

## **MSC Surveillance Report**

For The

Southern Gulf of St Lawrence Snow Crab (Chionoecetes opilio) Trap Fishery

#### Facilitated By the

Affiliation of Seafood Producers Association of Nova Scotia (ASPANS)

Assessors: Dr Ivan Mateo, Lead Assessor Eric Dunne, Assessor

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# **1. General Information**

Fishery name	Southern Gulf of St Lawrence Snow Crab ( <i>Chionoecetes opilio</i> ) Trap Fishery					
Unit(s) of assessment	<ul> <li><u>Species</u>: Snow crab <i>Chionoecetes opilio</i></li> <li><u>Geographical Area</u>: Southern Gulf of St Lawrence, Canada</li> <li>Method of Canture: Baited Trap</li> </ul>					
Date certified	25 <sup>th</sup> September 2012 Date of ex	piry 24 <sup>th</sup> September 2017				
Surveillance level and type	Surveillance level 1, off-site surve	illance audit				
Date of surveillance audit	23 <sup>rd</sup> September 2015					
Surveillance stage (tick one)	1st Surveillance	17 <sup>th</sup> September 2013				
	2nd Surveillance	23 <sup>rd</sup> October 2014				
	3rd Surveillance	x				
	4th Surveillance					
	Other (expedited etc.)					
Surveillance team	Lead assessor: Dr Ivan Mateo,					
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### 1.1 Summary

The Southern Gulf of St Lawrence (SGSL) Snow Crab Trap Fishery was certified on the 25th of September 2012. This report contains the findings of the third surveillance audit in relation to the certificate of:

The Affiliation of Seafood Producers Association of Nova Scotia (ASPANS) Southern Gulf of St. Lawrence Snow Crab Trap Fishery (One Unit of Certification).

The third surveillance audit focused on the stock status and any changes in the management regime or regulations and legislation since the initial certification and monitoring continued compliance with the MSC Principles and Criteria.

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The conditions of certification stipulated that the IFMP for the SGSL should be shown to contain fishery-specific objectives designed to achieved the requirements of MSC's Principles 1 and 2 (PI 3.2.1) and that evidence must be provided that an effective review and evaluation of the fishery specific management system is in place (PI 3.2.5). For Year 2, the Condition 1 (P3 3.2.1) stipulated that the IFMP for the SGSL should be adopted, and published by the second year.

Based on the evidence provided, the assessment team during the 2<sup>nd</sup> surveillance audit concluded that both the Year 1 and Year 2 milestones on Conditions 1 and 2 have been met. Therefore, both conditions were closed. The score of the relative PIs have been revised, and according to the revised scores, the overall notation of the SGSL snow crab fishery has been modified (Section 9).

Condition number	Performance indicator (PI)	Status	PI original score	PI revised score
1	3.2.1	Closed (2 <sup>nd</sup> Surveillance)	70	80
2	3.2.5	Closed (1 <sup>st</sup> Surveillance)	70	80

#### Table 1. PI 13.2.1 and 3.2.5 original and revised score.

SAI Global determines that the Affiliation of Seafood Producers Association of Nova Scotia (ASPANS) Southern Gulf of St. Lawrence Snow Crab Trap Fishery continues to operate a wellmanaged and sustainable fishery and, therefore, continued certification to the MSC Principles and Criteria for Sustainable Fishing is awarded.

On the behalf of the MC client, ASPANS, SAI Global would like to extend thanks to the management organization and stakeholders of the Southern Gulf of St Lawrence Snow Crab Fishery who took part in this surveillance audit.

- Assessor: Eric Dunne has extensive senior level experience in all aspects of fishery resource management and policy.
- Lead Assessor: Dr. Ivan Mateo is an assessor with SAI Global. He is a fisheries scientist with 16 years of extensive experience in fisheries science providing scientific advice for the management of tropical and temperate economically important species.

## **1.2 Introduction**

This report sets out the results of the third annual surveillance assessment of:

#### The Affiliation of Seafood Producers Association of Nova Scotia (ASPANS) Southern Gulf of St. Lawrence Snow Crab 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 GTC as the certification body (CB) of record.

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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).



# 2. Fishery Background

#### 2015 Catch Data:

The initial TAC for 2015 was set at 26,036 t for the Southern Gulf of St. Lawrence (crab fishing areas 12, 12E, 12F and 19). This was an increase in TAC of 808.56 t (3.2%) over the 2014 initial TAC. These quotas were further adjusted taking into account quota reconciliation and the distribution of the scientific quota to each fleet. There were significant positive or negative TAC changes in all areas as shown below.

Area	2014	2015		%	2014		2015	
	TAC	TAC	Change	change	Landings	%TAC	Landings	% TAC
12	19,409	23,021	3,613	19%	19,633	101%	23,095	100%
12E	170	189	19	11%	178	105%	192	102%
12F	906	502	(403)	-45%	862	97%	510	102%
19	3,745	2,130	(1,615)	-43%	3,745	100%	2,093	98%
	24,230	25,842	1,613	7%	24,439	101%	25,890	100%

Note: The landings data were as of August 5, 2015 and show all quota was caught.

Table 3. PI 13.2.1 and 3.2.5 original and revised score.

Condition number	Performance indicator (PI)	Status	PI original score	PI revised score
1	3.2.1	Closed (2 <sup>nd</sup> Surveillance)	70	80
2	3.2.5	Closed (1 <sup>st</sup> Surveillance)	70	80

#### **2.1 Fishery observations**

Information taken from DFO 2015

**Fleet structure**: In 2014, 434 vessels were active in the SGSL snow crab fishery as compared to 418 vessels fishing 440 issued licences in 2013. Similar data on fleet structure for 2015 were not available at time of audit.

#### Historical Catch Data:

Snow crab landings from the Southern Gulf of St. Lawrence were low in the 1970s and increased with three periods of high landings: 1981-1986, 1994-1995, and more recently 2002 to 2009 (Figure 1). The peak landing of the entire history was in 2005 at 36,118 t. The landings of snow crab from the Southern Gulf of St. Lawrence in 2014 were 24,439 t from a revised quota of 24,230 t.

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Figure 1. Landings (tonnes) in the Southern Gulf of St. Lawrence snow crab fishery, 1969 to 2014.

The 2014 fishing season in Area 12 opened on May 07 and the last landings were recorded on July 23 with reported landings of 19,633 t from a revised quota of 19,409 t (Tables 4, Figure 1). In accordance with the soft-shelled crab protocol, 8 of 323 grids were closed during the 2014 fishing season. The fishing effort estimated from logbooks has varied from 161,148 to 544,454 trap hauls between 1987 and 2014, with the lowest effort in 2010 and the highest effort in 2002. The fishing effort was 317,689 trap hauls in 2014, an increase from 2013 (296,398 trap hauls) (Table 4).

**Table 4.** Revised quota (2012 to 2014), and landings (tonnes), fishing effort (trap hauls) and catch performance for the snow crab fishery in Area 12, 2006 to 2014.

Fishery descriptor	2006	2007	2008	2009	2010	2011	2012	2013	2014
Revised quota (t) <sup>1</sup>	25,869	23,207	20,900	20,900	7,700	8,585	18,143	22,548	19,409
Landings (t)	25,889	23,243	20,911	20,896	7,719	8,618	18,159	22,645	19,633
CPUE (kg/trap-haul) <sup>2</sup>	64.4	65.7	56.4	48.2	47.9	53.0	68.0	76.4	61.8
Effort (trap hauls)	402,702	353,775	370,762	433,527	161,148	162,604	267,044	296,398	317,689
Soft-shelled crab (%) in catches <sup>3</sup>	3.1	2.0	3.0	5.0	6.5	6.2	3.7	2.8	4.4
Grids closed (total of 323)	11	5	3	78	74	233	7	5	8

<sup>1</sup> For reasons of interannual quota adjustments, reconciliations, and re-distribution of the scientific quota among areas, the revised quota does not necessarily correspond to the TAC in the notice to harvesters <sup>2</sup> CPUE values are not standardized and do not account for changes in management measures <sup>3</sup> The percentage is based on a durometer reading of 68. Catches are defined as male crab of all sizes (commercial >= 95 mm and non-commercial) in traps.

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The 2014 fishing season in Area 19 opened on July 15 and the last date of landings was August 24 with reported landings of 3,745 t from a revised quota of 3,745 t (Tables 5, Figure 1). In accordance with the white crab protocol (shell hardness <72 durometer units), no sector within Area 19 was closed during the 2014 fishing season. The fishing effort in Area 19 has varied from 11,138 to 56,517 trap hauls between 1987 and 2014, with the lowest effort in 2010 and the highest effort in 2004. The effort in 2014 was 25,407 trap hauls (Table 5).

**Table 5.** Revised quota (2012 to 2014) and landings (tonnes), fishing effort (trap hauls) and catch performance for the snow crab fishery in Area 19, 2006 to 2014.

Fishery descriptor	2006	2007	2008	2009	2010	2011	2012	2013	2014
Revised quota (t) <sup>1</sup>	2,000	3,074	3,002	2,433	1,360	1,703	2,907	2,654	3,745
Landings (t)	1,989	3,034	2,929	2,370	1,360	1,701	2,906	2,657	3,745
CPUE (kg/trap-haul) 2	84.4	71.3	76.3	71.4	122.1	133.3	178.1	148.5	147.4
Effort (trap hauls)	23,566	42,553	38,388	33,193	11,138	12,761	16,317	17,890	25,407
White crab (%) in catches <sup>3</sup>	6.1	7.4	9.0	11.6	6.4	11.5	4.5	3.0	1.0
Sectors closed <sup>4</sup>	2/4	0/4	4/4	9/9	4/9	0/9	0/9	0/9	0/9

<sup>1</sup> For reasons of interannual quota adjustments, reconciliations, and re-distribution of the scientific quota among areas, the revised quota does not necessarily correspond to the TAC in the notice to harvesters.

<sup>2</sup> CPUE values are not standardized and do not account for changes in management measures.

<sup>3</sup> The percentage is based on a durometer reading of 72. Catches are defined as male crab of all sizes (commercial >= 95 mm and non-commercial) in traps.

<sup>4</sup> Total number of sectors was changed from 4 to 9 sectors in 2009.

The 2014 fishing season in Area 12E began on May 04 and the date of last landings was July 01 with reported landings of 178 t from a revised quota of 170 t (Tables 6, Figure 1). The fishing effort in Area 12E has varied from 1,825 to 10,074 trap hauls between 1995 and 2014, with the lowest effort in 2010 and the highest effort in 2006. The fishing effort in Area 12E decreased from 5,097 trap hauls in 2013 to 3,765 trap hauls in 2014. In accordance with the soft-shelled protocol, no grids within Area 12E were closed during the 2014 fishing season.

**Table 6.** Revised quota (2012 to 2014) and landings (tonnes), fishing effort (trap hauls) and catch performance for the snow crab fishery in Area 12E, 2006 to 2014.

Fishery descriptor	2006	2007	2008	2009	2010	2011	2012	2013	2014
Revised quota (t) <sup>1</sup>	550	221	400	200	67	75	251	204	170
Landings (t)	411	220	187	67	50	76	185	204	178
CPUE (kg/trap-haul) <sup>2</sup>	40.8	37.2	20.3	14.4	27.4	31.5	32.9	40.1	47.3
Effort (trap hauls)	10,074	5,914	9,232	4,653	1,825	2,413	5,623	5,097	3,765
Soft-shelled crab (%) in catches <sup>3</sup>	7.8	1.3	10.1	7.8	14.7	8.4	3.3	15.9	7.8
Grids closed (total of 8)	2	0	0	2	0	0	0	0	0

<sup>1</sup> For reasons of interannual quota adjustments, reconciliations, and re-distribution of the scientific quota among areas, the revised quota does not necessarily correspond to the TAC in the notice to harvesters <sup>2</sup> CPUE values are not standardized and do not account for changes in management measures.

<sup>3</sup> The percentage is based on a durometer reading of 68. Catches are defined as male crab of all sizes (commercial >= 95 mm and non-commercial) in traps.

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In Area 12F, the fishery in 2014 opened on May 01 and the last date of recorded landings was July 22 with reported landings of 882 t from a revised quota of 906 t (Tables 7, Figure 1). The fishing effort in Area 12F has varied from 4,437 to 23,163 trap hauls between 1995 and 2014, with the lowest effort in 2002 and the highest effort in 2014. The fishing effort increased from 11,086 trap hauls in 2013 to 23,163 trap hauls in 2014. In accordance with the soft-shelled protocol, no sector within Area 12F was closed during the 2014 fishing season.

**Table 7.** Revised quota (2012 to 2014) and landings (tonnes), fishing effort (trap hauls) and catch performance for the snow crab fishery in Area 12F, 2006 to 2014<sup>1</sup>.

Fishery descriptor	2006	2007	2008	2009	2010	2011	2012	2013	2014
Revised quota (t) <sup>1</sup>	815	408	585	465	420	314	706	543	906
Landings (t)	787	370	431	309	420	313	706	543	882
CPUE (kg/trap-haul) <sup>2</sup>	55.9	30.2	27.8	22.0	29.3	32.5	41.8	49.0	38.1
Effort (trap hauls)	14,079	12,252	15,504	14,045	14,335	9,631	16,890	11,086	23,163
Soft-shelled crab (%) in catches <sup>3</sup>	3.5	2.4	7.3	11.4	8.6	2.6	9.4	2.4	1.7
Sectors closed (total of 3)	0	1	3	3	2	0	0	0	0

<sup>1</sup> For reasons of interannual quota adjustments, reconciliations, and re-distribution of the scientific quota among areas, the revised quota does not necessarily correspond to the TAC in the notice to harvesters <sup>2</sup> CPUE values are not standardized and do not account for changes in management measures.

<sup>3</sup> The percentage is based on a durometer reading of 68. Catches are defined as male crab of all sizes (commercial >= 95 mm and non-commercial) in traps.

1 Initial quota announced was 1,658.84t

#### 2014 CPUE Data

Catch per unit of effort (CPUE) expressed as kg per trap-haul (kg/th) is calculated directly from logbook data as the ratio of total landings (kg) to total effort (trap-hauls). CPUE values are not standardized and do not account for changes in management measures and fishing practices and as a result may not be directly proportional to biomass.

In Area 12, the annual mean CPUE decreased in 2014 (68.1 kg/th) compared to 2013 (Figure 2). In Area 19, the CPUE (147.4 kg/th) in 2014 remained at the same level as 2013 (Figure 2). The CPUE increased in Area 12E (47.3 kg/th) in 2014 compared to 2013 while in Area 12F, the CPUE (38.1 kg/th) decreased in 2014 compared to 2013 (Figure 2).

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**Figure 2.** Catch per unit effort (kg per trap haul) in the Southern Gulf of St. Lawrence snow crab fishery, Areas 12, 19, 12E and 12F, based on logbooks, 1997 to 2014.

#### **Fishing Mortality:**

The exploitation rate in the Southern Gulf of St. Lawrence is calculated as the ratio between the catch of the fishery in the year of the assessment and the commercial biomass estimated from the trawl survey in the previous year. In 2014, the exploitation rate was 38.3% (Source: DFO 2013 Scientific survey); between 1998 and 2013 exploitation rates varied from 21% to 45% (Figure 3).

Total mortality is calculated as residual biomass estimated from the survey in the year of the assessment divided by the biomass available to the fishery as estimated in the previous year's survey. In 2014, total mortality was estimated at 63.7% (Figure 3). The total mortality has varied between 45.8% and 82.5% since 1997, except for 2011 when it was estimated at 5.6% (Figure 3).

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Year of the fishery

**Figure 3.** Exploitation rates (means and 95% confidence intervals) by the fishery and total mortality of commercial-sized adult male snow crab in the Southern Gulf of St. Lawrence, 1997 to 2014. The 2011 total mortality point is isolated from the series due to uncertainties.

#### **Enforcement activities:**

For the calendar year 2014, there were a total of 9,129 Fishery Officer patrol hours expended on the crab fishery in the SGSL Region, 142 warnings issued and 119 charges laid compared to 11,567 hours, 64 warnings and 63 charges laid in 2013. The increase in violations in 2014 was caused by an increased emphasis on monitoring VMS requirements which resulted in the detection of considerable technical violations caused by harvesters unknowingly using outdated equipment. The availability of faster patrol vessels also resulted in increased infractions being detected.

A Compliance Review will be conducted before the end of 2015.

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### 2.2 Stock status observations

#### Assessment:

Snow crab in fishing areas 12, 19, 12E, and 12F comprise a single biological population and the Southern Gulf of St. Lawrence stock is considered as one unit for assessment purposes.

The survey design and biomass estimation polygon covers the entire area of the Southern Gulf of St. Lawrence defined by the 20 to 200 fathoms depth contours (corresponding to the areal extent of bottom temperatures < 5 °C which are favourable for snow crab and encompassing the area of the Southern Gulf of St. Lawrence biological unit) (Figure 4). The survey spatial sampling design partitioned this area into square grids of 12.7 km x 12.7 km. In 2014, the number of sampling stations remained at 355. The 352 successful sampling stations from the 2013 trawl survey were used as fixed stations as per the recommendations from the 2014 scientific peer review (DFO 2014a) and a new set of 3 sampling stations (the 3 that were abandoned in 2013) was generated randomly. A total 353 stations were successfully trawled in 2014; two sampling squares had to be abandoned due to failures to successfully trawl the area. The survey in 2014 was financed through a collaborative agreement with the fishing industry under Section 10 of the Fisheries Act.



**Figure 4.** The survey and estimation polygon of 57,840 km<sup>2</sup> used for the 2014 snow crab stock assessment in the Southern Gulf of St. Lawrence (all of the coloured areas) and corresponding estimation polygons for the four crab fishing areas (12, 12E, 12F, and 19). The unassigned zone north of areas 12E and 12F (label A) and buffer zones (labels B and C) are also shown.

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#### **Stock Condition:**

#### Fishable Biomass

The biomass of commercial-sized adult males in the Southern Gulf of St. Lawrence from the 2014 trawl survey was estimated at 67,534 t (95% confidence interval (C.I.) range of 60,994 t to 74,579 t (Figure 5). The estimated commercial biomass in the Southern Gulf of St. Lawrence increased by 2.5% relative to the 2013 estimate (65,868 t; 95% C.I. 56,283 t to 76,610 t).

Recruitment to the fishery at the time of the 2014 survey was 43,630 t (95% C.I. 36,774 t to 51,388 t), comprising 65% of the commercial biomass (Figure 5). Recruitment to the fishery in 2014 increased by 11.9% compared to the 2013 estimate. The residual biomass (carapace conditions 3 to 5) of commercial-sized adult male crab after the 2014 fishery was estimated at 23,897 t (95% C.I. 20,927 t to 27,168 t), a decrease of 11.1% compared to the 2013 estimate (Figure 5).



Year of the survey

**Figure 5.** Total commercial biomass, recruitment commercial biomass, and residual commercial biomass (in 1,000 t; means with 95% confidence intervals) in the Southern Gulf of St. Lawrence, 1997 to 2014.

A second fishery independent survey of the Southern Gulf of St. Lawrence is used to provide an index of biomass of commercial-sized adult male crab. The multi-species research vessel bottom trawl survey, a stratified random design, has been conducted annually in September since the early 1970's although the estimation of commercial-sized adult male crab biomass is available only since 2001.

Over the available time series, the September multi-species bottom trawl survey index shows generally similar trends in biomass (within the estimation precisions of the surveys) in commercial adult male snow crab biomass between 2001 and 2014 as the biomass estimates from the dedicated snow crab trawl survey (Figure 6).

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Year

Figure 6. Index of trawlable biomass (in tonnes, means and 95% confidence intervals) of adult male snow crab  $\geq$ 95 mm carapace width in the September RV survey for 2001 to 2014 excluding 2003, based on a geographic area comparable to that used for the current snow crab assessment.

#### **Recruitment and Reproduction**

The abundance of mature females increased in 2014 compared to 2013 but was lower than the historical average (1997-2013), (Figure 7). The decrease of pubescent females observed in the 2014 survey suggests that the abundance of mature females may decrease in the coming years (Figure 7)



1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

Year of the survey

Figure 7. Estimated abundances (in millions; means and 95% confidence intervals) of mature female (black circle symbols) and pubescent females (open square symbols) in the Southern Gulf of St. Lawrence based on the trawl surveys during 1997 to 2014.

Based on abundances of adolescent males of R-2, R-3 and R-4 from recent surveys, the predicted recruitment of commercial-sized adult male crab for the 2015 survey, available for the 2016 fishery, was estimated at 42,300 t (95% C.I. 32,760 to 51,840 t; Figure 8).

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**Figure 8.** Estimated abundances (in millions; means and 95% confidence intervals) of R-4 (upper panel), R-3 (middle panel) and R-2 (lower panel) adolescent male crabs in the Southern Gulf of St. Lawrence for the survey years 1997 to 2014.

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#### **Biological Reference Points**

Within the Precautionary Approach (PA) framework (DFO 2009), the Limit Reference Point for biomass ( $B_{lim}$ ) defines the critical/cautious zones and an upper stock reference ( $B_{USR}$ ) delimits the cautious/healthy zones on the stock status axis. The upper stock reference point ( $B_{USR}$ ) is 41,400 t of commercial-sized adult males of all carapace conditions as estimated from the trawl survey (DFO 2012b). Commercial sized adult male crabs of all carapace conditions are available for the fishery in the year following the trawl survey. The biomass limit reference point ( $B_{lim}$ ) value is 10,000 t (DFO 2012b). The biomass limit reference point was chosen as the lowest biomass of hard shelled commercial sized adult males which produced good recruitment rates of small male crabs of 34-44 mm CW (referred to as Instar VIII) (DFO 2010). The removal reference point ( $F_{lim}$ ) is 34.6% (DFO 2012b). The Southern Gulf of St. Lawrence commercial biomass estimate from the trawl survey is used for evaluating catch options relative to the defined reference points.

The trajectory of stock abundance (biomass of commercial-sized adult male crab as estimated from the trawl survey in the year before the fishery) versus exploitation rate in the fishery year for snow crab from the Southern Gulf of St. Lawrence is shown in Figure 9. The commercial biomass has varied between 30,920 t and 103,429 t during 1998 to 2014. Over this same period, exploitation rates have varied between 20.8% and 45.0%. The estimated biomass from the 2014 snow crab survey, which would be available to the fishery in 2015, is 67,534 t (95% CI 60,994 to 74,579 t). The 2014 survey biomass estimate is in the healthy zone.

Harvest decision rules that conform to the PA have been developed (DFO 2014b). These PA compliant harvest decision rules include rules for which the exploitation rate exceeds  $F_{lim}$  when the stock is in the healthy zone (DFO 2014b). The Snow Crab Advisory Committee agreed on the proportional harvest decision rule (variant 4 in DFO 2014b, Figure 10) to derive the exploitation rate and the TAC based on the estimated biomass from the Southern Gulf of St. Lawrence snow crab survey. This decision rule and the corresponding estimated commercial biomass from the 2014 survey of 67,534 t, results in a selected exploitation rate of 38.55% and corresponding to a TAC of 26,036 t for the 2015 fishery (Figure 10).

A risk analysis was developed for the decision rule TAC and relative to other catch levels in 2015 (Table 8). The risk analysis indicates that the TAC derived from the harvest decision rule will result in a near zero chance of the residual biomass after the fishery being less than  $B_{lim}$  and a near 100% chance of the biomass for the next year's fishery being above  $B_{USR}$  and in the healthy zone of the PA (Table 8). The risk analysis also provides predictions of the commercial biomass in the 2015 survey, assuming the corresponding catch level is taken in 2015. At the decision rule TAC value of 26,036 t for the 2015 fishery, the commercial biomass predicted for the 2015 post-fishery survey and for the 2016 fishery, is 65,680 t, with a 95% confidence interval range of 54,800 to 76,410 t, a value similar to the 2014 survey

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**Figure 9.** Trajectory of stock abundance (biomass of commercial-sized adult male crab as estimated from the trawl survey in year before the fishery) versus exploitation rate in the fishery year for snow crab from the Southern Gulf of St. Lawrence. Year of the fishery is labeled on the figure. Error bars are 95% confidence intervals. White circle symbols are biomass and exploitation rate levels used to define the reference points. The grey squares are the years when the reference points were used within the PA to decide on the fishery quota. The biomass estimate available for the 2015 fishery (with 95% confidence interval) is also shown as the white square.



**Figure 10.** Harvest decision rule (solid black line; proportional variant 4; DFO 2014b) for the Southern Gulf of St. Lawrence snow crab fishery and corresponding exploitation rate (0.3855) resulting from the commercial biomass estimate (67,534 t) for the 2015 fishery (dashed-dotted line).

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**Table 8.** Risk analysis of catch options in 2015 for the Southern Gulf of St. Lawrence snow crab fishery showing probabilities of exceeding  $F_{lim}$ , of the hard-shell commercial-sized adult male remaining biomass falling below  $B_{lim}$ , and of the total commercial-sized adult male biomass being equal to or above  $B_{USR}$  post-fishery in 2015. The catch level of 26,036 t based on the agreed harvest decision rule is highlighted in the table. Also shown is the predicted commercial biomass from the 2015 survey assuming each corresponding catch level is fished.

	Probability			_
	> F <sub>lim</sub>	< B <sub>lim</sub>	>= B <sub>USR</sub>	Expected biomass for
Catch level (t)	(0.346)	(10,000 t)	(41,400 t)	the 2015 survey
20,000	0	0	1	71,720 (60,840-82,450)
21,000	0.02	0	1	70,720 (59,840-81,450)
22,000	0.13	0	1	69,720 (58,840-80,450)
23,000	0.38	0	1	68,720 (57,840-79,450)
23,370	0.50	0	1	68,350 (57,080-79,200)
24,000	0.70	0	1	67,720 (56,840-78,450)
25,000	0.91	0	1	66,720 (55,840-77,450)
26,000	0.99	0	1	65,720 (54,840-76,450)
26,036	0.99	0	1	65,680 (54,800-76,410)
27,000	1	0	1	64,720 (53,840-75,450)
28,000	1	0	1	63,720 (52,840-74,450)
29,000	1	0	1	62,720 (51,840-73,450)
30,000	1	0	1	61,720 (50,840-72,450)
39,330	1	0.5	0.95	52,390 (41,510-63,120)
50,210	1	1	0.50	41,510 (30,630-52,240)

## 2.3 Relevant changes to Legislation and Regulations

With respect to Endangered Threatened Protected (ETP) species, mandatory submission of SARA logbooks, whether there were encounters or not in 2015, was required as a condition of license. Submissions are required at the end of the fishing season; therefore, more comprehensive information is expected to be available next year. In the past, if no interaction occurred a logbook was not required to be submitted.

On the subject of Species at Risk, descriptions of critical habitat for leatherback turtle and three species of wolffish will be available for public consultation on the Species at Risk Registry in 2015-16 and subsequent Critical Habitat Protection Order proclamation.

With respect to ongoing research activities Fisheries and Oceans Canada, Gulf Region continues to work with Quebec and Newfoundland Labrador Regions on the development of a Marine Protected Area Network in the bioregion of the Gulf of St. Lawrence. Ecological data has been gathered and is being assessed, through a science process, to determine priority conservation areas. Socio-economic information is being collected and will be assessed to determine priority economic activity areas. The socio-economic information will be validated with stakeholders over the next year (winter 2016).

Work is ongoing to undertake an ecological risk assessment of three coral and sponge areas in the Gulf of St. Lawrence. This assessment is in conjunction with the Sensitive Benthic Areas policy for fisheries management. Work continues on the collaborative research program in the

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Northumberland Strait, the initiative is the Northumberland Strait Ecosystem Monitoring Partnership and is considering the cumulative impact of activities on the Strait. The Community Aquatic Monitoring Program continues in 35 estuaries in the Gulf Region, this is the thirteenth year of this program

### **2.4 Relevant changes to Management Regime**

The Gulf Region's senior executive confirmed that no changes occurred to the various aspects of how the fishery is managed; data collection, governance arrangements and consultative process remain the same. As a result of faster patrol vessels and more stringent VMS monitoring requirements, a substantial increase in violation detected occurred in 2014 over 2013. The trawl survey will continue on an annual basis and annual updates of information and analysis being provided to industry participants through stock assessment updates.

Movement to ITQ regimes by all fleets in SGSL snow crab is still under active consideration.

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## **3. The Surveillance Process**

The 3<sup>rd</sup> Annual Surveillance Audit followed the current version of MSC procedures and methodologies and implemented by SAI Global accredited MSC Procedures (QP).

MSC Scheme Document	Issue Date
MSC Certification Requirements v1.3	January 14, 2013
MSC FCR and Guidancev2.0	October 1, 2014
General Certification Requirements v.2.1	February 20, 2015
Surveillance Reporting Template v1.0	October 8, 2014

- Assessor: Eric Dunne has extensive senior level experience in all aspects of fishery resource management and policy.
- Lead Assessor: Dr. Ivan Mateo is an assessor with SAI Global. He is a fisheries scientist with 16 years of extensive experience in fisheries science providing scientific advice for the management of tropical and temperate economically important species.

Although Eric Dunne was a member of the full assessment team member, the surveillance team is different form the original team due to SAI Global staff turn-over; this team is the same as for the 2<sup>nd</sup> surveillance audit and experience are summarized below.

#### Dr. Ivan Mateo - Lead Assessor

Dr. Ivan Mateo has over 15 years' experience working with natural resources population dynamic modeling. His specialization is in fish and crustacean population dynamics, stock assessment, evaluation of management strategies for exploited populations, bioenergetics, ecosystem-based assessment, and ecological statistical analysis. Dr. Mateo received a Ph.D. in Environmental Sciences with Fisheries specialization from the University of Rhode Island. He has studied population dynamics of economically important species as well as candidate species for endangered species listing from many different regions of the world such as the Caribbean, the Northeast US Coast, Gulf of California and Alaska. He has done research with NMFS Northeast Fisheries Science Center Ecosystem Based Fishery Management on bioenergetic modeling for Atlantic cod He also has been working as environmental consultant in the Caribbean doing field work and looking at the effects of industrialization on essential fish habitats and for the Environmental Defense Fund developing population dynamics models for data poor stocks in the Gulf of California. Recently Dr. Mateo worked as National Research Council postdoc research associate at the NOAA National Marine Fisheries Services Ted Stevens Marine Research Institute on population dynamic modeling of Alaska sablefish.

#### Eric Dunne - Assessor

Eric has over 45 years' experience in the economic, policy and operations analyses and executive management of the full range of fishery management activities and functions. Since 1995, he has been a fishery consultant based in St. John's, Newfoundland, Canada, specializing in comprehensive analysis of all aspects of fisheries management activities and issues. With an educational background in the economics of fishing, he had previously held senior positions in the Department's economics and policy development functions. He later gained experience in the area of fisheries innovation and technology development. As well, he has lectured on fisheries management and fisheries economics in the Masters of Marine Studies Program at Memorial University of Newfoundland and Labrador.

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Most recently he has become fully versed in the overall MSC assessment process. In this context, he has assessed all aspects of the management systems utilized for a variety of finfish and shellfish fisheries from the sub-Arctic areas of the Northwest Atlantic to the Gulf of Mexico.

#### Announcement of Surveillance Audit

The consultation plan involved a written notification to the list of stakeholders from the initial assessment of this fishery. In many cases follow up mails were also sent to ensure that stakeholders had been provided with sufficient opportunity to meet with, or submit information on the fishery to, the assessment team.

Table 9 provides a list of the stakeholders and management organisations engaged in the process either through meetings, conference call or submission of information. These consultations focused on the questions and evidence that demonstrates the status of the Southern Gulf of St Lawrence snow crab stock, the performance of the fishery throughout the year and measures that supported the fulfilment of the Conditions of Certification placed upon ASPANS at the initial certification decision.

An offsite desktop meeting with the fishery management organization of the SGSL snow crab fishery, the Department of Fisheries and Oceans (DFO), was held on September 23, 2015.

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.

Given that on the 3<sup>rd</sup> surveillance there were no conditions left, the CAB followed MSC v2 Process to provide a reduced surveillance.

#### MSC 2.0/ CR 7.23.4.3 states:

"The surveillance level for the fishery shall be determined on the basis of the confidence of the CAB in its ability to verify information, and progress towards meeting conditions, remotely. Surveillance level 1 may only be chosen if, following an assessment or surveillance audit, the fishery has no outstanding conditions".

Therefore, the 3rd Annual Surveillance Audit was conducted as a desktop offsite audit.

Surveillance Level	Year 3	Year 4
Level 1	<i>Off-Site Surveillance Audit</i>	Review of information and reduced re-assessment

#### Table 5.3: Fishery Surveillance Program



The purposes of the Surveillance Audit were:

- 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 organisations that comprise the management system and regime for ASPANS. Through this process, a stakeholder consultation plan was developed as part of the surveillance assessment.

Individual letters were sent to stakeholders and management agencies, with follow up e-mails and information on the objectives of the surveillance audit. From this, a surveillance off-site meeting plan was organized. However, only one meeting was necessary: with the Client and DFO. There was no participation of other stakeholders (i.e. NGOs, Academic Institutes).

- Offsite Surveillance Audit date was September 23<sup>rd</sup> 2015.
- Off-site audits were performed by Dr. Ivan Mateo, and Mr. Eric Dunne.

Meetings generally consisted of a 90-180 minute discussion with a pre-set generic agenda used in each case. 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. The review was performed using the standard MSC procedures.

Overall, the surveillance audit took place in one day, an off-site surveillance on September 23<sup>rd</sup> 2015.

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## **3.1 Summary of stakeholder and client meetings**

Based on the stakeholder consultation plan a considerable number of stakeholders were contacted directly by surface mail and e-mail. From this process a final direct consultation plan for the audit was undertaken. Table 9 details the dates, meeting locations and organisations that were consulted through direct meetings or conference calls during the third surveillance assessment. All meetings were conducted by the Surveillance Team Assessors.

**Table 9.** Consultation Meetings during on 3<sup>rd</sup> Surveillance Assessment of the Southern Gulf of St. Lawrence snow crab Trap Fishery.

Name Organization	Present at Meetings	Location	Venue	Date/Time	Purpose
Fisheries and Oceans Gulf - Moncton, NB	Dr. Ivan Mateo Eric Dunne Peter Norsworthy (Client) Manon Mallet Mikio Moriyasu Ron Belliveau Ray MacIsaac Carole Godin Sylvie Léger Leroy MacEachern	Offsite Audit	Offsite Audit	23 <sup>rd</sup> September, 2015 9:30 AM	Status of the fishery, stock and stock assessment and the management system given that the milestones contained in the Action Plan approved for the two Conditions attached to Certification of this fishery were completed and the conditions were closed on the first year. To discuss details of Audits and client views on several topics as well as involvement in carrying out Action Plan.



# 4. Results

The general 'Conditions' set for each Certificate holder were as follows:

- ASPANS 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 standards of certification;
- ASPANS must agree by contract to be responsible financially and technically for compliance with required surveillance audits by an accredited MSC certification body, as a contract must be signed and verified by GTC (ex-SAI Global) prior to certification being awarded;
- ASPANS must recognize that MSC standards require a full-evaluation for certification (as opposed to yearly monitoring for update purposes) every five years;
- Prior to receiving final certification, ASPANS shall develop, an Action Plan for meeting the Condition for continued Certification and have it approved by GTC (ex-SAI Global).

An Action Plan was submitted and accepted prior to initial certification.

During the surveillance audit, ASPANS was deemed to be in conformance with the general conditions of certification. Prior to the initial certification of the client fishery, an Action Plan was developed and submitted to GTC (ex-SAI Global) by the client and accepted by the assessment team. During the surveillance audit, the evaluation of any changes to the client group was also undertaken.

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# The Specific Conditions of Certification

During the initial assessment of the SGSL snow crab fishery, a conditional score was allocated for PIs 3.2.1 and 3.2.5 of the MSC Default Scoring Tree.

Condition number	Condition	Performance indicator	Score
1	Documentary evidence shall be provided that the fishery has adopted clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.	3.2.1	70
2	Documentary evidence shall provide there is a system of monitoring and evaluating the performance of the fishery- specific management system against its objectives and that there is an effectives and timely review of the fishery-specific management system in place.	3.2.5	70

# Table of Conditions, Action Plan and Observations from Evidence Collected during the Surveillance Audit

Item 5:	Condition 1 (of 2)		
Performance Indicator & Guidepost Issue	PI 3.2.1 Fishery-specific objectives The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.	Guide post 80 (Issue a) Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the management system.	
Condition 1	Documentary evidence shall be provided that the fishery has adopted clear, specif objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.		
	By surveillance audit Year 1, the IFMP for the SGSL snow crab should be shown to contain fishery objectives designed to achieve the requirements of Principles 1 and 2.		
	By surveillance audit Year 2, the IFMP, including the specific objectives to achieved requirements of Principles 1 and 2, should be adopted.		

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Action Plan	<ul> <li>The draft IFMP will be developed in accordance with IFMP development guidelines 43 and reviewed internally by DFO. DFO will ensure that the IFMP is consistent with MSC's Principles 1 and 2.</li> <li>The draft IFMP will be presented to the SGSL snow crab advisory committee and any other relevant committees or groups for stakeholder consultations.</li> <li>Upon completion of stakeholder consultations, the final IFMP shall be published and made publically available.</li> <li>By the first annual surveillance audit, the CAB shall be presented with evidence that the IFMP has been developed and that consultations with relevant committees or groups have taken place or are scheduled.</li> <li>By the first annual surveillance audit, the CAB will be presented with evidence that the IFMP that has been developed is consistent with MSC principles 1&amp;2.</li> <li>By the second year surveillance audit, the CAB will be presented with evidence that the IFMP that has been developed is consistent with MSC principles 1&amp;2.</li> <li>By the second year surveillance audit, the CAB will be presented with evidence that the IFMP is published, consultations have been completed and the IFMP adopted.</li> </ul>
Evidence YEAR 1	This surveillance audit focused on the work undertaken to satisfy Year 1 milestones. A draft of an IFMP for the snow crab in SGSL CFAs 12, 12E, 12F and 19 containing fishery-specific objectives has been developed and circulated in July 2013 to industry for review and comment by end of August 2013. The final approval is expected at the 2014 SGSL Snow Crab Advisory Committee.
Conclusion and Outcome on Condition 1	The evidence presented during the first surveillance audit demonstrated that ASPANS had fulfilled the requirements of the Action Plan for the Year 1 milestones of Condition 1. The Condition was not closed out since the original rational and the score (70) for this condition remains unchanged. Status of Condition 1: Open – On Target.
<i>Evidence YEAR 2</i>	Before the second surveillance audit site visit meeting, evidence was presented to the assessment team that consultations were completed and the IFMP was adopted and published in September 2014. This evidence package was received on September 16 2014 and contained the published IFMP and a list of the public consultations.
Conclusion and Outcome on Condition 1	The evidence presented during the 2 year surveillance audit demonstrates that ASPANS has fulfilled the requirements of the Action Plan for the Year 2 milestones of Condition 1. The Condition is now closed out since the original rational and this condition was rescored. Status of Condition 1: Closed.

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Item 5:	Condition 2 (of 2)					
Performance Indicator & Guidepost Issue	PI3.2.5MonitoringandManagementPerformanceEvaluationThere is system for monitoring andevaluating the performance of thefishery-specificmanagementsystem against its objectives.	Guide post 80 (Issue b) The fishery-specific management system is subject to regular internal and occasional external review.				
Condition 2	Documentary evidence shall be provided that there is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives and that there is an effective and timely review of the fishery-specific management system in place. By surveillance audit Year 1, evidence must be provided that there is in place an effective review and evaluation of the fishery specific management system. This condition is related to the Condition 1 in that the review processes required to					
Action Plan	<ul> <li>The draft fishery management performance monitoring and evaluation (FMPME) methods will be developed in accordance with IFMP development guidelines and reviewed internally by DFO.</li> <li>The draft FMPME will be presented to the SGSL snow crab Advisory Committee and any other relevant committees or groups for stakeholder consultations.</li> <li>Upon completion of stakeholder consultations, the final FMPME shall be incorporated into the IFMP.</li> <li>By the first annual surveillance audit, the CAB shall be presented with evidence that the FMPME has been developed, relevant stakeholders have been consulted and the IFMPME has been developed.</li> </ul>					
Evidence YEAR 1	During the first surveillance audit site visit meeting, evidence was presented to the assessment team that the FMPME has been developed, relevant stakeholders have been consulted and the FMPME has been adopted in policy and is contained in the draft of the IFMP, which is now been reviewed by industry.					
Conclusion and Outcome on Condition 1	The evidence presented during the fulfilled the requirements of the Activis therefore considered as a result or and evaluation of the fishery specific <b>Status of Condition 2: Closed at first</b>	surveillance audit demonstrates that ASPANS has on Plan for the Year 1 milestones of Condition 1. It f the surveillance Audit 1 that an effective review management system was put in place. surveillance audit. Score of PI 3.2.5 was revised.				

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## **Harmonization of Certificates**

There are no harmonization issues for the Southern Gulf of St Lawrence snow crab trap fishery.



## 5. Conclusion

The assessment team conducting this 3<sup>rd</sup> surveillance audit confirms that ASPANS have met the general requirements for continued certification to the MSC Principles and Criteria for Sustainable Fishing.

The assessment team also concludes that there is sufficient evidence and information provided by the clients and substantiated through the course of consultation meetings during the surveillance audit to confirm that commitment to meeting the specific conditions of certification have been met. Therefore, the assessment team recommends that continued certification be awarded to the respective client fisheries:

• Southern Gulf of St. Lawrence Snow Crab Trap Fishery

SAI Global determines that the timelines and related Action Plans for the Condition placed on the client fisheries remain unchanged from the original conditions set and that these will be subject to annual surveillance audit, next scheduled in September 2016. In the interim period, the client fisheries are obliged to provide up-dates as per the general conditions of certification to changes in the client group and also with respect to:

## 5.1 Outcome of SAI Global Assurance Services Decision

SAI Global determines that in each case:

• Southern Gulf of St. Lawrence Snow Crab Trap Fishery

Continue 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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## References

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**Meetings:** Refer to table of meetings itemized in Section 3 (Table 3).

#### **Reports & publications:**

DFO. 2015. Assessment of snow crab in the Southern Gulf of St. Lawrence (Areas 12, 19, 12E and 12F) and advice for the 2015 fishery. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2015/013.

DFO. 2014 OFFSHORE ECOLOGICALLY AND BIOLOGICALLY SIGNIFICANT AREAS IN THE SOUTHERN GULF OF ST LAWRENCE BIOREGION. DFO Can.Sci. Advis. Sec. Sci.Advis. Rep.2014/041, August 2014

DFO. 2014b. Assessment of candidate harvest decision rules for compliance to the Precautionary Approach framework for the snow crab fishery in the southern Gulf of St. Lawrence. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2014/007.

DFO. 2012b. Revised reference points for snow crab to account for the change in estimation area of the southern Gulf of St. Lawrence biological unit. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2012/002.

Documentation provided by client (ASPANS)

# The following documentation relevant to both (Maritimes and sGSL) units of certification were provided to the CAB:

ASPANS Crab RAPs Feb and Mar 2015 .doc Client Submission Surveillance September 2015.doc

# The following backup files are provided as part of the MSC Snow Crab Southern Gulf of St. Lawrence submission:

2014 Gulf Region CP Report for MSC 2014 Snow Crab Advisory Committee Meeting Minutes 2015\_013 Snow Crab Science Advisory Report Letter from RDG for Gulf region Sep2015 Notice to Harvesters – 2015 Snow Crab (CHP Area 12) Notice to Harvesters – 2015 Snow Crab (CHP Area 12E) Notice to Harvesters – 2015 Snow Crab (TAC and Scientific Survey Quota) Notice to Harvesters – Temporary Quota Transfers (April 2015) Snow Crab Summary of Stock Status – Peer Review – Jan2015

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# **Appendices**

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

The report shall include the scoring tables for any specific PIs that are re-scored. Use the evaluation table in the relevant version of the Full Assessment Reporting Template. Changes made to the original rationales should be identified in some way, such as by using a different coloured font.

[Reference: FCR 7.23.12.5]

## Revision of PI 3.2.1 scoring at 2<sup>nd</sup> Surveillance audit

PI 3.2	.1	The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2					
Scoring Issue		SG 60	SG 80	SG 100			
а	Guidepost	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.			
	Met?	Y	Y	Ν			



PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2	
	Justification	The current updated IFMP for SGSL Snow Crab was adopted by the Gulf R February, 2014 and was published on the DFO website in Septembe (http://www.inter.dfo-mpo.gc.ca/Gulf/FAM/IMFP/2014-Snow-Crab-Gulf-Reg This document meets the Departmental Template for IFMPs and contains specific objectives in Section 10. The current IFMP for SGSL Snow Crab was adopted by the Gulf Region in F 2014 and is now published on the DFO website in Sep 2014.(http://www.inter.dfo-mpo.gc.ca/Gulf/FAM/IMFP/2014-Snow-Crab-Gu Region). This document meets the Departmental Template for IFMPs and fishery specific objectives in Section 10. These objectives are both short- a term and are now explicitly part of the SGSL Snow Crab fishery management as they will be reviewed on an ongoing basis in the Regions advisory co system. They are generally consistent with achieving MSC's Principles 1 and While the fishery specific objectives contained in Section 10 of the new SG Crab IFMP are explicit in the fishery management system and fairly well they are all not actually measurable and have yet to be proven to democ consistent with achieving MSC's Principles 1 and 2 outcomes. Therefore a 100 could not be given at this time.	egion in r, 2014. gion). s fishery ebruary, otember, <u>llf-</u> contains nd long- : system, mmittee 2. SL Snow defined, onstrably score of
References         The new IFMP for SGSL Snow Crab (http://www.inter.d.           mpo.gc.ca/Gulf/FAM/IMFP/2014-Snow-Crab-Gulf-Region).         (http://www.inter.d.			
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDI		MBER (if relevant):	N/A



# Revision of PI 3.2.5 scoring at 1<sup>st</sup> Surveillance audit

PI 3.2.5		There is a system of monit specific management syste There is effective and time	s a system of monitoring and evaluating the performance of the fishery- c management system against its objectives s effective and timely review of the fishery-specific management system				
Scoring	Issue	SG 60	SG 80	SG 100			
а	Guidepost	The fishery has in place mechanisms to evaluate some parts of the management system.	The fishery has in place mechanisms to evaluate key parts of the management system	The fishery has in mechanisms to evalua parts of the manag system.	place ate all gement		
	Met?	Y	Y	Ν			
	Justification	During the surveillance audit site visit meeting, evidence was presented to assessment team that the FMPME has been developed, relevant stakeholders been consulted and the FMPME has been adopted in policy and is contained in draft of the IFMP, which is now been reviewed by industry. This FMPME allows evaluating key parts of the management system.					
b	togoThe managementfishery-specific subjectThe fishery-specific managementThe managementfishery-specific managementThe managementfish fish managementtoregular internal review.toregular internal and occasional external review.toregular external review.		The fishery-s management system is s to regular internal external review.	specific subject and			
	Met?	Y	Y	Ν			
	Justification	During the surveillance audit site visit meeting, evidence was presented to the assessment team that the FMPME has been developed, relevant stakeholders have been consulted and the FMPME has been adopted in policy and is contained in the draft of the IFMP, which is now been reviewed by industry. This FMPME allows having a regular internal and occasional external review of key parts of SGSL snow crab fishery management system.					
References		Draft of Integrated Fisherie Lawrence Crab Fishing Area Information collected durir	es Management Plan Snow as 12, 12E, 12F, 19. ag site visit meeting.	Crab in the Southern Gu	lf of St.		
OVERALL	. PERFO	RMANCE INDICATOR SCORE	E:		80		
CONDITI		MBER (if relevant):			N/A		

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According to the revised score, the overall notation of the SGSL snow crab fishery is as following:

Principle	Wt (L1)	Component	Wt (L2)	PI No.	Performance Indicator (PI)	Wt (L3)	Weight in Principle	Score	Contribution to Principle Score
			0.5	1.1.1	Stock status	0.5	0.25	90	22.50
		Outcome		1.1.2	Reference points	0.5	0.25	100	25.00
				1.1.3	Stock rebuilding	0.333	0.1667	NA	
One	1			1.2.1	Harvest strategy	0.25	0.125	100	12.50
		Managomont	0.5	1.2.2	Harvest control rules & tools	0.25	0.125	95	11.88
		wanagement	0.5	1.2.3	Information & monitoring	0.25	0.125	100	12.50
				1.2.4	Assessment of stock status	0.25	0.125	100	12.50
				2.1.1	Outcome	0.333	0.0667	100	6.67
		Retained species	0.2	2.1.2	Management	0.333	0.0667	100	6.67
		species		2.1.3	Information	0.333	0.0667	100	6.67
				2.2.1	Outcome	0.333	0.0667	100	6.67
		By-catch species	0.2	2.2.2	Management	0.333	0.0667	100	6.67
				2.2.3	Information	0.333	0.0667	90	6.00
		ETP species	0.2	2.3.1	Outcome	0.333	0.0667	100	6.67
Two	1			2.3.2	Management	0.333	0.0667	95	6.33
				2.3.3	Information	0.333	0.0667	85	5.67
		Habitats	0.2	2.4.1	Outcome	0.333	0.0667	90	6.00
				2.4.2	Management	0.333	0.0667	95	6.33
				2.4.3	Information	0.333	0.0667	95	6.33
				2.5.1	Outcome	0.333	0.0667	100	6.67
		Ecosystem	0.2	2.5.2	Management	0.333	0.0667	100	6.67
				2.5.3	Information	0.333	0.0667	100	6.67
				3.1.1	Legal & customary framework	0.25	0.125	85	10.63
		Governance	0.5	3.1.2	Consultation, roles & responsibilities	0.25	0.125	80	10.00
		And policy		3.1.3	Long term objectives	0.25	0.125	80	10.00
				3.1.4	Incentives for sustainable fishing	0.25	0.125	90	11.25
Three	1			3.2.1	Fishery specific objectives	0.2	0.1	80	8.00
		Fishery		3.2.2	Decision making processes	0.2	0.1	80	8.00
		specific management	0.5	3.2.3	Compliance & enforcement	0.2	0.1	85	8.50
		system		3.2.4	Research plan	0.2	0.1	90	9.00
				3.2.5	Management performance evaluation	0.2	0.1	80	8.00

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Final Principle Scores	
Principle	Score
Principle 1 – Target Species	96.9
Principle 2 - Ecosystem	96.7
Principle 3 – Management System	83.4



# Appendix 2. Stakeholder submissions (if any)

No stakeholder submissions have been received.

**Appendix 3. Surveillance audit information (if necessary)** 

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



# **Appendix 5. Revised Surveillance Program (if necessary)**

The surveillance program has not been revised and surveillance level remains 1.

Surveillance Level	Year 3	Year 4
Level 1	<i>Off-Site Surveillance Audit</i>	Review of information and reduced re-assessment

#### Table 5.3: Fishery Surveillance Program

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