

Surveillance Report

CANADIAN NORTHERN PRAWN TRAWL FISHERY Shrimp Fishing Areas 13, 14, 15

Certificate No.: MML 028

Moody Marine Ltd. 25th October 2009

Authors:

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1.0 GENERAL INFORMATION

Scope against which the surveillance is undertaken: MSC Principles and Criteria for Sustainable Fishing as applied to the CANADIAN NORTHERN PRAWN TRAWL FISHERY Shrimp Fishing Areas 13, 14, 15.

Species: Pandalus borealis

Area: Shrimp Fishing Area 13,14, 15 (Scotian Shelf on Atlantic coast of Canada)

Method of capture: Trawl

Date of Surveillance Visit:	31 August – 4 September 2009				
Initial Certification	Date: 4 th August 2008		Ce	Certificate Ref: MML-028	
Surveillance stage	1st	2 nd		3rd	4th
Surveillance team:	Lead Assessor: Paul Knapman Assessors: Michaela Aschan, Howard Powles				
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2.0 RESULTS, CONCLUSIONS AND RECOMMENDATIONS

This report contains the findings of the first surveillance audit in relation to the Association of Seafood Producers (ASP) Canadian Northern Prawn Trawl Fishery in Shrimp fishing Areas 13, 14, 15 (Scotian Shelf). The surveillance audit was carried out in accordance with the Marine Stewardship Council (MSC) Fisheries Certification Methodology (FCM) Version 6.

An announcement of the surveillance site visit was published on the MSC website on 27^{th} July advising stakeholders that owing to the availability of key staff involved with the management of the fishery and, in the interests of facilitating the harmonisation of an overlapping fishery, the audit site visit would take place the week of 31^{st} August (See appendix A).

The surveillance team – Michaela Aschan, Howard Powles, Paul Knapman and Don Aldous - met with staff from the Department of Fisheries and Oceans, Canada (DFO) Maritime Region - Kerri Graham, Peter Koeller and Andrew Newbould on Monday 31st August and with members of the client group – Derek Butler, Gerry Donovan, Greg Viscount and Charles Daley on Tuesday 1st September. Information and evidence was gathered on the status of the stock, the performance of the fishery throughout the year, measures to meet the Conditions of Certification and changes in management.

The following section is set out as a table within which general information about the status of the stock and the fishery for this reporting period is provided along with the surveillance team's observations, conclusions and recommendations on the current status of the fishery and the client's progress toward meeting the Conditions of Certification.

The table includes the original assessment scoring guideposts and scoring commentary and the requirements of the original Condition alongside the heading 'Activity assessed'. This identifies the areas in which the fishery was determined to perform below the level required by the MSC standard during the initial assessment, and the required actions to address these issues.

As required by the MSC assessment methodology, ASP produced an Action Plan setting out the stages involved in addressing the Conditions raised. This is set out in the table alongside the heading 'ASP Action Plan'.

According to the terms of the Action Plan, the client has provided information on the work undertaken to date.

This progress has been evaluated by the Moody Marine surveillance team ('Observations' and 'Conclusion') against:

- 1. the commitments made in the Action Plan;
- 2. the intent of the original Condition; and,
- 3. the original scoring indicator, guideposts and commentary.

The influence of any overall legislative and management changes in the fishery are also taken into consideration.

When the Condition has been judged to have been met, a re-evaluation of the scoring allocated to the relevant Performance Indicator(s) in the original MSC assessment will be included within the evaluation.

Item	Comments regarding <i>P. borealis</i> in SFA 13, 14, and 15	
1	Stock status	
Observations	The eastern Scotian Shelf fishery for <i>Pandalus borealis</i> began in the 1970's at low catch levels. It began to expand in the early 1990's with the introduction of the Nordmore grid which effectively eliminated groundfish by-catches and associated restrictions. At the same time the shrimp population began to increase due to environmental and ecological factors, including a period of lower water temperatures, which probably improved recruitment, and a decrease in predator populations, which decreased natural mortality. The population increase is reflected in both commercial catch rates and survey abundance indices. The population has continued to increase or has remained high throughout the history of the fishery.	
	The 14 th industry funded survey was conducted in June 2008 and revealed that biomass decreased significantly (20%) since last year and 36% since the all-time high of 2004. It was in 2008 slightly below average for the 1995-2008, but above the low values of the 1980s survey series. Decreases were observed in all areas except the inshore, which remained about the same as 2007. The spawning stock biomass (SSB) had decreased by 50% since the all time high of 2004 and is now slightly below average for the 1995-2008 series. Commercial catch rates remained high in 2008 and spatial indicators show that the area with the highest commercial catch rates remains large. Also in 2009 the catches were high until June when the fishery usually stops due to reduced quality in the summer months. Also the crab survey of 2009 indicates that the shrimp survey of 2008 may have given an underestimate. The conservative quota for 2009 is therefore likely to be adjusted to be higher in 2010 (Koeller pers. com).	
	Koeller, P.A., L. Savard, D. Parsons and C. Fu. 2000. A precautionary approach to assessment and management of shrimp stocks in the Northwest Atlantic. <i>J. Northw. Atl. Fish. Sci.</i> 27:1-12	
	Koeller, P., C. Fuentes-Yaco, T. Platt, S. Sathyendranath, A. Richards, P. Ouellet, D. Orr, U. Skúladóttir, K. Wieland, L. Savard, M. Aschan (2009). 2009a. Basin-Scale Coherence in Phenology of Shrimps and Phytoplankton in the North Atlantic Ocean. <i>Science</i> : 324 (5928) pp. 791 – 793.	
	Koeller, P., Covey, M. and M. King. 2009b. An Assessment of the Eastern Scotian Shelf Shrimp Stock and Fishery in 2008 with an Outlook for 2009. Canadian Science Advisory Secretariat Research Document 2009/030, 52.pp	

Item	P. borealis in SFA 13, 14, 15
2	Condition 1: Reference Points and Decision Rules
Activity assessed	 This Condition relates to the development and incorporation of precautionary reference points and decision rules in the management advice for the fishery. Five related Performance Indicators (PIs) under MSC Principle 1 and 3 were considered to be deficient in the initial assessment of the fishery. The following bullet points reflect the narrative used for the 80 Scoring Guidepost (SG) for each of these PIs: Appropriate limit and precautionary reference points should be determined and implemented taking into account stock biology and the limitations of the available fishery and assessment data (PI 1.1.3.2). Major uncertainties and assumptions should be reflected in the management advice and limitations addressed through the appropriate decision rules (PI 1.1.3.5). Clear decision making rules should exist, be fully documented and reconciled with appropriate reference points and with data and assessment limitations (PI 1.1.3.7). Results from monitoring the stock are regularly interpreted in relation to reference points (3A.6.2). Practical procedures exist to reduce harvest in the light of monitoring results and provide for stock recovery to specified levels. Measures can be implemented speedily (3A.6.3). To ensure that, as a minimum, each of the PIs achieves the 80 SG the assessment team recommended that within the second year of the fisheries MSC certification the client should address the following points: a) The informal precautionary reference points and decision rules currently guiding fishery management should be quantified and explicitly incorporated in the stock assessment and integrated fisheries management plan. b) Further work should be undertaken to develop and implement reference points based on stock biology, fishery characteristics and the limitations of the available data. c) Management advice and decision rules should take explicit account of the implications of the major uncertainties and assumptions in the
Association of Seafood Producers (ASP) Action Plan	Action Plan Condition 1 DFO has agreed to work on developing proxies and reference points, for presentation to relevant RAP meeting, and eventual discussion at the Eastern Scotian Shelf Shrimp Advisory Committee (ESSSAC).
	Consideration will be given to levels of abundance that are deemed acceptable or unacceptable based upon trends over time in consultation with ESSAC.
	Key ongoing uncertainties and assumptions currently documented in the scientific advice, and reflected in the low exploitation rates in management decision will be formalized in the IFMP within 2 years.
Observations	In May 2008 a National Working Group, including two industry experts, was established to work on the PA initiative. This was followed by a National workshop, co-lead by DFO Science and Fisheries and Aquaculture Management (FAM), held in Ottawa, November 26-27, 2008, on the development of Precautionary Approach (PA) frameworks for Canadian shrimp and prawn stocks/fisheries.

Various options were explored, including approaches currently in use internationally to define reference points (upper stock reference and limit reference point) and PA compliant harvest decision rules. The values of provisional reference points using some of these options were examined. Further work was defined and preliminary implementation timelines were also discussed for the various stocks/fisheries. As a result individual PA frameworks will be implemented within the regions, according to the regional priorities identified for each fishery and established in collaboration with stakeholders (DFO 2009).
 A nested approach, combining adaptive management within limit reference points (RP) has been suggested for the Scotian Shelf shrimp management (Koeller, 2009), where the following principles apply: 1) Exploitation should remain at or below the conservative level experienced during the modern fishery (<20%), during which the stock has continued to increase or remained high. 2) Within the target exploitation index, the rate of increase to the TAC during favourable stock indicators should decrease with each increment, and the rate of decrease in response to unfavourable indicators should equal or exceed the rate of increase. 3) A lower limit reference point of 30% of the average spawning stock biomass maintained during the modern fishery will result in closure.
The current Scotian Shelf Shrimp (<i>Pandalus borealis</i>) integrated fisheries management plan (IFMP) is effective from 2007-2011 but is considered ever green (DFO Maritimes Region, Reference Number DFO/2006-1140). As part of DFOs development of conservation and sustainable use policies it has introduced a "Sustainable Fisheries Framework" (DFO 2009a) which, among other things, is providing a new IFMP template (DFO 2009b) that is expected to be adopted for all Canadian fisheries. We understand from our meeting with DFO Maritime staff that the template will be adopted for the Scotian Shelf Shrimp Fishery and will show how management advice and decision rules take account of major uncertainties and assumptions in the stock assessment including in the context of future declines in biomass.
DFO. 2009. Proceedings of the Precautionary Approach Workshop on Shrimp and Prawn Stocks and Fisheries; November 26-27, 2008. DFO Can. Sci. Advis. Sec. Proceed. Ser. 2008/031. 167 pp.
DFO, 2009a <u>http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/overview-cadre-eng.htm</u>)
DFO 2009b (<u>http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/ifmp-pgip-back-fiche-eng.htm</u>).

Koeller, P. 2009. A precautionary approach toward fulfilling conditions for MSC certification of the shrimp fishery in SFAs 13-15. Draft report, 9pp.

Item	P. borealis in SFA 13, 14, 15
3	Condition 2: Ecological Impacts of the Fishery
Activity assessed	This Condition relates to better understanding and informing management of the effects of the fishery on seabed habitats and communities in order that, where appropriate and necessary, management measures can be adopted. Eight PIs that were considered deficient in the initial assessment of the fishery were combined to create this Condition. The following bullet points reflect the narrative used for the 80 SG for each of these PIs:
	 The nature and distribution of all main habitat types are known in adequate detail. Information is recent. The distribution of fishing operations is monitored and the sensitivity of key habitats is understood (PI 2.1.1.1). Impacts of gear use on the habitat are identified or can be reliably estimated including reliable information on the extent, timing and location of use (PI 2.1.3.1). It can be demonstrated that the fishery does not have unacceptable impacts upon habitats within major fishing areas or on sensitive habitats elsewhere (PI 2.1.4.3). Appropriate information is available on the effects of the fishery on biological
	 diversity, community structure and productivity. This does not indicate any unacceptable impacts (PI 2.1.4.4). Management strategies are in place to detect and reduce ecosystem impacts, although these may not have been fully tested, they are considered appropriate to adequately protect key elements of the ecosystem within main fishing areas (PI2.1.4.5). There are appropriate evaluated procedures used for measuring performance relative to the objectives (3A.3.4). Measures are being applied to minimise any environmental impacts and there is evidence that the measures are working (3A.7.1). Suitability of no-take zones and closed areas / seasons has been reviewed and these have been or are currently being implemented and enforced if and where appropriate (3A.7.2).
	To ensure that, as a minimum, each of the PIs achieve the 80 scoring guidepost the assessment team recommended that the client should address the following:
	 Within the second year of certification: a) Based on existing information, the spatial distribution of fishing effort should be documented. b) Existing data should be compiled and used to map seabed habitats and, where possible, associated species.
	 Within the third year of certification: c) Based on the initial assessments above, develop a program to fill key knowledge gaps. d) Review information on the sensitivity of the identified seabed habitats and associated species. e) Compile information from existing studies of gear impacts on the identified seabed habitats. f) Using information from a, b, c, d, e above, assess the likely impacts of the fishery - taking into account extent, timing and location. g) Assess the acceptability of the current impacts of the fishery on habitat structure. h) Assess the acceptability of current impacts on biological diversity, community

	 structure, and productivity. i) Review the effectiveness of existing policies, operating procedures and codes of conduct for coral conservation. Within the fourth year of certification: j) If appropriate, using the information and outcomes from the above, new management strategies should be outlined and measures implemented to detect and minimise ecosystem impacts of the fishery and to ensure that key elements of the ecosystem are protected. In particular, the suitability of no-take zones and closed areas / seasons should be reviewed, and implemented and enforced if and where appropriate
ASP Action Plan	Action Plan Condition 2 Existing information on the spatial distribution on fishing effort/catch, as well as existing data on seabed habitats and associated species will be compiled. This existing work will form the basis of a qualitative analysis on sensitivity of key habitats and gear impacts.
	The RAP will apply existing information to evaluate the risk of unacceptable impacts on ecosystem function as a result of the shrimp fishery and identify options for mitigation in areas where high risk of impairing ecosystem function may be identified. The RAP will also identify any important knowledge gaps.
	In consultation with ESSSAC, the client will work to develop a monitoring program and propose strategies to address areas where there is a high risk of impairing ecosystem function.
Observations	The client has set aside funding to compile information on distribution of fishing effort and on seabed habitats and associated species and confirmed their intent to initiate work on these soon, such that results can be complete in Year 2 as required.
	As indicated in the certification report, detailed information on distribution of fishing effort is available from logbooks and VMS data and is periodically reported on in assessments.
	Collection and compilation of information on benthic habitats and species in the fishery is continuing as part of the Eastern Scotian Shelf Integrated Management (ESSIM) initiative (e.g. Zwanenburg 2007). The ESSIM Strategic Plan released in 2007 (DFO 2007) provides an overall framework for managing ecosystem impacts of fishing and other human activities in the fishery area.
	DFO has developed a national policy for Managing the Impacts of Fishing on Sensitive Benthic Habitats (DFO 2009c) (<u>http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/benthi-eng.htm</u>), which is expected to provide an overall framework for actions to improve protection of sensitive habitats and species.
Conclusion	Progress appears to be on target for meeting the first milestone of this Condition, i.e. documenting the spatial distribution of fishing effort and compilation and mapping of seabed habitats and species.
	While noting that the client has identified and "ring fenced" resources the audit team recommend that the client move quickly on their appointment of staff to undertake this work.

Item	P. borealis in SFA 13, 14, 15		
4	Condition 3: Potential Impacts on Protected, Endangered and Threatened Species		
Activity assessed	 This Condition relates to ensuring that management takes into account any significant the effect caused by the fishery on Protected, Endangered or Threatened (PET) species. The following bullet point reflects the narrative used for the 80 SG for the single PI that was considered to be deficient in this area of the assessment: Management objectives are set to detect and reduce impacts on protected, endangered and threatened (PET) species. Accompanying strategies are designed to adequately protect endangered and threatened species within main fishing areas (PI 2.2.2.1). 		
	To ensure that, as a minimum, this PI achieves the 80 SG the assessment team recommended that the client address the following points:		
	 Within the second year of the certification: a) Explicit recognition should be given in the fishery management plan to the potential impacts of the fishery on protected, endangered and threatened species. b) The adequacy of the existing management measures in protecting such species should be assessed in relation to identified objectives. c) Additional management measures to detect and reduce impacts on protected, endangered and threatened species should be put in place if necessary. 		
ASP Action Plan	Action Plan Condition 3 It is agreed the IFMP for shrimp will be updated to reference the Recovery Plans and mitigation measures implemented in the Northern Shrimp fishery for these species.		
	The Client will undertake to communicate appropriate information to all vessels in the shrimp fishery regarding species on the COSEWIC list not already covered as "protected, endangered or threatened species" under SARA.		
Observations	The draft Integrated Fisheries Management Plan (IFMP), which will be finalised soon, notes the potential impact of the fishery on the two wolffish species, notes the existence of a recovery strategy for these species, and indicates that shrimp fishing licence conditions prohibit retention of any individuals of these species and require return in good condition if alive.		
	The audit team was advised that those responsible for leading implementation of the recovery strategy for the two wolffish species listed as threatened consider the impact of the shrimp fishery on these species to be minimal, implying that no further measures to protect these species are necessary. A detailed assessment of status of these two species is planned during the next year.		
Conclusion	Once the IFMP is published the assessment team will able to confirm that this part of the Condition has been met.		
	If the client were to obtain a written opinion from the wolffish recovery team (or others responsible for leading on wolffish recovery) confirming that the impact of the shrimp fishery on spotted and northern wolffish is minimal, and that no further measures were required, parts (b) and (c) of the Condition would be met and the		

	Condition could be closed out at the next annual audit.

Item	P. borealis in SFA 13, 14, 15	
5	Condition 4: Unobserved Fishing Mortality	
Activity assessed	 This Condition relates to understanding the unobserved fishing mortality on the target species. In this instance, because illegal, unreported and unregulated (IUU) fishing and unobserved fishing is not considered to be an issue in the fishery this Condition relates to the mortality of the gear during the fishing operation. The following bullet point reflects the narrative used for the 80 SG for the PI that was considered to be deficient in this area of the assessment: Information from existing work has allowed qualitative estimates of unobserved fishing mortality to be made (PI 2.1.2.3). To ensure that, as a minimum, that this PI achieves the 80 SG the assessment team recommend that within the second year of the certification: a) Information from existing studies should be compiled to produce a qualitative assessment of probable unobserved fishing mortality on target and non target species in this fishery. 	
ASP Action Plan	Action Plan Condition 4 It is agreed that the relevant RAP assessment of northern shrimp will consider available studies on unobserved mortality and make a qualitative determination of the level of unobserved fishing mortality.	
Observations	The client has set aside funding to compile existing information and make a qualitative assessment of unobserved fishing mortality, and will initiate this work soon such that it can be complete in Year 2.	
Conclusion	Progress on meeting this Condition appears to be on target as funds have been set aside and the client is actively seeking to appoint someone to undertake this work.	
	The audit team recommend that this work commence as soon as possible to ensure that this Condition can be met, rescored and closed out at the next annual audit.	

Item	<i>P. borealis</i> in SFA 13, 14, 15
6	Condition 5: Measurable and Explicit Long and Short Term Objectives
Activity assessed	 This Condition relates to the need for the management system to clearly identify short and long term objectives and implement precautionary measures where sufficient information is lacking. The following bullet points reflects the narrative used for the 80 SG for each PI that was considered to be deficient in this area of the assessment: The management system contains short and long-term resource and environment objectives (PI 3A.3.1). Appropriate, formalised measures exist to evaluate and implement a precautionary approach in the development and application of operational procedures in the absence of sufficient information (PI 3A.3.3). To ensure that, as a minimum, that these PIs achieve the 80 SG the assessment team recommended that within the third year of the certification the client should ensure that: a) Management plans should more explicitly specify measurable long and short term resource and environmental objectives, and appropriate formalised measures should be used to implement a precautionary approach in the absence of sufficient information the absence of sufficient information the client should ensure that:
ASP Action Plan	Action Plan Condition 5 The client will work with DFO in consultation with ESSSAC to discuss the development measurable and explicit long and short term objectives and include these in the IFMP.
Observations	 DFO are adopting a new IFMP template as part of their "Sustainable Fisheries Framework" policy initiative that will include: Short- and long-term sustainable fisheries objectives for stock conservation, the ecosystem, shared stewardship and collaboration, socio-economic factors, and compliance. The stock assessment and status, including ecosystem interactions, available information on precautionary approach references, and stock trends DFO Maritimes staff told the audit team that a new IFMP is expected in 2010 and will include these points.
Conclusion	Progress on meeting this Condition appears to be ahead of target, i.e. a revised IFMP is expected to be in 2010 and will include short and long term objectives for the resource and the ecosystem; and, formalised measures for using a precautionary approach.

Item	Any complaints against the certified operation; recorded, reviewed and actioned
7	No complaints that would potentially compromise the certification were reported or brought to the attention of the audit team during the site visit.

Item	Any relevant changes to legislation or regulation.
8	There were no reported changes in legislation or regulation within the fishery during the first year of certification.

Item	Any relevant changes to management regime.
9	As indicated in the commentary above, within the last year DFO have set out their new policy initiative, "Sustainable Fisheries Framework". According to the DFO website the Framework's primary goal is to ensure that Canada's fisheries are environmentally sustainable, while supporting economic prosperity. In so doing, it is designed to help DFO take a more rigorous, consistent, and transparent approach to decision making across all key fisheries in Canada.
	It is expected that the Framework and its associated polices will be completed as part of a three-year Fisheries Renewal program planned to conclude in 2011 with implementation being phased-in over time for all Canadian fisheries.
	The Framework comprises four main elements: conservation and sustainable use policies; economic policies; governance policies and principles; and planning and monitoring tools.
	From our discussions with DFO staff regarding this fishery it appears that the most immediate implication of implementing the framework will be a revised IFMP that uses a new IFMP template. From what we have seen of the template, it will help meet a number of specific Conditions of Certification for this fishery and, more generally, help to set out information requirements for any Canadian fishery considering entering or already within the MSC certification program.
	It is noted that there has been a change in the management personnel within the shrimp fishery with Andrew Newbould replacing Mike Eagles as the Senior Resource Manager.
	We also note that Peter Koeller (Senior Fisheries Research Scientist) will be retiring within the second annual audit reporting period. At the time of the audit visit it was not clear who was to be appointed to Peter's post. We would like to thank Peter for his help both with this annual audit and the initial MSC assessment of this fishery and wish him a happy retirement.

Item	Any other relevant changes.
10	The Association of Seafood Producers agreed with five other processing companies to share their certification. As a result the following companies have completed chain of custody audits on their plants and have been added to certificate. The companies are:
	Cold North Seafoods Limited (Atlantic Cold Seafoods) 157 Glencoe Drive

Mt. Pearl, NL A1N 4S7
Contact Person: Aiden Daley
Plant: St. Joseph's (formerly NuSea)
Quinlan Brothers Limited
Box 71, Suite 302 Atlantic Place
St. John's, NL A1C 6C9
Contact Person: Robin Quinlan
Plant: Bay de Verde
Gulf Shrimp Limited
Box 71 Suite 302 Atlantic Place
St John's NL A1C 6C9
Contact Person: Derrick Philpott
Plant : Black Duck Cove
Think - Drick Duck Cove
Quin-Sea Fisheries Ltd.
Box 71, Suite 302 Atlantic Place
St. John's, NL A1C 6C9
Contact Person: Derrick Philpott
Plant: Old Perlican
Labrador Choice Seafoods
P.O. Box 130
L'anse au Loup, NL A0K 3L0
Contact Person: Pius Walsh
Plant: Charlottetown
As a result, all of the shrimp processing plants in Newfoundland and Labrador are
within the scope of the certification as are the vessels licensed to fish in SFAs 13, 14
and 15 with which they trade provided the shrimp landed by those licence holders'
proceeds through a Chain of Custody certified path.
Also for this reason there is no longer a need to include an updated vessel list as
indicated in the Public Certification Report.

Item	Overall Conclusions regarding <i>P. borealis</i> in SFA 13, 14, 15
11	No changes in management have taken place that would detrimentally affect the performance of this fishery against the MSC standard and the fishery continues to meet the requirements of the MSC Standard. MSC Certification should therefore continue with audits annually.

Information Sources:

Meetings

August 31, 2009: Meeting with DFO Maritimes Region, Dartmouth, Nova Scotia September 1, 2009: Meeting with members of the client group, St John's, Newfoundland

Reports etc

DFO 2007. Eastern Scotian Shelf Integrated Management Plan – Strategic Plan. 72 pp.

DFO. 2009. Proceedings of the Precautionary Approach Workshop on Shrimp and Prawn Stocks and Fisheries; November 26-27, 2008. DFO Can. Sci. Advis. Sec. Proceed. Ser. 2008/031. 167 pp.

DFO, 2009a <u>http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/overview-cadre-eng.htm</u>)

DFO 2009b (http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/ifmp-pgip-back-fiche-eng.htm).

DFO 2009c (http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/benthi-eng.htm

Koeller, P.A., L. Savard, D. Parsons and C. Fu. 2000. A precautionary approach to assessment and management of shrimp stocks in the Northwest Atlantic. J. Northw. Atl. Fish. Sci. 27:1-12

Koeller, P., C. Fuentes-Yaco, T. Platt, S. Sathyendranath, A. Richards, P. Ouellet, D. Orr, U. Skúladóttir, K. Wieland, L. Savard, M. Aschan (2009). 2009a. Basin-Scale Coherence in Phenology of Shrimps and Phytoplankton in the North Atlantic Ocean. *Science*: 324 (5928) pp. 791 – 793.

Koeller, P., Covey, M. and M. King. 2009b. An Assessment of the Eastern Scotian Shelf Shrimp Stock and Fishery in 2008 with an Outlook for 2009. Canadian Science Advisory Secretariat Research Document 2009/030, 52.pp

Koeller, P. 2009. A precautionary approach toward fulfilling conditions for MSC certification of the shrimp fishery in SFAs 13-15. Draft report, 9pp.

Zwanenburg, K.C.T., A. Bundy, P. Strain, W.D. Bowen, H. Breeze, S.E. Campana, C. Hannah, E. Head, and D. Gordon. 2007. Implications of Ecosystem Dynamics for the Integrated Management of the Eastern Scotian Shelf. Canadian Technical Report of Fisheries and Aquatic Sciences No. 2652. xiii+91 pp.

Standards and Guidelines used:

- 1. MSC Principles and Criteria for Sustainable Fishing
- 2. MSC Fishery Certification Methodology Version 6. September 2006
- 3. TAB Directives all

Appendix a

Advisory

Canadian Northern Prawn Trawl Fishery Shrimp Fishing Areas 5, 6, 7, 13, 14, 15

Delay of First Annual Surveillance Audit

Due to the availability of key people involved with the management of the above fisheries and in order to assist in the aims of harmonisation of another MSC assessment of a shrimp fishery, part of which includes shrimp fishing areas 5, 6 and 7, the site visit associated with the above fishery will take place the week beginning 31st August 2009. The audit report will be submitted to the MSC 30 days after completing the audit.

This extension has the agreement of Moody Marine and the MSC.

Any questions relating to this should be communicated to Paul Knapman, at the address below or on <u>p.knapman@moodyint.com</u>

27th July 2009