. Source: DFO 2016.

Year	LFA 27	LFA 28	LFA 29	LFA 30	LFA 31A	LFA 31B	LFA 32	LFA 28-32	Season	LFA 33	TOTAL
2012	2,751	11	729	416	807	1,080	922	3,965	2011-12	5,126	9,091
2013	3,808	12	607	461	671	740	862	3,353	2012-13	5,345	8,698
2014	3,673	16	759	455	806	1,148	1,239	4,423	2013-14	5,835	10,258

Table 5. Lobster landings (mt) in the Southwest Nova Scotia (UoA 3), 2011-12 to 2013-24. Source: DFO 2015a.

Fishing season	Landings
2011-12	23,295
2012-13	22,770
2013-14	25,425

Table 6. Lobster landings (mt) in the Bay of Fundy (UoA 4). Source: DFO, at surveillance audit.

Season	LFA 35	LFA 36	LFA 38	TOTAL
2011-2012	3,247	2,488	2,741	8,476
2012-2013	3,168	2,739	2,682	8,589
2013-2014	3,930	3,325	4,196	11,451

4.1.2. Number of licences

The number of licences slightly decreased in UoA 1 from 1,721 in 2013 to 1,709 in 2015 (Table 7).

Table 7. Number of licences in the SGSL (UoA 1) per LFA, 2013-2015. Source: DFO, at surveillance audit.

LFA	Lobster Licence Category		2013	2014	2015
23	Commercial Communal	Category A	61	61	61
		Temporary	4	4	4
	Commercial	Category A	571	572	572
		Category B	31	31	30
		Partnership A	4	2	2
	Total 23		671	670	669
25	Commercial Communal	Category A	84	84	85
		Category A	389	383	384
	Commercial	Category B	6	5	5
		Partnership A	10	14	12
	Total 25		489	486	486
26A	Commercial Communal	Category A	22	22	22
		Category A	305	300	300
	Commercial	Category B	4	4	4
		Partnership A	4	2	2
	Total 26A		335	328	328
26B	Commercial Communal	Category A	6	6	9
		Category A	203	203	198
	Commercial	Category B	3	3	3
		Partnership A	14	14	16
	Total 26B		226	226	226
TOTAL UoC 1			1,721	1,710	1,709

The number of licences is stable in 2014 and 2015 in Eastern Scotia (UoA 2) (Table 8).

Table 8. Number of licences in Eastern Scotia (UoA 2), 2014 and 2015. CC: Commercial communal. Source: DFO, at surveillance audit.

LFA	Lobster Licence Category		2014	2015
27	CC vessel based limit	Category A	10	10
		Partnership A	2	2
	Special permit	Educational	1	1
	Vessel based limit	Category A	404	412
		Category B	15	15
		Partnership A	50	42
	Total 27		482	482
28	CC vessel based limit	Category A	7	7
	Vessel based limit	Category A	5	5
		Partnership A	2	2
	Total 28		14	14
29	CC vessel based limit	Category A	7	7
	Vessel based limit	Category A	49	51
		Category B	6	5
		Partnership A	2	-
	Total 29		64	63
30	Vessel based limit	Category A	20	20
	Total 30		20	20
31A	Vessel based limit	Category A	64	62
		Category B	4	4
		Partnership A	4	6
	Total 31A		72	72
31B	Vessel based limit	Category A	70	70
		Category B	1	1
	Total 31B		71	71
32	CC vessel based limit	Category A	6	6
	Vessel based limit	Category A	137	139
		Category B	6	6
		Partnership A	10	8
	Total 32		159	159
33	CC vessel based limit	Category A	13	11
		Partnership A	2	4
	Special permit	Educational	1	3
	Vessel based limit	Category A	440	438
		Category B	42	41
		Partnership A	202	204
	Total 33		700	701
TOTAL UoC 2			1,582	1,582

The number of licences is stable in 2013-14 and 2014-15 in Southwest Nova Scotia (UoA 3) and in the Bay of Fundy (UoA 4), Table 9 and 10, respectively.

Table 9. Number of licences in Southwest Nova Scotia (UoA 3), 2013-14 and 2014-15. CC: Commercial communal. Source: DFO, at surveillance audit.

LFA	Lobster Licence Category	2014	2015
34	CC vessel based limit	29	31
	Category A		
	Partnership A	2	1
	Vessel based limit	838	841
	Category A		
	Partnership A	110	106
Total 34/UoC 3		979	979

Table 10. Number of licences in the Bay of Fundy (UoA 4), 2013-14 and 2014-15. CC: Commercial communal. Source: DFO, at surveillance audit.

LFA	Lobster Licence Category	2014	2015
35	CC vessel based limit	15	15
	Category A		
	Vessel based limit	73	77
	Category A		
	Category B	3	3
	Partnership A	4	-
Total 35		95	95
36	CC vessel based limit	15	13
	Category A		
	Partnership A	-	2
	Special permit	-	1
	Educational		
	Vessel based limit	119	129
	Category A		
	Category B	1	1
	Partnership A	42	32
Total 36		177	178
38	CC vessel based limit	14	12
	Category A		
	Partnership A	2	4
	Vessel based limit	65	69
	Category A		
	Category B	1	1
	Partnership A	54	50
Total 38		136	136
Total UoC 4		408	409

4.1.3. Fishing season

There are two distinct lobster fishing seasons in the SGSL, a spring fishery (LFAs 23, 26A and 26B) and a summer/fall fishery (LFA 25) (Table 11).

Table 11. 2014 and 2015 fishing season per sub-areas in the SGSL (UoA 1). Source: DFO, at surveillance audit.

	LFA 23	LFA 26A2	LFA 26A3	LFA25	LFA 26B North	LFA 26B South
2014	May 7-July 5	April 30-June 30	April 30-June 30	August 8-October 9	May 7-July 5	April 30-June 30
2015**	May 8-July 4	May 11-July 4	May 11-July 4	August 11-October 12	May 14-July 9	May 11-July 4

**** 2015 was an exceptional year for ice condition in the Southern Gulf, forcing delays in opening of fishing season.**

They are two distinct lobster fishing seasons in Eastern Scotia, a spring fishery (LFA 27-32) and a winter/spring fishery (LFA 33) (Table 12).

Table 12. 2015 fishing season per LFA in Eastern Scotia (UoA 2). Source: DFO 2016.

LFA	Fishing season
27	May 15 – July 15
28	April 30 – June 30
29	April 30 – June 30
30	May 20 – July 20
31A	April 29 – June 30
31B	April 19 – June 30
32	April 29 – June 30
33	Last Monday of November – May 31

The lobster fishery in Southwest Nova Scotia (LFA 34, UoA 3) is a winter/spring fishery with a season similar to LFA 33, from the last Monday of November through to May 31 (DFO 2015a).

The lobster fishery in the Bay of Fundy is a fall/winter/spring fishery (Table 13).

Table 13. 2014-15 fishing season per LFA in the Bay of Fundy (UoA 4). Source: DFO 2015b.

LFA	Fishing season
35	Fall: Oct 14 – Dec 31 Spring: Last day of Feb – July 31
36	Fall: 2 nd Tuesday in Nov. – Dec 31 Spring: March 31 – June 29
38	2 nd Tuesday in Nov – June 29

4.1.4. Management measures

Lobster fisheries are managed by input controls including a minimum legal size (MLS), prohibition on landings of both egg-bearing and V-notched females (V-notched female are not required to be released in UoA 1), limited seasons and traps limits. Fishing seasons (see 4.1.3.), traps limits and MLS differ among LFAs (Table 14-17). Other management measures include the requirement of vents to allow sublegal sized lobster and small individuals of non-target species to escape and biodegradable trap mechanisms to mitigate ghost fishing by lost traps.

Table 14. Management measures for 2015 and upcoming 2016 (when available) fishing season in the SGSL (UoA 1). Source: DFO, at surveillance audit and Rondeau et al 2015.

	LFA 23				LFA 25	LFA 26A			LFA 26B	
	23A	23B	23C	23D		26A1	26A2	26A3	North	South
2015 number of traps per licence A	300				NS: 225 NB: 250	280	275	250	250	
2016 traps per line	na	na	3 (in a portion of the LFA)		na	5	6	2	5	na
2016 trap overall dimensions (cm)	Length=125, Width=90, Height=50									

Rectangular escape mechanism height and width (mm) in parlor section of trap	Dimensions adapted to the minimum legal carapace size in effect									
Biodegradable mechanism in parlor section	Dimensions of unobstructed opening not less than 89 mm in H and 148 mm in W									
Maximum size of entrance (mm)	152	152	152	152	152	na	152	na	152	na
MLS (mm)	75	75	72	71	71	71	73	76	81	79
Female size restriction (mm)	115-129				≥ 114	115-129			na	

Table 15. Management measures in Eastern Scotia (UoA 2) as of December 31, 2015. Source: DFO 2016.

LFA	Trap limits ¹	MLS (mm)	Other measures
27	275	82.5	-
28	250	84	Max. hoop size – 153 mm
29	250	84	Max. hoop size – 153 mm
30	250	82.5	Max. carapace length - 135 mm for females
31A	250	82.5	Closed window, 114-124 mm
31B	250	82.5	V-notching and release of 110 lb of mature females/licence
32	250	82.5	V-notching and release of 110 lb of mature females/licence
33	250	82.5	-

¹Trap limit is for category A licence holder only.

Table 16. Management measures in Southwestern Nova Scotia (UoA 3) as of December 31, 2015. Source: DFO 2015a.

MLS (mm)	82.5
Trap limits per licence A	375: 1 st day of season – March 31 400: April 1 – May 31
Trap limits per partnership A	563: 1 st day of season – March 31 600: April 1 – May 31

Table 17. Management measures in the Bay of Fundy (UoA 4) as of December 31, 2015. Source: DFO 2015b.

LFA	Trap limits	MLS (mm)
35	300	82.5
36	300	82.5
38	375	82.5

4.2. Stock status observations

There is no direct measurement of lobster biomass (empirical or analytical). The lobster stock assessment is based on the analysis of trends of stock indicators including abundance, fishing pressure and production.

4.2.1. UoA-1 – Southern Gulf of St Lawrence (SGSL)

The fishery-dependent data include:

- DFO official catch statistics
- At-sea sampling activities
- Voluntary recruitment-index logbook program

The fishery-independent data consist of:

- A trawl survey conducted in LFA 25 and part of LFA 26A
- SCUBA survey indices from LFAs 25 and 26A
- Bio-collectors

Table 18 present sampling and surveys carried out in 2012-2014 in the SGSL.

Table 18. Sampling and surveys carried out in 2012-2015 in the SGSL. Source: DFO, at site visit.

At-sea sampling activities: number of berried female (b), male and non-berried female (M&F) measured, port visited, number of samples and traps sampled.										
LFA 23BC						LFA 23G				
	B	M&F	Port	Samples	Traps	B	M&F	Port	Samples	Traps
2013	3066	19738	2	18	5345	1314	12517	2	17	4409
2014	1643	7872	1	7	1730	633	8976	2	12	3133
2015										

LFA 25N						LFA 25S				
	B	M&F	Port	Samples	Traps	B	M&F	Port	Samples	Traps
2013	891	8855	4	8	1700	853	4493	3	6	1409
2014	526	7045	4	6	1379	247	3086	3	5	834
2015										

LFA 26ANS						LFA 26AD				
	B	M&F	Port	Samples	Traps	B	M&F	Port	Samples	Traps
2013	943	3304	1	4	987	363	1620	3	6	1430
2014						1033	3612	3	9	2267
2015										

LFA 26B					
	B	M&F	Port	Samples	Traps
	363	1620	3	6	1430
	1033	3612	3	9	2267

Details of the sampling activities within the recruitment-index program, 2012-2014.							
Sub-region	Year	Number of participants	Lobster measured Modified	Modified traps sampled	Lobster measured Regular	Regular traps sampled	Total Lobsters
25N	2012	12	13694	1429	7822	1429	22,945
	2013	12	14179	1378	6638	1378	22,195
	2014	11	16498	1436	6715	1436	24,649
25S	2012	3	1711	343	1424	344	3,478
	2013	3	2619	379	1510	379	4,508
	2014	3	2932	398	1588	398	4,918
26AD	2012	7	1190	961	1030	817	3,181
	2013	7	1521	859	1335	859	3,715
	2014	8	1994	963	1655	963	4,612
26ANS	2012	8	3053	1122	2498	1122	6,673
	2013	6	3144	793	2647	792	6,584
	2014	10	5547	1443	4545	1443	11,535
26B	2012	5	2915	645	1893	641	5,453
	2013	4	2853	432	2116	434	5,401
	2014	10	6869	1177	4889	1165	12,935

SCUBA survey in LFA 25 and 26A number of lines done, 2013-2015				
Site	LFA	2013	2014	2015
Pointe-Verte	23BC	2	2	5
Grande-Anse	23BC	No longer surveyed		
Caraquet	23G	25	25	25
Neguac	23G	3	3	0
Richibucto	25N	9	7	6
Cocagne	25N	12	9	9
Shediac	25S	12	9	9
Robichaud	25S	No longer surveyed		
Murray Corner (new site)	25S	3	0	3
Fox Harbour	26A	6	4	0
Pictou	26A	6	6	4

The trawl survey was carried out in LFA 25 and 26A in 2013, 2014 and 2015 using the same design and trawl as described in the Public Certification Report (PCR).

For the bio-collectors program, a 7th site was added in 2014 in Egmont Bay.

The last stock assessment report was published in 2013 (DFO 2013a). Overall abundance of lobster in the southern Gulf of St. Lawrence remains at high levels with recent landings either well-above the long-term median values or at their peak in the time series (Rondeau et al 2015).

A Science Response on the lobster stock status is scheduled to be presented in the fall of 2016 with the publication of the report early in 2017.

4.2.2. UoA-2 – Eastern Nova-Scotia

The lobster stock assessment is based on the analysis of trends of stock indicators. They are primarily fishery-dependent data which consist of landings and effort data from the fishery, port and at-sea samples of the commercial catch and data from standard traps maintained by Fishermen and Scientist Research Society (FSRS) study participants. Landing levels are a function of abundance and a wide range of other factors but are still thought to be indicative of general trends and patterns of abundance. Catch rates (CPUE) are also affected by factors other than abundance. Commercial CPUE for LFAs 27-33 comes from two sources: mandatory logs and voluntary logs.

A cluster analysis of historical lobster landings (1947-2009) for Statistical District (SD) was used to group LFAs for assessment purposes.

Cluster groups resulting provided three assessment units

1. Northeastern Cape Breton (LFA 27);
2. Southeastern-Cape Breton, Chedabucto Bay and Eastern Shore (LFA 28-32);
3. South Shore (LFA 33)

The status of the Eastern Scotia lobster stock was updated in 2016 (DFO 2016). Reference points are defined from landings. The Upper Stock Reference (USR) for the abundance of legal lobsters based on landings is defined as 80% of the median for the period 1985-2009. The metric for assessing where the stock is relative to the USR is the 3-year running mean of landings. For the season ending in 2015, this metric is above the USRs for all stock assessment units (Figure 1) and individual LFAs.

Trends in commercial CPUEs remain positive.

The CPUE (in number / trap haul) of sublegal sizes, for LFA 27 north and south show a substantial increase from 1998-2015. For LFAs 29, 30, and 31A, sublegal catch rates have been increasing over the last three years. CPUE in LFA 31B peaked in 2015 to the highest level on record. LFA 28 varies without any discernable trend. Catch rates in LFA 32 and 33 east have been consistent over the past several years. In LFA 33 west, sublegal CPUE has gradually increased since the early 2000s and 2015 is similar to 2014.

At the end of the 2015 fishing season, the lobster stocks in LFAs 27, 28-32, and 33 were considered to be within the healthy zone. The 3-year running means (2012-2014) of landings for individual LFAs and for LFAs combined as stock units (LFAs 28-32) were all above the USRs. Catch rates of legal and sublegal lobsters remain high relative to historic levels providing support to the assertion that these stocks are in the healthy zone (DFO 2016).

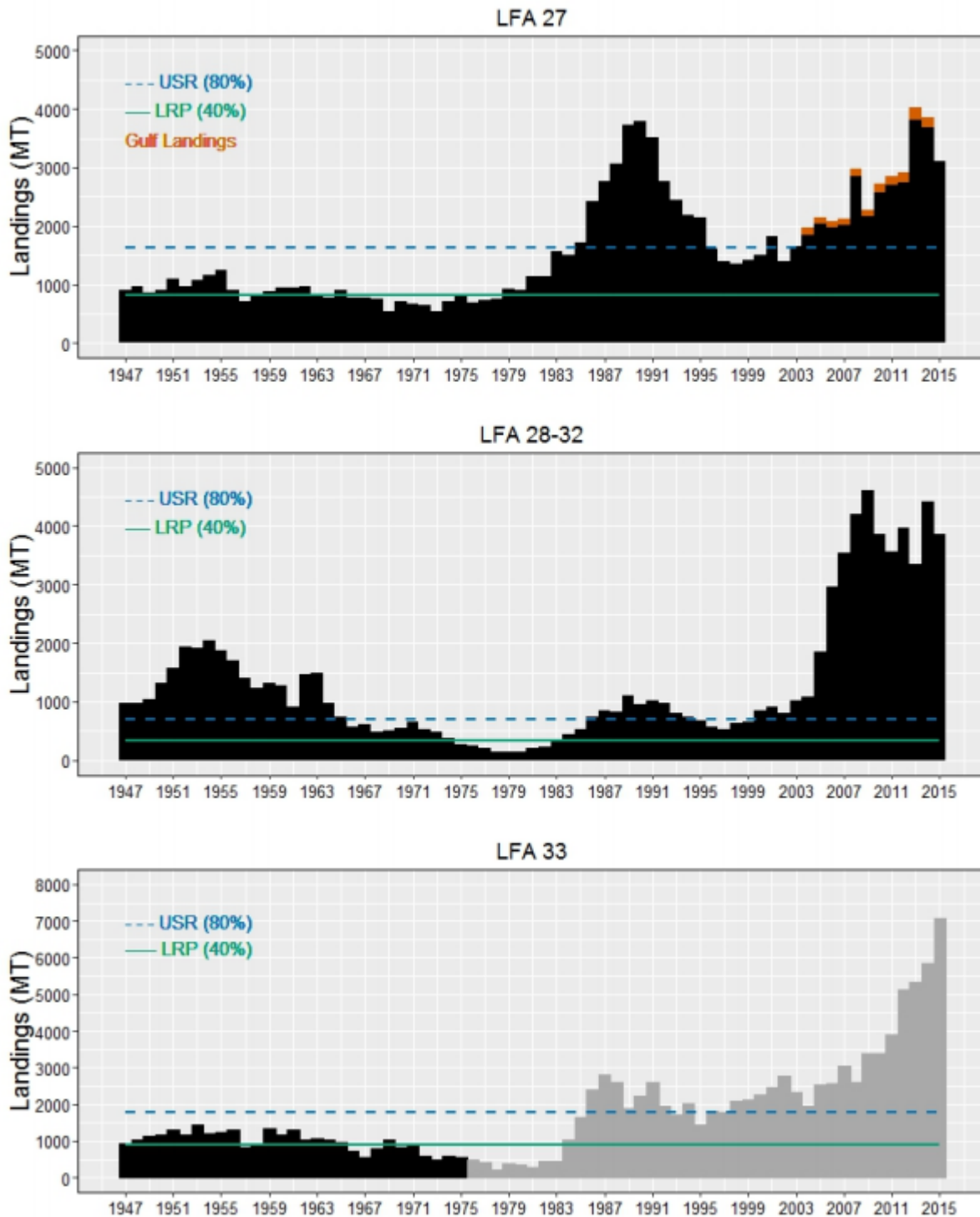


Figure 1. Annual lobster landings by the commercial fishery in LFAs 27, 28-32, and 33 from 1947 to 2015 (2014-2015 for LFA 33). Gulf landings are added to LFA 27(orange), are preliminary for 2014 and are not yet available for 2015. Reference points are shown as horizontal lines with the blue dashed line representing the upper stock reference (USR) and the green solid line the limit reference points (LRP). In LFA 33, landings shown in black are based on annual values, while landings in grey are seasonal values, with 2015 representing the season from November 2014 to May 2015. Source: DFO 2016.

4.2.3. UoA-3 – Southern Nova-Scotia

There is no direct measurement of lobster biomass (empirical or analytical). The lobster stock assessment is based on the analysis of trends of stock indicators. They are fishery-dependent and fishery independent. Fishery dependent data consist of landings and effort data from the fishery, port and at sea samples of the commercial catch and data from standard traps maintained by FSRS study participants. Landing levels are a function of abundance and a wide range of other factors but are still thought to be indicative of general trends and patterns of abundance. CPUEs are also affected by factors other than abundance. Fishery independent data are the regular summer DFO research survey, a trawl survey carried on by the industry (“ITQ survey”), and the scallop survey, which records lobster catches.

The ITQ survey in LFA 34 had the same 32 fixed stations sampled annually since 1997. There have been a number of exploratory tows and changing protocols outside of those core 32 stations over the last 3 years. In 2016, DFO Maritimes Lobster research team are focusing on building upon the core 32 stations and developing a standard protocol and survey design for continuing the trawl survey into the future (DFO pers. comm.).

The status of the lobster stock in Southwest Nova Scotia was updated in 2015 (DFO 2015a). Landings for 2013-14 are the highest on record (Figure 2). For the season ending 2013-14, this metric (3-year running mean) is 23,830 t, well above the USR (8 867 t) and the highest on record. The CPUE has increased substantially since 1999-00, and the 2013-14 value is the highest observed (Figure 3). The current 3-year running mean is 1.18 kg/trap haul, well above the USR (0.62 kg/trap haul). The indicator based on the research survey shows that the current 3-year running mean is well above the proposed USR (Figure 4).

All indicators show that the lobster stock in UoA-3 remains in the healthy zone.

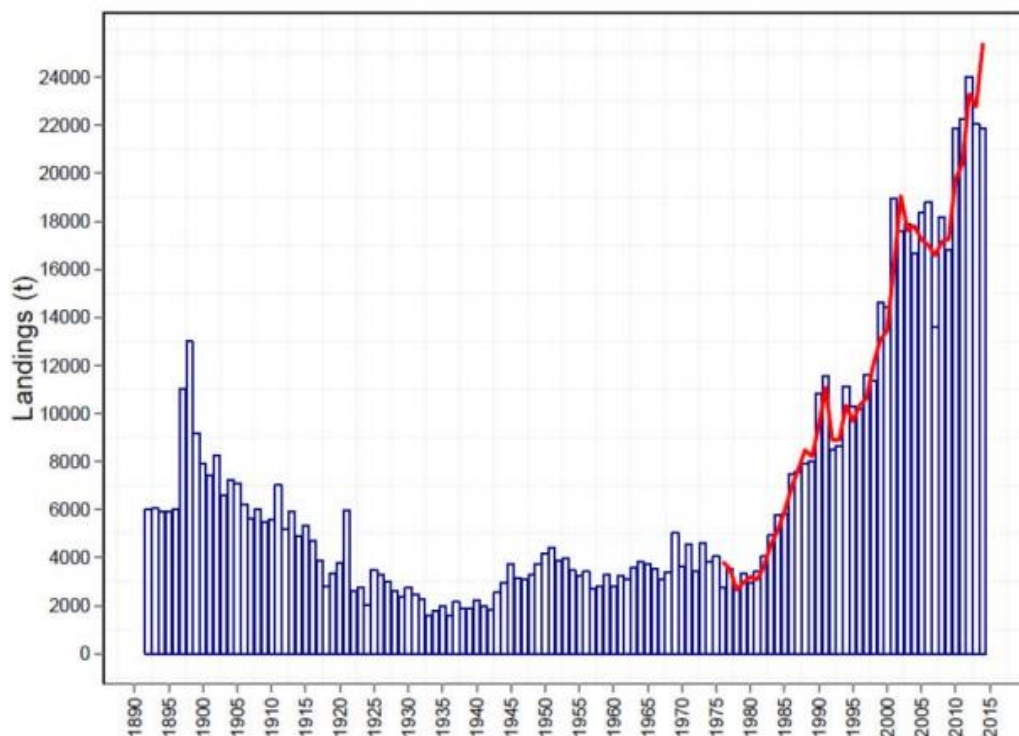


Figure 2. Annual lobster landings by the commercial fishery in LFA 34, 1893 to 2014. The solid line represents seasonal lobster landings, first available for the 1975-76 fishing season (Year 1976 on plot) until the present. Source: DFO 2015a.

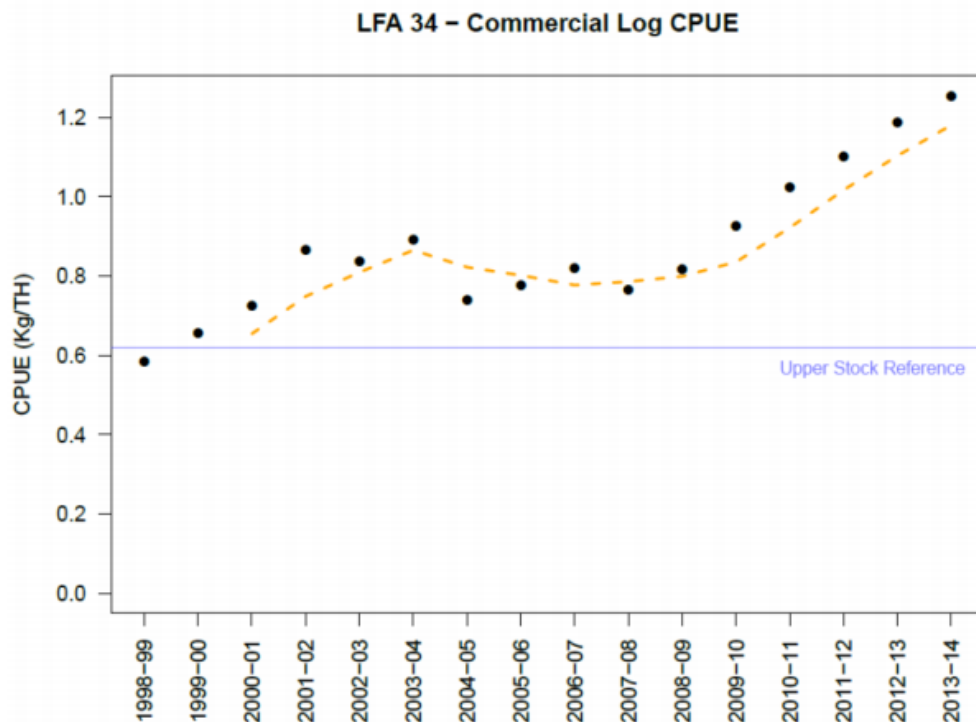


Figure 3. Trend in commercial CPUE (total weight landed/total trap hauls) for available time period together with proposed USR (horizontal line at 0.62 kg/trap haul). USR is based on 80% of the median CPUE from 1998-99 to 2008-09. The dashed line is the 3-year running mean (1.18 after 2013-14 season). Source: DFO 2015a.

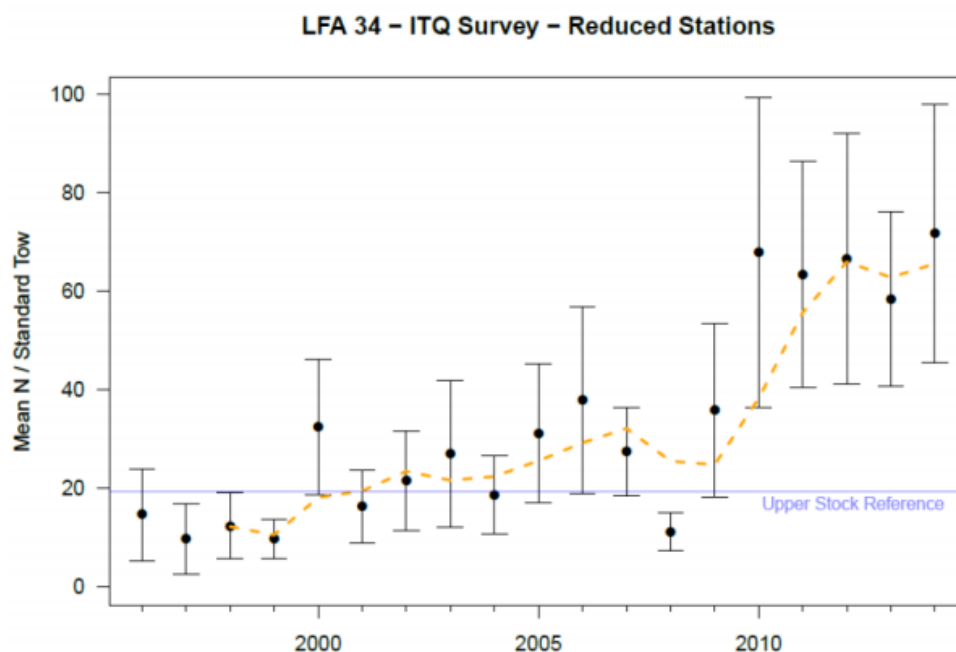


Figure 4. Trend in mean number of lobsters per standard tow from the ITQ survey with a reduced number of stations (n=32) to adjust for changes to survey in 2013. Standard error bars are shown for each year. An adjusted USR (horizontal line at 19.3 lobsters/standard tow) was calculated by taking 80% of the

median number per standard tow for the reduced number of stations. The dashed line is the 3-year running mean. Source: DFO 2015a.

4.2.4. UoA-4 – Bay of Fundy

Three abundance indicators were regarded as primary, and associated reference points were tabled. The first abundance indicator was based on landings. Landings-based reference points are part of the current Inshore Lobster Integrated Fishery Management Plan for LFAs 27-38. It was recognized that using landings as the sole indicator of abundance for lobster stocks has risks, and one of the goals of the 2013 assessment was to provide potential alternatives. Two additional abundance indicators and associated reference points were proposed. One was based on commercial catch rate calculated as total landings per total trap hauls in LFAs 35-38 from complete records of the fishermen logbooks. The second was based on the stratified mean of number of lobsters per tow in a fishery-independent trawl survey (summer Research Vessel (RV) Survey).

There were no changes to the summer RV survey design since 1970.

The status of the lobster stock in the Bay of Fundy was updated in 2015 (DFO, 2015b).

An upward trend in landings was recorded for the past two decades (1994-95 to 2013-14) in all three LFAs (Figure 5). For the fishing year 2013-14, the 3-year moving average was at 9509 t, 6 times the proposed USR. The commercial catch-per-unit-effort (CPUE, in kg/trap haul) has increased substantially since 1998-99 and the 2.25 kg/trap haul for 2013-14 is the highest on record (Figure 6). The 2011-2014 3-year moving average is 1.99 kg/trap haul, which is more than three times the proposed USR. For the trawl survey, the estimated 3-year moving average for the period 2013-2014, was 48.3 lobsters per tow almost 25 times greater than the proposed USR (Figure 7).

All indicators show that the lobster stock in UoA-3 remains in the healthy zone.

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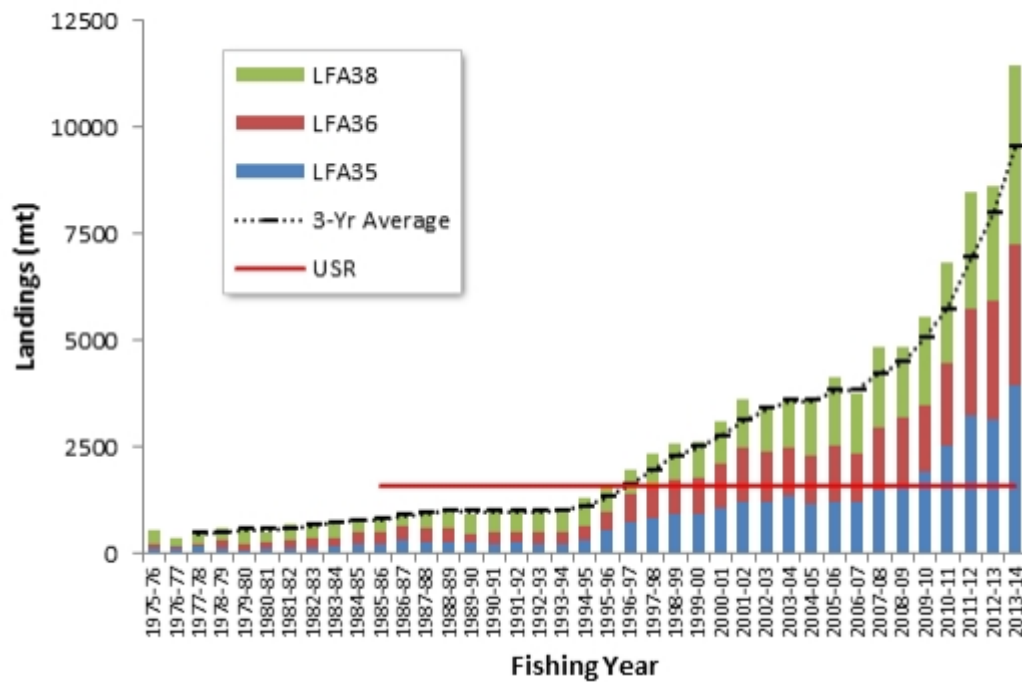


Figure 5. Lobster landings by fishing year from the commercial fishery in LFAs 35-38 from 1975 to summer 2014. Fishing year encompasses the fall through the early summer of the following year. The red horizontal line is the proposed USR for the LFAs 35-38 (proposed at 1575 mt for the LFAs 35-38 as a whole). The black dashes with dotted line are the 3-year moving averages for LFAs 35-38 landings. Source DFO 2015b.

LFA 35 to 38 – Commercial Log CPUE

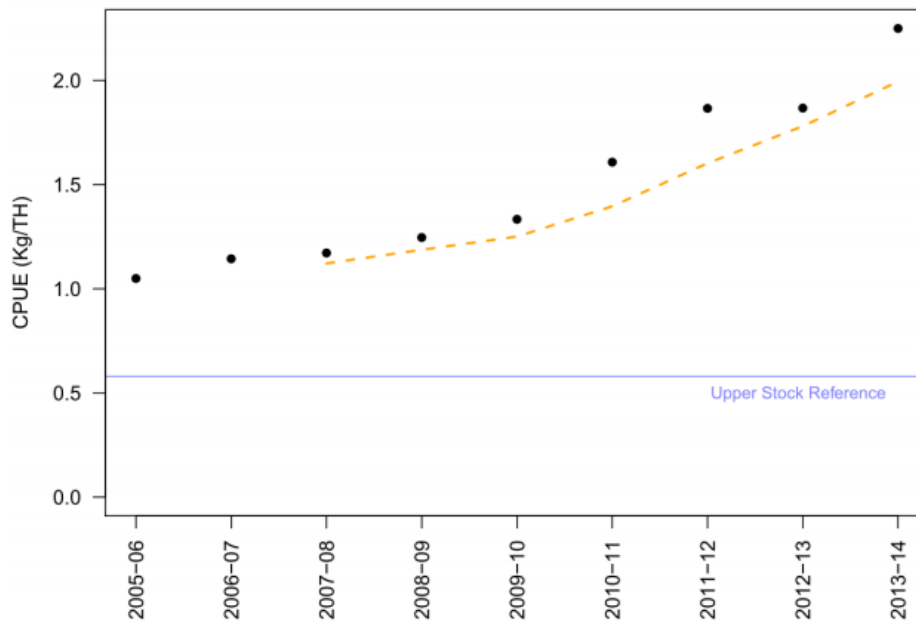


Figure 6. Trend in commercial catch-per-unit-effort (CPUE; total weight landed/total trap hauls) per fishing year calculated from complete entries of fishermen logbooks. Proposed USR is the horizontal solid blue line (0.58 kg/trap haul). Red dashed line is the 3-year moving average. Source: DFO 2015b.

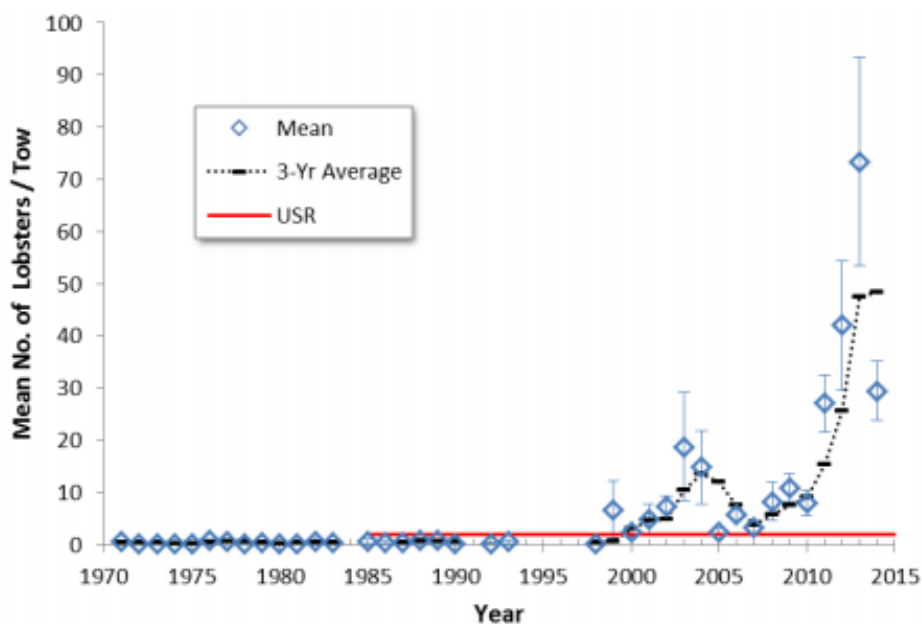


Figure 7. Stratified mean number of lobsters per tow (including standard error) in LFAs 35-38 from the summer RV survey in the bay of Fundy for all size lobsters caught (size range from 40 to 213 mm carapace length (CL)). Stratified mean is calculated by averaging the mean catch rates of the 6 strata covering the Bay of Fundy. Black dashes with dotted line are the 3-year moving averages. Red solid line is the proposed USR set at 1.9 lobsters per tow. NB: Years with no symbols (e.g. 1994-1997) had no lobster counts available. Source: DFO 2015b.

4.3. Ecosystem observations

4.3.1. UoA 1 – Southern Gulf of St Lawrence

Retained species

Under licence conditions, rock crab (*Cancer irroratus*), cunner (*Tautoglabrus adspersus*) and sculpin (*Myoxocephalus octodecemspinocus*) are allowed to be landed. It is required to record the amount of rock crab, sculpin and cunner landed in lobster logbooks (implemented in 2014).

Table 19 presents rock crab landings during the lobster fishery.

Rock crab landings sharply decreased and are 3 times lower in 2014 than in 2012. These data confirmed the decreasing trend already observed during the full assessment.

Table 19. Rock crab landings (mt) during the lobster fishery. Source: DFO, at surveillance audit.

	Rock crab landings during lobster fishery (mt)						Total landed during rock crab directed fishery (mt)	% of total rock crab landings coming from the lobster fishery
	23	24	25	26A	26B	Total		
2012	*	5.7	11.7	199.0	*	216.8	3,641.5	5.6%
2013	*	2.3	19.7	72.1	*	96.0	3,533.7	2.6%
2014	*	*	16.4	56.3	*	73.3	3,263.0	2.2%

*Confidential: landings from than 5 harvesters

There is no estimate of total biomass of rock crab in the SGSL, in term of male biomass available to the fishery or estimates of exploitation rates. The last rock crab stock assessment report was published in 2013 (DFO 2013b). Although there are uncertainties in the stock assessment (total removals are not known, stock status indicators are almost all fishery-dependent, interpretation of catch rates), there is no sign suggesting a negative change in rock crab abundance in the recent years. Rock crab has a high biomass and is widely distributed in the coastal areas of the SGSL.

A Science Response on the rock crab stock status is scheduled to be presented in the 2016 fall with a publication of the report in 2017.

Table 20 presents the estimated amount of cunner and sculpin landed from lobster logbooks in 2014.

Table 20. Amount (lbs) of cunner and sculpin landed estimated from lobster logbooks, 2014. Source: DFO, at surveillance audit.

2014 lobster fishing season - Cunner		Licensed Fishing Area		
		24	25	26A
Estimated weight of cunner (lbs)		93,544	60,088	34,847
Number of reported harvester-days	With cunners landed or used as bait	3,228	2,355	2,865
	Without reported cunners	25,873	23,011	28,948
	Total number of harvester-days	29,101	25,366	31,813
2014 lobster fishing season - Sculpin		Licensed Fishing Area		
		24	25	26A
Estimated weight of sculpin (lbs)		27,688	11,587	20,374
Number of reported harvester-days at sea	With sculpins landed or used as bait	4,473	1,854	5,001
	Without reported sculpins	24,628	23,512	26,812
	Total number of harvester-days	29,101	25,366	31,813

There is neither a formal monitoring or cunner and sculpin populations nor a stock assessment. During the full assessment, the Assessment team has been told that decrease of abundance or size has not been observed and that there is no concern about both species. No concern was raised during the surveillance audit neither.

During the full assessment, it was determined that main species used as bait are Atlantic mackerel and SGSL fall herring.

Two conditions related to the use of mackerel as bait and its stock status have been raised during the full assessment. Progress against these conditions are presented in section 6.

According to the last assessment of the SGSL fall herring (DFO 2014a), SGSL fall herring is highly likely to be within biologically based limits.

Bycatch species

Although cunner and sculpin are allowed to be landed, an important amount is returned to the sea in a manner that causes the least harm. During the full assessment Risk Based Framework meeting, these species have been identified as main bycatch species, and it was again confirmed during the surveillance audit.

A condition related to the bycatch monitoring has been raised during the full assessment. Progress against these conditions are presented in section 6.

Endangered Threatened and Protected (ETP) species

Since the 2015 fishing season, logbooks for Species at Risk (SAR) interactions require a nil response and must be returned; in the past if no interaction occurred a logbook was not required to be submitted.

The interaction between the Southern Gulf of St Lawrence lobster trap fishery and ETP species was determined to be low during the full assessment. The surveillance team determined that there is not change to the risk level to ETP species and the fishery continue not to pose a risk of serious or irreversible harm to ETP species.

Based on the information from SARA logbooks for 2012-2014, with or without NIL reports, encounters with SAR species are 1-2 per year and are most often interactions with wolffish (caught alive and returned to the water in a manner that causes least amount of harm).

4.3.2. UoAs 2, 3 and 4 - Maritimes

Retained species

By licence condition, all inshore Lobster harvesters in LFAs 27-38 are authorized to retain green crab (*Carcinus maenas*), rock crab (*Cancer irroratus*), and sculpin (*Myoxocephalus octodecemspinocus*). In addition, harvesters in LFAs 33-38 are authorized to retain Jonah crab (*Cancer borealis*) that is ≥ 130 mm in length. However, in actual fishing practices, sculpin is not retained

The surveillance team was provided with crab landings for all Maritimes LFAs combined (Table 21).

Table 21. Crab landings (Jonah and rock crabs for LFA 27-38, 2011-12 through 2014-15. Data include LFA 38 Grey Zone data. Source: DFO, at surveillance audit. ¹Preliminary data that may change without notice.

Season	Weight Landed (round kg)
2011-2012	386,653
2012-2013	229,411
2013-2014	308,519
2014-2015 ¹	391,137

There is no stock assessment for inshore rock crab and Jonah crab. During the full assessment, it was determined that the level of exploitation does not appear to have an impact on crab resources given the protection of brood stock provided by the MLS and the mandatory release of female crabs. No concerns was raised about crab species status during the surveillance audit.

During the full assessment, it was determined that main species used as bait are Atlantic mackerel and local herring.

According to the last 4VWX herring stock assessment, the three-year moving spawning biomass average increased above limit reference point in 2011 and changed very little in 2012. Since 2012, the three-year moving biomass average has been increasing slightly ear year (DFO 2015c).

Two conditions related to the use of mackerel as bait and its stock status have been raised during the full assessment. Progress against these conditions are presented in section 6.

LFA 27 harvesters have formally requested to use cunner as bait. DFO recently accepted and it is stated in the LFA 27 2016 licence condition, section 4.1, as below.

“4.1 THE LICENCE HOLDER/OPERATOR IS REQUIRED TO FORTHWITH RETURN ALL INCIDENTALLY CAUGHT FISH, INCLUDING FEMALE CRABS OF ALL SPECIES, EXCEPT GREEN CRAB, MALE ROCK CRAB, SCULPIN AND CUNNER, TO THE WATER AND PLACE FROM WHICH IT WAS TAKEN AND, WHERE IT IS ALIVE, IN A MANNER THAT CAUSES IT THE LEAST HARM. RETAINED CUNNER MUST BE EQUAL TO OR GREATER THAN 10 CENTIMETRES, MEASURED FROM THE TIP OF THE NOSE AND ALONG THE CENTRE OF THE BODY TO THE END OF THE TAIL” (DFO 2016a, LFA 27 licence condition 2016)

There is no formal stock assessment for cunner. During the full assessment, the assessment team has been told that decrease of abundance or size has not been observed and that there is no concern about this species. The use of cunner as bait is implemented with cautious, a MLS is in place and LFA 27 Management Board put forward a proposal to evaluate/monitor the impact of the use of cunner as bait on cunner population.

Bycatch species

Based on the information available during the full assessment, it was determined that the level of bycatch is very low. However, due to their vulnerability, cod and cusk were considered as main bycatch species.

Cusk is currently under consideration for SARA listing, and the recommendation of listing or not is scheduled to be published in fall 2016/winter 2017. According to the last cusk stock assessment, the current 3-year geometric mean of the cusk biomass index remains above the limit reference point, but within the cautious zone (DFO 2016d).

A condition related to the bycatch monitoring has been raised during the full assessment. Progress against these conditions are presented in section 6.

Endangered Threatened and Protected (ETP) species

During the full assessment, the assessment team evaluated that it is highly likely that the Bay of Fundy and Scotian Shelf trap fisheries do not pose a risk of serious or irreversible harm to ETP species and do not hinder recovery of ETP species. The surveillance team determined that there is not change to the risk level to ETP species and lobster fisheries continue not to pose a risk of serious or irreversible harm to ETP species.

Based on the information from SARA logbooks for 2012-2015, with, encounters with SAR species are most often interactions with wolffish (caught alive and returned to the water in a manner that causes least amount of harm).

4.4. Relevant changes to Legislation and Regulations

There were no major changes to the legislation and/or regulations that governs the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery.

LFA 27 harvesters are now allowed to retained and used cunner as bait (see 4.3.2).

LFA 31B licence condition was amended in 2016 regarding V-notched females. Harvesters must meet a target number of females to be V-notched and released as stated below.

“SCHEDULE 5: INSTRUCTIONS FOR V-NOTCHING AND RELEASE OF LOBSTERS

1. THE FOLLOWING AMOUNTS OF LOBSTER MUST BE V-NOTCHED AND RETURNED TO THE WATER:

- CLASS A LICENCE: 50 KILOGRAMS (110 POUNDS)
- CLASS B LICENCE: 15 KILOGRAMS (33 POUNDS)
- PARTNERSHIP (INCLUDING STACKED): 75 KILOGRAMS (165 POUNDS).

2. THE LICENCE HOLDER/OPERATOR WILL ENSURE THAT THE LOBSTERS ARE V-NOTCHED ON THE BOTTOM OUTSIDE EDGE OF THE RIGHT FLIPPER (UROPOD) NEXT TO THE MIDDLE FLIPPER (TELSON). THE RIGHT FLIPPER SHALL BE DETERMINED WHEN THE UNDERSIDE OF THE LOBSTER IS DOWN AND ITS TAIL IS TOWARD THE PERSON MAKING THE DETERMINATION. FOR THE PURPOSE OF THESE LICENCE CONDITIONS, A V-NOTCH CONSISTS OF A V-SHAPED CUT IN THE EDGE OF THE FLIPPER.

3. THE LICENCE HOLDER/OPERATOR WILL ENSURE THE V-NOTCHING AND RELEASE OF THE LOBSTERS IS WITNESSED AND RECORDED BY ONE OF THE FOLLOWING INDIVIDUALS (THE WITNESS):

- A TECHNICIAN WITH THE GUYSBOROUGH COUNTY INSHORE FISHERMEN’S ASSOCIATION
- A TECHNICIAN WITH THE FISHERMEN AND SCIENTISTS RESEARCH SOCIETY
- ANOTHER PERSON AUTHORIZED IN WRITING BY DFO.

4. THE RECORD OF THE V-NOTCHING AND RELEASE OF THE LOBSTERS MUST INCLUDE THE LOCATION AND DATE AS WELL AS THE WEIGHT, LENGTH, NUMBER AND CONDITION OF THE ANIMALS.

5. THE LICENCE HOLDER/OPERATOR AND THE WITNESS MUST SIGN TWO COPIES OF A CONFIRMATION NOTICE INDICATING THE WEIGHT OF THE LOBSTERS V-NOTCHED AND THE DATE ON WHICH THEY WERE RETURNED TO THE WATER. THE LICENCE HOLDER/OPERATOR MUST PROVIDE ONE OF THE CONFIRMATION NOTICES TO THE WITNESS AND MUST RETAIN THE OTHER FOR THEIR RECORDS.

6. ALL V-NOTCHING MUST BE COMPLETED BY THE END OF THE LOBSTER FISHING SEASON.” (DFO 2016b, LFA 31B licence condition)

A comprehensive monitoring, control and surveillance system continues to be implemented in the fishery. Compliance to regulations remains very high with a level of recidivism in the fishery to be extremely low (Conservation and Protection staff *per. comm*).

4.5. Relevant changes to the Management Regime

There have been no changes to the management regime of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery since the full assessment/last surveillance audit that have a bearing on the performance of the fisheries against the MSC Standard.

4.6. Changes to personnel in science and management

UoA 1 (SGSL)

There were no changes to DFO personnel in science and management.

UoAs 2, 3, and 4 (Maritimes)

Sara Quigley was assigned the lobster file in December 2014 (Maritimes Region Senior Advisor, Lobster). Changes were also made to the DFO science staff: Adam Cook (as of Oct 2015) and Brad Hubley (as of November 2014) took over from John Tremblay and Doug Pezzack respectively.

4.7. The General Conditions of Certification

The general 'Conditions' set out for the Nova Scotia and New Brunswick Lobster Eco-Certification Society as the certificate holder at initial full assessment were as follows:

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

Fulfilment of General Conditions- Surveillance Audit 1.

- An Action Plan was submitted and accepted prior to the initial certification of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery and actions undertaken against the milestones of each Condition in the intervening period are reported upon in the next following sections.
- An up-dated list of client group members in 2016.

4.8. The Specific Conditions of Certification

During the initial assessment of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery, a conditional score was allocated for PI 1.2.2 Harvest Control Rules, PI 2.1.1 Retained Species Outcome, PI 2.1.2 Retained Species Management Strategy, PI 2.2.3 Bycatch Species Information and PI 3.2.4 Research Plan.

Table 22. Summary of Assessment Conditions

UoA 1 - Southern Gulf of St Lawrence

Condition number	PI	Status	PI original score	PI revised score	Principle revised score
1	1.2.2	Open-ahead target	65	Not revised	P1: not revised
2	2.1.1	Open-on target	60	Not revised	P2: not revised
3	2.1.2	Open-on target	60	Not revised	
4	2.2.3	Open- ahead target	70	Not revised	
5	3.2.4	Closed-ahead target	70	90 at surveillance 1	P3: revised from 90.8 to 92.8 at surveillance 1

UoAs 2, 3 and 4 - Maritimes

Condition number	PI	Status	PI original score	PI revised score	Principle revised score
1	1.2.2	Open-ahead target	65	Not revised	P1: not revised
2	2.1.1	Open-on target	60	Not revised	P2: not revised
3	2.1.2	Open-on target	60	Not revised	
4	2.2.3	Open- on target	75	Not revised	
5	3.2.4	Open- on target	70	Not revised	P3: not revised

5. Assessment Process

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

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

Table 5.3. Fishery Surveillance Program

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

The surveillance audit was conducted as a normal onsite audit.

The Surveillance Audit was comprised in general of:

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

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

Emails and information on objectives of the surveillance audit were sent to stakeholders and management agencies. From this, a surveillance on-site meeting plan was organized and appointments for each individual meeting set. Due to the nature of the management of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery, and the geographic location of the respective clients and stakeholders, the on-site audit meetings were proposed to be in Moncton, New Brunswick, and Bedford and Halifax, Nova Scotia.

- On site Surveillance Audit date was 13th-15th April 2016.
- On-site audits were performed by Dr. Géraldine Criquet (Lead Auditor), and Dr. Jean-Claude Brêthes (Auditor).

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

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

5.1. Summary of stakeholder and client meetings

Arising out of the stakeholder consultation plan preparation a considerable number of stakeholders were contacted directly by surface mail and e-mail and a final direct consultation plan for the audit was prepared. Table 23 details the dates, meeting locations and organisations that were consulted through direct meetings or conference calls during the on-site surveillance assessment.

All meetings were conducted by the Surveillance Team Assessors.

Table 23. Consultation Meetings during the On Site Surveillance Assessment of the the PEI Lobster Trap Fishery.

Name Organisation	Present at Meetings	Location	Venue	Date/Time	Purpose
DFO Gulf Region	SAI Global surveillance team DFO: Manon Mallet, Michel Comeau, Dave Austin, Don Sheidow, Jonathan Breault, Amélie Rondeau, Leroy MacEachern, Mark MacLachlan, Ray MacIsaac, Josiane Massiera, Carole Godin, Sandra Comeau, Isabelle Frenette PEI DFARD: Bob Creed, Robert MacMillan Industry: Ian MacPherson, Eugene O'Leary, Ed Frenette, Martin Mallet, Leonard Leblanc. Andrea Flynn NB-NS client representative: Peter Norsworthy	Moncton, New Brunswick	DFO Gulf offices	13 th April 2016, 8.30-11.00 am	Lobster stock assessment and status, lobster landings in the SGSL, traps characteristics, lobster fleet, management measures, enforcement and compliance, bycatch monitoring, harvest control rules, retained species, research plan
PEI and NS-NB client groups	SAI Global surveillance team Industry: Ian MacPherson, Eugene O'Leary, Ed Frenette, Martin Mallet, Leonard Leblanc. Andrea Flynn NB-NS client representative: Peter Norsworthy PEI DFARD: Bob Creed, Robert MacMillan DFO: Manon Mallet	Moncton, New Brunswick	DFO Gulf offices	13 th April 2016, 11.00-12.00 am	NS-NB and PEI client group joint approach to address conditions on 2.1.1 and 2.1.2 related to the use of Canadian mackerel as bait
NS-NB client group	SAI Global surveillance team	Bedford, Nova Scotia	Clearwater Seafood offices	14 th April 2016, 4.30 - 5.30 pm	NS-NB client group updates, approach to address conditions on 2.1.1 and 2.1.2

SAI Global, 3rd Floor, Block 3, Quayside Business Park, Mill Street, Dundalk, Co. Louth, Ireland

	Client group: Catherine Boyd, Geoff Irvine, Eugene O'Leary Client representative: Peter Norsworthy				related to the use of Canadian mackerel as bait, lobster harvesters concerns, surveillance audit process and timeline
DFO Maritimes Region	SAI Global surveillance team DFO: Colleen Smith, Scott Coffen-Smout, Margaret Lever, Adam Cook, Sara Quinley Client group: Eugene O'Leary Client representative: Peter Norsworthy	Halifax, Nova Scotia	DFO Maritimes offices	15 th April 2016, 9.00-11.30 am	Lobster stock assessment and status, lobster landings in the Maritimes, traps characteristics, lobster fleet, management measures, enforcement and compliance, bycatch monitoring, cusk, MPAs, harvest control rules, retained species, research plan
NS-NB client group	SAI Global surveillance team Client group: Eugene O'Leary Client representative: Peter Norsworthy	Halifax, Nova Scotia	Lunch	15 th April 2016, 12.00-1.30 pm	Wrap-up meeting

5.2. Harmonization

The UoA 1 of the Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence lobster fishery and the Prince Edward Island (PEI) lobster fishery overlaps. PEI lobster was certified in November 2014. Scores of all Performance Indicators and overall score of Principles were harmonized and the same conditions were raised on both fisheries during the full assessment. The 1st surveillance audit for both fisheries were combined and both client groups joint meetings were held during the surveillance audit site visit (see section 5.1).

The outcome and conclusion on conditions from this 1st surveillance audit, presented in section 6, are the same for both fisheries.

6. Results

Table 24. Condition 1 of 5

UoA 1 - SGSL

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	1.2.2 Harvest Control Rules	<p>Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.</p> <p>The selection of the harvest control rules takes into account the main uncertainties.</p>	65
Condition	The client must provide evidence of implementation of well-defined harvest control rules, taking into account uncertainties, that reduce exploitation rates as the limit reference point is approached.		
Client action plan and agreed Milestones	<p>Action Plan</p> <ol style="list-style-type: none"> 1. The client shall immediately engage DFO to discuss options and next steps to enable the client to fulfil this condition. 2. The client shall support the acquiring of any additional information that may be required to support these activities. 3. The client will provide documentary evidence of the requests and support provided on this condition. 4. The client will provide all necessary support to DFO to ensure that all required milestones as prescribed are met. <p>Milestones</p>		

	<p>By Year 1: The Assessment team shall be provided with documentary evidence that consultation between relevant stakeholders about the harvest control rules have been scheduled (score remains unchanged).</p> <p>By Year 2: The Assessment team shall be provided with documentary evidence that consultation between relevant stakeholders occurred to discuss about the harvest control rules (score remains unchanged).</p> <p>By Year 3: The Assessment team shall be provided with documentary evidence that harvest control rules have been defined and approved (score remains unchanged).</p> <p>By Year 4: The Assessment team shall be provided with documentary evidence that harvest control rules have been implemented (score reaches 80).</p>
Evidence for Year 1	<p>Consultation between relevant stakeholders occurred to discuss about HCRs. A decision rules working group that includes DFO (4), Aboriginal organizations (4) and the fishery sector including PEI (3), NB (3) and NS (3) was created in 2014 and first meeting was held on November 2014. The surveillance team was provided with the working group Terms of Reference (TOR) (DFO 2014b) and the November 2014 working group meeting agenda and minutes (DFO 2014c). During this meeting, the TOR were reviewed and the role of the working group which is to develop one of multiple options of HCRs was explained. DFO Science summarized the concept of the Precautionary Approach (PA), the reference points and the stock status zones, and explained how the reference points were developed. Also, the working group listed a full inventory of tools available in the “tool box” that could be used to develop HCRs.</p> <p>A second working group meeting was held on January 2015. The surveillance team was provided with the January meeting agenda (DFO 2015). During this meeting, November 2014 meeting minutes were reviewed and approved, the potential HCRs list was reviewed and possible HCRs for the critical, cautious and healthy zones were discussed.</p> <p>Next step is for DFO to review the PA of other species for comparison/examples and to provide list options to the group prior to the series of meetings, which are to be scheduled in fall/winter 2016.</p> <p>When available, the HCRs options could be submitted for review using the DFO Science peer review process. These HCRs would in turn be presented for approval at a future Southern Gulf Lobster Advisory Committee.</p>
Conclusion and Outcome on Condition 1 from 1st surveillance audit	<p>Consultation between relevant stakeholders occurred to discuss about the harvest control rules. Therefore, The evidence presented during the 1st surveillance audit demonstrates that the client’s actions have met the requirements of the Action Plan for the Year 1, and Year 2.</p> <p>The Condition is not closed out since the original score for this PI remains unchanged. The fishery will be assessed at the next surveillance audit with respect to further work on the development of HCRs.</p>
Status of condition	Open – Ahead of target.

UoAs 2, 3, 4 - Maritimes

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	1.2.2 Harvest Control Rules	<p>Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.</p> <p>The selection of the harvest control rules takes into account the main uncertainties.</p>	70
Condition	The client must provide evidence of implementation of well-defined harvest control rules, taking into account uncertainties, that reduce exploitation rates as the limit reference point is approached.		
Client action plan and agreed Milestones	<p>Action Plan</p> <ol style="list-style-type: none"> 1. The client shall immediately engage DFO to discuss options and next steps to enable the client to fulfil this condition. 2. The client shall support the acquiring of any additional information that may be required to support these activities. 3. The client will provide documentary evidence of the requests and support provided on this condition. 4. The client will provide all necessary support to DFO to ensure that all required milestones as prescribed are met. <p>Milestones</p> <p>By Year 1: The Assessment team shall be provided with documentary evidence that consultation between relevant stakeholders about the harvest control rules have been scheduled (score remains unchanged).</p> <p>By Year 2: The Assessment team shall be provided with documentary evidence that consultation between relevant stakeholders occurred to discuss about the harvest control rules (score remains unchanged).</p> <p>By Year 3: The Assessment team shall be provided with documentary evidence that harvest control rules have been defined and approved (score remains unchanged).</p> <p>By Year 4: The Assessment team shall be provided with documentary evidence that harvest control rules have been implemented (score reaches 80).</p>		
Evidence for Year 1	<p>Consultation between relevant stakeholders occurred to discuss about HCRs. Consultation was held at the Maritimes Region Lobster Advisory Committee (DFO 2015e) and during each LFA lobster Advisory Committee. The surveillance team was provided with meeting agenda and minutes.</p> <p>During the Maritimes Region Lobster Advisory Committee, DFO gave a presentation of DFO's role in developing HCRs which includes supporting the industry in meeting its conditions, and ensuring that any HCRs incorporated into</p>		

	the management plan are consistent with DFO policy. Examples of HCRs were presented and discussed. DFO's and industry's responsibilities were defined. Progress on developing candidate HCRs should happen over 2016/2017.
Conclusion and Outcome on Condition 1 from 1st surveillance audit	<p>Consultation between relevant stakeholders occurred to discuss about the harvest control rules. Therefore, The evidence presented during the 1st surveillance audit demonstrates that the client's actions have met the requirements of the Action Plan for the Year 1, and Year 2.</p> <p>The Condition is not closed out since the original score for this PI remains unchanged. The fishery will be assessed at the next surveillance audit with respect to further work on the development of HCRs.</p>
Status of condition	Open – Ahead of target.

Table 25. Condition 2 of 5

For all UoAs

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/scoring guidepost text	Score
	2.1.1 Retained Species Outcome	If main retained species are outside the limits, there is a partial strategy in place of demonstrably effective management measures in place such that the fishery does not hinder the recovery and rebuilding.	60
Condition	The client must provide evidence that a partial strategy of demonstrably effective management measures is in place such that the PEI lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel stock.		
Client action plan and agreed Milestones	<p>Action Plan</p> <ol style="list-style-type: none"> 1. The client group shall immediately meet to discuss options to fulfill this condition. 2. The client will ensure participating parties define method(s) to reduce mackerel bait use. Further, the client will work jointly with all participating parties to define methods to collect adequate proxy information to benchmark and monitor mackerel bait use. 3. The client shall support the acquisition of any additional information that may be required to support these activities. 4. The client will provide documentary evidence of the requests and support provided on this condition. 5. The client will report on mackerel bait use as required to meet this condition <p>Milestones</p> <p>By Year 1: The Assessment team shall be provided with documentary evidence that a partial strategy to reduce the use of Canadian mackerel as bait has been discussed. (score remains unchanged)</p>		

	<p>By Year 2: The Assessment team shall be provided with documentary evidence that a partial strategy to reduce the use of Canadian mackerel as bait has been proposed and agreed. (score remains unchanged)</p> <p>By Year 3: T The Assessment team shall be provided with documentary evidence that a partial strategy to reduce the use of Canadian mackerel as bait has been implemented. (score remains unchanged)</p> <p>By Year 4: The Assessment team shall be provided with documentary evidence the amount of Canadian mackerel used as bait has been significantly reduced. (score reaches 80)</p>
Evidence for Year 1	<p>Both NS-NB and PEI client groups opted for a joint approach to address this condition.</p> <p>Several meetings were held to discuss a partial strategy to ensure the lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel. A first meeting was held in August 2014 with stakeholders to discuss options for meeting the requirements of this condition. Stakeholder consultation meeting was also held in February 2016, the assessment team was provided with the meeting minutes. In addition, the client group participated to the mackerel advisory committee meeting in February 2016. Meetings were held between December 2015 and February 2016 with bait suppliers.</p> <p>Three axes were considered as part of a partial strategy to ensure that the PEI lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel stock:</p> <ol style="list-style-type: none"> 1) <u>Monitoring of the amount of mackerel used as bai</u> The client group solicited the bait suppliers participation to monitor the use of Canadian mackerel for bait. Preliminary consultations with bait suppliers show that the availability of Canadian mackerel has declined and the mackerel bait prices has significantly increased the last 5 years. The client group provided bait suppliers willing to participate with an Annual Bait Survey Form (see appendix 4). This survey method of monitoring bait used in the lobster fishery will be tested in 2016 and will be used to confirm the decrease in the use of Canadian mackerel as bait. 2) <u>Encourage and support improvements of the mackerel fisheries management and mackerel stock assessment</u> The client group strongly advocated the improvement of mackerel fisheries management and encourage DFO to carry out a new mackerel stock assessment. The client group. participated to the mackerel advisory committee meeting in February 2016. DFO has undertaken a number of activities to improve stock abundance and mackerel landings reporting : DFO reduced the TAC in 2015; DFO has re-engaged with U.S. counterparts, providing foundation for a more collaborative approach in science and management in future years; DFO has committed to complete a full assessment in 2017 and has undertaken research projects that provide alternative stock modeling methods to include missing information and will be developing recommendations for risk assessment. 3) <u>Alternative to traditional bait</u> It was highlighted that the decrease in the availability of main bait sources and the increase in bait prices led to issues in bait supply for lobster harvesters. For

	these reasons, Homarus Inc., the Research and Development sector of the Union des Pêcheurs des Maritimes, worked on the development of an alternative and ecological bait using the residues from fish transformation in processing plants. This alternative bait is in its commercialization phase.
Conclusion and Outcome on Condition 2 from 1st surveillance audit	<p>Several meetings were held to discuss a partial strategy to ensure the lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel. The evidence presented during the 1st surveillance audit demonstrates that the client's actions have met the requirements of the Action Plan for the Year 1 milestone of Condition 2.</p> <p>The Condition is not closed out since the original score for this PI remains unchanged. The fishery will be assessed at the next surveillance audit with respect to further work on the partial strategy to ensure the fishery does not hinder the recovery and rebuilding of the Canadian mackerel.</p>
Status of condition	Open – On target

Table 26. Condition 3 of 5
For all UoAs

	Insert relevant PI	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.1.2 Retained Species Management Strategy	<p>There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.</p> <p>There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.</p> <p>There is some evidence that the partial strategy is being implemented successfully.</p>	60
Condition	The client must provide evidence that a partial strategy is in place to ensure the PEI lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel stock. Also, the client must provide some evidence that the partial strategy is being implemented successfully.		
Client action plan and agreed	Action Plan		

Milestones	<p>1. The client group shall immediately meet to discuss options to fulfill this condition.</p> <p>2. The client will ensure participating parties define method(s) to reduce mackerel bait use. Further, the client will work jointly with all participating parties to define methods to collect adequate proxy information to benchmark and monitor mackerel bait use.</p> <p>3. The client shall support the acquisition of any additional information that may be required to support these activities.</p> <p>4. The client will provide documentary evidence of the requests and support provided on this condition. 5. The client will report on mackerel bait use as required to meet this condition</p> <p>Milestones</p> <p>By Year 1: The Assessment team shall be provided with documentary evidence that a partial strategy to reduce the use of Canadian mackerel as bait has been discussed. (score remains unchanged)</p> <p>By Year 2: The Assessment team shall be provided with documentary evidence that a partial strategy to reduce the use of Canadian mackerel as bait has been proposed and agreed. (score remains unchanged)</p> <p>By Year 3: T The Assessment team shall be provided with documentary evidence that a partial strategy to reduce the use of Canadian mackerel as bait has been implemented. (score remains unchanged)</p> <p>By Year 4: The Assessment team shall be provided with documentary evidence the amount of Canadian mackerel used as bait has been significantly reduced. (score reaches 80)</p>
Evidence for Year 1	<p>Both NS-NB and PEI client groups opted for a joint approach to address this condition.</p> <p>Several meetings were held to discuss a partial strategy to ensure the lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel. A first meeting was held in August 2014 with stakeholders to discuss options for meeting the requirements of this condition. Stakeholder consultation meeting was also held in February 2016, the assessment team was provided with the meeting minutes. In addition, the client group participated to the mackerel advisory committee meeting in February 2016. Meetings were held between December 2015 and February 2016 with bait suppliers.</p> <p>Three axes were considered as part of a partial strategy to ensure that the PEI lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel stock:</p> <p>4) <u>Monitoring of the amount of mackerel used as bai</u></p> <p>The client group solicited the bait suppliers participation to monitor the use of Canadian mackerel for bait. Preliminary consultations with bait suppliers show that the availability of Canadian mackerel has declined and the mackerel bait prices has significantly increased the last 5 years. The client group provided bait suppliers willing to participate with an Annual Bait Survey Form (see appendix 4). This survey</p>

	<p>method of monitoring bait used in the lobster fishery will be tested in 2016 and will be used to confirm the decrease in the use of Canadian mackerel as bait.</p> <p>5) <u>Encourage and support improvements of the mackerel fisheries management and mackerel stock assessment</u></p> <p>The client group strongly advocated the improvement of mackerel fisheries management and encourage DFO to carry out a new mackerel stock assessment. The client group. participated to the mackerel advisory committee meeting in February 2016. DFO has undertaken a number of activities to improve stock abundance and mackerel landings reporting : DFO reduced the TAC in 2015; DFO has re-engaged with U.S. counterparts, providing foundation for a more collaborative approach in science and management in future years; DFO has committed to complete a full assessment in 2017 and has undertaken research projects that provide alternative stock modeling methods to include missing information and will be developing recommendations for risk assessment.</p> <p>6) <u>Alternative to traditional bait</u></p> <p>It was highlighted that the decrease in the availability of main bait sources and the increase in bait prices led to issues in bait supply for lobster harvesters. For these reasons, Homarus Inc., the Research and Development sector of the Union des Pêcheurs des Maritimes, worked on the development of an alternative and ecological bait using the residues from fish transformation in processing plants. This alternative bait is in its commercialization phase.</p>
Conclusion and Outcome on Condition 3 from 1st surveillance audit	<p>Several meetings were held to discuss a partial strategy to ensure the lobster fishery does not hinder the recovery and rebuilding of the Canadian mackerel. The evidence presented during the 1st surveillance audit demonstrates that the client's actions have met the requirements of the Action Plan for the Year 1 milestone of Condition 2.</p> <p>The Condition is not closed out since the original score for this PI remains unchanged. The fishery will be assessed at the next surveillance audit with respect to further work on the partial strategy to ensure the fishery does not hinder the recovery and rebuilding of the Canadian mackerel.</p>
Status of condition	Open – On target

Table 27. Condition 4 of 5
UoA 1 - SGSL

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.2.3 Bycatch Species Information	<p>Information is adequate to support a partial strategy to manage main bycatch species.</p> <p>Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome</p>	70

		indicator scores or the operation of the fishery or the effectiveness of the strategy).	
Condition	The client must provide evidence that information on bycatch is adequate to support a partial strategy to manage main bycatch species, and that accurate and sufficient data on the amount of main bycatch species affected by the fisheries are collected to detect any increase in risk to main bycatch species.		
Client action plan and agreed Milestones	<p>Action Plan</p> <ol style="list-style-type: none"> 1. The client shall immediately request to meet with DFO to discuss the options available to fulfil this condition. 2. The client will acquire any additional information that may be required to support these activities. 3. The client will provide documentary evidence of the requests and support provided on this condition. 4. The client will consult with the DFO and other participating parties to define methods to collect adequate proxy information to reflect bycatch encounters in all LFA's. 5. The client will test bycatch data collection methods. 6. The client will ensure that information will be processed and reported regarding by catch data as required to meet the condition. <p>Milestones</p> <p>By Year 1: The Assessment team shall be provided with documentary evidence that a system for bycatch data collection has been designed (score remains unchanged).</p> <p>By Year 2: The Assessment team shall be provided with documentary evidence that a system for bycatch data collection has been agreed and tested (score remains unchanged).</p> <p>By Year 3: The Assessment team shall be provided with documentary evidence that a system for bycatch data collection has been implemented within the fishery management system (score remains unchanged).</p> <p>By Year 4: The Assessment team shall be provided with documentary evidence that there is an on-going system for bycatch data collection (score reaches 80).</p>		
Evidence for Year 1	<p>The client group has engaged stakeholders and DFO in order to design a system for bycatch data collection. Stakeholder consultations were held during winter 2014 and spring 2015, and a system for bycatch collection was designed and agreed. As a result, DFO Gulf has initiated a collaborative research project "Bycatch composition and vitality assessment of species caught as bycatch during the lobster fishery in the SGSL" (see Appendix 4). A summary of the protocol is presented below.</p> <ul style="list-style-type: none"> - Composition: identify all bycatch species; - Quantity: count and weight all bycatches; - Survival: note injuries and evaluate vitality every minute for 10 min for as many specimen as possible; - Air exposure: analyse videos of fishing activities to extract average duration of air exposure of bycatch species (sorting time). 		

	<p>In May-June and August-October 2015, samplings were carrying out on-board fishing vessels by independent observers according to the established protocol. The preliminary results show that there is a limited quantity of bycatch, the most prevalent bycatch other than non-legal lobster are rock crab and cunner; no mortality was observed and the average sorting time for a trap is less than 1 minute. The completion of the analysis and a preliminary report is scheduled for the fall 2016, and results will be presented at the next lobster advisory committee. The results of this project will be used to plan the implementation of a bycatch monitoring system on a long-term basis.</p>
Conclusion and Outcome on Condition 4 from 1st surveillance audit	<p>The client provided evidence that a system for data collection has been designed, agreed and tested. The evidence presented during the 1st surveillance audit demonstrates that the client's actions have met the requirements of the Action Plan for the Year 1 and the Year 2 milestone of Condition 4.</p> <p>The Condition is not closed out since the original score for this PI remains unchanged. The fishery will be assessed at the next surveillance audit with respect to further work on the implementation of a bycatch monitoring system</p>
Status of condition	Open – Ahead target

UoAs 2, 3 and 4 - Maritimes

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	2.2.3 Bycatch Species Information	Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectively of the strategy).	75
Condition	The client must provide evidence that accurate and sufficient data on the amount of main bycatch species affected by the fisheries are collected to detect any increase in risk to main bycatch species.		
Client action plan and agreed Milestones	Action Plan <ol style="list-style-type: none"> 1. The client shall immediately request to meet with DFO to discuss the options available to fulfil this condition. 2. The client will acquire any additional information that may be required to support these activities. 3. The client will provide documentary evidence of the requests and support provided on this condition. 4. The client will consult with the DFO and other participating parties to define methods to collect adequate proxy information to reflect bycatch encounters in all LFA's. 5. The client will test bycatch data collection methods. 		

	<p>6. The client will ensure that information will be processed and reported regarding by catch data as required to meet the condition.</p> <p>Milestones</p> <p>By Year 1: The Assessment team shall be provided with documentary evidence that a system for bycatch data collection has been designed (score remains unchanged). By Year 2: The Assessment team shall be provided with documentary evidence that a system for bycatch data collection has been agreed and tested (score remains unchanged). By Year 3: The Assessment team shall be provided with documentary evidence that a system for bycatch data collection has been implemented within the fishery management system (score remains unchanged). By Year 4: The Assessment team shall be provided with documentary evidence that there is an on-going system for bycatch data collection (score reaches 80)</p>
Evidence for Year 1	<p>During the Maritimes Region Lobster Advisory Committee, DFO gave an overview of the objectives and implementation steps of the Department's new <i>Policy on Managing Bycatch</i>. DFO described, and invited comments on, the overlap between these and the bycatch-related conditions of the inshore fishery's MSC certificate. DFO also described DFO's bycatch priorities for both the inshore and offshore lobster fisheries: systematically working through the steps of the bycatch policy, documenting risk management strategies in the management plans, and addressing risks to bycatch species of concern, such as cusk and 4X5Y cod.</p> <p>In February 2016, the client group collaborated with DFO on the development of a bycatch data collection protocol (see Appendix 4). A bycatch data collection form (see Appendix 4) has been designed and distributed to LFA representatives for being used beginning on the 2016 fishing season.</p> <p>At-sea bycatch monitoring continues in LFA 27 and LFA 31.</p>
Conclusion and Outcome on Condition 4 from 1st surveillance audit	<p>The client provided evidence that a system for data collection has been designed and agreed. However, it cannot be said that the system has been tested in all LFAs yet. The evidence presented during the 1st surveillance audit demonstrates that the client's actions have met the requirements of the Action Plan for the Year 1 Condition 4.</p> <p>The Condition is not closed out since the original score for this PI remains unchanged. The fishery will be assessed at the next surveillance audit with respect to further work on the implementation of a bycatch monitoring system.</p>
Status of condition	Open – On target

Table 28. Condition 5 of 5
UoA1 - SGSL

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/scoring guidepost text	Score
	3.2.4 Research Plan	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	70
Condition	The client must provide evidence that a written research plan for the fishery provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.		
Client action plan and agreed Milestones	<p>Action Plan</p> <ol style="list-style-type: none"> 1. The client shall immediately engage DFO and the other participating parties on what information and support can be provided to fulfill this condition. 2. The client will acquire any additional information that may be required to support these activities. 3. The client will provide documentary evidence of the requests and support provided on this condition. 4. The client will consult with DFO and representative stakeholders on the research plan, e.g., through advisory committee meetings. 5. As a result of the consultations, the client will develop the research plan specific to the region's lobster fishery in accordance with MSC principles 1 and 2. 6. The client, DFO and other stakeholders will develop monitoring and measurement activities with respect to the research plan within the area of their respective responsibility. <p>Milestones</p> <p>By Year 1: The Assessment team shall be provided with documentary evidence that stakeholder consultations regarding the research plan for the SGSL lobster fishery have been commenced or are planned. (score remains unchanged)</p> <p>By Year 2: The Assessment team shall be provided with documentary evidence that a research plan reflective of existing and scheduled research activities has been developed, and that their activities, milestones, and results (proposed or achieved) support the objectives and requirements of Principles 1 and 2. The plan shall incorporate research activities conducted by other organizations in so far as they relate to Principles 1 and 2. (score remains unchanged)</p> <p>By Year 3: The Assessment team shall be provided with documentary evidence that the research plan has been agreed and implemented for the fishery, and is updated annually (as required) for the remainder of the certification period. (score reaches 80)</p>		

Evidence for Year 1	<p>The surveillance team was provided with a research plan that was approved and implemented for the fishery in 2016. The research plan covers activities carried out and planned by DFO Science, the industry and the provincial governments. Responsibilities are defined as well as a time frame for each activity. The research plans covers activities planned and undertaken in the Gulf Region over a five-year time period (2014-2018). These research activities support the objectives and requirements of Principles 1 and 2.</p> <p>Six research activities concern monitoring and lobster stock assessment:</p> <ul style="list-style-type: none"> - At-Sea Sampling (2014-2018) - Recruitment Index Monitoring Program (2014-2018) - Benthic recruitment monitoring program (2014-2018) - Fishery Independent Trawl Survey (2014-2018) - Coastal Temperature Monitoring Program (2014-2018) - Assessment and Science Advice (2016) <p>And eleven research projects include:</p> <ul style="list-style-type: none"> - Lobster Fishery Bycatch (2015-2017) - Female Reproductive Biology (2014-2017) - Research on Adaptation to Climate Changes (2014-2017) - Interaction between Aquaculture and Lobster Habitat (2015-2018) - New Method to Collect Benthic Recruitment Indices (2014-2018) - Population Connectivity (2014-2018) - Larval seeding (2014-2018) - Environment quality (2014-2018) - Ecological bait (2014-2018) - Lobster quality assessment (BRIX) (2014-2016) - Electronic logbook (2014-2018)
Conclusion and Outcome on Condition 5 from 1st surveillance audit	<p>The surveillance team was provided with a research plan that was approved and implemented for the fishery in 2016.</p> <p>The evidence presented during the 1st surveillance audit demonstrates that the client's actions have met the requirements of the Action Plan for the Year 1, Year 2 and year 3 milestone of Condition 5.</p> <p>This condition is closed and the PI 3.2.4 is re-scored (see Appendix 1).</p>
Status of condition	Closed – Ahead of target.

UoCs 2, 3 and 4 - Maritimes

Performance Indicator(s) & Score(s)	Insert relevant PI number(s)	Insert relevant scoring issue/scoring guidepost text	Score
	3.2.4 Research Plan	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	70
Condition	The client must provide evidence that a written research plan for the fishery provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.		
Client action plan and agreed Milestones	<p>Action Plan</p> <ol style="list-style-type: none"> 1. The client shall immediately engage DFO and the other participating parties on what information and support can be provided to fulfill this condition. 2. The client will acquire any additional information that may be required to support these activities. 3. The client will provide documentary evidence of the requests and support provided on this condition. 4. The client will consult with DFO and representative stakeholders on the research plan, e.g., through advisory committee meetings. 5. As a result of the consultations, the client will develop the research plan specific to the region's lobster fishery in accordance with MSC principles 1 and 2. 6. The client, DFO and other stakeholders will develop monitoring and measurement activities with respect to the research plan within the area of their respective responsibility. <p>Milestones</p> <p>By Year 1: The Assessment team shall be provided with documentary evidence that stakeholder consultations regarding the research plan for the Maritimes lobster fishery have been commenced or are planned. (score remains unchanged)</p> <p>By Year 2: The Assessment team shall be provided with documentary evidence that a research plan reflective of existing and scheduled research activities has been developed, and that their activities, milestones, and results (proposed or achieved) support the objectives and requirements of Principles 1 and 2. The plan shall incorporate research activities conducted by other organizations in so far as they relate to Principles 1 and 2. (score remains unchanged)</p> <p>By Year 3: The Assessment team shall be provided with documentary evidence that the research plan has been agreed and implemented for the fishery, and is updated annually (as required) for the remainder of the certification period. (score reaches 80)</p>		
Evidence for Year 1	Discussions with the industry regarding the ongoing research, the research needs and the development of a research plan occurred during lobster advisory		

	<p>committees. More discussions are planned for the next lobster advisory committees.</p> <p>During the surveillance audit, DFO highlighted that the two senior scientists in charge of lobster fisheries retired on 2015. Two new scientists were hired in 2014 and 2015. As a consequence, it will take more time than for DFO Gulf before they could precise their priorities and provide a research plan.</p>
Conclusion and Outcome on Condition 5 from 1st surveillance audit	<p>Discussions regarding the development of a research plan occurred. The evidence presented during the 1st surveillance audit demonstrates that the client's actions have met the requirements of the Action Plan for the Year 1 Condition 5.</p> <p>The Condition is not closed out since the original score for this PI remains unchanged. The fishery will be assessed at the next surveillance audit with respect to further work on the development of a research plan.</p>
Status of condition	Open – On target

6.1. Summary of Status of Conditions (if applicable)

UoA 1 - Southern Gulf of St Lawrence

Condition number	PI	Status	PI original score	PI revised score	Principle revised score
1	1.2.2	Open-ahead target	65	Not revised	P1: not revised
2	2.1.1	Open-on target	60	Not revised	P2: not revised
3	2.1.2	Open-on target	60	Not revised	
4	2.2.3	Open- ahead target	70	Not revised	
5	3.2.4	Closed-ahead target	70	90 at surveillance 1	P3: revised from 90.8 to 92.8 at surveillance 1

UoAs 2, 3 and 4 - Maritimes

Condition number	PI	Status	PI original score	PI revised score	Principle revised score
1	1.2.2	Open-ahead target	65	Not revised	P1: not revised
2	2.1.1	Open-on target	60	Not revised	P2: not revised
3	2.1.2	Open-on target	60	Not revised	
4	2.2.3	Open- on target	75	Not revised	
5	3.2.4	Open- on target	70	Not revised	P3: not revised

6.2. Revised milestones (if applicable)

Not applicable.

7. Conclusion

The assessment team conducting this 1st surveillance audit confirms that Nova Scotia and New Brunswick Eco-Certification Society has met the general requirements for continued certification to the MSC Principles and Criteria for Sustainable Fishing.

UoA 1 – SGSL

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

UoA 2, 3 and 4 - Maritimes

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

The assessment team recommends that continued certification be awarded to the respective client fisheries:

- **The Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery.**

7.1. Outcome of SAI Global Assurance Services Decision

SAI Global determines that:

- **The The Bay of Fundy, Scotian Shelf and Southern Gulf of St Lawrence Lobster Trap Fishery continues to operate a well-managed and sustainable fishery and therefore, continued certification to the MSC Principles and Criteria for Sustainable Fishing is awarded.**

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DFO 2016b. LFA 31B licence condition 2016, Condition ID 7686.

DFO 2016c. Bycatch composition and vitality assessment of species caught as bycatch during the lobster fishery in the southern Gulf of St. Lawrence.

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9. Appendices

Appendix 1. Re-scoring evaluation tables (if necessary)

The initial rationale is written in light grey and the update based on the evidence received during the first surveillance audit is written in blue.

For UoA 1 - SGSL

Scoring Table PI 3.2.4 Research Plan

PI 3.2.4		The fishery has a research plan that addresses the information needs of management		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	Met?	Y	Y	Y

	Justification	<p>A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2. DFO's national science and oceans research programs are typically defined by multi-year strategic plans and/or frameworks with appropriate planning imperatives and guidance.</p> <p>There are numerous documented past and current/ongoing project-specific research initiatives which support the needs of the PEI lobster resource, habitat and ecosystem and contribute to the objectives consistent with MSC's Principles 1 and 2. Descriptions of the initiatives are provided in the main report. These initiatives vary in their scope, complexity, duration, objectives and outcomes. Collectively, they provide the management system with ongoing, reliable advice that informs the development of measures and policies consistent with the requirements of the MSC's principles.</p> <p>However, the assessment team found no documented evidence to indicate that a formalized regional research plan was developed to provide the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. By extension, there was no documented evidence of a comprehensive research plan that provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2, preventing the fishery from meeting 80a and 100a.</p> <p>A comprehensive research plan was designed and approved in 2016. This plan covers activities carried on by DFO-Science, the fishing industry (Maritime Fisheries union and its affiliated development office <i>Homarus</i>), and the Department of Fisheries of Prince Edward Island. Responsibilities are defined as well as a time frame for each activity.</p> <p>The plan covers activities planned and undertaken over a five-year time period (2014-2018). It includes six activities related to monitoring and stock assessment:</p> <ul style="list-style-type: none"> - At-Sea Sampling (2014-2018) - Recruitment Index Monitoring Program (2014-2018) - Benthic recruitment monitoring program (2014-2018) - Fishery Independent Trawl Survey (2014-2018) - Coastal Temperature Monitoring Program (2014-2018) - Assessment and Science Advice (2016) <p>And eleven research projects are also designed, including:</p> <ul style="list-style-type: none"> - Lobster Fishery Bycatch (2015-2017) - Female Reproductive Biology (2014-2017) - Research on Adaptation to Climate Changes (2014-2017) - Interaction between Aquaculture and Lobster Habitat (2015-2018) - New Method to Collect Benthic Recruitment Indices (2014-2018) - Population Connectivity (2014-2018) - Larval seeding (2014-2018) - Environment quality (2014-2018) - Ecological bait (2014-2018) - Lobster quality assessment (BRIX) (2014-2016) - Electronic logbook (2014-2018)
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PI 3.2.4		The fishery has a research plan that addresses the information needs of management		
b	Guidepost	Research results are available to interested parties.	Research results are disseminated to all interested parties in a timely fashion.	Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.
	Met?	Y	Y	N
	Justification	<p>Research results are disseminated to all interested parties in a timely fashion.</p> <p>DFO-based research results are widely and publicly available on the CSAS website and in scientific journals. The results are also explained to, and discussed with, industry stakeholders and others at formal and informal venues. Related research generated by other government departments, academia, and NGOs is also disseminated on various websites and scientific journals.</p> <p>The research plan is recent (2016). It is not possible, at this time, to affirm that this plan is widely distributed and available to interested parties, which prevent the fishery from meeting 100.</p>		
References		DFO 2016e. Research Plan for the Lobster Fishery in the Gulf Region. Strategic Approach to Research. Monitoring, Assessment and Research, 2014-2018.		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				N/A

Principle 3 PI scoring for the UoA 1 – SGSL

Principle	Wt (L1)	Component	Wt (L2)	PI No.	PI	Wt (L3)	Weight in Principle	Score
Three	1	Governance And policy	0.5	3.1.1	Legal & customary framework	0.25	0.125	90
				3.1.2	Consultation, roles & responsibilities	0.25	0.125	90
				3.1.3	Long term objectives	0.25	0.125	90
				3.1.4	Incentives for sustainable fishing	0.25	0.125	100
		Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.2	0.1	100
				3.2.2	Decision making processes	0.2	0.1	90
				3.2.3	Compliance enforcement &	0.2	0.1	95
				3.2.4	Research plan	0.2	0.1	Revised to 90
				3.2.5	Management performance evaluation	0.2	0.1	90

As a result the overall score of the Principle 3 for the UoA 1 – SGSL, is revised from **90.8** to **92.8**.

Appendix 2. Stakeholder submissions (if any)

Stakeholder submissions have not been received.

Appendix 3. Surveillance audit information (if necessary)

Not necessary. All information related to the surveillance audit is provide in section 3 and 5.

Appendix 4. Additional detail on conditions/ actions/ results (if necessary)

Bait Annual Report Form for bait suppliers

Canadian Mackerel Bait Use Annual Reporting Form								
From: Nova Scotia and New Brunswick Lobster Eco-certification Society								
Purpose: To meet requirements regarding MSC conditions 2&3 regarding use of Canadian mackerel in lobster fisheries.								
Confidentiality: All information submitted will be kept confidential to Pisces Consulting Limited who is working on behalf of the NS and NB Lobster Eco-certification Society. Only aggregate information, combining all responses, will be reported publicly to the MSC accredited certification body.								
Work Instructions: Each calendar year please complete and remit the following information to Pisces Consulting Limited by January 15 of the following year.								
Remit to: or	pisces@ns.sympatico.ca rhcrouse@eastlink.ca	or call: 902-482-0984 to submit report by phone.						
<div style="border: 1px solid black; padding: 5px;"> <p>Company Name: <u>MSC Bait Company Limited</u></p> <p>Reporting Year: <u>2016</u></p> <p>Total bait sold: <u>10,400</u> (Metric Tons)</p> <p>Total mackerel sold for bait: <u>2000</u> (Metric Tons)</p> <p>Canadian mackerel sold for bait: <u>100</u> (Metric Tons)</p> </div>								
Processing Plants Only (If applicable)								
<div style="border: 1px solid black; padding: 5px;"> <p>Canadian mackerel bait purchased direct from fishers: _____ (Metric Tons)</p> </div>								
<table border="1" style="border-collapse: collapse; width: 150px;"> <thead> <tr> <th colspan="2" style="text-align: center; padding: 2px;">Office Use Only</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">Document entry date:</td> <td style="padding: 2px;">_____</td> </tr> <tr> <td style="padding: 2px;">Document entry by:</td> <td style="padding: 2px;">_____</td> </tr> </tbody> </table>			Office Use Only		Document entry date:	_____	Document entry by:	_____
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DFO Gulf Bycatch Sampling Protocol

Bycatch composition and vitality assessment of species caught as bycatch during the lobster fishery in the southern Gulf of St. Lawrence.

Bycatch composition

The following equipment is required to carry out the bycatch composition: caliper, hanging scale, buckets (fish pans or other containers for sorting), thermometer (for air temperature), sampling sheets (with pencils and clipboard), identification guides, scientific licence, and wet gear (personal protection equipment).

The sampling method is established to meet sampling requirement for spatial and temporal coverage. At-sea technicians will sample assign vessels by doing the following types of sampling: A) fishing activity information; B) measurements of discarded non-legal lobster; and 3) bycatch composition (counts and weights).

A. Fishing activity information

All the information on the fishing activity will be recorded on the *“Sea sampling header sheet”*. Most information can be filled by conducting a short interview with the harvester before starting the fishing activity (one per trip). Information to be collected includes: type of bait, number and length of traps, and dimensions and number of entrances and escape vents on traps. Information on weather can be recorded at the end of the trip except for the air temperature that needs to be recorded at the beginning and end of the hauling activity (first and last trap hauled). Total landings for the day for lobster and rock crab, if any, as well as the total number of traps fished and the number of traps sampled will be noted at the end of the trip. Please note that if not all traps are sampled for bycatch; the landing information must reflect only what was retained from the sampled traps.

It is important that the bycatch composition, including discarded lobsters, be recorded for the highest number of traps possible. Ideally all trap hauled should be sampled, however, if this is not possible, don’t skip traps within a line, skip entire lines. Bycatch specimens and discarded lobsters from unsampled traps or lines should not be accounted for and retained lobsters (legal) must be kept separate or estimated and subtracted from the total landing.

B. Discarded lobster

Lobsters that cannot be legally retained (undersized/shorts, berried females, and window or maximum-size females; see Table 1) should be measured (rounded down to mm) and returned to sea as soon as possible. Lobsters to be discarded according to their size must be first sorted by either the captain or the deckhand before the at-sea technicians can measure them. Lobster measurements tally is to be recorded on the *“Length frequency sheet”*. If a lobster to be discarded falls outside the size-range on the tally sheet, clearly write its carapace length measurements and type (female, male, berried or window/maximum size females) at the back of the tally sheet. Please refer to the reference table at the end of this document for LFA specific lobster size restrictions. Do not measure legal size lobsters.

C. Bycatch composition

Bycatch species (inside and outside the traps) should be separated by species or taxonomic group in buckets or other containers immediately after the trap is empty. Counts and weights of those species are to be recorded on the *“Bycatch species sheet”* at the end of the fishing/sampling activity or at any other convenient time. The most common bycatch species or taxonomic groups are already listed on the sheet. Use the proper species name (refer to the list of potential bycatch species; see Table 2) if adding a new one to the tally sheet. It is important to remove any excess of water and account for the container’s weight (tare the scale) when weighing bycatch species. If a large quantity (over 50 kg) of a specific bycatch group is caught, weight can be estimated. Remember to separate rock crab males and females before counting and weighing. Male rock crabs can be legally retained and/or sold as bycatch but not the females. Please refer to the provided field guides and bycatch species list for identification.

At the end of the trip, make sure that all the required information on the 3 different sheets has been recorded properly and thank the captain and crew for their cooperation.

Table 1. Legal size restrictions for lobsters by Lobster Fishing Areas in 2015. Undersize male and female lobsters, window or maximum size females, as well as all berried females cannot be retained and must be discarded at-sea.

LFA	Undersizes	Window females size	Maximum females size	Berried females
23A	< 76	115-129		All sizes
23B	< 76	115-129		
23C	< 75	115-129		
23D	< 74	115-129		
24	< 72	115-129		
25	< 72		114 and up	
26A-1	< 72	115-129		
26A-2	< 73	115-129		
26B-North	≤ 82	na		
26B-South	< 80	115-129		

Table 2. List of species or taxonomic groups that could be caught as bycatch during the southern Gulf lobster fishery

Common name	Nom commun	GSE codes	Scientific name	Comments
Rock crab	Crabe commun	2513	<i>Cancer irroratus</i>	Separate males and females
Toad crab	Crabe araignée	2520	<i>Hyas sp.</i>	Include the 2 species of <i>Hyas</i>
Lady crab	Crabe calico	2539	<i>Ovalipes ocellatus</i>	Rare, only in LFA 25
Green crab	Crabe vert	2531	<i>Carcinus maenas</i>	Rare, in very shallow waters
Sea star	Étoile de mer	6110	<i>Asterias sp.</i>	Include all types of sea stars except brittle stars
Basket star	Gorgonocéphale	6300	<i>Gorgonocephalus</i>	
Sea cucumber	Concombre de mer	6600	<i>Cucumaria frondosa</i>	
Sand dollar	Oursin plat	6511	<i>Echinarachnius parma</i>	
Sea urchin	Oursin vert	6411	<i>Strongylocentrotus droebachiensis</i>	
Hermit crab	Bernard l'hermite	2561	<i>Pagurus</i>	Verify mollusc shells for hermit crab; if the mollusc is alive the operculum should be visible
Northern whelk	Buccin commun	4211	<i>Buccinum undatum</i>	Look for black spots on a whitish body
Northern moonsnail	Lunatie	4221	<i>Euspira eros</i>	Big round and smooth shell
Periwinkle	Littorine	4250	<i>Littorina sp.</i>	Little, brownish or blackish
Stimpson's colus	Colus de Stimpson	4228	<i>Colus stimpsoni</i>	Spindle shape with a long canal
New England neptune	Neptunée	4227	<i>Neptunea decemcostata</i>	Pronounced ridges
Mussel	Moule bleue	4331	<i>Mytilus edulis</i>	Most likely hanging on the trap
Sponge	Éponge de mer	8600	<i>Porifera</i>	Most likely hanging on the trap
Seaweed	Algue	9300		Most likely hanging on the trap
Sea raven	Hémitriptère	320	<i>Hemitripterus americanus</i>	
Sculpin	Chaboisseau	300	<i>Myoxocephalus sp.</i>	Include longhorn, shorthorn and little grubby
Ocean pout	Loquette d'Amérique	640	<i>Macrozoarces americanus</i>	
Atlantic cod	Morue franche	10	<i>Gadus morhua</i>	
Greenland cod	Ogac	118	<i>Gagus ogac</i>	
White hake	Merluce blanche	12	<i>Urophycis tenuis</i>	
Cunner	Tanche-tautogue	122	<i>Tautogolabrus adspersus</i>	
Winter flounder	Plie rouge	43	<i>Pseudopleuronectes americanus</i>	
American plaice	Plie canadienne	40	<i>Hippoglossoides platessoides</i>	
Yellowtail flounder	Limande à queue jaune	42	<i>Limanda ferruginea</i>	
Windowpane flounder	Turbot de sable	143	<i>Scophthalmus aquosus</i>	

Atlantic lump sucker	spiny	Poule de mer	502	<i>Eumicrotremus spinosus</i>	
Rock gunnel		Sigouine de roche	621	<i>Pholis gunnellus</i>	
Winter skate		Raie tachetée	204	<i>Leucoraja ocellata</i>	

Vitality assessment of bycatch

The following equipment is required to carry out the vitality assessment of bycatch: caliper, measuring board, buckets (fish pans or other containers for sorting), timers, thermometer (for air temperature), sampling sheets (with pencils and clipboard), scientific licence, species identification sheets, and wet gear (personal protection equipment). The at-sea sampling should be carried out on a regular basis (at least one a week for designated wharves) during the entire fishing season to gather information on potential changes in water and air temperature, and also on the bycatch composition.

Information on the fishing activity

All the information on the fishing activity will be recorded on the “*Sea sampling header sheet*”. Most information can be filled by conducting a short interview with the harvester before starting the fishing activity (one per trip). Weather information can be filled out at the end of the trip except for the air temperature that need to be recorded at the beginning of hauling and after the 10 minutes vitality observation period for the organisms.

Vitality assessment

The vitality assessment can begin as soon as the hauling activity starts. Take all bycatch individuals (except if there are too many) from the same trap line into a container, start the timer and assess the condition based on injury (Tables 3-4) and vitality (Table 5). Record data on the sampling sheet every minute for a total of 10 minutes. Use Table 6 for vitality signs according to the taxon type being observed. Make sure that individuals pooled together into a container will not injure one another, separate them if needed. At the end of the 10 minutes, record air temperature and their sizes, and finally return them to the sea. Fishes (fork length) are to be measured on a measuring board while crabs (carapace width) and lobsters (carapace length) with a caliper. The vitality assessment is based on observations on the boat and should not be biased by the condition of the specimen when returned at sea. For example, although sculpins will most likely be floating on their back when returned to the sea, they had vigorous movements and were trying to ventilate (vitality code 1) while observed on the boat, i.e., observations from the vitality assessment that should be recorded. Sculpins should be identified to the species level (longhorn, shorthorn, gruby).

The vitality assessment needs to be done on undersized lobsters as they cannot be legally retained. They can be assessed on an *ad hoc* basis when time permit. For lobsters and crabs, record the sex on the sampling sheet (male = 1, female = 2).

Try to assess the vitality of all bycatch specimens but if not possible, focus on less frequent species. Specimens that are not kept for the vitality assessment still need to be accounted for in the bycatch composition component of the project (counted and weighted).

Vitality codes in Table 5 have been developed for fish species but could also be adjusted to crustaceans (crabs, lobsters, hermit-crabs). The vitality assessment of other types of invertebrates such as echinoderms, gastropods and bivalves is more subjective but one could assume that a specimen without any major injury will stay in good condition for the 10 minutes observation (code 1). If it's really hot on the boat and the starfish being observed is getting all flaccid, it could be coded as a 4.

Tableau 3. Description of codes used in the assessment of the injury level of fish species caught.

Injury	Code	Description
None	1	No bleeding, torn operculum or noticeable loss of scales
Minor	2	Minor bleeding <u>or</u> minor tear of mouthparts area or operculum <u>or</u> moderate loss of scales (i.e. bare patch).
Major	3	Major bleeding <u>or</u> major tear of the mouthparts or operculum <u>or</u> everted stomach <u>or</u> bloated swim bladder

Tableau 4. Description of codes used in the assessment of the injury level of invertebrate species caught.

Injury	Code	Description
None	1	No visible injury to body, shell, or carapace
Minor	2	Minor cracks to shell or carapace without exposure of/access to internal organs. Recent loss of some limbs for crustaceans. The specimen should survive these injuries.
Major	3	Body, shell or carapace crushed with internal organs exposed. Recent loss of the majority of limbs for crustacean. Injuries will most likely cause the death of the specimen.

Tableau 5. Description of codes used to characterize fish and invertebrate vitality.

Vitality	Code	Description
Excellent	1	Vigorous body movements or strong reaction to stimuli; no or minor injuries.
Good	2	Weak body movements but still good reaction to external stimuli; minor injuries.
Poor	3	No more body movement but still some breathing attempts (for fish); minor or major injuries.
Moribund/dead	4	No body movement and no reaction to stimuli; specimen considered dead.

Tableau 6. Description of signs to look for when assessing the vitality of specimens from different taxonomic groups.

Groups	Vitality signs
Fish	Body and ventilation movements (mouth, operculum, etc.).
Crustaceans	Body and mouthparts movements, eyes move when touched. Good tonus of the limbs (do not place specimen on their back for the assessment).

Echinoderms	Movements of tube feet and spines, the specimen adhere to a flat surface. Mouthparts are tightly shut; soft bodied specimens (sea stars and sea cucumbers) are toned and not flaccid.
Gastropods	Body movements/locomotion, the operculum is tightly shut.
Bivalves	Valves are tightly shut or do so when physically tapped.

Lobster Bycatch Sampling Protocol for Maritimes Region

Purpose: To capture non-target species information to support condition requirements for the MSC lobster certification.

Participation: It is proposed that each LFA participate in fishery dependent reporting of non-target species encounters. Those LFA's that currently collect non-target species information are not required to participate if current efforts meet the minimum sampling requirements and these LFA's disclose their information annually.

Sampling Plan:

- A minimum of 2% of enterprises from each LFA will participate.
- Each participant will record daily non-target species information for one week per month.
- The total encounters by species will be recorded each day of fishing during the week.

The following summarizes by LFA the anticipated sample plan outcome. Given the proposed participation rates and seasons in each LFA, it is expected there would be 331 weekly logs submitted each year.

LFA	UoC12									UoC13	UoC14				Maritimes Total
	27	28	29	30	31a	31b	32	33	Total	34	35	36	38	Total	
Licensed	524	776	777	777	777	777	777	777	777	777	777	777	777	777	777
Sample Size	2%	5%	5%	5%	5%	5%	3%	2%	3%	2%	2%	2%	2%	2%	3%
Participants	777	777	777	777	777	777	777	777	777	777	777	777	777	777	777
# Weekly Logs (max)	777	777	777	777	777	777	777	777	777	777	777	777	777	777	777

Information Collected: The following pages provide a sample of the document to be used for reporting.

Collaboration: To ensure DFO can utilize the information the date when fishing starts for the week will be recorded, the corresponding Log number from the enterprise monthly log, and the License number. This will permit assigning non-target species encounters to the geographic area fished, LFA, fishing depth, etc. Subsequently, this should permit DFO to examine spatially and temporally non-target species encounters from the lobster fishery.

**Lobster Fishery Bycatch
Weekly Reporting Form**

From: Nova Scotia and New Brunswick Lobster Eco-certification Society

Purpose: To meet requirements regarding MSC condition 4; bycatch encounters in lobster fisheries.

Confidentiality: This information will be kept confidential, and only summary information will be reported publicly to the MSC accredited certification body. DFO will have access to data to examine the geographic distribution and abundance of non-target species.

Work Instructions:

1. Complete this report only one week per month, starting the first Sunday of every month of lobster fishing.
2. Each day record the number of traps hauled, and estimated weight of n lobster returns and non-target species captured, whether kept or returned.
3. Any non-specified species, record as 'other' and record the species if known at the bottom in 'Other Species'.
4. Submit your report at the end of the week by post or email to Pisces Consulting Limited.

Form Starting Date: 01 / 01 / 2016 (mm/dd/yy)

Vessel Name: Cape Sample

Name: John Doe

Lobster Fishing Area: LFA 34 (e.g. LFA 34)

Lobster Log #: 123456

License #: 678910

Phone #: 902-111-1111

	Pots Hauled	Lobster Returns (Pounds)	Pounds of Each Captured														
			Finfish Pounds									Crab (Pounds)				Other (Pounds)	
			Sculpin	Cod	Haddock	Pollock	Redfish	Cusk	Hake	Flounder (Flats)	Other finfish	Snow Crab	Rock Crab	Jonah Crab	Other Crab	Urchins	Other
Sample	150	100	50	10						1		20			5		
Sunday	0																
Monday	300	200	50	5	10										10		
Tuesday	150	60	80												5		
Wednesday	150	50	60		30					1							
Thursday	0																
Friday	150	100	30	10									50				
Saturday	0																
Total	750	410	220	15	40					1			50		15		
	Other Species	Silver Hake - 1 pound															

Submit Report to: Pisces Consulting Limited
PO 612, 745 Sackville Drive
Lower Sackville, NS
B3J 3K1

or by email to: pisces@ns.sympatico.ca

Office Use Only

Document entry date: _____

Document entry by: _____

Appendix 5. Revised Surveillance Program (if necessary)

Not applicable. Surveillance program is not revised.