DNV·GL

FINAL REPORT FOR THE

Expedited assessment of the Faroe Islands North East Arctic cold water prawn fishery - Addition of Lithuanian vessel

Reyktal Ltd, Reval Seafood Ltd., P/R Ocean Tiger and UAB Marlinas

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Customer:	Reyktal Ltd, Reval Seafood Ltd., P/R Ocean Tiger and UAB Marlinas, **Reyktal Ltd**: Veerenni 39, 10138 Tallinn, Estonia **P/R Ocean Tiger:** Strandgade 10, 3730 Nexø, Denmark **UAB Marlinas:** Pylimo 4, 91249 Klaipeda, Lithuania	
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Objective:

Assessment of the expedited assessment for extension of scope of the Estonia North East Arctic cold water prawn fishery against MSC Fisheries Standards v1.2.

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0	2017-02-03	Peer Review Draft Report	Same as above	
0	2017-02-20	Public Comment Draft report	Same as above	
0	2017-03-23	Final Report	Same as above	
0		Public Certification Report	Same as above	

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ABBREVIATIONS & ACRONYMS

ACOM	(ICES) Advisory Committee
AED	Actual Eligibility Date
AFWG	(ICES) Arctic Fisheries Working Group
AMOVA	Analysis of molecular variance
BRD	Bycatch reduction Device
CFP	Common Fisheries Policy (European Commission)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CL	Carapace length
COE	Catch on entry
COX	Catch on exit
CPUE	Catch per unit effort
DNV	Det Norske Veritas
EEZ	Exclusive Economic Zone
EFCA	European Fisheries Control Agency
ERS	Electronic Reporting System
ETP	Endangered, Threatened and Protected
EU	European Union
FPZ	Fishery Protection Zone
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
IMR	Institute of Marine Research, Norway
ITQ	individual transferable quota
IUCN	International Union for Conservation of Nature
LOA	Length overall
MSE	Management Strategy Evaluation
NAFO	Northwest Atlantic Fisheries Organisation
NEAFC	North East Atlantic Fisheries Commission
NGO	Non - Governmental Organization
NIPAG	NAFO/ICES Pandalus Assessment Group
MSC	Marine Stewardship Council
OSPAR	Oslo – Paris Convention. The Convention for the Protection of the Marine Environment of the North-East Atlantic.
PI	Performance Indicator
PINRO	Polar Research Institute of Marine Fisheries and Oceanography, Russia
PSC	Port State Control
PSCF	Port State Control Form
RAPD	Random amplified polymorphic DNA
SG	Scoring guidepost
SSB	Spawning Stock Biomass
TAC	Total Allowable Catch
TED	Target Eligibility Date
UNCLOS	United Nations Law of the Sea Conference
VME	Vulnerable marine ecosystems
VMS	Vessel Monitoring System
WWF	World Wildlife Fund

LIST OF SYMBOLS & REFERENCE POINTS

B_{lim}	Minimum biomass below which recruitment is expected to be impaired or the stock dynamics are unknown.

B_{msy}	Biomass corresponding to the maximum sustainable yield (biological reference point); the peak value on a domed yield-per-recruit curve.
B_{pa}	Precautionary biomass below which SSB should not be allowed to fall to safeguard it against falling to Blim.
$B_{trigger}$	Value of spawning stock biomass (SSB) that triggers a specific management action.
F	Instantaneous rate of fishing mortality.
F_{lim}	Fishing mortality rate that is expected to be associated with stock 'collapse' if maintained over a longer time (precautionary reference point).
F_{msy}	F giving maximum sustainable yield (biological reference point).
F_{pa}	Precautionary buffer to avoid that true fishing mortality is at Flim when the perceived fishing mortality is at Fpa.
K	Carrying Capacity
MSY	Maximum Sustainable Yield

1 EXECUTIVE SUMMARY

This report provides information on the expedited assessment of the Estonia North East Arctic cold water prawn fishery against Marine Stewardship Council (MSC) Fisheries Standard.

The Estonia North East Arctic cold water prawn fishery was MSC certified on 7 November 2013 (F-DNV-144850) - valid to 7 November 2018. The certification included Reyktal Ltd. and Reval Seafood Ltd., but was extended to also include the Danish company P/R Ocean Tiger after a gap analysis performed in October/November 2014. The Scope extension certification report was published on the MSC´s website in March 2015. P/R Ocean Tiger, represented by vessel Ocean Tiger R38, became a part of the client group with equal rights and responsibilities in regards to MSC Fisheries certificate maintenance for this fishery.

This current expedited assessment was needed based on a request from the client for an extension of the certificate in order to include a fishing vessel from Lithuania in the UoC. The original UoC and UoA that were certified in 2013 covered the entire Estonian fleet fishing for cold water prawn in the Barents Sea. The UoC was extended in March 2015 to cover the Danish vessel Ocean Tiger. No other fisher groups were identified as "other eligible fisher" groups at that time. It is however still possible to extend the certificate providing that the CAB confirms that all assessment tree components are the same for the extended UoA and the certified fishery, and the CAB confirms that extending the scope of the certificate does not have implications for any PIs. To establish this, the CAB has to carry out a gap analysis to confirm which assessment components are the same as for the certified fishery. If some assessment tree components are not the same as assessment components in the certified fishery, the CAB shall carry out an expedited assessment. During this assessment the assessment components which are not the same will be scored. If it is determined that the scores from the assessed PIs in combination with the scores obtained for the commonly held components with the existing certificate meet the requirements for certification, the CAB shall include the new UoA within the scope of the existing valid fishery certificate.

The gap analysis that has been carried out in relation to the scope extension for the Lithuanian vessel has revealed that not all assessment components are the same for the extended UoA and the certified fishery. Therefore the expedited assessment described in this report has been carried out.

During the gap analysis it was concluded that four of the nine assessment components are the same for the extended UoA and the certified fishery. These were the Outcome component of P1 and the Bycatch, ETP and Ecosystem components of P2.

This expedited assessment thus involved the assessment against the harvest strategy component under Principle 1, the retained species and habitat components under Principle 2 and the governance and policy and fishery specific management components under Principle 3.

The assessment was carried out using MSC Fisheries Certification Requirements and Guidance v1.2. For the assessment, the default assessment tree was used.

Table 1 Assessment team

Role	Name
Team leader, Principle expert	Julian Addison
DNV GL project manager and Chain of custody responsible:	Sigrun Bekkevold

Table 2 Assessment timeline

Event	Date
Announcement of expedited audit:	6 October 2016
Site visit and stakeholder consultations:	10-11 November 2016
Expected date of certification:	April 2017
Eligibility date:	21 February 2017

1.1 Main strengths and weaknesses of the client's operation

In this expedited assessment several assessment components have been re-assessed. The assessment however resulted in most cases in identical scores with only 1 performance indicator being awarded a slightly lower score following evaluation of the scope extension. The score for PI 3.1.2 was reduced from 90 to 85. The difference in scores following the scope extension is obviously small and does not result in the lowering of any score below 80. This means that this expedited audit has no significant consequences for the main strengths and main weaknesses of the fishery. Therefore the main strengths and weaknesses presented in paragraph 1.2 and 1.3 respectively are the same as at the original assessment. The only change compared to the original assessment report and the scope extension report which included a Danish vessel is that now a Lithuanian vessel is added.

1.2 Strengths

The attributes of the Estonia North East Arctic cold water prawn fishery that are helpful in achieving sustainability and thereby complying with MSC Principles and Criteria for Sustainable Fisheries are:

- Shrimp (*Pandalus borealis*) stock in the Barents Sea has been close to its carrying capacity throughout the history of the fishery.

- Estonia, Denmark, Lithuania, EU, NEAFC and Norway maintain a robust and effective control and surveillance regime, which ensures a high degree of compliance across all fishing fleets participating in this fishery.

- The mandatory use of sorting grids and the implementation of permanent and temporary area closures are effective in minimizing the by-catch of all species.

- The fishery does not cause any mortality of ETP species e.g. whales, seals or birds and the effects on fish species are likely to be within limits of national and international requirements for protection of ETP species.

- The limited scope of the fishery, the change to lighter gears and operation primarily within known habitats make it highly unlikely for this fishery to reduce habitat structure and function to a point where there would be serious harm.

- The Estonian, Danish and Lithuanian fisheries authorities consult with all relevant stakeholder groups (e.g. the Lithuanian long distance fishermen's association - Okeaninio žvejybos laivyno įmonių asociacija) regarding new fisheries measures prior to their implementation.

1.3 Weaknesses

Weaknesses of the Estonia North East Arctic cold water prawn fishery in the context of fully meeting the MSC Principles and Criteria for Sustainable Fisheries are:

- The ecological role of the shrimp stock in the Barents Sea is not well understood.
- A significant component of the Estonian shrimp fishery takes place in International waters, where only technical measures apply. Therefore there is currently no scope for limiting fishing effort within this sub-area of the fishery.
- There are no explicit harvest controls rules in place which define what management action will be invoked if the stock biomass declines to levels close to Btrigger or Blim, or if fishing mortality increases to levels close to Flim.
- The move on rule concerning interactions with sponge or coral habitats requires vessels to move on when bycatch exceeds thresholds for VMEs in the NEAFC regulatory area of 30 kg of live coral and 400 kg of sponges. In order to detect any increase in risk for vulnerable bottom habitats more information is needed to show that the move on rule is consequently applied and risks for habitat continues to be low.

1.4 Determination / draft determination

The extended Unit of Assessment of the Estonia North East Arctic cold water prawn fishery achieved a score of 80 or more for each of the three MSC Principles, and did not score under 60 for any of the set MSC Criteria. The assessment team therefore recommends that the extended UoA is included within the scope of the existing valid fishery certificate for the client group Reyktal Ltd, Reval Seafood Ltd, P/R Ocean Tiger and UAB Marlinas with conditions as described below.

1.5 Conditions for certification and time-scale for compliance

At the original assessment in 2013 the Unit of Assessment achieved a score of below 80 against 3 performance indicators (PIs). The assessment team has therefore set conditions for continuing certification that the client is required to address. The conditions are applicable to improve performance to at least the 80 level within the periods set by the DNV assessment team as described in the tables below.

In this expedited assessment several assessment components have been re-assessed. The assessment components harvest strategy under P1 and habitat under P2 include the 3 PIs that have attracted a condition in the original assessment. However the re-assessment of these components and PIs involved did not lead to any change of score. That means that the same PIs attracted exactly the same Condition with the same timelines as were formulated during the original assessment. The same applies to the recommendation concerning PI 1.2.3. Actions that have to be taken by client remain the responsibilities of the client group.

Condition 1

Performance Indicator	PI 1.2.1 There is a robust and precautionary harvest strategy in place
Score	70
Rationale	**SG 80 (a) Requirement:** The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy **work together** towards achieving management objectives reflected in the target and limit reference points. **Rationale:** A significant component of the Estonian, Danish and Lithuanian shrimp fisheries takes place in International waters, where only technical measures apply, and there is currently therefore no scope for limiting fishing effort within this sub-area of the fishery. Although the proportion of the stock which is in international waters is relatively small and there is a limit on the number of the Estonian, Danish and Lithuanian vessels, this is a significant weakness in the harvest strategy and the assessment team does not believe that the fishery achieves SG80 for this issue.
Condition	By the fourth annual surveillance, regulations limiting fishing effort in international waters (ICES Ia and Ib), that are responsive to the state of the stock, should be implemented to demonstrate that the elements of the harvest strategy work together towards achieving management objectives for the Barents Sea shrimp stock as a whole.
Milestones	**Annual surveillance 1**: Show written evidence of consultation with relevant authorities and stakeholder groups in relation to options limiting fishing effort in international waters **Annual surveillance 2:** Provide an evaluation of options considered for potential mechanisms for limiting fishing effort **Annual surveillance 3:** Propose regulations for limiting fishing effort to relevant authorities **Annual surveillance 4:** Implementation of regulations for limiting fishing effort through consultation with relevant authorities.
Consultation on condition	Relevant Ministries in Estonia, Denmark and Lithuania, NEAFC.

Condition 2

Performance Indicator	PI 1.2.2 There are well defined and effective harvest control rules in place
Score	75
Rationale	**SG 80 (a) Requirement:** 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. **Rationale:** There are no well-defined harvest control rules in place which stipulate what management action will be invoked if the stock biomass declines to levels close to Btrigger or Blim, or if fishing mortality increases to levels close to Flim.
Condition	By the fourth annual surveillance, well defined harvest control rules shall be implemented for the shrimp stock as a whole to ensure that the exploitation rates are reduced as limit reference points are approached.
Milestones	**Annual surveillance 1:** Show written evidence of consultation with relevant authorities and stakeholder groups in relation to options for HCRs. **Annual surveillance 2:** Provide an evaluation of options considered for potential HCRs **Annual surveillance 3**: Propose HCR to relevant authorities **Annual surveillance 4:** Implementation of HCR through consultation with relevant authorities.
Consultation on condition	Relevant Ministries in Estonia, Denmark and Lithuania, NEAFC.

Condition 3

Performance Indicator	**PI 2.4.3 Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types**
Score	75
Rationale	**SG 80 (c) Requirement:** **Sufficient data continue to be collected to detect any increase in risk to habitat** (e.g. **due to** changes in the outcome indicator scores or the operation of the fishery or **the effectiveness of the measures**) **Rationale:** Based on the (VMS) information provided the team has concluded that the fishery is patchy and focused in limited areas. It is expected that the fishery will continue this fishing pattern and also that the same fishing grounds will be fished time after time, Additionally the move on rule concerning interactions with sponge or coral habitats requires vessels to move on when bycatch exceeds thresholds for VMEs in the NEAFC regulatory area of 30 kg of live coral and 400 kg of sponges. Therefore the conclusion is that large areas are not impacted by the fishery and the move on rule further reduces risk to bottom habitat. In order to detect any increase in risk for vulnerable bottom habitats information is needed to show that the fishery continues to be conducted in the same patchy and concentrated manner. More information is also needed to show that the move on rule is consequently applied and risks for habitat continue to be low.
Condition	The fishery is required to collect sufficient information on bycatches and spatial distribution of the fishery in order to detect any increase in risk for vulnerable bottom habitats (e.g. due to changes in fishing pattern or effectiveness of the move on rule).
Milestones	**Annual surveillance 1:** Develop and implement procedures for monitoring and recording all by-catches of coral and sponges in every fishing haul. Provide the team with the collected data preferably with a map showing all recorded bycatches of sponges and corals. Provide the team with a map with all the VMS data on all UoC fishing vessels. Together with the team analyse the collected data to determine whether significant impacts are likely and where necessary develop appropriate management responses. **Annual surveillance 2-4:** Provide the team with the collected data preferably with a map showing all recorded bycatches of sponges and corals. Provide the team with a map with all the VMS data on all UoC fishing vessels. Show proof that appropriate management responses are taken where necessary.
Consultation on condition	None. Client is advised to establish cooperation with the relevant scientific institutes in Estonia, Denmark and Lithuania in order to develop appropriate recording procedures and data analysis.

2 AUTHORSHIP AND PEER REVIEWERS

Table 3 Assessment team

Role	Name	Qualifications
Team leader and Principle expert	**Julian Addison**	Julian holds a Ph.D. in population ecology and modelling from Imperial College of Science and Technology, University of London, and also a BSc in Zoology from Kings College, University of London. He has 30 years' experience of stock assessment and provision of management advice on shellfish fisheries and scientific research on crustacean biology and population dynamics and inshore fisheries. Until December 2010 when he left the organisation to become an independent consultant, he worked at the Centre for Environment, Fisheries and Aquaculture Science (Cefas) in Lowestoft, England where he was Senior Shellfish Advisor to Government policy makers, which involved working closely with marine managers, legislators and stakeholders, Government Statutory Nature Conservation Organisations and environmental NGOs. He has also worked as a visiting scientist at DFO in Halifax, Nova Scotia and at NMFS in Woods Hole, Massachusetts where he experienced shellfish management approaches in North America. For four years he was a member of the Scientific Committee and the UK delegation to the International Whaling Commission providing scientific advice to the UK Commissioner. He has worked extensively with ICES and most recently was Chair of the Working Group on the Biology and Life History of Crabs, a member of the Working Group on Crangon Fisheries and Life History and a member of the Steering Group on Ecosystems Function. He has extensive experience of the MSC certification process primarily as a P1 team member but also as a P2 team member and team leader undertaking MSC full assessments for the Ireland and Northern Ireland bottom grown mussel fisheries, the Newfoundland and Labrador snow crab fishery, Estonia and Faroe Islands North East Atlantic Cold Water prawn fisheries, Swedish Skagerrak and Norwegian Deep cold water prawn fishery, the Eastern Canada offshore lobster fishery and the Limfjord mussel and cockle fisheries. He has also undertaken MSC pre-assessments and numerous annual surveillance audits being responsible also for P3 issues and has carried out peer reviews of MSC assessments in both Europe and North America of lobster, cold water prawn, razorfish, cockle and scallop fisheries. Other recent work includes a review of the stock assessment model for blue crabs in Chesapeake Bay, USA, and an assessment of three Alaskan crab fisheries under the FAO-based Responsible Fisheries Management scheme. He was a P1 expert of the team for the initial assessment of both Estonia and Faroe Islands NEA cold water prawn fishery, and also team leader and principle expert for the all the surveillance audits.

DNV GL project manager and Chain of custody responsible	**Sigrun Bekkevold**	Sigrun Bekkevold is a subcontractor for DNV GL Business Assurance and holds a Master of Science in industrial chemistry and biochemistry from the Norwegian University of Science and Technology in Trondheim. She has 25 years of experience in leading projects for sustainable development of the marine sector. She was employed in DNV GL until October 2016, and after that is hired as a subcontractor on MSC fisheries projects. She has been working with the MSC standard for sustainable fisheries as project manager and chain of custody responsible for pre-assessments, initial assessments and surveillance assessments. This includes e.g. Norwegian, Swedish and Danish shrimp fisheries in Skagerrak and the North Sea, Norwegian, Faroese and Estonian shrimps fisheries in the Barents Sea, Norwegian krill fishery in Antarctica, Greenland halibut and lumpfish fisheries in West Greenland and fisheries in the Baltic sea. She has also been project manager in developing product certification standard for marine ingredients in for Norwegian Food industry and has also been working with strategies for sustainability services in the marine sector. Before 2012 her main focus was on research, innovation and business development within total utilization of fish. This includes compiling strategies, action plans, feasibility analysis and market analysis, organizing project teams, performing mass flow analysis, networking with industry, research and authorities, evaluating regulatory issues and communication of results. She held a position as a general manager in RUBIN Foundation, aiming for value adding and better utilization of fish by-products. RUBIN has been owned by the seafood industry in Norway and supported by Ministry of Fishery and Coastal Affairs and the Norwegian Seafood Research Fund. The work has included the whole value chain, from the fishing vessel and all the way to the marked. She has been project manager and chain of custody responsible in the two last surveillance audits on the Estonia and Faroe Islands NEA CWP fishery.

2.1 Peer reviewers

Based on experience with the relevant MSC Fishery programme and components of the Unit of Certification, the peer reviewer listed in Table 4 was selected in accordance with MSC Fishery Certification Requirements on qualifications and competencies.

Table 4 Peer reviewer

Peer reviewer	Name
Peer reviewer	**John Nichols** Mr John Nichols is a retired UK government fisheries biologist with 42 years research experience in plankton ecosystems in the North Atlantic specializing in the taxonomy of North Atlantic & NW European plankton including phytoplankton, micro and meso-plankton, ichythoplankton and young fish.. He has been a member of ICES working groups on herring, mackerel, horse mackerel, sardine and anchovy assessments; and mackerel and horse mackerel egg surveys. He was also a member of ICES study groups on herring larval surveys and plankton sampling. He was scientist in charge of numerous research vessel surveys for fish stock assessment purposes and directly involved in the assessment of pelagic and western demersal fish stocks from 1994 to 2000. He has been involved in the publication of over fifty scientific papers and reports more than half of which have been in peer reviewed journals, and the publication of two fish egg and larvae identification keys. Since retirement from his government post he has participated in a total of 29 different fisheries MSC assessments as the Principle 1 expert plus the re-assessments of many of those fisheries Those assessments include the Thames estuary herring, PFA North Sea Herring, NEA mackerel and Atlanto-Scandian herring, Hastings Fleet Dover sole, the north –east coast of England bass fishery, the SW mackerel hand line fishery, **Portuguese sardine,** a Newfoundland herring fishery, Newfoundland cod, Canadian Pacific sablefish, various Norwegian and Swedish pelagic fisheries, Faroese and Norwegian saithe fisheries, Faroese, Russian and Norwegian Arctic cod and haddock fisheries and a North Sea plaice and sole fishery,. He has also been a peer reviewer for numerous MSC certification reports by various Certification bodies and has also carried out two MSC pre-assessments and numerous annual audits. In 2010 he delivered a lecture on *The Importance of a Fisheries Interaction with the Ecosystem in the MSC Certification Process*' at an international Safe Seas conference in Portugal. In 2014 he successfully completed the four module MSC on line training course, passed the exam and was certified in the role of an MSC Fishery Assessment Team Leader. Elected as a Fellow of the Society of Biology in July 2014.

3 DESCRIPTION OF THE FISHERY

3.1 Unit(s) of Certification and scope of certification sought

3.1.1 Statement that the fishery is within the MSC scope

The fishery is within the scope of the MSC Fisheries standard according to the following determinations:

- The target species is a crustacean and the fishery does not use poisons or explosives.
- The fishery is not conducted under a controversial unilateral exemption to an international agreement.
- The client or client group does not include an entity that has been successfully prosecuted for a forced labour violation in the last 2 years.
- The fishery has mechanisms for resolving disputes and disputes do not overwhelm the fishery.

The MSC Guidelines specify that the unit of certification is the fishery or fish stock (=biologically distinct unit) combined with the fishing method, gear and practice, and the vessel(s) pursuing the fish of that stock) and management framework.

3.1.2 Original and new Unit of Assessment

The fishery covered currently by this certification is defined as described in Table 5A. Originally the certification included Reyktal Ltd. and Reval Seafood Ltd., but was extended to also include the Danish company P/R Ocean Tiger in February 2015 after a gap analysis performed in October/November 2014. The evaluation of the scope extension was published as a part of the Surveillance Report No. 1 for the Estonia NEA cold-water prawn fishery on MSC´s website in November 2014, and was available for consultation for 30 days. No comments were received from stakeholders. The Scope extension certification report was published on MSC´s website in March 2015. P/R Ocean Tiger, represented by vessel Ocean Tiger R38, became a part of the client group with equal rights and responsibilities in regards to MSC Fisheries certificate maintenance for this fishery.

Table 5A Original UoC as defined in the PCR of 7 November 2013 followed by a scope extension report of 3 March 2015 to include a Danish vessel

Fishery Name	Estonia North East Arctic Cold Water Prawn
Species	Northern shrimp, or cold water prawn (*Pandalus borealis*)
Geographical area	Barents Sea and Svalbard in FAO statistical area 27, ICES Ia,b and IIb.
Method of capture	Bottom trawl
Stock	Barents Sea shrimp (ICES Division I and II)/FAO 27
Management	• Estonia and Denmark Fisheries Management /EU Commission • NEAFC • Norwegian Fisheries Management (Svalbard FPZ) The stock is managed according to ICES advice.
Client group	Reyktal Ltd. and Reval Seafood Ltd represented by the following vessels: Taurus, Ontika, Eldborg (owned by Reyktal Ltd), Reval Viking (owned by Reval Seafood Ltd)

	P/R Ocean Tiger represented by the following vessel: Ocean Tiger R38.
Eligible fishers	There are no other identified eligible fishers, as there are no other vessels fishing for cold water prawns (*Pandalus borealis*) licensed under Estonian fisheries management in the Unit of Certification. If at a later date more vessels are added to the Estonian shrimp fishery in the Barents Sea, their eligibility to share the certificate will be considered upon the application. New vessels owned by the client group will automatically (subject to full compliance with MSC requirements) be eligible to share the MSC certificate.

After the scope extension to include a Lithuanian vessel owned by UAB Marlinas, the scope is set as defined in Table 5B. Changes are highlighted in blue.

Table 5B New extended UoC to include a Lithuanian vessel

Fishery Name	Estonia North East Arctic Cold Water Prawn
Species	Northern shrimp, or cold water prawn (Pandalus borealis)
Geographical area	Barents Sea and Svalbard in FAO statistical area 27, ICES Ia,b and IIb.
Method of capture	Bottom trawl
Stock	Barents Sea shrimp (ICES Division I and II)/FAO 27
Management	• Estonia, Denmark and Lithuania Fisheries Management /EU Commission • NEAFC • Norwegian Fisheries Management (Svalbard FPZ) The stock is managed according to ICES advice.
Client group	Reyktal Ltd. and Reval Seafood Ltd represented by the following vessels: Steffano, Ontika (owned by Reyktal Ltd), Reval Viking (owned by Reval Seafood Ltd) P/R Ocean Tiger represented by the following vessel: Ocean Tiger R38. **Extension:** Lithuanian vessel owned by UAB Marlinas: Taurus
Eligible fishers	**Estonia / Denmark** There are no other identified eligible fishers, as there are no other vessels fishing for cold water prawns (Pandalus borealis) licensed under Estonian fisheries management in the Unit of Certification. If at a later date more vessels are added to the Estonian shrimp fishery in the Barents Sea, their eligibility to share the certificate will be considered upon the application. New vessels owned by the client group will automatically (subject to full compliance with MSC requirements) be eligible to share the MSC certificate. **Lithuania (extension)** There are currently no vessels other than Taurus included in the scope extension to the certification. If at a later date the vessel owner adds more vessels to their fleet that fish in the Barents Sea for cold water shrimp under Lithuanian quota, they will automatically (subject to full compliance with MSC requirements) be eligible to share the MSC certificate.

3.1.3 Rationale for unit of certification

According to the MSC Certification Requirements v2.0, the proposed unit of certification shall include the target stock (s), the fishing method or gear and the practice (including vessels) pursuing that stock. The MSC Certification Requirements Guidance V1.1 specifies that the unit of certification is *"The fishery or fish stock (= biologically distinct unit) combined with the fishing method/gear and practice (= vessel(s) pursuing that stock".*

3.1.4 Other Eligible fishers

As per 07.11.2013 (the original certification), there were no other eligible fishers who could be entitled to join this certification process. Following the scope extension of 3 March 2015 and this current scope extension, the 3 Estonian vessels, 1 Danish vessel and 1 Lithuanian vessel in the client group are the only vessels in the UoA. If at a later date more vessels are added to the Estonian shrimp fishery in the Barents Sea, their eligibility to share the certificate will be considered upon the application. New vessels owned by the Estonian client group, P/R Ocean Tiger or UAB Marlinas will automatically (subject to full compliance with MSC requirements) be eligible to share the MSC certificate. List of eligible vessels will be kept updated and also listed in an Appendix in the annual surveillance reports.

3.2 Overview of the fishery

3.2.1 Client name and contact information

Reyktal Ltd, Reval Seafood Ltd,
Veerenni 39,
10138 Tallinn, Estonia
Website: www.reyktal.eemaresco.dk

Contact person:
Mati Saravet (Managing director)
Phone: +372 513 8366
Email: mati@reyktal.ee

P/R Ocean Tiger:
Strandgade 10,
3730 Nexø, Denmark
Web site: www.ocean-prawns.com/site/Ocean_Tiger/

Contact person:
Peter Pedersen
Phone: +45 56440419
E-mail: pp@ocean-prawns.com

Additional client:

UAB Marlinas
Pylimo 4,
91249 Klaipeda, Lithuania
Web site: www.pp-group.eu

Contact person:
Aivaras Labanauskas (Managing director)
Phone: +370 46 493105
Mob. +370 670 19116
email: ala@pp-group.eu

3.2.2 Client information

Reyktal Ltd. was established in 1997 as a deep sea fishing company. Today, the company operates three stern freezing trawlers (Steffano and Ontika) and focuses primarily on the shrimp fishing in the North East Atlantic.

Steffano (EK-1601) Gross tonnage:2139 ton Length: 63,4 m	
Ontika (EK-0101) Gross tonnage: 1410 ton Length: 63,83 m	

Reval Seafood Ltd. is affiliated to Reyktal Ltd. company established in November 2012. The company was established as a consequence of a large investment into a new shrimp trawler - Reval Viking. Reyktal Seafood Ltd owns 50% of Reval Seafood Ltd (Reval Viking).

Reval Viking (ex Remoy Viking) (EK-1202) Gross tonnage: 2350 ton Length: 61,00 m	

Following the scope extension assessment in 2015, the extended certificate includes the Danish vessel Ocean Tiger. The vessel is managed by Ocean Prawns A/S which has been working in the shrimp industry for over thirty years. Ocean Prawns A/S handles catches of approximately 25,000 tonnes of cold water shrimp and halibut, making the company one of the world's largest suppliers of MSC-labelled shrimps from the northern Atlantic.

Ocean Tiger (R 38) Gross tonnage:2223 ton Length: 60,00 m	

The extended certificate includes the vessel Taurus that was sold by Reyktal to the Lithuanian company UAB Marlinas in October 2016. UAB Marlinas was established on 20 June 2016, specifically as a shrimp fishing company. UAB Marlinas acquired shrimp fishing trawler Taurus from Reyktal ltd, which keeps managing the vessel, due to their extensive experience in the shrimp fishery.

Taurus (KL 898) Gross tonnage:1780 ton Length: 58,00 m	

3.2.3 Overview of the fishery

3.2.3.1 History of the fishery

The fishery for *Pandalus borealis* in the Barents Sea and Svalbard Fishery Protection Zone (FPZ) was started by vessels from Norway in 1970, and as the fishery developed, vessels from Russia, Iceland, Greenland, Faroe Islands and the EU countries also entered the fishery. Norwegian and Russian vessels exploit the *Pandalus borealis* stock across the entire region, although Russian vessels declared zero landings each year from 2009 to 2012 and only minimal landings since then. Vessels from other countries, including those from Estonia, Denmark and Lithuania are not permitted to fish in the Norwegian EEZ, but they are permitted to fish within the Svalbard FPZ, and in an area of international

waters to the south east of Svalbard known as the 'Loop Hole' (Figures 1 & 2). Over the last few years the fishery has shown increased activity in the international zone, due to a recent eastwards shift in the main areas of shrimp distribution possibly driven by observed changes in water temperatures, and to some area closures due to high bycatches of juvenile fish. Currently the shrimp fishing fleet comprises primarily of large vessels with on average 6000 HP in comparison with the 1980s when the average vessel was around 1000 HP. Traditionally vessels used single trawls only, but since 1996, vessels have increasingly used both double and triple trawls, and in 2010 approximately 90% of the largest fleet of vessels from Norway were using multiple trawls.

Figure 1: Map of the North east Atlantic, Norwegian Sea and Barents Sea identifying NEAFC regulatory areas (orange).

As the fishery developed, catches reached a peak of 128,000 tonnes in 1984, but since 2000 catches have declined from around 80,000 tonnes to 20-30,000 tonnes per annum (Figure 3).

Up until 2010 the majority of the landings were by Norwegian vessels, but in recent years there has been an increase in fishing effort by vessels from EU countries, Faroe Islands and Greenland, such that these countries now land approximately half of the total landings. The decline in landings since 2000 is due to reductions in fishing effort caused by increased vessel operating costs, primarily high fuel prices, and low market prices and consequent low profitability of the fishery (NAFO/ICES, 2010). Since 2006, the total catch in the fishery has been significantly below the TAC recommended by ICES. Landings then declined further to 19,249 tonnes in 2013 and increased slightly to 20,964 tonnes in 2014. Since then landings have increased significantly to 33,624 tonnes in 2015, and for 2016 ICES projected landings to be 36,000 tonnes (Figure 3).

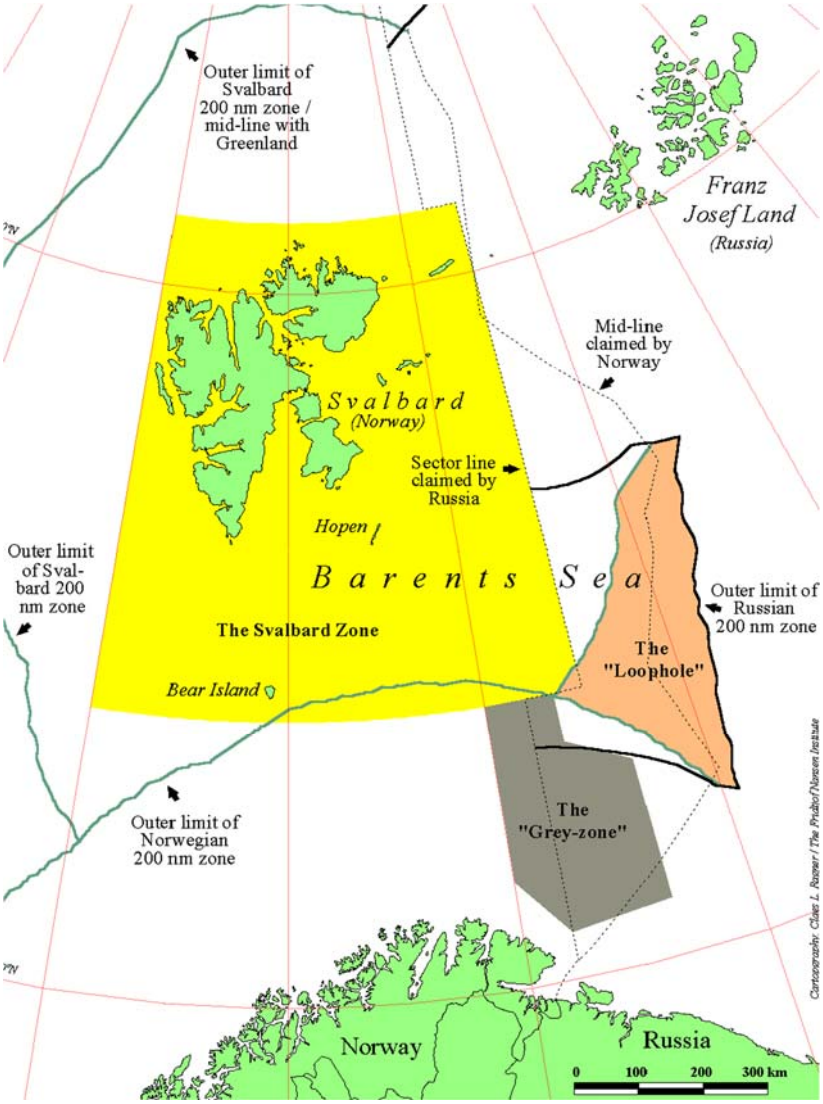

Figure 2. Map of the Barents Sea identifying the Svalbard Area, the NEAFC zone (The Loophole) and the former "Grey-zone".

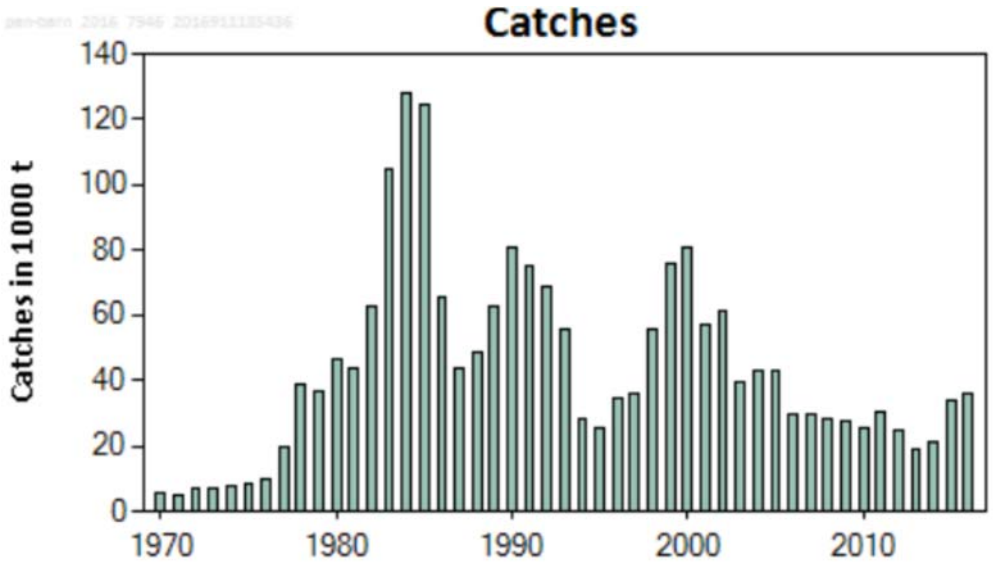

Figure 3: Total annual landings of shrimp in the Barents Sea. The 2016 projected value is estimated based on data until August and information from the industry. (Source: ICES 2016a*)*

3.2.3.2 The client fishery

Within the Barents Sea, vessels from Estonia, Denmark and Lithuania have fishing rights in the Svalbard Fisheries Protection Zone, and in an area of international waters managed by NEAFC to the south east of Svalbard known as the 'Loop Hole'. Vessels from these countries are not permitted to fish in the EEZ of Russian Federation. Fishing takes place throughout the year, but in some areas it will be restricted by ice conditions, with the main fishing season being March to October.

Estonian vessels landed 4521, 5289 and 5897 tonnes of shrimps in ICES Area I and II in 2013, 2014 and 2015 respectively, equating to approximately 23%, 25% and 18% of the overall landings from the Barents Sea stock in the respective years. Provisional figures for 2016 up to the end of October 2016 show landings of 6423 tonnes. The majority of the landings have been from the NEAFC zone in all years. The Danish vessel, Ocean Tiger R38, caught 165 tonnes of shrimp during the only fishing trip undertaken in 2014, but these shrimp were not landed until January 2015. Landings by the Danish vessel in 2015 (based on sales note data) were 1169 tonnes equating to approximately 3.5% of the overall landings from the Barents Sea stock. Approximately 60% of the landings were from the Svalbard zone in 2015. Preliminary data up to the end of October for 2016 show landings of 1374 tonnes. The Lithuanian vessel that is included in this scope extension was previously fishing under the Estonian flag, and therefore no landings had been made by the vessel under the Lithuanian flag up to October 2016. Shrimps from the Barents Sea fishery are landed by another Lithuanian vessel but this vessel is not part of the UoC.

In 2013 three Estonian vessels were licensed to fish in the Barents Sea shrimp fishery: Eldborg (EK-0604), Ontika (EK-1502, previously EK0101) and Taurus (EK-994). Reval Viking (EK-1202) was purchased in 2013 following which Eldborg no longer had a license to fish for shrimps. Steffano (EK-1601) was purchased in 2016. The Danish vessel is Ocean Tiger R38. All vessels use primarily double trawls. In 2016, Taurus was sold to a Lithuanian company, UAB Marlinas, and the Estonian client has requested the extension of the client fleet with Taurus now under the Lithuanian flag. Taurus will operate with the same crew as when under the Estonian flag and will fish in the same areas. In 2015 under the Estonian flag, Taurus landed 1753 tonnes of shrimps.

3.2.3.3 Fishing practices and gear used

In March 2015, the Estonian Unit of Certification was extended to include the Danish vessel "Ocean Tiger". This vessel has a LOA of 60 metres and an engine power of KW 4920/3970. Ocean Tiger operates with a fishing gear that is identical to the gears used by the Estonian vessels in the client fleet as described below.

At this current expedited audit, representatives of Lithuanian company UAB Marlinas confirmed that Taurus would continue to operate with fishing gear that is identical to the gears used by the Estonian vessels in the client fleet as described below.

Shrimp is caught by small-mesh trawl gear with a minimum stretched mesh size of 35 mm. The mesh size used by all UoC vessels in the cod end is 44 mm although a smaller mesh size is allowed in the Svalbard Area (Table 6). All trawls are equipped with obligatory sorting grids (Figure 4), which stream by-catch of fish out of the shrimp trawl, allowing maximum reduction of by-catch of juvenile fish. The spacing between the grid bars on the sorting grid is determined by regulation in both the Svalbard FPZ and the NEAFC Regulatory area (Table 6).

Table 6. Technical measures/requirements in the Svalbard FPZ and NEAFC regulatory area.

	Minimum mesh size	Cod end	Sorting grid bar space
Svalbard FPZ	35 mm	42 mm	19 mm
NEAFC Regulatory area	40 mm	44 mm	22 mm

Figure 4: Sorting grid used on shrimp trawlers in the Barents Sea.

The net is an otter (twin-rig) trawl net (Figure 5), which is held open by trawl doors. In the middle between the nets a clump is used to keep the net near the bottom. The weight of the doors is between 4 and 6 tonnes and the weight of the clump is around 5 to 9 tonnes. The ground rope is prevented from making contact with the sea bottom by rubber discs of approximately 0.5 to 0.8m in diameter.

Most of the fishing vessels use double trawling. The length of towing is around 4-6 hours, with approximately 7-8 tonnes of shrimp being taken in 1 day. Longer towing is not recommended due to quality considerations. Offshore vessels can catch up to 300 tonnes of shrimp per trip, which usually last for 4-5 weeks.

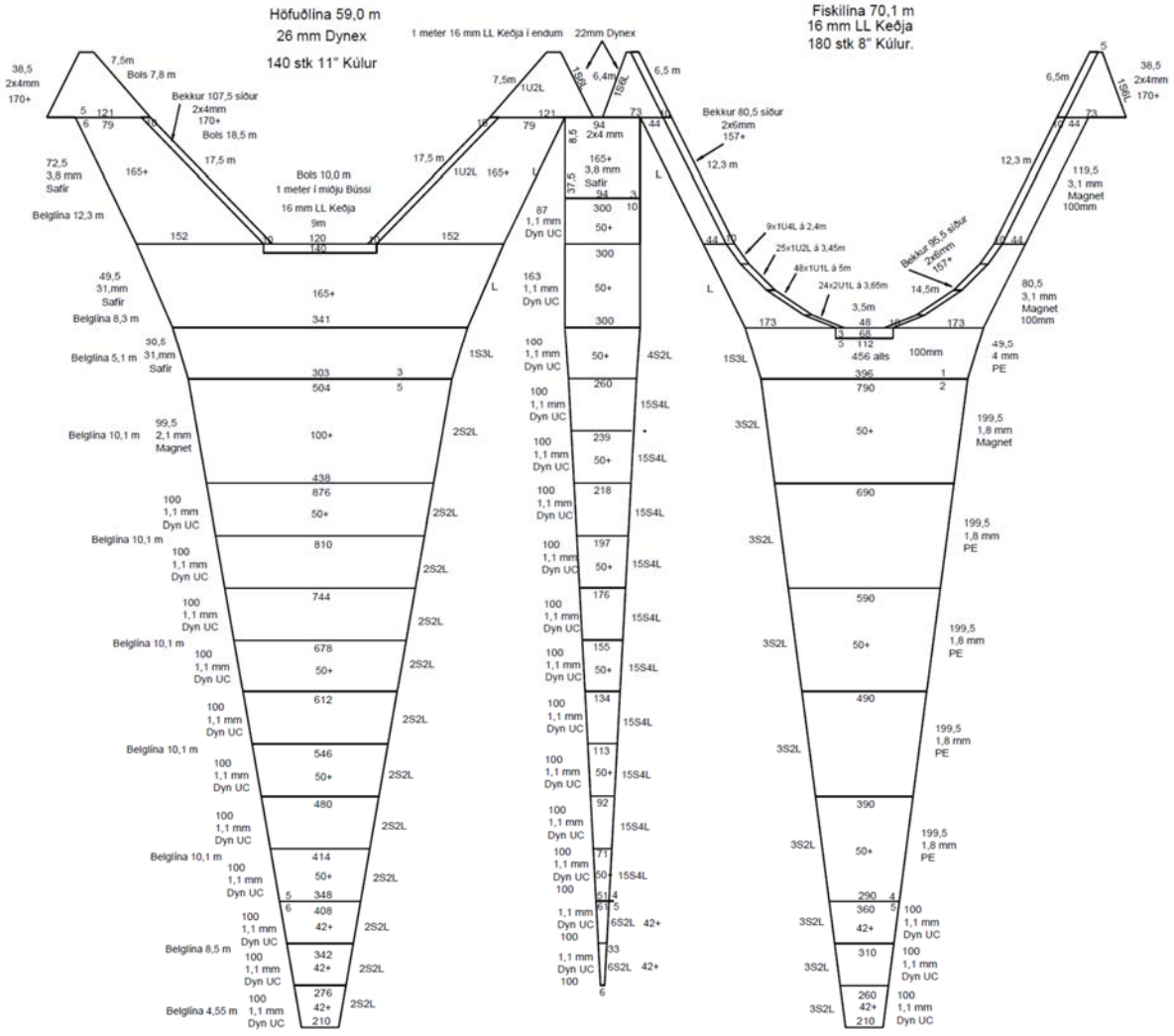

Figure 2: Twin-rig trawl used on client vessel Taurus. Model ANG COS 3300.

The Barents Sea shrimp fishery generally takes place at 250 – 350 m depth[1]. The deepest fishing ground is around 800 m. According to fishermen, shrimp can be found almost everywhere, though not always in the same volumes. The majority of vessels operate on the soft sea bed, allowing no lasting damage to the sea bottom. Some vessels operate in the areas with a harder sea-bottom, and use light-weight

[1] The average fishing depth in 2012: Eldborg – 281m, Ontika -275m, Taurus -348m.

rock–hopper gear. In both cases, trawl doors have contact with the sea bottom and result in a direct impact on habitat structure. Some vessels have been trying pelagic doors, which are kept off the bottom. It is expected that this practice would be more frequently used in the future in order to reduce the environmental impact on the sea bottom. There are also several on-going projects which are aimed at developing a more effective and environmentally friendly trawl gear for shrimp fisheries.

The minimum landing size of shrimp is 6cm (15mm CL), while the average size of shrimp caught by Estonian vessels is around 7-8 cm. The mesh size used in the fishery and the current practice of targeting larger shrimps means that the fishable stock is considered to be shrimps of 17mm CL and above rendering the minimum landing size of 15mm CL redundant. There are some areas in the Barents Sea, where a high concentration of small sized shrimp may occur. It should be noted that all shrimp, including undersized shrimp is landed.

Management regulations differ across the various fishing zones. The fishery is regulated primarily through effort control and technical measures. There is no TAC for the Barents Sea stock as a whole, but there is a partial TAC in the Russian zone. Norwegian and Russian vessels require licences. Estonian vessels fish only in the Svalbard FPZ and in international waters managed by NEAFC and require a licence to fish in both areas issued by the Estonian Ministry of Agriculture. In both areas, Estonian vessels have a Vessel Monitoring System (VMS) on board and must complete EU electronic log books. Estonia is a signatory to the Svalbard Treaty, and Estonian vessels are therefore allowed to fish in the Svalbard FPZ under Norwegian regulations. In this area vessels must notify Norwegian authorities prior to commencement of fishing, and weekly catch reports in the form of a Port State Control Form (PSC) must be made to both Norwegian and Estonian authorities. The number of vessels permitted to fish in the Svalbard FPZ is limited by country and by an overall limit on effective fishing days. Estonia has a limit of 3 vessels and 377 effective fishing days. Denmark has an allocation of 31 days, and within the total EU allocation of days in the Svalbard FPZ, Denmark agreed the transfer of 35 days with the Estonian authorities and 61 fishing days with the German authorities, providing a total of 127 fishing days in the Svalbard FPZ allocated to Denmark in 2015. Denmark has an allocation of 92 days in 2016. Lithuania has a limit of 6 vessels with an overall limit of 647 fishing days of which 317 days have been allocated to UAB Marlinas. Vessels must cease fishing in areas where the bycatch of cod and haddock is over 10% or when more than 10% of the catch of shrimps are undersized (<15mm CL) or when the numbers of undersized cod, haddock or redfish reach prescribed numbers per 10kg of shrimps caught. Estonia used to be a contracting party to NEAFC, but is now represented through the EU which allows its vessels to fish in the area of international waters known as the Loop Hole. In this area there is no effective limit on the overall level of fishing effort or an overall quota, although Estonia currently issues licences to only 3 vessels to fish in this area and allocates a quota to each licence holder. Fishing must be undertaken as set out in the NEAFC Scheme of Control and Enforcement which includes the completion of catch on entry (COE) and catch on exit (COX) forms when entering or exiting the area, a Port State Control Form (PSC) when landing shrimps in another country, and an EU catch certificate if the shrimps are destined for the EU market. In all areas, there is a minimum stretched mesh size of 35mm and the incorporation of Nordmore sorting grids to reduce bycatch are mandatory. All the above regulations apply to both Danish and Lithuanian vessels as well.

3.3 Principle One: Target Species Background

3.3.1 Impact of the scope extension on the UoA.

The status of the cold water prawn stock in the Barents Sea and the harvest strategy that is applied to the fishery were assessed against Principle 1 in the initial full assessment of the Estonia NEA cold water prawn fishery. The addition of a vessel to the Unit of Certification cannot impact the scores on the Performance Indicators 1.1.1 and 1.1.2 since these concern stock status and the application of reference points as they are under the current Norwegian, Russian and NEAFC stock management regime for the Barents Sea cold water prawn fishery. The extended fishing operations target the same stock in the same geographical area which implies that scores on Outcome PI's will be identical.

Although the fishing operations of the fleet extension are managed mainly under the same management system, Lithuanian vessels fall under Lithuanian jurisdiction. This means that the actions of these vessels might be partly controlled by Lithuanian national regulations and license conditions. Therefore the assessment team has assessed the Harvest strategy component of Principle 1. The results of this assessment are described in the scoring tables in Appendix 1.

Scores and supportive rationales previously applied to Estonian vessels can be found in the Public Certification Report which is available for download at MSC website:
https://fisheries.msc.org/en/fisheries/estonia-north-east-arctic-cold-water-prawn-fishery/@@assessments

3.3.2 Fishery resources

3.3.2.1 Biology and life histories

The cold water prawn *Pandalus borealis* (Krøyer, 1838), also known as the pink or northern shrimp, is a caridean shrimp of the family Pandalidae. It is distributed across the North Atlantic around the Barents Sea, Svalbard, Iceland and Greenland and south to the North Sea and Massachusetts, and across the North Pacific from the Bering Sea south to Japan and Oregon (Holthuis, 1980). In all these areas there are important commercial fisheries for *Pandalus borealis*.

Migration of egg-carrying females into shallower waters in connection with egg-hatching has been observed (Horsted, 1978) and juveniles may migrate from shallower to deeper water (Smidt, 1981). In addition particle tracking models reveal that the larvae of *P. borealis* may be transported as far as 300km during the pelagic phase (Pedersen *et al*. 2003) suggesting some connectivity between populations within the main fishing areas. Martinez *et al.* (2006) studied the genetic structure of *Pandalus borealis* in the Northeast Atlantic analysing variation in the genomic DNA by random amplified polymorphic DNA (RAPD) markers. The study used analysis of molecular variance (AMOVA) and principal component analysis on 34 genetic markers obtained by RAPD fingerprint analysis from shrimps captured in the Barents Sea, Svalbard, Jan Mayen and in two Norwegian fjords. There was no significant genetic variation among shrimp samples from the Barents Sea and Svalbard, although there may be some sub-population structure in environmentally extreme areas due to selection at the larvae and juvenile stages exerted by migration distance and water temperature. Martinez *et al*. concluded that the populations of the Barents Sea and Svalbard can be considered to be a single population, confirming the conclusions of previous genetic analyses of shrimp samples from the region using allozyme studies of Kartavtsev *et al*. (1991) and Drengstig *et al*. (2000), and in accordance with the model of larvae dispersion and mother populations postulated by Pedersen *et al*. (2003).

The North East Arctic cold water prawn, *Pandalus borealis* is distributed throughout the Barents Sea and in the Svalbard Fishery Protection Zone (ICES Sub-areas I and II) primarily in areas with soft, muddy sediments. The highest shrimp densities observed on the joint Norwegian-Russian ecosystem survey in the Barents Sea are at temperatures between zero and 4 degrees C. Shrimp were not caught in areas where bottom temperatures were below zero and the upper temperature limit seems to lie between 6 and 8 degrees C (Hvingel and Thangstad, 2012b). *Pandalus borealis* is a protandric hermaphrodite (Bergstrøm, 2000). Individuals start out as males, mature as males and mate for two years but, after about 3 to 4 years they change sex and complete their lives as females (NAFO/ICES, 2010). Shrimp spawn in autumn, and females carry their eggs until spring when the larvae hatch. The main fishery occurs outside the period when females are carrying eggs, which potentially reduces the impact of exploitation on recruitment. Within a period of approximately 2 months, the shrimp larvae settle to the bottom (Aschan and Ingvalsen, 2009), although particle tracking models reveal that the larvae of *P. borealis* may be transported as far as 300km during the pelagic phase (Pedersen *et al*. 2003). Shrimp feed both on the ocean floor and in the water column. Their diet will therefore include both benthic and pelagic organisms. Recruitment of one year old shrimp appears to be dependent on spawning stock biomass, but it may also be affected by the timing and duration of the phytoplankton bloom (Aschan and Ingvalsen, 2009). Small and medium-sized shrimp (mostly males) predominate in southern and eastern areas in depths of 200 – 350 m while larger individuals (mostly females) occur in northern and western regions in depths of 350 -500 m (Aschan, 2000). Recruitment to the fishery as 3-4 year olds, when the shrimps are greater than 15 mm carapace length (6 cm total length), is influenced by temperature, competition with other species and predation. Numerous fish and marine mammal species are predators of *P. borealis* (Parsons, 2005) and predation mortality is thought to be an important factor in shrimp stock dynamics.

3.3.3 Status of stocks

Pandalus borealis is distributed throughout the Barents Sea and around Svalbard (Figure 6) and is considered to be a single stock (Martinez et al. 2006). The stock in the Barents Sea and Svalbard area (ICES Sub-areas I and II) is assessed annually along with other Northwest Atlantic Fisheries Organization (NAFO) and International Council for the Exploration of the Sea (ICES) stocks by the joint NAFO/ICES *Pandalus* Assessment Group (NIPAG).

3.3.3.1 Stock assessment methods

The stock assessment model used by NIPAG is a stochastic version of a surplus production model. The model is formulated in a state-space framework and Bayesian methods are used to derive posterior likelihood distributions of the parameters (Hvingel and Kingsley, 2006). The model synthesises information from input priors including the initial population biomass in 1969, the carrying capacity (K) and Maximum Sustainable Yield (MSY), a series of shrimp catches and four independent series of shrimp biomasses (Hvingel, 2012). Further details on the methodology and updated stock indices can be found in the most recent stock assessment report (NAFO/ICES, 2016).

The assessment model estimates biomass in relation to Bmsy and fishing mortality in relation to Fmsy, and considers two other reference points that ICES uses within its MSY framework for providing advice: Btrigger (50% of Bmsy), a biomass encountered with low probability if Fmsy is implemented, and Blim (30% of Bmsy), the biomass below which recruitment is expected to be impaired. The assessment also considers Flim (170% of Fmsy), the fishing mortality that would drive the stock to Blim.

The stock assessments described in the annual NIPAG reports are peer-reviewed within ICES by an ICES Review Group. The Review Group involves stock assessment scientists not involved with the *Pandalus borealis* assessments and, from time to time, scientists who are outside the ICES assessment process. The Group may query aspects of the assessment model, the current assessment and the presentation of the results. The 2011 Review Group concluded that there were no major issues regarding the assessment and the data used, and recommended to ACOM, the Advisory Committee, that the assessment could be accepted as the basis for advice.

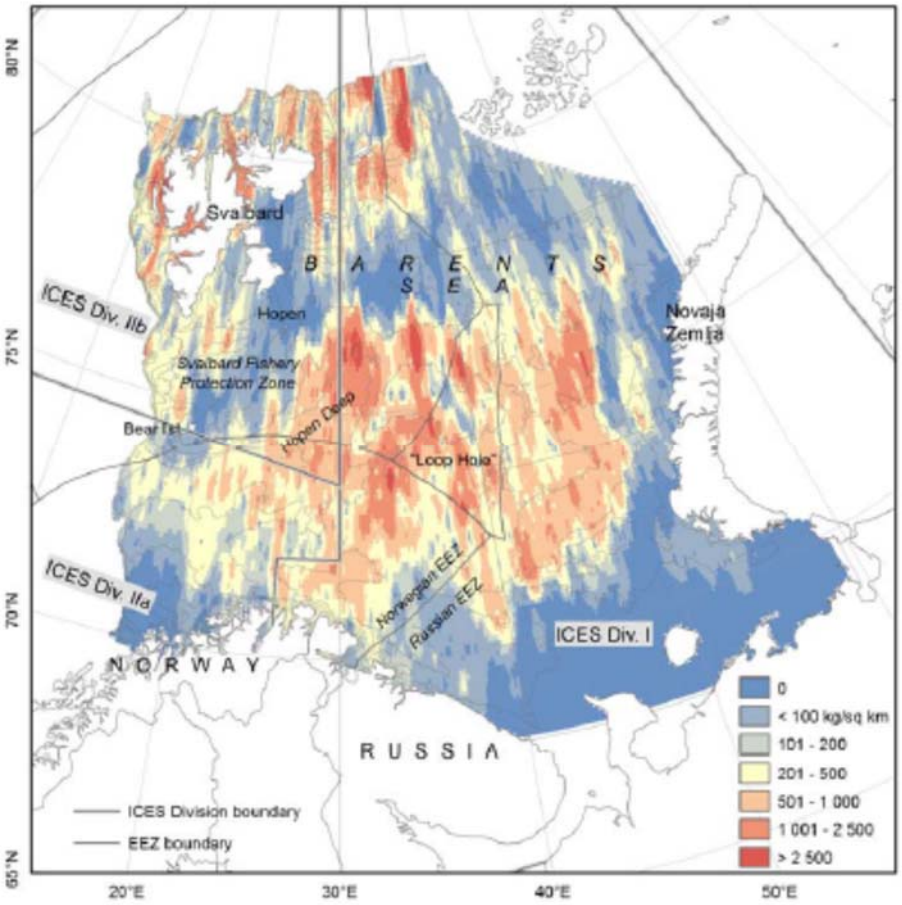

Figure 6: Shrimp in the Barents Sea: stock distribution, mean density index (kg/km2), based on survey data from 2000-2010. (Source: Hvingel and Thangstad, 2012a).

3.3.3.2 Results of assessment

The model provides good simulations of the observed biomass data and the results are not sensitive to the setting of the priors for the initial stock biomass and carrying capacity. The model does not necessarily capture major short-term changes in recruitment. The most recent assessment in 2016 (ICES/NAFO, 2016a) shows that there has been no change in stock status since the original assessment. The estimated biomass has been above Bmsy since the start of the fishery in the 1970s, and the fishing mortality rate has been well below Fmsy throughout the duration of the fishery (Figures 7 and 8). Assuming a catch of 36.000 t in 2016, the assessment estimated that fishing mortality in 2016 would be 0.10 x Fmsy, and that biomass in 2017 is projected to be 1.67 x Bmsy. The assessment estimates the risk associated with exceeding the various reference points. In 2016, the risk of F being above Fmsy was 2.7%, the risk of biomass falling below Btrigger and Blim was 0.4% and 0.1% respectively, and the risk

of F exceeding Flim was 1.2% (NAFO/ICES, 2016). The 2016 assessment also provides model predictions of risk associated with a range of catch levels up to 100.000 t per annum. Assuming a catch of 36.000 t for 2016, catch options up to 90.000 t for 2017 have a low probability of exceeding Flim (<5%), or of the biomass going below Blim (<1%) by the end of 2017, and all are likely to maintain the stock at its current high level (ICES, 2016a). More detail of the most recent values of the various stock indices can be found in the 2016 stock assessment report (NAFO/ICES, 2016)

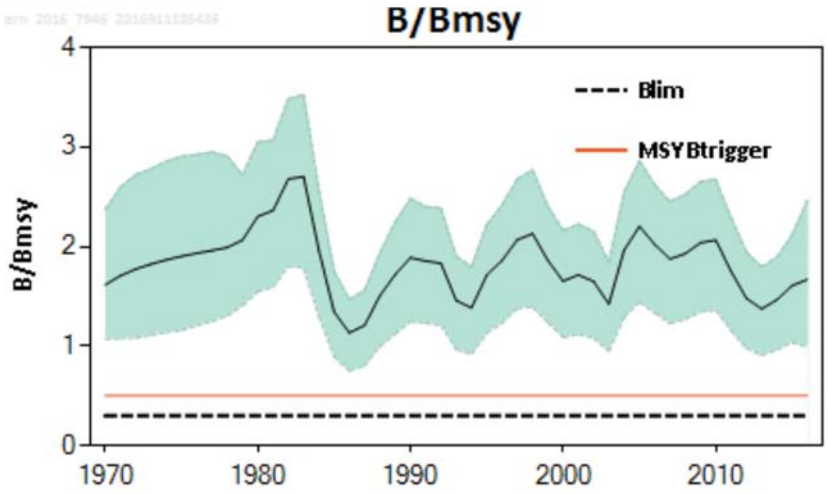

Figure 7: Northern shrimp in subareas 1 and 2. Summary of the stock assessment. Biomass relative to BMSY with 90% probability intervals. Source ICES 2016a.

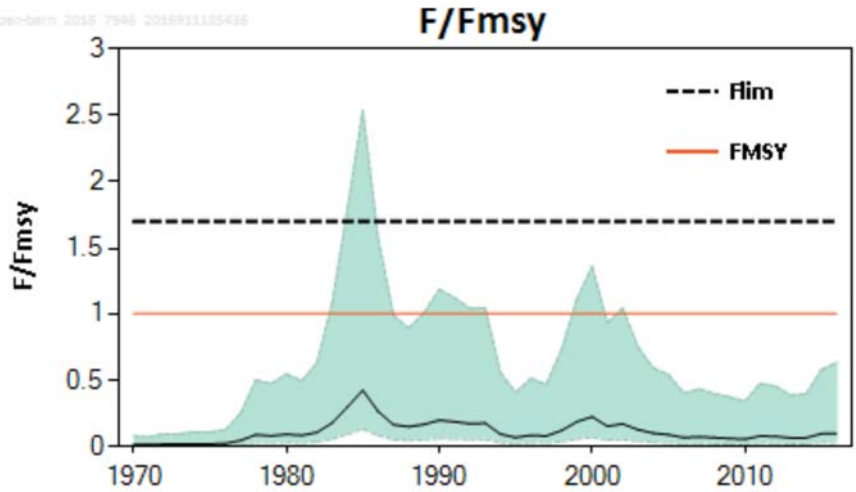

Figure 8: Northern shrimp in subareas 1 and 2. Summary of the stock assessment. Fishing mortality relative to FMSY with 90% probability intervals. Source ICES 2016a.

3.3.3.3 Management advice based on assessment of status

The management advice for the Barents Sea and Svalbard stock based on the NIPAG assessment is formulated by the ICES Advisory Committee (ACOM) on behalf of the Council of ICES. The annual ICES Advice Book contains a general section (Book 1) which contains the conceptual framework for the assessments and advice including the maximum sustainable yield (MSY) concept and the setting of reference points under the precautionary approach (PA) to fisheries management

http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/General_context_of_ICES_advice_2015.pdf

In addition there are a series of books containing regional reports on the various marine eco-regions. Book 3 covers the Barents Sea and the Norwegian Sea including the Sub-areas I and II (Barents Sea) *Pandalus borealis* stock.

The ICES advice for the Barents Sea *Pandalus borealis* stock, based upon the stock assessment described within the latest NIPAG report (NAFO/ICES, 2016), is that an increase in annual catch to 70,000 tonnes would move stock exploitation in the direction of FMSY. The advice lists the various reference points that are used to assess the status of the stock and confirms that within the MSY approach, the stock is well above Btrigger and that F is well below Fmsy, and that within the Precautionary Approach there is a low risk in 2017 of the stock falling below Blim or of F exceeding Flim.

3.4 Principle Two: Ecosystem Background

3.4.1 Impact of the scope extension on the UoA

The impact of the original UoA on the components of Principle 2 was assessed during the initial full assessment of the Estonia NEA cold water prawn fishery. In the GAP analysis that was conducted for both the Danish vessel in 2015 and for the Lithuania vessel in 2016 it was concluded that the addition of a vessel to the Unit of Certification will not impact the scores concerning the Bycatch 2.2, the ETP 2.3 and the Ecosystem 2.5 components under Principle 2 because Danish and Lithuanian vessels operate with identical fishing gear and mesh size in the same geographic region and target the same stock as the Estonian fleet that was assessed during the original assessment. The bycatch of the Danish and Lithuanian vessels will be similar (identical) and will have identical impacts on the stocks of bycatch species. The same rationale can be applied to account for interactions with ETP species and possible impacts on the ecosystem. Only for retained species 2.1 and Habitat 2.4 was it concluded that the addition of the Danish and Lithuanian vessels might result in different scores since the overlap of the new UoA with the original UoC might not be 100%. Concerning the Retained species component the team was not certain whether Danish and Lithuanian vessels might retain species other than cold water prawn. Information provided to the team at the site visits showed however that no species other than cold water prawn is retained since the Danish and Lithuanian cold water prawn vessels do not currently have quota to land species other than shrimp. This means that the overlap is complete and that the scores will be identical. Because the team however has announced an assessment of this component, it was assessed nevertheless and the results are presented in Appendix 1. For the Habitat component 2.4 the team has considered during the GAP analysis that the Danish and Lithuanian vessels might fish in different fishing areas which could have a different impact on vulnerable bottom habitats. The information presented at the site visits showed that the Danish and Lithuanian vessels are likely to operate on exactly the same fishing grounds in the Svalbard FPZ and NEAFC Zone as the Estonian vessel. The results of the assessment of component 2.4 are presented in Appendix 1.

Scores and supportive rationales previously applied to Estonian vessels could be found in the Public Certification Report and surveillance reports which are available for download at MSC website: https://fisheries.msc.org/en/fisheries/estonia-north-east-arctic-cold-water-prawn-fishery/@@assessments

3.4.2 Retained bycatch

Estonian vessels at all times use a Nordmøre sorting grid with 19 mm spacing between bars (as required by Norwegian fishery regulations). All larger fish are guided out of an opening in the upper side of the net. This practice means only the small specimens that can pass between the bars of the grid are caught. These small fish are not retained and are therefore considered as bycatch (see Paragraph. 3.4.3). Research on the effectiveness of Nordmøre sorting grids (Richards & Hendrickson, 2006; Isaksen, B. & A.V. Solvdal, 1997) has shown that the Nordmøre sorting grid effectively reduces the bycatch of fish. The obligation to use sorting grids is required by the fishing license issued by the Estonian authorities.

However in 2012 a small cod (*Gadus morhua*) quota of 250 tonnes for the Barents Sea was allocated to Estonia. Client vessels will, in such cases, still use sorting grids. Cod will be retained by rigging an additional net (sack) to the net opening in the upper side of the net. The larger cod will be retained in this additional net. A stress meter will make it possible to monitor the quantity of cod caught in the additional net so that quota allocations will not be exceeded. Since the mesh size of the additional sack is large (157 mm) only larger fish like cod will be retained in this sack. All other fish will escape.

In the first year that a quota for cod was allocated (2012), the client vessels landed 225 tonnes. From 2013 to 2016 similar quantities of cod were landed against agreed annual quotas. Although these are rather small quantities compared to the total cod stock and are less than 5 % of landings of the UoC, the assessment team has considered that cod is an important species and that cod catches (quota) may rise in the future. Therefore the team has considered cod to be a main retained species in this fishery.

The ICES advice 2016 for the stock of cod in Subareas I and II (Northeast Arctic cod) concluded that: "The spawning-stock biomass (SSB) has been above MSY Btrigger since 2002. The total stock biomass (TSB) reached a peak in 2013 and has now dropped slightly. Fishing mortality (F) was reduced from well above Flim in 1997 to below FMSY in 2007 and the most recent estimate is just below FMSY. Surveys indicate that year classes 2011–2014 are above or around the long-term average."

A management plan for this stock is agreed between Russia and Norway. This Joint Russian–Norwegian Fisheries Commission management plan has been implemented since 2004 with the objectives of maintaining high long-term yield, year-to-year stability of landings, and full utilization of all available information on stock dynamics. The plan was evaluated in 2010 and ICES considered it to be in accordance with the precautionary approach and not in contradiction to the MSY framework. At the 2010 meeting of the Joint Russian–Norwegian Fisheries Commission it was agreed that the plan would be in force until 2015.

The management plan includes the following decision rules for setting the annual fishing quota (TAC) for Northeast Arctic cod (NEA cod):
"Estimate the average TAC level for the coming 3 years based on Fpa. TAC for the next year will be set to this level as a starting value for the 3-year period. For the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development. However the TAC should not be changed by more than +/- 10% compared with the previous year's TAC. If the TAC, by following such a rule, corresponds to a fishing mortality (F) lower than 0.30 the TAC should be increased to a level corresponding to a fishing mortality of 0.30. If the spawning stock falls below Bpa, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from Fpa at Bpa, to F= 0 at SSB equal to zero. At SSB-levels below Bpa in any of the operational years (current year, a year before and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC."

At the 45th Session of the Joint Russian–Norwegian Fisheries Commission in 2015 it was decided that a number of alternative harvest control rules (HCRs) for Northeast Arctic cod should be evaluated by ICES. ICES provided advice on these harvest control rules in 2016, and the most recent ICES advice (ICES, 2016b) provides catch options based on the current management plan (805,000 tonnes) and on a series of alternative harvest control rules (771,000 to 890,000 tonnes).

On the basis of this information the team concluded that there is a high degree of certainty that the stock of cod is within biologically based limits and fluctuating around its target reference points.

Landings data as collected by the Estonian Authorities are accurate and verifiable. There is an Electronic Reporting System (ERS) in place. Catches have to be reported to the Fisheries Inspectorate on a daily basis. Prior to landing the vessel has to notify the authorities of the state where the fish will be landed (the Port state) of the quantities on board. This state (in most cases Norway since most catches are landed in Tromsø) will send a so-called Port State Control Form (PSCF) to the Estonian authorities (the

Flag state) for validation. With this procedure there is a check on the landed quantities with the quantities as reported in the Logbook (ERS).

Landings data and information collected as above for the Estonian fleet show that there are no retained species in the Danish fishery. Neither the Danish vessels nor Lithuanian vessels in the UoC targeting cold water prawn have fish quota that would allow them to land species other than shrimp. The obligation to use sorting grids is required by the fishing licenses issued by the Danish and Lithuanian authorities.

3.4.3 Discarding

The mandatory use of sorting grids and the implementation of permanent and temporary closed areas are effective in minimizing the by-catch of all species. Grids are designed to minimize by-catch and, in this respect, they are highly effective (Richards A, and Hendrickson L., 2006; Isaksen, B. & A.V. Solvdal, 1997.). However, smaller individuals of several species that can pass through the grid spacing are caught and discarded.

By-catch of species other than shrimp for the total Barents Sea shrimp fishery is estimated from surveillance and research surveys. The by-catch rates in specific areas are then multiplied by the corresponding shrimp catch from logbooks to estimate the overall by-catch. By-catch estimates since 1992 are: small cod 2–67 million fish/yr; redfish 2–25 million from 2000 -2004; haddock 1–9 million and Greenland halibut 0.5–14 million (Hvingel and Thangstad, 2010). The overall by-catch is estimated between 1-3%. Furthermore, it is estimated that by-catch is less than 1% per by-catch species.

The low discard figures described here are in line with FAO discards database data: "The fisheries for Pandalidae (*Pandalus*, *Heterocarpus* sp.) concentrated in the North Atlantic (Canada, Norway, Iceland) account for approximately 13 000 tonnes of discards. The mandatory use of Nordmore grids and other BRDs in most of these fisheries results in a relatively low discard rate (weighted discard rate of 5.4 per cent)."

In 2003 the SURVIVAL-project – a three year project, partly funded by the EU Commission – was started to assess the survival of fish (haddock, whiting, saithe and cod) escaping from towed fishing gear. The experiments showed that survival of fish that had passed through a trawl cod-end was generally good. On average the survival of both whiting and haddock was around 95%.

Overall catches in the Barents Sea shrimp fishery have declined from 83,000 tons in 2000 to 20,000 tons in 2012. Hvingel and Thangstad (2012) conclude that this development must have resulted in a drastic decline in bycatches. Current bycatch of other species is considered to be low (Hvingel and Thangstad, 2012).

For the Svalbard zone bycatch limits have been defined by the Norwegian Authorities. These limits are implemented in the respective fishing licenses for the Estonian, Danish and Lithuanian fleets. For the Svalbard Fisheries Protection Zone the limits are set as a maximum number of fish per kg of shrimp. These numbers are: cod 8, haddock 20, redfish 3, and Greenland halibut 3. In case bycatches are higher than the limits set, a vessel should seek another fishing area at least 2 Miles away (move on rule).

When high bycatches of fish are higher than the set limits in a certain area, the area can be temporarily closed by the managing authorities of Norway.

3.4.4 Endangered, Threatened and Protected Species (ETP)

The Barents Sea is an important area for Marine mammals. The PINRO / IMR Joint Ecosystem work concludes that the most common marine mammal in the Barents Sea is the white-beaked dolphin (*Lagenorhynchus albirostris* – IUCN Least Concern). Of the baleen whales, minke (*Balaenoptera acutorostrata* – IUCN Least concern), humpback *Megaptera novaeangliae* – IUCN least concern) and fin whales (*Balaenoptera physalus* – IUCN endangered) were the most numerous. Only the last of these aforementioned marine mammal species is protected by CITES. Two other species of marine mammals which also occur in the Barents Sea are also protected by CITES: sei whale (*Balaenoptera borealis* – IUCN endangered) and blue whale (*Balaenoptera musculus* - IUCN endangered). The Joint PINRO / IMR ecosystem report states that blue and sei whales are rarer and occasionally observed in the Barents Sea. Harp Seals (*Pagophilus groenladicus* - IUCN least concern) are also present in the Barents Sea, but are not protected by CITES. No elasmobranches species occurring in the Barents Sea are protected by CITES, although some of these species which are listed by IUCN as critically endangered do occur in the Barents Sea, such as flapper / blue Skate (*Dipturus batis*) Angel shark (*Squatina squatina)* and porbeagle (NE sub-population).

The Barents Sea is an important breeding ground for seabird and is home to unique sea bird colonies, including one of the world's largest puffin colonies. There is a good level of understanding of the bird composition of the Barents Sea, including regional and seasonal distribution patterns.

The fishery is carried out near the bottom in very deep water (from 300m to 500 m.), therefore there is virtually no chance that birds or marine mammals are encountered when the net is at the fishing depth. The only possible moment of encounter would be when the net is hauled in and birds or marine mammals would be attracted by the fish in the net. This however seems unlikely in a shrimp fishery with very limited bycatch of fish. In the scientific literature no signs can be found that the bycatch of birds or mammals are an issue in the Barents Sea shrimp fisheries. The client has confirmed that no birds are caught and that seals and whales do not enter the net when it is hauled.

However some undersized individuals of species that appear on international lists of protected species may be caught. These are redfish (*Sebastes marinus* and *Sebastes mentella*), blue ling (*Molva dypterygia*) and pollock (*Theragra finnmarchica*).

The by-catch of redfish is limited to 3 fish per 10 kg of shrimp (or 300 fish per tonne in the Russian EEZ) and, should this limit be exceeded, vessels are required to move to another area.

For all species and especially the larger fish (e.g. blue ling) it can be concluded that the sorting grid would protect them from being caught. Smaller specimen could pass the sorting grid and be caught. However it is highly unlikely that this would involve a large number of individuals.

3.4.5 Habitat

The fishing gear used in the certified fleet is a relatively light otter trawl gear, with rock hopper gear. The gear operates on or near the bottom, and may thus cause some damage to benthic habitats. The gear used by the fishery is equipped with large 'rockhopper' discs which hold the head rope of the trawl

some 30-40 cm above the seabed, reducing damage substantially relative to a standard trawl with a tickler chain in contact with the bottom. The contact of the trawl doors (4-6 tonnes) with the bottom, however, causes a clear trail which can be seen, for example, using side-scan sonar. The clump of the gear deployed by the unit of certification is a 6 tonne roller type. If deployed on muddy sediments this is likely to cause some impact. The degree of impact of the clump on sandy habitats has not been investigated but is likely to be relatively minor given the overall width of the clump.

Rockhopper gear also permits trawling in areas too rough for standard trawls, which would otherwise be protected. Generally speaking, however, the vessels stay within areas that are known to be trawlable, because of the risk of snagging gear on rough ground. This is beneficial to habitats because much of the damage done by trawls is done in the first pass.

Figure 9 shows the fishing positions of the Estonian vessels in 2013. The map shows that the fishery is highly concentrated in certain areas. These areas will be fished year after year since skippers know they are "clean ground" or have already been cleared of obstructions. Hence vessels of all nations tend to fish the same ground repeatedly rather than stray into new areas. Figure 10 shows the fishing tracks of the Danish vessel in 2015 showing that the Danish vessel fishes in similar areas to the Estonian vessels. The vessel Taurus which will fish under the Lithuanian flag in the future, and therefore has no historical record of fishing activity under the Lithuanian flag. As the new owners will be keeping the same crew, the vessel is expected to fish in the same areas as in previous years under the Estonian flag.

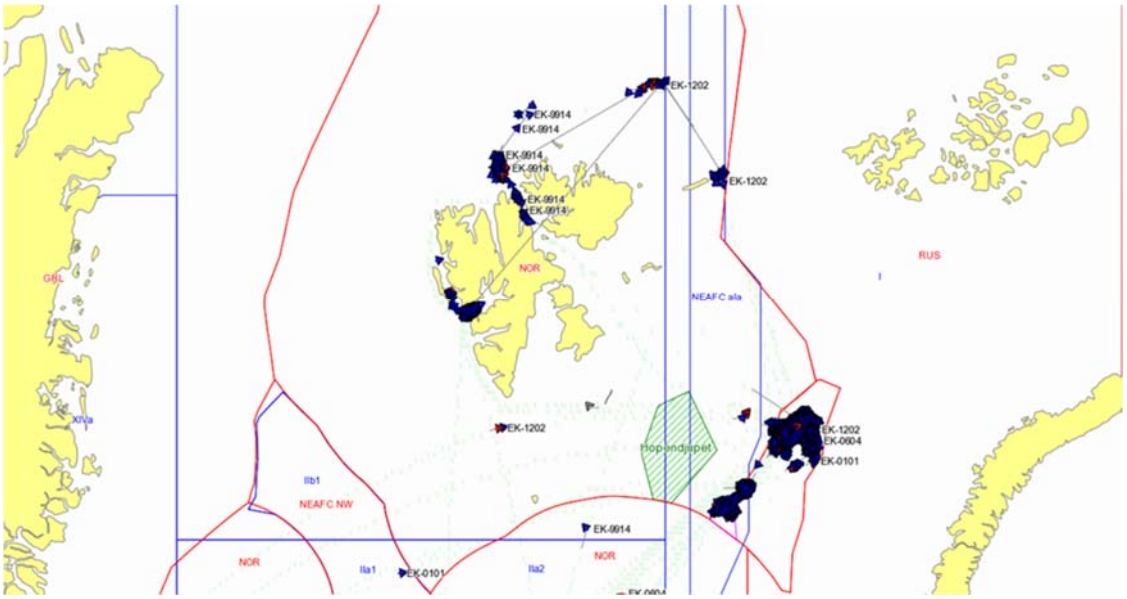

Figure 9: Map with VMS positions for the Estonian vessels in 2013.

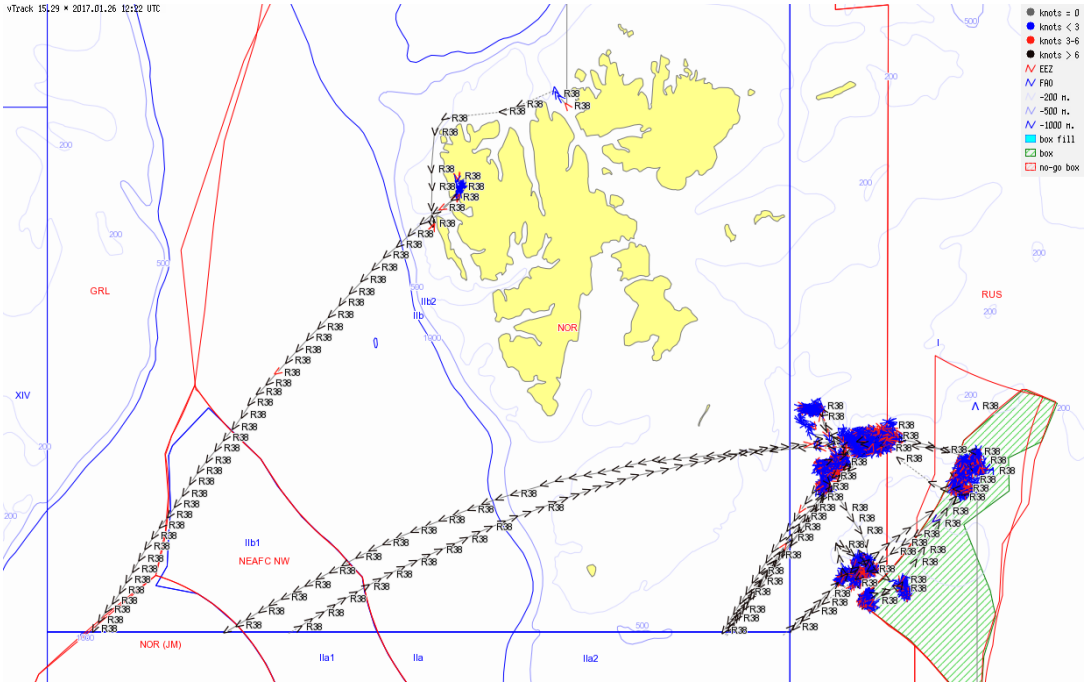

Figure 10: Map with fishing positions of the Danish vessel, Ocean Tiger, in 2015.

Bottom trawl gears are known to impact on habitat structure and function. Particularly areas with biotic habitats generated by aggregations or colonial growth of single species are vulnerable. Such habitat-generating species are represented by a wide range of taxonomic groups, e.g. *Porifera*, *Polychaeta*, *Cnidaria*, *Mollusca* and *Bryozoa* (e.g., reviews in Jennings, 1998; Løkkeborg, 2005; Kaiser and de Groot, 2000; Moore and Jennings, 2000, Collie et al. 2000). In already disturbed areas, where the fauna comprise opportunistic, short-lived organisms, the trawl damage is less than in more pristine areas (Olsgard et al., 2008). In general, the response of benthic organisms to disturbance differs with substrate, depth, gear, and type of organism (Collie et al.; 2000).

Studies of long-term dynamics of bottom communities in the Barents Sea (Dennisenko, 2008) showed that significant increases in benthic biomass were observed during periods of reduced fishing intensity during the Second World War. Subsequently, following the peak in fishing intensity in the post war years and the 1960s and 70s, recovery of areas and bio-resources of the most common species, large taxons and trophic groups of zoobenthos was again observed. Rate of recovery is dependent on a number of issues – frequency of disturbance (natural and anthropogenic), productivity, substrate type and species. Benthic recovery rates following trawling events, are typically in the range of 2.5 to 6 years with the fastest recovery being observed in mud habitats.

In the Barents Sea although the majority of the habitats may fall within the more dynamic and sedimentary range (hence quicker recovery), it is notable that some of the species composition and the substrate types on the shelf edge may show slower recovery characteristics. The main species of coral (eg. *lophelia* sp) which would be particularly vulnerable to trawl impact (potentially qualifying as a serious / irreversible impact) are located in Norwegian coastal waters and therefore beyond the area fished by the certified vessels.

Skippers have informed the team that with the goal of reducing fuel costs the contact of the gear with the seafloor is minimized by applying a different technique with shorter fishing lines. There have also been tests with semi pelagic doors to reduce the impact further. Pictures of the catch show that the catch is very clean. Bycatch of bottom fauna is close to zero. Since bycatch of benthic organisms would affect the shrimp catch negatively these bycatches are avoided.

The fact that the ground rope does not touch the sea floor as in other trawl fisheries that target fish that dwell on the sea floor ensures that the impact on the bottom fauna is limited.

The Estonian shrimp fleet consists of 3 vessels and that firstly with the addition of a Danish vessel, and secondly the addition of a Lithuanian vessel, the Unit of Certification would increase to 5 vessels. The total impact of the fishery was and remains therefore very limited when the total area of the Barents Sea is taken into account. The areas that are fished have generally been fished many times before which means that these areas have already been disturbed before and the fauna comprise of opportunistic, short-lived organisms. The trawl damage in such areas is less than in more pristine areas (Olsgard et al., 2008.).

Norway has established areas closed for fishing in the Svalbard zone.

The Norwegian Ministry of Fisheries and Coastal Affairs has issued a regulation that regulates fishing with bottom gear in the fisheries protection zone around Svalbard. The new regulation entered into force from 1 September 2011. The regulation establishes a distinction in existing fishing areas (where the water depth is less than 1000 m) and new fishing areas (where the water depth is more than 1000 meters). In existing fishing areas a "move on" rule is established in case a vessel encounters sponges or corals in its catch. (An encounter is defined as catching more than 30 kg of live corals or 400 kg of live sponges in a single haul.) When a vessel encounters the given quantities, the vessel shall cease fishing activities and relocate to a position at least two nautical miles from the position that on the basis of all available information is probably closest to the vulnerable benthic habitat that has been identified. The vessel shall, without delay, report the encounter to the Directorate of Fisheries, including the location and the type of habitat encountered.

A vessel must hold a special permit from the Norwegian Directorate of Fisheries to fish in new fishing areas. A special permit may only be issued if the vessel has submitted the following to the Directorate for approval:

- a detailed protocol for the exploratory fishery, including a harvesting plan describing fishing gear, target species, bycatches, dates and areas,
- a mitigation plan for avoiding damage to sensitive marine ecosystems,
- a plan for log-keeping and reporting,
- a plan for collection of data on vulnerable benthic habitats.

For encounters with sensitive habitats the same rules apply as described above for the existing fishing grounds. The Directorate of Fisheries may lay down a requirement for a vessel to carry an observer when fishing in new fishing areas. The costs associated with carrying an observer on board, including wage costs, and also any interest on overdue payments, transport to and from the vessel, and board and lodging while at sea, shall be covered by the owner of the vessel. If sufficient documentation can be provided of bottom fisheries in areas that are deeper than 1000 meters, such areas may, on application to the Directorate of Fisheries, be classified as existing fishing areas.

A similar approach has been formulated by NEAFC in its regulations for bottom fishing in the NEAFC Regulatory Area. A distinction between existing and new fishery areas has been established. All bottom fishing activities in new bottom fishing areas or with bottom gear not previously used in the area concerned shall be considered as exploratory fisheries and shall be conducted in accordance with an Exploratory Bottom Fisheries Protocol.

These strategies imply that in existing fishing areas, where fishing has taken place for decades, the perceived impact on the ecosystem is considered tolerable and thus the fishing activity can continue, but with stricter monitoring and reporting requirements. In new fishing areas additional restrictions apply to protect vulnerable marine ecosystems (VME).

Sea bed mapping:
The integrated management plan for the Barents Sea includes a programme of research and mapping of benthic habitats, for example the Norwegian MAREANO programme. This programme will contribute to periodic updates of the integrated management plan.

VMS data collection
NEAFC has recommended Member States to provide VMS data to ICES and NEAFC constituent bodies to meet the needs of both science and compliance. (Recommendation 10, 2013: made at the 31st Annual Meeting in November 2012.)

3.4.6 Ecosystem impacts

It is not the intention of the assessment team to give a lengthy and detailed description of the ecosystem in this report, but instead focus on those areas which are most relevant to the fishery assessment. Several thorough overviews of the ecosystem are available on the internet. For instance the ICES arctic fisheries working group (AFWG) provide a good and detailed overview of the Barents Sea Ecosystem. Part of this description is the following text.

"The Barents Sea is on the Arctic continental shelf. It has an average depth of 230m, and a maximum depth of about 500m at the western end of Bear Island Trough. Its topography is characterized by troughs and basins (300 m – 500m deep), separated by shallow bank areas, with depths ranging from 100-200 m. The general pattern of circulation is characterized by an inflow of relatively warm Atlantic water from the southwest and of cold Arctic water from the northeast, with these water masses separated by the Polar Front which is usually around the vicinity of Bear Island. There can be large inter-annual variability in oceanographic conditions related to variable strength in these two inflows and the precise position of the Polar Front.

The Barents Sea, in common with other high latitude marine ecosystems, has extremely high primary production from spring to autumn, but low (more or less zero) primary production in winter due to low light levels and strong wind-induced mixing. This means that the ecosystem supports large populations of secondary producers (zooplankton and small pelagic fish species such as capelin, herring, sand eels etc.) but that the size and growth rate of these populations is very dependent on environmental conditions.

More than 200 fish species are registered during surveys of the Barents Sea, with nearly 100 of them occurring regularly. Commercially important fish species include cod, haddock, saithe, capelin, and spring-spawning herring. Species distributions largely depend on the position of the Polar Front. The

distribution of cod and haddock is largely overlapping. There have been significant variations in abundance and recruitment of many of these fish species due to a combination of fishing pressure and environmental variability (weather, food availability and in some cases predator abundance and distribution). Variation in the recruitment of some important species (cod, haddock and herring) can be linked to changes in the influx of Atlantic waters into the Barents Sea.

Cod, capelin, and herring are considered to be the keystone species in the Barents Sea food web. Capelin is the most important prey species in the Barents Sea: cod prey on capelin, herring, and smaller cod, while herring prey on capelin larvae. Cod is the most important predatory fish species in the Barents Sea in terms of biomass and ecosystem impact, and can feed on a wide range of prey, including larger zooplankton, most fish species and shrimp, although capelin is their preferred prey, followed most likely by euphausiids (krill). Fluctuations of the capelin stock have a strong effect on growth, maturation and fecundity of cod, as well as on cod recruitment. Herring and capelin populations are also linked, with a strong year class of herring leading to poor recruitment of capelin, presumably due to predation pressure. Other important fish species are haddock and saithe, redfish (now less important in the ecosystem due to heavy overfishing in the 1980s), Greenland halibut, long rough dab and rays (see above). Blue whiting may be present in large numbers in years when the Atlantic influence is strong.

About 25 species of marine mammals regularly occur in the Barents Sea, including seven species of pinnipeds (seals and walruses), 12 whales, 5 porpoises and dolphins and polar bear. Some of these species are migratory, and use the Barents Sea as a summer feeding area (e.g. minke whale), while others are resident (e.g. white-beaked dolphin, harbour porpoise). Marine mammals in the Barents Sea may consume up to 1.5 times the amount of fish caught in fisheries – for example, it has been calculated that the minke whale population consumes ~1.8 million tonnes of crustaceans (krill and other similar species), while harp seals consume 3-5 million tonnes of fish; mainly capelin, herring, polar cod (*Boreogadus saida*) and other gadoids.

The Barents Sea is home to ~20 million seabirds (one of the largest concentrations of seabirds in the world), who also harvest ~1.2 million tonnes of biomass from the marine ecosystem. Nearly 40 species are thought to breed regularly in the Norwegian and Barents Seas - particularly auks, gulls and fulmars.

Benthic ecosystems in the area are of course variable, but are generally composed of soft substrata with an infauna dominated by polychaetes and bivalves. Some rocky areas host diverse sponge communities and it is also an important area for deep-water corals (*Lophelia pertusa*), particularly close to the Norwegian coast (although this might be at least partly because they are better mapped in coastal areas. These deep-sea sponge and cold water coral communities are designated by OSPAR as vulnerable habitats, and are known to be susceptible to damage by bottom trawls."

In addition, an annual ecosystem report is produced each year by scientists at the IMR (Norway) and PINRO, which provides a thorough overview of the ecosystem and seeks to provide the managing authorities with science based advice in order to allow the authorities to make optimal management decisions regarding the long term utilization of the resources in the Barents Sea area. The most recent of these is the Joint IMR / PINRO State of the Barents Sea Ecosystem Report (Stiansen *et al* 2009).

The Barents Sea ecosystem status report provides comprehensive information about key ecosystem components, present trends and human impacts on the Barents Sea ecosystem. The report shows that

although there are several human impacts on the ecosystem the general condition of the ecosystem has remained intact.

The management strategy to protect the Barents Sea ecosystem includes measures to reduce the impact of the fishery like technical measures, closed areas and quota. Although well defined, the strategy laid down in the Integrated Management Plan does not yet cover all impacts of the fishery on the ecosystem. Measures are implemented for the Svalbard area but for international waters a full strategy is still under development in the NEAFC framework. The strategy is based on the available information that is collected through research projects like the MAREANO Project and the Biological and Geological Seabed Mapping project.

The purpose of the management plans is to provide a framework for value creation through the sustainable use of natural resources and ecosystem services in the sea areas and at the same time maintain the structure, functioning, productivity and diversity of the ecosystems of the areas.
The management shall ensure that activities in the area do not threaten the environment and living resources and thus future opportunities for continued value creation. The management plan includes targets for a range of subjects on different levels:

- Biological diversity – including fisheries
- Pollution prevention – including hazardous substances
- Acute oil pollution/environmental risk
- Safe seafood
- Value creation from economic activity

Different projects improve knowledge to the management plan:

- Environmental monitoring and research
- Seabed mapping
- Geological mapping
- Seabird distribution
- Screening of hazardous chemicals

The management plan is regularly updated taking into account new knowledge and development. The first update took place in 2010.

The Barents Sea is the focus of a large amount of research by IMR, PINRO and the Universities of Bergen and Tromsø. Different projects conducted in the framework of the Integrated Management plan of the Marine Environment of the Barents Sea and the Sea Areas off Lofoten Islands improves knowledge to the management plan. These projects include: environmental monitoring and research, Seabed mapping, geological mapping, seabird distribution and screening of hazardous chemicals.

Other projects that improve the knowledge of the ecosystem are ECOSIM, the Joint Ecosystem survey (Russia and Norway) and ecosystem modelling. Development of multispecies models like MULTSPEC, AGGMULT and SYSTMOD (in Norway) and MSVPA (in Russia) provided a basis for the current ecosystem models used by ICES: EcoCod, Bifrost, Gadget and STOCOBAR. These models include cod, capelin, herring, haddock, polar cod, shrimp, harp seal and minke whale.

3.5 Principle Three: Management System Background

3.5.1 Impact of the scope extension on the UoA

Principle 3 was assessed during the initial full assessment of the Estonia NEA cold water prawn fishery. In the GAP analysis that was conducted it was concluded that the cold water prawn in the Barents Sea is mainly managed by Norwegian, Russian and NEAFC management. However the Lithuanian vessel that is added to the UoC falls under Lithuanian jurisdiction and this could mean that there is not a full overlap between the original and the new Unit of Assessment. The assessment team has assessed Principle 3 for the new UoC/UoA including the Lithuanian management system in full in order to ensure that the Lithuanian management system is fully taken into account in this assessment and the scores. Results of this assessment were harmonised with the assessment results for the Estonian and Danish vessels and final harmonised scores with the supportive rationales are presented in full in the Appendix 1 of this report. Scores and supportive rationales previously applied to Estonian vessels could be found in the Public Certification Report which is available for download at MSC website: https://fisheries.msc.org/en/fisheries/estonia-north-east-arctic-cold-water-prawn-fishery/@@assessments

3.5.2 Management of the Barents Sea cold water prawn fishery

The fishery is covered by the legal systems of the EU, Estonia, Denmark and Lithuania, by the Norwegian jurisdiction in the Svalbard fishing area and the NEAFC Commission regulates fisheries in the NEAFC Regulatory area in International waters. Although the fishery in the Barents Sea is mainly controlled by the management measures implemented by Norway and Russia, Estonian, Danish and Lithuanian vessels require a fishing license of their respective flag states. It is through these fishing licences that the vessels are obliged to respect the Norwegian and Russian regulations that are in place. For instance the regulations on fishing days, quota (in Russian waters), minimum mesh size and minimum landing size (MLS) apply to all vessels. Management regulations and requirements for reporting fishing activity differ across the various fishing zones, and these are described in detail in section 3. 2.3.3 above.

As members of the European Union, Estonia, Denmark and Lithuania must manage their fisheries within the Framework of the EU's Common Fisheries Policy (CFP). Implementation of the CFP at a national level is carried out through the individual Member States. In Estonia, The Ministries of Agriculture and Environment are responsible for fisheries management and regulation. In Denmark responsibility for fisheries management, legislation and policy lies with the Ministry of Food, Agriculture and Fisheries, within which responsibility for administration, regulation, enforcement and inspection lies with The Danish Agrifish Agency. In Lithuania, responsibility for fisheries management and regulation lies with the Fisheries Service within the Ministry of Agriculture.

3.5.3 Fishing Areas and jurisdiction

Politically, the picture of territorial seas ownership and access rights in the Barents Sea and Svalbard / Spitsbergen area is relatively complex. Following the United Nations conference on the Law of the Sea (UNCLOS, 1976), coastal states, including Norway and Russia, established 200 nautical mile exclusive fishing zones. The Barents Sea falls almost entirely within the 200 mile exclusive fishing zones of Norway and Russia, with the exception of a relatively small triangle of international waters in the eastern Barents Sea (the Loophole) and a larger area between mainland Norway and Jan Mayen (sometimes known as the 'banana').

Until recently the maritime delimitation between the two countries was not fully agreed, e.g. the case in the so-called grey-zone, where Russia and Norway agreed on parallel jurisdiction (Stokke 2002). The exact delineation of the Barents Sea and the Arctic Ocean was finally agreed in April 2010 (Figure 11), during the visit of the President of the Russian Federation to Norway. The delimitation agreement was signed in Murmansk in September 2010 and entered into force in July 2011, following ratification by the Norwegian and Russian parliaments.

The EU, Norway, Estonia, Denmark and Lithuania have signed and ratified relevant international agreements such as the 1982 Law of the Sea Convention and the 1995 Straddling Stocks Agreement.

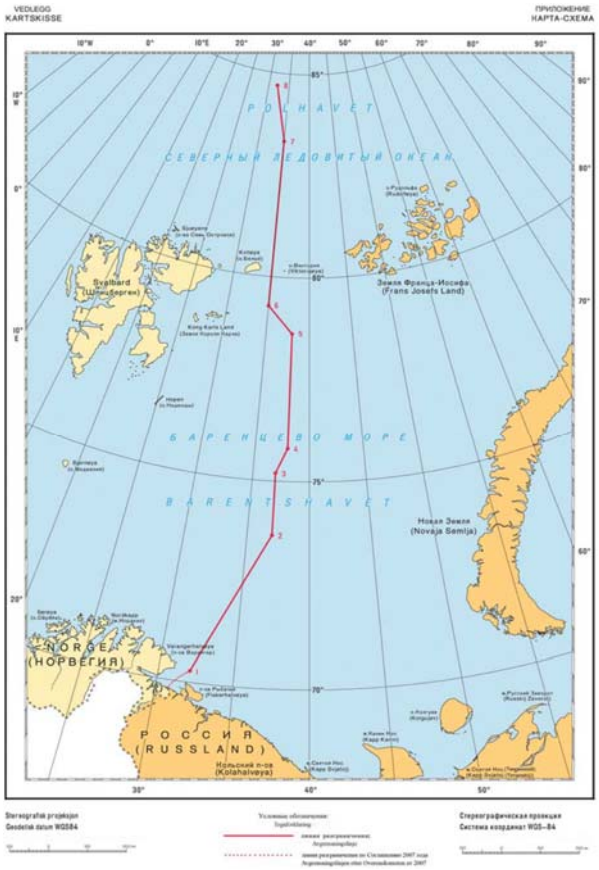

Figure **11: Agreed delineation between Russian and Norwegian waters.**

3.5.4 Management objectives

Long-term objectives are clearly defined and explicit within the EU Common Fisheries Policy, Estonian Fisheries Strategy, Danish 1999 Fisheries Act, Lithuanian Law on Fisheries (2000, revised 2016), Norwegian Marine Resource Act and the NEAFC convention, and are consistent with the MSC Principles and Criteria and precautionary approach.

The Norwegian Marine Resources Act states:

"The purpose of this Act is to ensure sustainable and economically profitable management of wild living marine resources and genetic material derived from them and to promote employment and settlement in coastal communities". Objectives for the protection of fish stocks in the Svalbard Fisheries Protection

Zone area are formulated within the Zone act and Norwegian fisheries management system (Marine Resources Act).

The NEAFC convention states: **"**The objective of this Convention is to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits (Article 2.)

For the EU clear over-arching long term objectives are set out in the EU Common Fisheries Policy (CFP). These long term objectives are clear and explicitly defined and entirely consistent with MSC Principles and Criteria. The 2002 reform of the CFP also embraced a more long-term approach to fisheries management, involving the establishment of multi-annual recovery plans for stocks outside safe biological limits and of multi-annual management plans for other stocks. It aimed to progressively implement an ecosystem-based approach to fisheries management.
Article 15 of Council Regulation EC 1198/2006 on the European Fisheries Fund, requires that all member states:
"Shall adopt, following appropriate consultation... a national strategic plan covering the fisheries sector (which) ...sets out the priorities, objectives, the estimated public financial resources (in accordance with the CFP) ...for:
(a) ... adjustment of fishing effort / capacity with regard to the evolution of fisheries resources, promotion of environmentally-friendly fishing methods and sustainable development of fishing activities;
(e) the sustainable development of fisheries areas,
(g) preserving human resources in the fisheries sector, through upgrading professional skills, securing sustainable employment and enhancing the position and role of women;
(h) protection and enhancement of the aquatic environment related to the fisheries sector".

The CFP was revised in 2013 and Article 2, paragraphs 1-4, of the revised CFP establish a range of objectives for managing fisheries in the EU, including: long-term environmental sustainability; being consistent with achieving economic, social and employment benefits; using a precautionary approach and restoring resources above levels that will produce MSY; implementing an ecosystem approach; and contributing to the collection of scientific data (Regulation (EU) No 1380/2013).

National
Implementation of the CFP at a national level is carried out through the individual Member States.

Estonia: The Estonian Fisheries strategy states: **"**In order to prevent the harmful environmental impact of fishing, several protection measures are applied: closed areas, closed seasons, establishing minimum fish sizes and catch limitations as well as various requirements and restrictions for fishing gear. In addition, technical supervision of fleet is conducted constantly. Training and dissemination of information have contributed considerably to raising environmental awareness among fishermen as well as people living near water bodies" (Paragraph 1.1.4 of the strategy). The objectives of the Estonian Fisheries Management System are focused at achieving a balance between fishing capacity and fishing possibilities and minimising impact of fisheries on the ecosystem through increasing the selectivity and other relevant measures.

Denmark: The main Danish enabling legislation is the 1999 Fisheries Act (Act No. 281 of 1999, consolidated as LBK No. 978 of 26 September 2008) which makes provision for the management of fisheries for purposes of protection and enhancement of living Resources in marine and freshwater and

for the protection of other marine animal and plant live, and to safeguard the basic foundations of commercial fishing and related commercial activities and possibilities for sport fishing.

Lithuania: The Lithuania Law on Fisheries (2000, revised 2016) regulates fishing, aquaculture, processing and marketing of fish. The objective of the Law is "to ensure sustainable fishing, protection of fish resources and their restocking, fishing control, with account of the ecological conditions, economy of fisheries and the interests of the fishermen, fish producers, processors and consumers."

3.5.5 Decision making process

In Norwegian, Estonian, Danish and Lithuanian management systems decision-making processes take place that have resulted in management measures for this fishery. For the Svalbard area Norway has developed several measures like closed areas, days at sea and technical measures. For International waters, Estonia, Denmark and Lithuania have implemented restrictions through their respective licensing system and technical measures.

Within the International waters, there are established decision making processes which have been used to develop measures and strategies for fisheries other than shrimps in the Barents Sea e.g. cod and haddock. For the Estonian, Danish and Lithuanian shrimp fisheries NEAFC regulations include the "move on" rule for encounters with vulnerable marine ecosystems (VME) and catch reporting requirements (Port State Control Form, PSCF). Several other measures are implemented through the fishing license issued by the Estonian, Danish and Lithuanian Authorities (sorting grid, retained catch, inspection programmes).

Organisations and individuals involved in the management process have been identified and functions, roles and responsibilities are explicitly defined.

- NEAFC Commission (Regulation of fishing in International Waters (NEAFC Regulatory Area)
- Estonian Ministry of Agriculture (Allocation of fishing rights, licenses, ERS)
- Estonian Ministry of Environment (Stock management, fisheries control, habitat protection, liaison with EU Commission)
- Estonian Fisheries Inspectorate (fisheries control and inspection)
- Estonian Marine Institute, University of Tartu (marine research)
- Estonian long-distance fishing association (represent the interests of the long-distance fleet)
- Food and Veterinary Board (Food safety)
- Estonian Maritime Academy (Education)
- Maritime Administration (Safety at Sea)
- Estonian Council of Environmental NGOs (nature conservation)
- Danish AgriFish Agency (administration, regulation, enforcement and inspection)
- DTU Aqua (research and advice on Danish fisheries management)
- Danish Fishermen's Association
- Danmarks Fiskeriforening Producent Organisation (Danish Fishermen's Producer Organisation, DFPO)
- Lithuanian Ministry of Agriculture incorporating Fisheries Service (responsibility for fisheries management, licensing, regulation and enforcement and research)
- Lithuanian Local Fisheries Councils
- Lithuanian long distance fishermen's association - Okeaninio žvejybos laivyno įmonių asociacija (Association of the enterprises of Oceanic fishery)

Precautionary approach

Both in the Norwegian and the NEAFC management system, the precautionary approach is used and specifically mentioned. In Norway, fish stock rebuilding primarily takes place under the Act relating to the Management of wild living marine resources. However, in special cases with a threatened and endangered marine species, this species can be prioritized according to the Nature Diversity Act. This Act then sets out requirements to protect and implement recovery strategies for the species.
The purpose of the Act relating to the management of wild living marine resources is among others to ensure sustainable and economically profitable management of wild living marine resources and genetic material derived from them. The Act also states that special importance shall be given to, among others, a precautionary approach in accordance with international agreements and guidelines,- and an ecosystem approach that takes into account habitats and biodiversity, when managing living marine resources. The Institute of Marine Research (IMR) has been reorganized to take this into account.

In the NEAFC Convention the use of the precautionary approach is described in Article 4.: It is stated that: "When making recommendations in accordance with Article 5 or 6 of this Convention the Commission shall in particular:
a) ensure that such recommendations are based on the best scientific evidence available;
b) apply the precautionary approach;
c) take due account of the impact of fisheries on other species and marine ecosystems, and in doing so adopt, where necessary, conservation and management measures that address the need to minimize harmful impacts on living marine resources and marine ecosystems; and
d) take due account of the need to conserve marine biological diversity."

Also in the OSPAR Convention the precautionary approach is mentioned: Article 3 (ii) reads: "to develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to particular species or habitats."

Findings and relevant recommendations emerging from research, monitoring, evaluation and review activity related to this fishery, such as catch levels, catch and fishing effort, potential impact of fishing on the marine environment, are reported and available on web-pages (e.g. Estonian Ministries of Agriculture and Environment, Danish AgriFish Agency, Lithuanian Fisheries Service, Norwegian Ministry of Fisheries and Coastal Affairs, Norwegian Fisheries Directorate, NEAFC Commission, ICES, NAFO, Estonian Marine Institute, DTU Aqua (Denmark), Lithuanian Fisheries Service Division of Fisheries Science and Research, IMR, Norway).

Fisheries authorities try to avoid legal disputes through dissemination of timely information through the various sources such as:

- Estonian Fisheries Information Centre (sponsored by Ministry of Agriculture)
- Publication and direct communication to stakeholders
- Direct contact with fishermen (e-mail, fax)

Regulations relating to bottom fishing activities:

The Norwegian Ministry of Fisheries and Coastal Affairs has issued a regulation that regulates fishing with bottom gear in the Fisheries Protection Zone around Svalbard. The new regulation entered into force from 1 September 2011. The regulation establishes a distinction between existing fishing areas (where the water depth is less than 1000 m) and new fishing areas (where the water depth is more than

1000 meters). In existing fishing areas a "move-on" rule is established in case a vessel encounters sponges or corals in its catch (an encounter is defined as catching more than 30 kg of live corals or 400 kg of live sponges in a single haul). When a vessel encounters the given quantities the vessel shall cease fishing activities and relocate to a position at least two nautical miles from the position that on the basis of all available information is probably closest to the vulnerable benthic habitat that has been identified. The vessel shall without delay report the encounter to the Directorate of Fisheries, including the location and the type of habitat encountered.

A vessel must hold a special permit from the Directorate of Fisheries to fish in new fishing areas. A special permit may only be issued if the vessel has submitted the following to the Directorate for approval:

- a detailed protocol for the exploratory fishery, including a harvesting plan describing fishing gear, target species, bycatches, dates and areas,
- a mitigation plan for avoiding damage to sensitive marine ecosystems,
- a plan for log-keeping and reporting, and
- a plan for collection of data on vulnerable benthic habitats.

For encounters with sensitive habitats the same rules apply as described above for the existing fishing grounds. The Directorate of Fisheries may lay down a requirement for a vessel to carry an observer when fishing in new fishing areas. The costs associated with carrying an observer on board, including wage costs, and also any interest on overdue payments, transport to and from the vessel, and board and lodging while at sea, shall be covered by the owner of the vessel. If sufficient documentation can be provided of bottom fisheries in areas that are deeper than 1000 metres, such areas may, on application to the Directorate of Fisheries, be classified as existing fishing areas.

A similar approach has been formulated by NEAFC in its regulations for bottom fishing in the NEAFC Regulatory Area. A distinction between existing and new fishery areas has been established. For new fishing areas all bottom fishing activities (or when bottom gear has not been previously used in the area concerned) shall be considered as exploratory fisheries and shall be conducted in accordance with an Exploratory Bottom Fisheries Protocol.

This strategy implies that in existing fishing areas, where fishing has taken place for decades, the perceived impact on the ecosystem is considered tolerable and thus the fishing activity can continue, but with stricter monitoring and reporting requirements. In new fishing areas, additional restrictions apply to protect vulnerable marine ecosystems (VME).

3.5.6 Consultation

The Estonian fisheries authorities run regular consultations with relevant stakeholder groups (e.g. the Fisheries Council and the Fisheries Commission) regarding new fisheries measures prior to their implementation. Minutes of the meetings are available and meetings are open to observers. Fisheries Council meetings are open to fishing industry representatives and environmental NGO's (through the umbrella organisation, the Estonian Council of Environmental NGOs). Other interested parties are allowed to attend those meetings as observers.

In Denmark, National strategies and action plans are developed by Danish management authorities (Danish Agrifish Agency) involving a range of stakeholders in extensive consultation. The Danish Fishermen's Association (DFA) represent the interests of Danish Fishermen at the EU's Regional Advisory Councils. There is opportunity for all interested and affected parties to be involved in

consultations on regulatory developments in fisheries, but certain stakeholders (environmental NGOs for example) stated that they are not able to effectively engage in the process.

The Lithuanian Fisheries Service consults with the Local Fisheries Council on all new fisheries regulations. Local Fisheries Council consists of representatives from the following institutions:

- National Fish Producers Association;
- Western Lithuanian Fishermen's confederation;
- Lithuanian Fisheries Producers Association;
- Vilnius University, Faculty of Natural Sciences;
- National Aquaculture and fisheries producers association;
- Ministry of Environment;
- Ecology Institute of Nature Research Centre;
- Environmental Protection Agency;
- Ministry of Agriculture;
- Fisheries Service;
- Klaipeda University, Faculty of Natural Sciences.

The Producer Associations listed above, for example the Lithuanian Fisheries Producers Association (Lietuvos žuvininkystės produktų gamintojų asociacija) are umbrella groups representing local companies engaged in fishing, fish processing and sale of fishery products. Consultation within the Local Fisheries Council can therefore be considered to be broad-ranging. Consultation will also occur with fishermen's associations such as Lithuanian long distance fishermen's association - Okeaninio žvejybos laivyno įmonių asociacija (Association of the enterprises of Oceanic fishery). All Deep Sea fishing companies are invited through the association and directly. The managing directors, lawyers or other decision makers of the relevant companies are attending. However one company, JSC Seivalas, does not belong to any association, but the company who owns a shrimp trawler which fishes in the Barents Sea (but not within this UoC) confirmed that they are included in all consultations on new fisheries regulations.

In the Norwegian management process there is also a strong tradition of stakeholder consultation in the Norwegian management process. Before new regulations are passed the relevant stakeholder organisations from all relevant sectors are consulted. EU has the same comprehensive stakeholder consultation framework for its member nations. In the EU for every renewal of the Common Fisheries Policy there is an extensive consultation process.

For NEAFC, the Commission adopts management measures for the fisheries in the NEAFC Regulatory Area. All Contracting parties are involved in the decision making process. At its 20th Annual Meeting, 5-9 November 2001, NEAFC agreed rules for observers in order to admit NGOs as observers to the meetings of the Commission. The rules with respect to observers state: All non- governmental organisations (NGOs) which support the objectives of the Convention, have a demonstrated interest in the species under the purview of NEAFC and are in good standing should be eligible to participate as an observer in all plenary meetings of the Commission, except meetings held in executive sessions or meetings of Heads of Delegations.

The fishery is a long-distance deep-water fishery in a very remote area and there are no people dependent on fishing shrimp for food and livelihood that applies to this fishery.

3.5.7 Monitoring, Control and Surveillance (MCS)

Norway, EU, Estonia, Denmark and Lithuania maintain a robust and effective control and surveillance regime to ensure a high degree of compliance across all fishing fleets participating in this fishery. Vessels can be, and are, warned, fined, have gear confiscated and licences suspended or withdrawn for non-compliance.

The Lithuanian vessel will operate under the same management system as the Estonian and Danish vessels in the EU. Estonia, Denmark and Lithuania play the role of flag state. The flag state responsibilities include the implementation of technical measures (safety, VMS), allocation of days of sea and reporting (logbook requirements). These requirements however are based on EU regulations and will therefore be similar if not identical for the Estonian, Danish and Lithuanian vessels.

Throughout the fishing zones there is a rigorous enforcement regime to ensure a high degree of compliance across all fishing fleets participating in this fishery. All vessels must be equipped with VMS and maintain up to date logbooks which are subject to regular at sea inspections by Norwegian, Russian, EU and NEAFC fishery inspection vessels. EU inspections are organised by the European Fisheries Control Agency (EFCA). These inspections also ensure that technical measures are being complied with and the catches tally with log book records and quota allocations. Vessels must also report when they intend to enter or leave the coastal states waters and may have to await inspection before commencing fishing or leaving a coastal state's waters. The vessels shall also give pre notification to the respective authorities prior to the start of fishing activities, the end of fishing activities and landing.

Monitoring, control and surveillance mechanisms include the following:

- **VMS:** In the EU all vessels larger than 15 m must have a satellite vessel monitoring system in both national and international waters. The satellite vessel monitoring system (VMS) is mandatory.

- **Catch control/log books:**
  All commercial fishing vessels operating in the North-East Atlantic must maintain a daily log of their activities in an authorised catch logbook issued for this purpose. The master of the vessel must ensure that the vessel details, gear and catch details are accurately recorded and sign the logbook every day, regardless of whether or not fishing takes place on that day. Estonia, Denmark and Lithuania operate an electronic logbook system (ERS). Logbook entries are sent automatically to the relevant Ministries within each country and then forwarded to the EU.

- **Monitoring of fishing days uptake**
  In the Norwegian waters within the Svalbard FPZ, fishing effort in the cold water prawn fishery is controlled by a limit on the number of vessels and the allocation of fishing days by Norway. Estonia has a limit of 3 vessels and 377 effective fishing days. Denmark has an allocation of 31 days, and within the total EU allocation of days in the Svalbard FPZ, Denmark agreed the transfer of 35 days with the Estonian authorities and 61 fishing days with the German authorities, providing a total of 127 fishing days in the Svalbard FPZ allocated to Denmark in 2015. In 2016 Denmark had an allocation of 92 days. Lithuania has a limit of 6 vessels with an overall limit of 647 fishing days. Monitoring of fishing days uptake is carried out by the relevant country in conjunction with Norwegian authorities.

- **Port State Control Form (PSCF):** Before landing fish the master of a vessel has to fill in a PSCF. This form will be sent by the port state to the flag state in order to verify whether the vessel had sufficient quota for the catch reported and has fished in the area declared (by cross checking with VMS data).

- **Landing control:** quantities and species landed will be controlled by the port state

- **EFCA:** The European Fisheries Control Agency (EFCA) is a European Union body established in 2005 to organise operational coordination of fisheries control and inspection activities by the Member States and to assist them to cooperate so as to comply with the rules of the Common EU Fisheries Policy in order to ensure its effective and uniform application.

- **Inspections at sea:** The coastal countries, Norway (Coast Guard) and Russia (Boarder Service), have inspection vessels doing random and risk based inspections at sea in their own Economic Zone as well as in the international zone covered by NEAFC. The inspectors have the permission to board the vessel and check fishing activities, gear used, logbook data, catch composition etc.

- **NEAFC inspections** (joint deployment plans)

- **EU control** vessels in Barents Sea

Cross checks of fishing activity recorded on the VMS system, log-books and landings data by the relevant authorities in Estonia and Denmark did not identify any cases of systematic non-compliance within the fishery. Similar cross-checks will be carried out on Taurus when it commences fishing under the Lithuanian flag. Vessels have been inspected at sea by Norwegian, Russian, EU and NEAFC authorities and demonstrate that the fishery generally complies with regulations.

Within the Estonian management system there is a set of sanctions and fines to deal with non-compliances.:

- Fines, set at 5 times value of the catch
- Withdrawal of licence for up to 1 year (on the second offence)
- Permanent loss of licence

As in the Estonian management system, within the Danish and Lithuanian management system there is a set of sanctions and fines to deal with non-compliances. The EU has implemented a point system for infringements (Control regulation 2009/1224; 2011/404). These sanction systems can lead to high fines or loss of fishing opportunities.

Hønneland (2000) has investigated compliance in the Barents Sea fisheries for which previous studies have indicated a generally high level of compliance. According to his findings based on interviews with fishermen the extent of surveillance seems to be less important than the legitimacy of the management bodies. Fishermen have also indicated that the risks of non-compliance are considered too high. The EU has implemented a point system for infringements (Control regulation 2009/1224; 2011/404).

3.5.8 Research

Research is planned and undertaken by Norway and Russia in the framework of the joint Russian-Norwegian scientific research programme on living marine resources. The research undertaken includes: investigations on fish and shrimp stocks, including stock size, structure and distribution, fishing technology and selectivity of fishing gear, optimal harvesting of commercial species in the Barents Sea, monitoring of the populations of marine mammals and birds.

Research is also planned in the joint NAFO/ICES Pandalus Assessment Working Group (NIPAG). Research findings are made available through annual reports and ICES papers published on ICES and IMR web sites.

3.5.9 Evaluation

Within the Estonian Management system there are mechanisms in place to periodically evaluate parts of the management system based on internal review within the Ministries and discussions within the Fisheries Commission and Fisheries Council. Currently the new national fishing strategy is being drafted, incorporating evaluation of the existing management system. Within the Danish Management system there are mechanisms in place to periodically evaluate parts of the management system based on internal review within the Ministry of Food, Agriculture and Fisheries. Management issues will be regularly discussed within the Fisheries Committees that have been established by the Fisheries Act 2004. One review on the Danish Fisheries has been requested by the European Parliaments Committee on Fisheries (Semrau & Ortega Gras, 2013). This report can be considered an external review. Scientific evaluations on the shrimp fishery have also been conducted by scientists and published in research papers. The Danish management system will also be evaluated externally by the National Audit Office (Rigsrevisionen), an independent institution that falls under the Danish National Parliament. Within the Lithuanian management system the Law on Fisheries 2000 was fully reviewed and updated in 2016. In addition the management system is regularly audited by the EU Commission.

Within the Norwegian management system, reporting of regulations and enforcement to the Norwegian Parliament occur annually. The National audit office performed a major audit on the management system in 2003-2004 reviewing resource management, Ministerial management and enforcement by subsidiary bodies like the IMR and Fisheries Directorate, etc. The report was presented to the Parliament. Research is published in scientific journals and subject to regular peer review therein. IMR has also had two major scientific reviews over the last decade by independent committees.

NEAFC has established a working group on the Future of NEAFC. This working group is asked to evaluate the role of NEAFC in taking a broader ecosystem approach to fisheries management. The working group will report to the NEACFC Commission.

4 EVALUATION PROCEDURE

4.1 Harmonised Fishery Assessment

There are several fisheries targeting *Pandalus borealis* which are already MSC Fisheries certified or undergoing certification process. Several of these fisheries take place in the North West Atlantic and do not intersect with the Estonia cold water prawn fishery which takes place in the North East Atlantic. The fisheries which directly overlap with the unit of assessment are presented in Table 7 below.

In order to ensure consistency of outcomes in assessments of overlapping fisheries the following activities were undertaken:

- Coordinated certification process
- The use of common assessment trees
- The sharing of fishery information
- Harmonisation of conclusions, scoring and conditions

At the original assessment the assessment team for Estonia NEA cold water prawn fishery took into account the evaluation, scoring and conditions for already certified Norway North East Arctic cold water prawn fishery and harmonised the results further with the Faroe Islands North East Arctic cold water prawn fishery undergoing assessment.

Table 7. List of relevant overlapping fisheries and current status with the MSC programme

Fishery	Assessment status	FAO area	ICES area
Faroe Islands North East Arctic cold water prawn	Certified	Area 27 Atlantic, Northeast	ICES I and II
Norway North East Arctic cold water prawn	Certified	Area 27 Atlantic, Northeast	ICES I and II

During this expedited assessment several assessment components have been rescored including 4 PIs that have been mentioned in the original assessment report as PIs that were harmonized with other certified fisheries or fisheries in assessment. These were PI 1.2.1, PI 1.2.2, PI 2.4.1 and PI 2.4.3. However the information that was provided by the client during the expedited audit revealed that management arrangements under the harvest strategy were identical to those of the certified fishery. Therefore also the scores for the re assessed PIs under P1 are identical. Concerning the assessment component habitat the information provided by the client showed that Lithuanian vessel will operate in the same fishing areas with the same fishing gear. The conclusion is therefore that all P1 and P2 scores have remained the same and that no further harmonisation (of scores) is possible nor needed.

4.2 Previous assessments

The Estonia NEA cold water prawn fishery has been previously assessed. This report describes the results of an expedited assessment of this fishery.

4.3 Assessment Methodologies

The scope extension process allows for the assessment of only those components within the fisheries that are not held in common with the originally certified fishery. The components needing evaluation

were identified by way of a gap analysis conducted prior to announcing the scope extension and verified during the information gathering phase of the assessment.
The gap analysis that has been carried out has revealed that not all assessment components are the same for the extended UoA and the certified fishery. Therefore the expedited assessment described in this report has been carried out.

During the gap analysis it was concluded that four of the nine assessment components are the same for the extended UoA and the certified fishery. These were the Outcome component of P1 and the Bycatch, ETP and Ecosystem components of P2.

This expedited assessment thus involved the assessment against the harvest strategy component under Principle 1, the retained species and habitat components under Principle 2 and the governance and policy and fishery specific management components under Principle 3.

In accordance with the MSC FCR v2.0 requirements the version of the assessment tree that was used for the assessment of the existing certified fishery is to be used in the assessment of the new UoA. Therefore the default assessment tree in FCR v1.2 was used for the assessment of the expedited audit.

4.3.1 The MSC fisheries standard

The MSC fisheries standard sets out requirements that a fishery must meet to enable it to claim that its fish come from a well-managed and sustainable source. The MSC standard applies to wild-capture fisheries that meet the scope requirements as confirmed in section 3.1.

The MSC fisheries standard comprises three core principles:

Principle 1: Sustainable target fish stocks

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Principle 2: Environmental impact of fishing

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Principle 3: Effective management

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

4.3.2 The assessment tree structure

The default tree structure is divided into four main levels for the purposes of scoring, as summarised below and illustrated in Figure 12.

- Principle: The Principles represent the overarching basis for the assessment tree

- Component: A high level sub-division of the Principle
- Performance Indicator (PI): A further sub-division of the Principle
- Scoring Issue (SI): A sub-division of the PI into related but different topics. Each PI has one or more scoring issues against which the fishery is assessed at the SG 60, 80, and 100 levels.

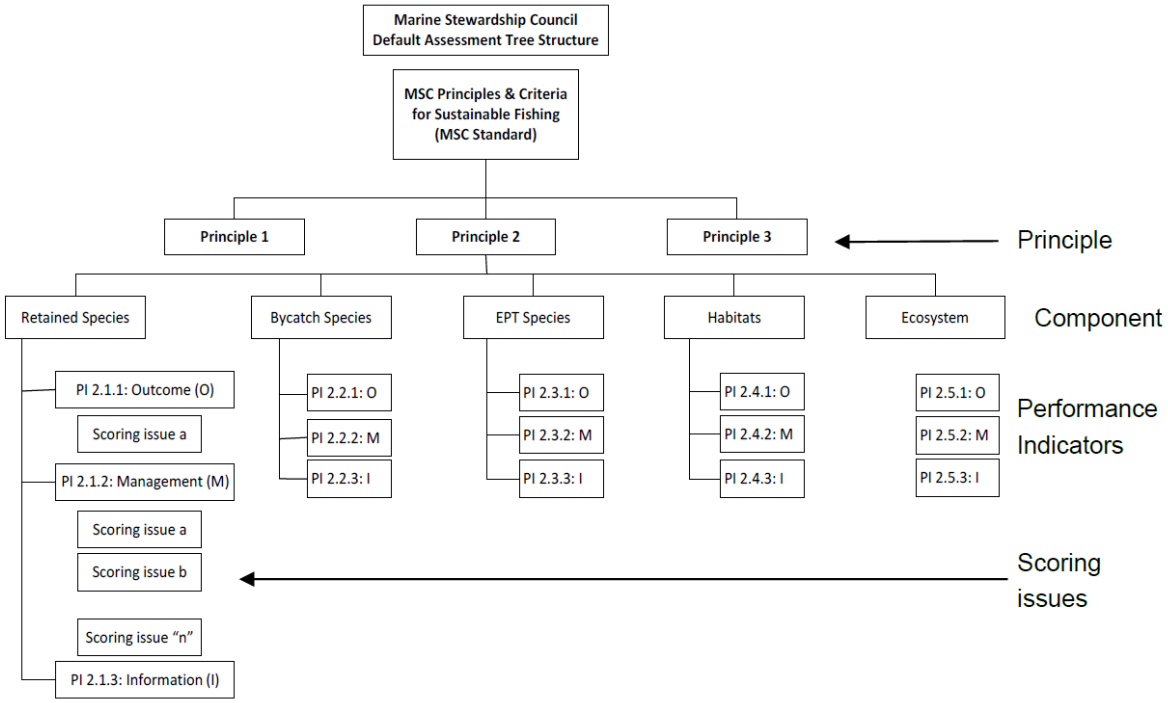

Figure 12: Assessment tree structure

The detailed assessment tree used in this assessment is included in Appendix 1.

4.4 Evaluation Processes and Techniques

4.4.1 Site Visits

The scope extension audit was conducted as an on-site audit in Tallinn, Estonia and Vilnius, Lithuania on 10-11 November 2016. Meetings were held with the client and the Ministry of Agriculture, Fisheries Service in Lithuania. The principle expert and team leader, Julian Addison, was participating remotely by skype, while the DNV GL representative and project manager/chain of custody responsible, Sigrun Bekkevold, was participating on-site. The scoring meeting took place on skype after the site visit and was performed according to MSC Certification Requirements, version 1.2.

The audit was announced on the MSC website on 6 October 2016 followed with a gap analysis assessing the degree of overlap between the proposed new Unit of Assessment (UoA) and the already certified UoA.

4.4.2 Site visit consultations

The assessment team met with relevant stakeholders as outlined in Table 8. Information gathered is presented in this report and in the enclosed scoring tables.

Table 8 Site visit consultations

Date	Name and affiliation	Summary of information obtained
10 November 2016	**Client group:** • Aivaras Labanauskas, UAB Marlinas • Mati Saravet, Reyktal Ltd	**Info about client and the fishery** • History and organizational structure **Fishing operations**: • Fishing season • Fishing area • UoC Fleet • Fishing practices: o Gears used o Fishing area/depth o Historical fishing levels (quotas and landings) o Composition of catch (commercial and non-commercial o Info on discarding o Sampling and weighing on board o Closed areas o Loss of fishing gear **Impact on eco system:** • List of all by-catch of fish species (species and quantities caught the last three years) • By-catch of marine mammals, ETP species (e.g. large rays, sharks, picked dogfish), birds the last three years • List of commercial/non-commercial species which are usually discarded (quantities • Protected or sensitive habitats within geographical • Effort of gear used in habitats (VMS maps) • Reporting & registration of by-catch/ discards • Sorting/separation of by-catch • Sampling **Management, compliance with rules and regulations** • Fishery management system • Fishery management objectives • Disputes with national/ international authorities for the last 5 years. • Records of sanctions and penalties in 2014, 2015, 2016 (if any). • Control & surveillance: o VMS system o Landing control o Quota control o Inspections on board o Observer reports • Participation in research projects • Amount and type of information provided to management bodies • Cooperation with management bodies • Management evaluation **Chain of Custody:** Traceability system on board and at landing • Labelling of products/changes in labelling of products • List of landing sites in 2015/2016 • First point of landing • First point of sale • Main products/change in product range/main markets

Date	Name and affiliation	Summary of information obtained
11 November 2016	**Ministry of Agriculture:** • Tomas Kazlauskas, Head of Fisheries Service • Alenas Bulauskis	• Fisheries Management & Regulations • Consultation and decision-making process • Mechanisms for resolution of legal disputes • Review of regulations for cold water prawns in ICES I and II • Harvest strategy for cold water prawns • Long-term objectives for Lithuanian fisheries • Strategy for minimising or eliminating ETP by-catch • Fishery specific regulation by Lithuania on MLS, mesh size, quota and fishing effort (fishing days) • Strategy and plans for protection of sensitive habitats • Control, surveillance and monitoring routines/regulations Logbooks: recording of landings and discards (of non-commercial species) • ERS systems • Observed fishing patterns (gear used, fishing area, number of boats, fishing season). • Level of slipping/discards in the cold water prawn fishery in the Barents Sea • Fishermen's compliance with laws and regulations • Research planning • Research for the fishery under assessment • Evaluation of management system

4.4.2.1 Process consultations

Several stakeholders have been identified and contacted during the expedited assessment of this fishery.

Information was made publicly available at different stages of the assessment (Table 9). Notifications on the MSC website (www.msc.org) were distributed to listed stakeholders in directed mails.

Table 9 Process announcements and consultations

Consultation subject	Consultation channels	Consultation date
Announcement of expedited audit	Notification on MSC website / direct email to listed stakeholders	6 October 2016
Gap analysis	Notification on MSC website / direct email to listed stakeholders	6 October 2016
Peer reviewer proposed	Notification on MSC website / direct email to listed stakeholders	17 November 2016
Peer reviewer confirmed	Notification on MSC website / direct email to listed stakeholders	28 November 2016
Announcement of changed peer reviewer	Notification on MSC website	26 January 2017
Public comment draft report	Notification on MSC website / direct email to listed stakeholders	21 February 2017
Final report	Notification on MSC website / direct email to listed stakeholders	11 April 2017
Public certification report	Notification on MSC website / direct email to listed stakeholders	

4.4.3 Evaluation Techniques

The originally certification of this fishery (Estonia NEA cold water prawn fishery) was assessed against the default assessment tree contained in MSC Certification Requirements version 1.2 (January 1Oth, 2012). The scope extension was assessed against the default assessment tree contained in MSC Certification Requirements version 1.2, using the "scope extension" process described in MSC Fishery Certification Requirements version 2.0 (October 1st, 2014). According to process requirements in v 2.0 the version of the assessment tree that was used in the assessment of the existing certified fishery is also to be used in the expedited assessment.

After all relevant information was compiled and analysed, the assessment team scored the Unit of Assessment against the relevant Performance Indicator Scoring Guideposts (PISGs) in assessed scoring indicators. The team discussed evidence together, weighed up the balance of evidence and used their judgement to agree on a final score following MSC FCR processes and based on consensus.

In order to fulfil the requirements for certification the following minimum scores are required:

- The fishery must obtain a score of 80 or more for each of the three MSC Principles, based on the weighted aggregate scores for all Performance Indicators under each Principle.
- The fishery must obtain a score of 60 or more for each individual scoring issue under each Performance Indicator in each Principle.

Conditions are set where the fishery fails to achieve a score of 80 to any Performance Indicators. Conditions with milestones are set to result in improved performance to at least the 80 level within a period set by the assessment team. The client is required to provide a client action plan to be accepted by the assessment team. The client action plan shall detail:

- how conditions and milestones will be addressed
- who will address the conditions
- the specified time period within which the conditions and milestones will be addressed
- how the action(s) is expected to improve the performance of the UoA
- how the CAB will assess outcomes and milestones in each subsequent surveillance or assessment

4.4.4 Risk Based Framework

The assessment did not use the Risk Based Framework.

5 TRACEABILITY

5.1 Eligibility Date

The **Eligibility Date** for the extended scope of this fishery is 21 February 2017.

The eligibility date is the date from which the products from a certified fishery is eligible to be sold as MSC certified or bear the MSC ecolabel. According to MSC requirements v. 2.0 the eligibility date can either be the date of certification of the fishery or the publication date of the first Public Comment Draft Report (PCDR). Fishing is all year around. In order to allow the client to take advantage of the opportunity to set the eligibility date by the publication of the PCDR, the eligibility date is set to 21 February 2017. The traceability and segregation systems in the fishery will be in place from this date.

5.2 Traceability within the Fishery

Due to the strict system of control, monitoring and enforcement, there is no opportunity neither incentives for the client fleet to substitute certified shrimp products with non-certified prior to or at the point of landing. All client catches taken in the UoC are properly reported, labelled and recorded.

Only the Lithuanian fishery traceability system is described in this section, and it shows that it is in line with the conditions set for the eligibility for entering further chains of custody.

5.2.1 Traceability

Lithuanian shrimp vessels have permissions to fish in the Svalbard FPZ and in the international zone (Loop Hole – managed by NEAFC) and are required to have a general fishing license and a specific fishing permit for shrimp fishing in all areas issued by the Lithuanian authorities. Lithuanian vessels are not permitted to fish the Russian zone.

Lithuanian vessels do not fish outside the unit of certification when they target Barents Sea shrimps. In all areas, these vessels have a VMS (Vessel Monitoring System) and also an AIS (Automatic Identification System) on board and by that there is full control about their fishing areas.

All trawlers in this fishery must complete electronic logbooks according to EU-regulation with vessel id, gear, catch details, position, etc. and send the recordings to the Fisheries Service under the Ministry of Agriculture every day, who do daily monitoring and send the recordings to EU commission. The Fisheries Service cross-checks the log book recordings with landing declarations.

The vessels are inspected by the Norwegian Coastguard, and also by Russian inspectors in the Loop Hole.

The vessels in the UoC cannot fish in other areas than the UoC on the same trip.

There is no transshipment in this fishery.

Thus, the risk of substitution of certified shrimp with non-certified shrimp is negligible.

5.2.2 At-Sea processing

The biggest shrimps are boiled on board, frozen and packed in 5 kilos boxes, while the smallest shrimps (industrial shrimps) are frozen directly and packed in bags.

All packagings are labelled and contain information of vessel id, country of origin, product/size, production date, expiry date and catch area. An example of a label is seen in Figure 13

Figure 13 Example of labelling used on shrimp products originating from the client fishery.

5.2.3 Points of landing

The shrimps for the Lithuanian vessel are landing at the same points as the vessels included in the original certified fishery. Most of the shrimps are landed in Tromsø, Norway, but some also in Reykjavik in Iceland, for either freezer storage or being transported to processing plant. Very seldom the shrimps can be landed in other places in Norway if the situation warrants it. Then the catch will be transported by third party refer vessels straight to freezer store in Tromsø or to processing plant near by Tromsø. There will be no handling/re-packaging of the shrimps before it ends up in Tromsø or at the processing plant(s). The system with packing and labelling on board, securing full traceability regarding species, vessel, catch dates and catch area, and with no handling/re-packing during the transport, minimize the risk for mixing of certified with non-certified products.

The sales system for the Lithuanian catch is the same as for the Estonian sales system. Some of the products are sold by landing before it goes to the processing plant, but some are sold after a certain time of storage in the freezer store. When stores vessel captains and the freezer store fill out a declaration and transit note which include the information about company, vessel, species, products, catch area and catch dates. There are no handling and repackaging of the products, only palleting and keeping the labels with all relevant traceability information visible. So there are no risk factors that may influence on the traceability while storing. The products are also in the custody of the vessel until sale.

In some cases the certified products are subject to consignment sale through an external exporting company; Icelandic Export Center Ltd. (IEC). Since this agent doesn't take ownership of the products (is not buying the shrimps from the vessels and re-selling it) and is not in any way handling the products but only provides a sales service for the vessel, it is included in the certification and needs no Chain of Custody.

Figure 14 shows the packaging on the pallets

Figure 14 Example of shrimp packaging on pallets during freezer storage

5.2.4 Traceability risk factors in the fishery

Traceability Factor	**Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)**
Potential for non-certified gear/s to be used within the fishery	The vessels included in the scope extension will not use gears not included in the UoC
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	The vessel included in the scope extension will not fish outside the UoC on the same trips, and hence there is no risk for mixing of certified with non-certified catch in that way.
Potential for vessels outside of the UoC or client group fishing the same stock	Vessels from other countries; i.e. Norway, Faroe Islands, Greenland, Iceland, Russia and EU countries also fish this stock. Some of these fisheries are under MSC assessment or are non-certified (March 2017). Some of the foreign vessels might land their catches in Norway, at the same landing places as the Lithuanian shrimps. However, the traceability system including catch control on board, by landing and transit/storage (log books, landing declarations, transit notes, etc.) and labelling of the product packaging with species, catch dates, vessel identification, catch area, etc. minimizes the risk for mixing of certified with non-certified shrimps
Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)	Risks of mixing of certified and non-certified catch during any kind of handling after landing and prior to first sale or processing are primarily associated with transportation to cold storage and cold storage. Segregation, packaging and labelling of the certified catch on board, which give full traceability to vessel,

	species, catch date and catch area, and no further re-packaging or re-labelling before sale or processing, minimize the risks for mixing of certified with non-certified products. Also captains declaration and transit notes filled out at the freezer store including these informations mitigates the risk of mixing. Very seldom the shrimps can be landed in other places in Norway if the situation warrants it. Then the catch will be transported by third party refer vessels straight to freezer store in Tromsø or to processing plant near by Tromsø. There will be no handling/re-packaging of the shrimps before it ends up in Tromsø or at the processing plant(s). The system with packing and labelling on board, securing full traceability regarding species, vessel, catch dates and catch area, and with no handling/re-packing during the transport, minimize the risk for mixing of certified with non-certified products.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	Before entering Chain of Custody the only processing activity is on board where the certified shrimps are frozen, packed and labelled. During this process the shrimps are segregated from other species and kept separate with the label identifying species, catch dates and catch area. There is no risk of mixing with non-certified shrimps. Any processing activities on shore is after sale, and requires Chain of Custody
Risk of mixing between certified and non-certified catch during transhipment	There is no transhipment
Any other risks of substitution between fish from the UoC	Non identified

5.3 Eligibility to Enter Further Chains of Custody

Pandalus borealis products caught in the manner defined in the Unit of Certification (Table 5B in section 3.1 of this report) will be eligible to enter Chain of Custody and carry the MSC logo at the completion of this scope extension process. This includes Pandalus products landed by the Lithuanian vessel that joins the client group and having a Lithuanian license and fishing permit for fishing cold water prawn by bottom trawl in ICES Divisions Ia,b and IIb.

Chain of custody will commence following the sale of frozen *Pandalus borealis* products at the point of landing (cold/freezer store or processing plant). Consignment sale through sales agents that don't take ownership of the products or are doing any handling of the products but only provides a sales service for the vessel are included in the certification and need no Chain of Custody.

Land-based peeling/processing plants as well as cold/freezer stores that perform anything more than movement of product must have separate CoC certification.

The **main** landing points are:

- Tromsø, Norway
- Reykjavik, Iceland

5.4 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to Enter Further Chains of Custody

IPI stocks are not involved in this scope extension certification.

6 EVALUATION RESULTS

6.1 Principle Level Scores

Table 10 Final Principle Scores original assessment

Final Principle Scores	
Principle	**Score**
Principle 1 – Target Species	84.4
Principle 2 – Ecosystem	85.7
Principle 3 – Management System	89.9

Table 11 Final Principle Scores current assessment

Final Principle Scores	
Principle	**Score**
Principle 1 – Target Species	84.4
Principle 2 – Ecosystem	85.7
Principle 3 – Management System	89.3

6.2 Summary of PI Level Scores

Table 12: Summary of PI level scores from original assessment

Fishery Assessment Scoring Worksheet version 1 - effective November 14, 2011													
Estonia North East Arctic Cold Water Prawn													
Note:	Scores are to be entered in the green-shaded cells in column K												
	Columns G, H and L apply in fisheries where the stock rebuilding PI (1.1.3) is NOT triggered												
	Columns I, J and M give the Principle 1 Outcome score contributions in fisheries where the stock rebuilding PI (1.1.3) is trigger												
Prin-ciple	Wt (L1)	Component	Wt (L2)	PI No.	Performance Indicator (PI)	Wt (L3)	Weight in				Score	Contribution to Principle Score	
						Either		Or				Either	Or
One	1	Outcome	0,5	1.1.1	Stock status	0,5	0,25	0,333	0,1667		100	25,00	16,67
				1.1.2	Reference points	0,5	0,25	0,333	0,1667		80	20,00	13,33
				1.1.3	Stock rebuilding			0,333	0,1667				0,00
		Management	0,5	1.2.1	Harvest strategy	0,25	0,125				70	8,75	8,75
				1.2.2	Harvest control rules & tools	0,25	0,125				75	9,38	9,38
				1.2.3	Information & monitoring	0,25	0,125				80	10,00	10,00
				1.2.4	Assessment of stock status	0,25	0,125				90	11,25	11,25
Two	1	Retained species	0,2	2.1.1	Outcome	0,333	0,0667				100	6,67	6,67
				2.1.2	Management	0,333	0,0667				100	6,67	6,67
				2.1.3	Information	0,333	0,0667				80	5,33	5,33
		Bycatch species	0,2	2.2.1	Outcome	0,333	0,0667				80	5,33	5,33
				2.2.2	Management	0,333	0,0667				85	5,67	5,67
				2.2.3	Information	0,333	0,0667				80	5,33	5,33
		ETP species	0,2	2.3.1	Outcome	0,333	0,0667				85	5,67	5,67
				2.3.2	Management	0,333	0,0667				90	6,00	6,00
				2.3.3	Information	0,333	0,0667				80	5,33	5,33
		Habitats	0,2	2.4.1	Outcome	0,333	0,0667				80	5,33	5,33
				2.4.2	Management	0,333	0,0667				80	5,33	5,33
				2.4.3	Information	0,333	0,0667				75	5,00	5,00
		Ecosystem	0,2	2.5.1	Outcome	0,333	0,0667				90	6,00	6,00
				2.5.2	Management	0,333	0,0667				90	6,00	6,00
				2.5.3	Information	0,333	0,0667				90	6,00	6,00
Three	1	Governance and policy	0,5	3.1.1	Legal & customary framework	0,25	0,125				95	11,88	11,88
				3.1.2	Consultation, roles &	0,25	0,125				90	11,25	11,25
				3.1.3	Long term objectives	0,25	0,125				100	12,50	12,50
				3.1.4	Incentives for sustainable fishing	0,25	0,125				90	11,25	11,25
		Fishery specific management system	0,5	3.2.1	Fishery specific objectives	0,2	0,1				80	8,00	8,00
				3.2.2	Decision making processes	0,2	0,1				90	9,00	9,00
				3.2.3	Compliance & enforcement	0,2	0,1				100	10,00	10,00
				3.2.4	Research plan	0,2	0,1				80	8,00	8,00
				3.2.5	Management performance	0,2	0,1				80	8,00	8,00

Overall weighted Principle-level scores		Either	Or
Principle 1 - Target species	Stock rebuilding PI not scored	84,4	
	Stock rebuilding PI scored		69,4
Principle 2 - Ecosystem		85,7	
Principle 3 - Management		89,9	

Table 13: Summary of PI level scores from expedited assessment including Lithuanian vessel

P	Wt	Component	Wt	Performance Indicator (PI)		Wt	Wt (P)	Score	Wt Score
1	1	Outcome	0.5	1.1.1	Stock status	0.5000	0.2500	100	25.00
				1.1.2	Reference points	0.5000	0.2500	80	20.00
				1.1.3	Stock rebuilding			0	0.00
		Management	0.5	1.2.1	Harvest strategy	0.2500	0.1250	70	8.75
				1.2.2	Harvest control rules & tools	0.2500	0.1250	75	9.38
				1.2.3	Information & monitoring	0.2500	0.1250	80	10.00
				1.2.4	Assessment of stock status	0.2500	0.1250	90	11.25
2	1	Retained species	0.2	2.1.1	Outcome	0.3333	0.0667	100	6.67
				2.1.2	Management	0.3333	0.0667	100	6.67
				2.1.3	Information	0.3333	0.0667	80	5.33
		Bycatch	0.2	2.2.1	Outcome	0.3333	0.0667	80	5.33
				2.2.2	Management	0.3333	0.0667	85	5.67
				2.2.3	Information	0.3333	0.0667	80	5.33
		ETP species	0.2	2.3.1	Outcome	0.3333	0.0667	85	5.67
				2.3.2	Management	0.3333	0.0667	90	6.00
				2.3.3	Information	0.3333	0.0667	80	5.33
		Habitats	0.2	2.4.1	Outcome	0.3333	0.0667	80	5.33
				2.4.2	Management	0.3333	0.0667	80	5.33
				2.4.3	Information	0.3333	0.0667	75	5.00
		Trophic function	0.2	2.5.1	Outcome	0.3333	0.0667	90	6.00
				2.5.2	Management	0.3333	0.0667	90	6.00
				2.5.3	Information	0.3333	0.0667	90	6.00
3	1	Governance and policy	0.5	3.1.1	Legal & customary framework	0.2500	0.1250	95	11.88
				3.1.2	Consultation, roles &	0.2500	0.1250	85	10.63
				3.1.3	Long term objectives	0.2500	0.1250	100	12.50
				3.1.4	Incentives for sustainable fishing	0.2500	0.1250	90	11.25
		Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.2000	0.1000	80	8.00
				3.2.2	Decision making processes	0.2000	0.1000	90	9.00
				3.2.3	Compliance & enforcement	0.2000	0.1000	100	10.00
				3.2.4	Research plan	0.2000	0.1000	80	8.00
				3.2.5	Management performance	0.2000	0.1000	80	8.00

Overall weighted Principle-level scores	
Principle 1 - Target species	84.4
Principle 2 - Ecosystem	85.7
Principle 3 - Management	89.3

6.3 Summary of Conditions

Table 14 Summary of Conditions

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/N/A)
1	By the fourth annual surveillance, regulations limiting fishing effort in international waters (ICES Ia and Ib), that are responsive to the state of the stock, should be implemented to demonstrate that the elements of the harvest strategy work together towards achieving management objectives for the Barents Sea shrimp stock as a whole.	**1.2.1**	**N / A**
2	By the fourth annual surveillance, well defined harvest control rules shall be implemented for the shrimp stock as a whole to ensure that the exploitation rates are reduced as limit reference points are approached.	**1.2.2**	**N / A**
3	The fishery is required to collect sufficient information on bycatches and spatial distribution of the fishery in order to detect any increase in risk for vulnerable bottom habitats (e.g. due to changes in fishing pattern or effectiveness of the move on rule).	**2.4.3**	**N / A**

Table 15 Recommendations

Recommendation number	Recommendation	Performance Indicator	Related to previously raised recommendation ? (Y/N/N/A)
1	The assessment team recommends that an observer programme is introduced for the Estonian fleet in the Barents Sea and Svalbard area to collect data on the catch and discards of shrimps and other species, and obtain representative samples of the size and sex distribution of shrimps.	**1.2.3**	**N/A**

6.4 Determination, Formal Conclusion and Agreement

The Lithuanian component of the fishery achieved a score of 80 or more for each of the three MSC Principles, and did not score under 60 for any of the set MSC Criteria. The assessment team therefore recommends the scope extension of the Estonia North East Arctic cold water prawn certificate to include the Lithuanian vessel Taurus that targets cold water prawn in the Barents Sea and joins the client group as specified in the Table 5B, section 3.1 of this report.

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APPENDIX 1 SCORING AND RATIONALES

Principle 1

Principle 1 Outcome status is not assessed.

Evaluation Table for PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	The harvest strategy is **expected** to achieve stock management objectives reflected in the target and limit reference points.
			The overarching principle of the Estonian Fishery Strategy is that fishing capacity should match fishing resources and this principle governs the harvest strategy of the Estonian fishery. The Lithuanian fisheries management system operates under similar principles of sustainable fisheries management as is laid down in the Fisheries Law 2000, which was updated in 2016. Estonia, Denmark and Lithuania as members of the European Union must manage their fisheries within the Framework of the EU's Common Fisheries Policy (CFP). The Estonian shrimp fishery in the Barents Sea is a component of a much larger fishery exploited by vessels from a range of national fleets extending over a wider geographical area than that fished by Estonian vessels. The same applies to the Danish and Lithuanian vessels in the shrimp fishery. The stock management objective for the whole Barents Sea fishery is to maintain the fishery within agreed limits based on annual stock assessments. For the whole fishery the harvest strategy is based primarily on effort limitation and technical conservation measures. There is no TAC for this fishery, except in the Russian zone. All Estonian, Danish and Lithuanian vessels require a licence to fish for shrimps issued by their respective Ministries, and must have a Vessel Monitoring System (VMS) on board, must complete EU electronic log books, and must complete all required catch declaration forms in both the Svalbard FPZ and international waters. Within the Svalbard FPZ the Estonian, Danish and Lithuanian fleets are subject to effort limitation through restrictions on the number of vessels and effective fishing days. Mortalities of juvenile shrimp are minimised through a minimum landing size, mesh size regulation, and mandatory sorting grids which also limit bycatch. Area closures can be invoked if there is a high bycatch of juvenile fish or shrimp. There are no seasonal closures of the fishery, although most effort is in spring and summer months. The area of the shrimp stock in international waters, the Loop Hole, which is managed by NEAFC, is fished by Estonian, Danish and Lithuanian vessels and those from other nations. Fishing in this area is regulated solely by technical conservation measures, although Estonian, Danish and Lithuanian authorities limit the number of vessels that are permitted to fish in the area.. The fishery in this area represents only a small component of the overall stock distribution, and so the overall lack of effort limitation in this small area is not expected to have any impact on the likelihood of achieving the overall stock management objectives. The components of this harvest strategy form an implicit management plan, which along with monitoring of the fishery, and annual assessment of the status of the stock in relation to reference points, is expected to achieve

PI 1.2.1		There is a robust and precautionary harvest strategy in place	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			stock management objectives.
	b	**Y**	The harvest strategy is **likely** to work based on prior experience or plausible argument.
			A harvest strategy based on strong limitations on fishing effort and protection of juveniles through technical conservation measures is likely to work based on prior experience in other fisheries, and annual stock assessments have concluded that throughout the history of the fishery, biomass has been above Bmsy and likely to remain so under the current harvest strategy.
	c	**Y**	Monitoring is in place that is expected to determine whether the harvest strategy is working.
			There is an effective monitoring system in place for all fleets including Estonian, Danish and Lithuanian vessels exploiting this stock, incorporating VMS on participating vessels, electronic log books (ERS), detailed recording of landings and inspection of vessels, which confirms that the harvest strategy is effective, and assessments show that the stock is being maintained within agreed limits.
80	**a**	**N**	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy **work together** towards achieving management objectives reflected in the target and limit reference points.
			For the shrimp stock as a whole, the various components of the harvest strategy do work together to control fishing mortality and maintain stock biomass, and hence ensure that the stock is maintained above its implicit target reference point and that limit reference points are not exceeded. Controls on numbers of fishing days and fishing vessels control fishing mortality and limit the impact on stock biomass, and the technical conservation measures ensure that stock biomass is not reduced significantly due to juvenile mortality. The annual assessment of the status of the stock in relation to reference points ensures that the harvest strategy can be responsive to the state of the stock. However, a significant component of the Estonian, Danish and Lithuanian shrimp fishery takes place in International waters where only technical measures apply, and there is currently therefore no scope for limiting fishing effort within this sub-area of the fishery. Although the proportion of the stock which is in international waters is relatively small and there is a limit on the number of the vessels from Estonia, Denmark and Lithuania, this is a significant weakness in the harvest strategy and the assessment team does not believe that the fishery achieves SG80 for this issue.
	b	**Y**	The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives.
			The harvest strategy has not been fully tested through, for example, a management strategy evaluation (MSE), but there is a rigorous monitoring programme in place including monitoring of fishing activity through the VMS system, accurate detailed recording of landings and completion of log books by all Estonian, Danish and Lithuanian vessels. Cross-checks by Estonian, Danish and Lithuanian authorities show that these elements of the harvest strategy are working effectively. Vessel inspections confirm that there is compliance with all management regulations. Fishery-independent stock

PI 1.2.1		There is a robust and precautionary harvest strategy in place	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			surveys demonstrate that recruitment has not been impaired under the current harvest strategy, and annual assessments of stock status show that biomass has been above Bmsy and F has been below Fmsy throughout the history of the fishery. It is reasonable to assume therefore that the harvest strategy is achieving its objectives.
100	**a**	**N**	The harvest strategy is responsive to the state of the stock and is **designed** to achieve stock management objectives reflected in the target and limit reference points.
			There is no formal management plan within which a harvest strategy has been designed to meet the management objectives, and there is no clear statement of how the strategy is modified in response to stock changes.
	b	**N**	The performance of the harvest strategy has been **fully evaluated** and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
			The harvest strategy has not been fully evaluated, although it does appear to be maintaining stocks at target levels.
	d	**N**	The harvest strategy is periodically reviewed and improved as necessary.
			Whilst elements of the harvest strategy may be modified from time to time in response to the state of the stock, there is no regular formal review of the harvest strategy.
References			Estonian Fisheries Strategy 2007-2013. Ministry of Agriculture of the Republic of Estonia, 65 pp. Lithuanian Fisheries Law, 2000, revised 2016. EU Common Fisheries Policy Regulation (EU) No 1380/2013. Fisheries regulations in Norwegian waters - http://www.fiskeridir.no/english/fisheries/regulations NEAFC Scheme of Control and Enforcement NAFO/ICES, 2016. NAFO/ICES *Pandalus* Assessment Group Meeting, 7-14 September 2016, Institute of Marine Research, Bergen, Norway. ICES CM 2016/ACOM:15.
OVERALL PERFORMANCE INDICATOR SCORE:			**70**
CONDITION NUMBER (if relevant):			**1**

Evaluation Table for PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules in place	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	**Generally understood** harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached. Although there are no formally defined harvest control rules, the fishery is managed through a series of regulations including effort limitation, technical conservation measures and partial TACs in some areas, and it is generally understood that these regulations can be changed in order to reduce the exploitation rate if limit reference points are approached. In addition, within the Svalbard FPZ, vessels must cease fishing in areas where the bycatch of cod and haddock is over 10% or when more than 10% of the catch of shrimps are undersized (<15mm CL) or when the numbers of undersized cod, haddock or redfish reach prescribed numbers per 10kg of shrimps caught.
	c	**Y**	There is **some evidence** that tools used to implement harvest control rules are appropriate and effective in controlling exploitation. Annual assessments of the status of the stock provide strong evidence that the management tools in place are appropriate to this fishery and appear to be effective in controlling the level of exploitation within the fishery as a whole.
80	**a**	**N**	**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. Whilst it is generally understood that fishery regulations can be changed in order to reduce the exploitation rate if limit reference points are approached, there are no explicit harvest control rules in place which define what management action will be invoked if the stock biomass declines to levels close to Btrigger or Blim, or if fishing mortality increases to levels close to Flim. Within the Svalbard FPZ there are explicit rules about closing the fishery if too many young fish or shrimp are caught. Vessels must cease fishing in areas where the bycatch of cod and haddock is over 10% or when more than 10% of the catch of shrimps are undersized (<15mm CL) or when the numbers of undersized cod, haddock or redfish reach prescribed numbers per 10kg of shrimps caught. In Russian waters, the bycatches of shrimp vessels are regulated through a bi-lateral agreement between Russia and flag states of vessels that fish in Russian waters.
	b	**Y**	The **selection** of the harvest control rules takes into account the **main** uncertainties. The management tools currently in place (effort limitation, technical conservation measures, partial TACs) can be considered to be implicit harvest control rules as they have been developed and modified on the basis of observed changes in the fishery between 1970 and 2012 underpinned by the outputs from stock assessments. The current stock assessment model explicitly accounts for inherent uncertainties in input parameters in a quantitative manner and so it can be concluded that the selection of the implicit harvest control rules takes the main uncertainties

PI 1.2.2		There are well defined and effective harvest control rules in place	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			into account.
	c	**Y**	**Available evidence indicates** that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.
			Annual assessments of the status of the stock provide strong evidence that the management tools in place are appropriate to this fishery and appear to be effective in controlling the level of exploitation.
100	**b**	**N**	The **design** of the harvest control rules takes into account a **wide range** of uncertainties.
			There are no clearly defined harvest control rules, and the current implicit control rules do not take into account a wide range of uncertainties such as the ecological role of the stock.
	c	**N**	**Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
			As there are no well-defined harvest control rules in use, this SG is not met.
References			Fisheries regulations in Norwegian waters - http://www.fiskeridir.no/english/fisheries/regulations Protocol of the Thirty Sixth session in the Joint Faroese-Russian Fisheries Commission NAFO/ICES, 2016. NAFO/ICES *Pandalus* Assessment Group Meeting, 7-14 September 2016, Institute of Marine Research, Bergen, Norway. ICES CM 2016/ACOM:15.
OVERALL PERFORMANCE INDICATOR SCORE:			**75**
CONDITION NUMBER (if relevant):			**2**

Evaluation Table for PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	**Some** relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy. There is good information available on the genetics of *Pandalus borealis* in relation to the distribution of the fishery in the Barents Sea and Svalbard, research surveys and observer programmes provide data on the size range and reproductive state of the stock, and the licensing of all vessels, VMS, log books and obligatory catch returns ensure that the fleet composition is well understood.
	b	**Y**	Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule. The assessment of the Barents Sea stock uses a series of biomass indices. Standardised annual catch rate data calculated from log books of the Norwegian fleet along with three trawl survey biomass indices provide independent estimates of stock abundance. Log books and mandatory catch declarations ensure that fishery removals are closely monitored across the fleet.
80	**a**	**Y**	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy. Genetics studies of *Pandalus borealis* have concluded that the populations of the Barents Sea and Svalbard can be considered to be a single population (Martinez *et al*., 2006), and research surveys and observer programmes on some components of the fleet provide data on the size range and reproductive state of the stock. The licensing of all vessels, VMS, log books and obligatory catch returns ensure that the fleet composition is well understood. There is good information on the composition of the Estonian, Danish and Lithuanian fleets, but the assessment team recommends that an observer programme is introduced for the Estonian, Danish and Lithuanian fleets in the Barents Sea and Svalbard area to collect data on the catch and discards of shrimps and other species, and obtain representative samples of the size and sex distribution of shrimps.
	b	**Y**	Stock abundance and fishery removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest control rule**, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule. Good information about abundance and fishery removals is available for the Barents Sea stock and is used in annual assessments of the status of the stock in relation to reference points, and the assessments evaluate the risk of various catch options. The assessment of the Barents Sea stock uses a series of biomass indices. For Norwegian vessels, the largest component of the shrimp fishing fleet, standardized annual catch rate data are calculated from log books with a GLM using individual vessel, season, area and gear type as variables. The resulting index is considered to be

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			indicative of shrimp biomass. Research surveys provide indices of stock biomass, abundance, recruitment and demographic composition (size, sex, reproductive status) and also monitor other ecosystem variables. Log books and mandatory catch declarations ensure that fishery removals are closely monitored across the fleet. VMS data, log book returns and mandatory catch returns for the Estonian, Danish and Lithuanian vessels are cross-checked by the respective authorities providing detailed information of fishery removals by the fleet and confirming compliance of vessels with current regulations, in particular the location of fishing. Raw catch data from Estonia, Denmark and Lithuania are incorporated in the assessment model, but catch per unit effort data, whilst available from the fleet from log books, are not used in the assessment. The key fishery-independent survey of the stock is the joint Norwegian-Russian ecosystem survey. Estonia, Denmark and Lithuania do not undertake any fishery-independent stock surveys.
	c	**Y**	There is good information on all other fishery removals from the stock.
			Mandatory catch returns ensure that landings from all components of the shrimp fleet in the Barents Sea are recorded. Mesh size regulations and the use of Nordmore sorting grids ensures that there is little discarded. There are no other fisheries targeting shrimp using other gears and no fisheries targeting other species which retain shrimp as bycatch or discard shrimp.
100	**a**	**N**	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
			There is a comprehensive range of information for much of the fleet that exploits this stock. There is strong genetic evidence that shrimp in the Barents Sea and Svalbard area constitute a single stock, and research surveys and observer programmes provide detailed information on stock biomass, abundance, recruitment and demographic composition. There is a comprehensive system of mandatory catch returns which along with VMS data and electronic log book returns ensure that fishery removals are fully recorded. Cross checks by national authorities confirm that fishery removals are recorded accurately. The joint Norwegian-Russian ecosystem survey provides additional environmental information on the stock area. As noted in 80a, there is currently no observer programme for Estonian, Danish and Lithuanian shrimp vessels fishing in the Barents Sea and so there is a gap in knowledge of the bycatch, discards and demographic structure of the shrimp stock for this component of the fleet, and for that reason the SG 100 is not met.
	b	**N**	**All information** required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent **uncertainties** in the information [data] and the robustness of assessment and management to this uncertainty.
			There is a lack of understanding of the inherent uncertainties in the data, although the assessment model considers the robustness of the assessment

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			and management to these uncertainties.
References			Hvingel, C. and Thangstad, T. 2012a. The Norwegian fishery for northern shrimp (*Pandalus borealis*) in the Barents Sea and round Svalbard 1970-2012. NAFO SCR Doc. 12/51. Hvingel, C. and Thangstad, T. 2012b. Research survey information regarding northern shrimp (*Pandalus borealis*) in the Barents Sea and Svalbard area 2004-2012. NAFO SCR Doc. 12/50. Martinez, I., Aschan, M., Skerjdal, T. and Aljanabi, S.M. 2006. The genetic structure of *Pandalus borealis* in the Northeast Atlantic determined by RAPD analysis. ICES Journal of Marine Science, 63: 840-850. NAFO/ICES, 2016. NAFO/ICES *Pandalus* Assessment Group Meeting, 7-14 September 2016, Institute of Marine Research, Bergen, Norway. ICES CM 2016/ACOM:15. Zakharov, D.V. and Lyubin, P.A. 2012. Results of Russian investigations of the northern shrimp in the Barents Sea in 2004-2012.
OVERALL PERFORMANCE INDICATOR SCORE:			**80**
CONDITION NUMBER (if relevant): Recommendation SG80a			

Evaluation Table for PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**b**	**Y**	The assessment estimates stock status relative to reference points.
			Whilst *Pandalus borealis* in the Barents Sea and Svalbard Fishery Protection Zone (FPZ) is considered as a single stock (Martinez *et al*., 2006), Estonian, Danish and Lithuanian vessels are restricted to fishing in only part of that stock – in the Svalbard FPZ and in an area of international waters to the south east of Svalbard known as the Loop Hole (ICES Area Ia). However the status of the stock is assessed against reference points at the scale of the whole Barents Sea stock, and no information is available on trends in stock biomass and recruitment within sub-areas of the stock. The stock assessment model used by the NAFO/ICES *Pandalus* Assessment Group (NIPAG) is a stochastic surplus-production model. The model is formulated in a state-space framework and Bayesian methods are used to derive posterior likelihood distributions of the parameters. The model synthesises information from input priors including the initial population biomass in 1969, the carrying capacity (K) and maximum Sustainable Yield (MSY), yield data based on reported shrimp catches since 1970, and four independent series of shrimp biomass: standardised CPUE from commercial vessels, a Norwegian trawl-survey biomass index, a Russian trawl-survey biomass index, and a trawl-survey biomass index from the more recent joint Norwegian-Russian ecosystem survey. Biomass is measured relative to the biomass that would yield MSY, Bmsy, and fishing mortality is scaled to the fishing mortality at MSY, Fmsy. The model estimates the current biomass in relation to Bmsy and the reference points, Btrigger and Blim set at 50% and 30% of Bmsy respectively, and the current fishing mortality in relation to Fmsy and Flim, set at 170% of Fmsy. In addition the model estimates the risk of biomass falling below these reference points and the risk of fishing mortality exceeding these reference points for a range of future catch options.
	c	**Y**	The assessment **identifies major sources** of uncertainty.
			The major sources of uncertainty are incorporated within the assessment approach. The NIPAG report notes that the model may perform less well if there is a sudden change in recruitment. Research surveys show that stock has been distributed further to the east in recent years, and this change in distribution may be associated with observed changes in water temperatures.
80	**a**	**Y**	The assessment is appropriate for the stock and for the harvest control rule.
			The assessment model was specifically designed for the *Pandalus borealis* fishery. A stock-production model is appropriate because shrimps cannot be aged. The model produced good predictions of the four independent biomass indices used as input to the 2012 assessment, evaluates stock status relative to reference points and evaluates the risk that biomass might be below Bmsy and fishing mortality might exceed Fmsy for a range of future catch options.
	c	**Y**	The assessment **takes uncertainty into account**.

PI 1.2.4		There is an adequate assessment of the stock status	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			The assessment evaluates the risk that biomass might be below Bmsy, Btrigger and Blim and the risk that fishing mortality might exceed Fmsy for a range of future catch options.
	e	**Y**	The assessment of stock status is subject to peer review.
			The stock assessment is undertaken by Norwegian scientists and presented at the NAFO/ICES *Pandalus* Assessment Group (NIPAG) along with assessments of other *Pandalus* stocks. There is therefore an inherent peer review by the various members of NIPAG, including scientists from Norway, Russian Federation, Canada, Denmark, Greenland, Sweden, Spain, France and Faroe Islands, and the NAFO Secretariat. The draft report is then peer reviewed by the ICES Review Group.
100	**a**	**N**	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.
			The assessment model was specifically designed for the *Pandalus borealis* fishery. A stock-production model is appropriate because shrimps cannot be aged. The model produced good predictions of the four independent biomass indices used as input to the 2012 assessment, and evaluates stock status relative to reference points and evaluates the risk that biomass might be below Bmsy and fishing mortality might exceed Fmsy for a range of future catch options. The assessment also considers how bottom temperatures can be used to infer changes in distribution of shrimp over recent years. Fish species, particularly cod, are known predators of *P. borealis*, and predation mortality is thought to be an important factor in shrimp stock dynamics. At present the model does not explicitly incorporate predation because the relationship between shrimp and cod densities is not known for this shrimp stock, and so the SG100 is not achieved.
	c	**Y**	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a **probabilistic** way.
			The assessment model is a Bayesian model which provides posterior distributions of parameter estimates, and which provides projections of estimated risk of falling below biomass reference points and of exceeding fishing mortality reference points.
	d	**N**	The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
			The assessment model has been found to be relatively insensitive to priors for initial stock biomass and carrying capacity, produced good predictions of the four independent biomass indices used as input to the 2012 assessment and is considered to be robust in its response to annual changes. The model is considered to be an improvement on previous models where trends in biological information, fishery data or research survey data were used in a 'traffic light' indicator approach. Predation is not explicitly incorporated into the stock assessment model for the Barents Sea, but in other *P. borealis* fisheries e.g. West Greenland, the model explicitly includes cod predation and the addition of this component provided a better fit than alternative models. The SG100 is therefore not met.

PI 1.2.4		There is an adequate assessment of the stock status	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
	e	**Y**	The assessment has been **internally and externally** peer reviewed. The stock assessment is peer reviewed annually by all members of NIPAG and by the ICES Review Group, whose members are stock assessment scientists not involved with the *Pandalus borealis* assessments and, from time to time, scientists who are outside the ICES assessment process. Such a review group can be considered as providing external peer review, and the assessment model itself (Hvingel and Kingsley, 2006) has been published in a peer-reviewed journal.
References			Hvingel, C. 2012. Shrimp (*Pandalus borealis*) in the Barents Sea – Stock assessment 2012. NAFO SCR Doc. 12/49. Hvingel, C. and Kingsley, M.C.S. 2006. A framework to model shrimp (*Pandalus borealis*) stock dynamics and to quantify the risk associated with alternative management options, using Bayesian methods. ICES Journal of Marine Science, 63: 68-82. Intertek Moody Marine 2012. MSC PCDR for West Greenland Cold Water Prawn Trawl Fishery. Martinez, I., Aschan, M., Skerjdal, T. and Aljanabi, S.M. 2006. The genetic structure of *Pandalus borealis* in the Northeast Atlantic determined by RAPD analysis. ICES Journal of Marine Science, 63: 840-850. NAFO/ICES, 2012. NAFO/ICES *Pandalus* Assessment Group Meeting, 17-24 October 2012, Institute of Marine Research, Tromso, Norway. ICES CM 2012/ACOM:14. NAFO/ICES, 2016. NAFO/ICES *Pandalus* Assessment Group Meeting, 7-14 September 2016, Institute of Marine Research, Bergen, Norway. ICES CM 2016/ACOM:15.
OVERALL PERFORMANCE INDICATOR SCORE:			**90**
CONDITION NUMBER (if relevant):			

Principle 2

Evaluation Table for PI 2.1.1 – Retained species Outcome

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	Main retained species are **likely** to be within biologically based limits (if not, go to scoring issue d below).
			In this fishery all Estonian, Danish and Lithuanian vessels at all times use a Nordmøre sorting grid with 22 mm spacing between bars. All larger fish are guided out of an opening in the upper side of the net. This practice means that only small specimens that can pass between the bars of the grid are caught. These small fish are not retained and are therefore dealt with under component 2.2 Bycatch. However in 2012 a small cod (*Gadus morhua*) quota of 250 tonnes for the Barents Sea was allocated to Estonia. In the first year that a quota for cod was allocated (2012), the client vessels landed 225 tonnes. From 2013 to 2016 similar quantities of cod were landed against agreed annual quotas. Although these are rather small quantities compared to the total cod stock and are less than 5 % of landings of the UoC, the team has considered that cod is an important species and that cod catches (quota) may rise in the future. Therefore the team has considered cod to be a main retained species in this fishery. This means that it should be considered here whether the cod stock in the Barents Sea is (highly) likely within biologically based limits. The ICES advice 2016 for the stock of cod in Subareas I and II (Northeast Arctic cod) concluded that: "The spawning-stock biomass (SSB) has been above MSY Btrigger since 2002. The total stock biomass (TSB) reached a peak in 2013 and has now dropped slightly. Fishing mortality (F) was reduced from well above Flim in 1997 to below FMSY in 2007 and the most recent estimate is just below FMSY. Surveys indicate that year classes 2011–2014 are above or around the long-term average." There are no retained (main or minor) retained species in the Danish and Lithuanian fisheries.
	c	**Y**	If main retained species are outside the limits there are **measures** in place that are **expected** to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.
			Estonian vessels: There is a high degree of certainty that the cod stock is within biologically based limits. See SG 100a. Danish and Lithuanian vessels: N/A There are no (main) retained species.
	d	**Y**	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.
			Estonian vessels; The status of the cod stock in the Barents Sea is assessed by ICES and well known. See SG100a. Danish and Lithuanian vessels: N/A There are no (main) retained species.
80	**a**	**Y**	Main retained species are **highly likely** to be within biologically based limits (if not, go to scoring issue c below).
			Estonian vessels; There is a high degree of certainty that the cod stock is within biologically based limits. See SG 100a.

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			Danish and Lithuanian vessels: N/A There are no (main) retained species.
	c	**Y**	If main retained species are outside the limits there is a **partial strategy** of **demonstrably effective** management measures in place such that the fishery does not hinder recovery and rebuilding.
			Estonian vessels: Cod is considered to be within biologically based limits. See SG100a. Danish and Lithuanian vessels; N/A There are no (main) retained species.
100	**a**	**Y**	There is a **high degree of certainty** that retained species are within biologically based limits **and** fluctuating around their target reference points.
			Estonian vessels: According to ICES advice 2016 the stock of cod in Subareas I and II (Northeast Arctic cod) is near an historic high. A management plan for this stock is agreed between Russia and Norway. This Joint Russian–Norwegian Fisheries Commission management plan has been implemented since 2004 with the objectives of maintaining high long-term yield, year-to-year stability of landings, and full utilization of all available information on stock dynamics. The plan was evaluated in 2010 and ICES considers that it is in accordance with the precautionary approach and not in contradiction to the MSY framework. At the 2010 meeting of the Joint Russian–Norwegian Fisheries Commission it was agreed that the plan would be in force until 2015. The management plan includes the following decision rules for setting the annual fishing quota (TAC) for Northeast Arctic cod (NEA cod): “Estimate the average TAC level for the coming 3 years based on Fpa. TAC for the next year will be set to this level as a starting value for the 3-year period. For the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development. However the TAC should not be changed by more than +/- 10% compared with the previous year’s TAC. If the TAC, by following such a rule, corresponds to a fishing mortality (F) lower than 0.30 the TAC should be increased to a level corresponding to a fishing mortality of 0.30. If the spawning stock falls below Bpa, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from Fpa at Bpa, to F= 0 at SSB equal to zero. At SSB-levels below Bpa in any of the operational years (current year, a year before and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC.” At the 45th Session of the Joint Russian–Norwegian Fisheries Commission in 2015 it was decided that a number of alternative harvest control rules (HCRs) for Northeast Arctic cod should be evaluated by ICES. ICES provided advice on these harvest control rules in 2016, and the most recent ICES advice provides catch options based on the current management plan (805,000 tonnes) and on a series of alternative harvest control rules (771,000 to 890,000 tonnes). The ICES advice 2016 for the stock of cod in Subareas I and II (Northeast Arctic cod) concluded that: “The spawning-stock biomass (SSB) has been above MSY Btrigger since 2002. The total stock biomass (TSB) reached a peak in 2013 and has now dropped slightly. Fishing mortality (F) was reduced from well above Flim in 1997 to below FMSY in 2007 and the most recent estimate is just below FMSY. Surveys indicate that year classes 2011–2014 are above or around the long-term average.”

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			On the basis of this information the team concludes that there is a high degree of certainty that the stock of cod is within biologically based limits and fluctuating around its target reference points. Danish and Lithuanian vessels: No fish are retained in the Danish and Lithuanian shrimp fishery. Incidental catches of small fish are therefore dealt with under component 2.2 Bycatch. Consequently there are no (main) retained species in this fishery.
	b	**Y**	Target reference points are defined for retained species.
			Estonian vessels: Yes. See SG100a. Danish and Lithuanian vessels: Not applicable since there are no fish retained in the Danish and Lithuanian shrimp fisheries. Incidental catches of small fish are therefore dealt with under component 2.2 Bycatch. Consequently there are no (main) retained species in this fishery.
References			Personal communications from: Relevant ministries in Estonia, Denmark and Lithuania. Landing data from Estonia, Denmark and Lithuania. ICES Advice June 2016, Book 3.3.2
OVERALL PERFORMANCE INDICATOR SCORE:			**100**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 2.1.2 – Retained species management

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	There are **measures** in place, if necessary, that are 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.
			Estonian vessels: The only main retained species in this fishery is Northeast Arctic cod (*Gadus morhua*). All other species are discarded and considered under Component "Bycatch species" below. The regulation of all cod landings from the fishing area through the Joint Russian-Norwegian Management Plan for cod in the Barents Sea, the mandatory use of sorting grids and the system of area closures together form a full strategy to manage the impact of the fishery on main retained species. See SG 100a. Danish and Lithuanian vessels: There are no (main) retained species. There is a strategy in place for managing retained species. See SG100 a.
	b	**Y**	The measures are considered **likely** to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).
			Research on the effectiveness of Nordmøre sorting grids (Richards & Hendrickson, 2006; Isaksen, B. & A.V. Solvdal, 1997) has shown that the Nordmøre sorting grid effectively reduces the bycatch of fish.
80	**a**	**Y**	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.
			Estonian vessels: The regulation of all cod landings from the fishing area through the Joint Russian-Norwegian Management Plan for cod in the Barents Sea, the mandatory use of sorting grids and the system of area closures to protect small fish, together form a full strategy to manage the impact of the fishery on main retained species. See SG 100a Danish and Lithuanian vessels: There are no (main) retained species. There is a strategy in place for managing retained species. See SG100 a.
	b	**Y**	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.
			Research on the effectiveness of Nordmøre sorting grids (Richards & Hendrickson, 2006; Isaksen, B. & A.V. Solvdal, 1997) has shown that the Nordmøre sorting grid effectively reduces the bycatch of fish. Estonian vessels: There is a regular assessment of the Northeast Arctic cod stock and these assessments show that the stock is near an all-time high level and within safe biological limits (ICES, 2016). Danish and Lithuanian vessels: Landings data show that there are no retained species in these fisheries.
	c	**Y**	There is **some evidence** that the partial strategy is being **implemented successfully.**

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			All the measures are currently implemented and enforced, e.g. use of sorting grids monitored by Norwegian, Russian and EU inspections at sea. The use of sorting grids is required by the fishing licence issued by the Estonian, Danish and Lithuanian authorities. For Estonian vessels, a quota system for cod is effectively implemented.
100	**a**	**Y**	There is a **strategy** in place for managing retained species.
			Estonian vessels: For the Northeast Arctic cod stock a joint management plan is in place. The management plan includes the following decision rules for setting the annual fishing quota (TAC) for Northeast Arctic cod (NEA cod): "Estimate the average TAC level for the coming 3 years based on Fpa. TAC for the next year will be set to this level as a starting value for the 3-year period. For the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development. However the TAC should not be changed by more than +/- 10% compared with the previous year's TAC. If the TAC, by following such a rule, corresponds to a fishing mortality (F) lower than 0.30 the TAC should be increased to a level corresponding to a fishing mortality of 0.30. If the spawning stock falls below Bpa, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from Fpa at Bpa, to F= 0 at SSB equal to zero. At SSB-levels below Bpa in any of the operational years (current year, a year before and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC." The mandatory use of sorting grids is considered as a strategy to reduce the bycatch of cod in this fishery. The grid prevents the bycatch of larger cod that cannot pass through the bars of the grid. In cases where the UoC is allowed to land cod from the fishing area, specific quotas are allocated. Client vessels will, in such cases, still use sorting grids. Cod will be retained by rigging an additional net to the net opening where larger fish escape through. A stress meter will make it possible to monitor the quantity of cod caught so that quota allocations will not be exceeded. The use of sorting grids cannot prevent the catch of undersized cod that pass with the shrimp through the bars of the sorting grid. In the Svalbard area Norway implements area closures when bycatch percentages of small fish are high. Regulated limits on by-catch (number of fish per 10kg of shrimp) are cod 8, haddock 20, redfish 3, and Greenland halibut 3 (IMR). On the basis of the management strategy (harvest control rules) for the cod stock, the use of sorting grids and the system of area closures the team concludes that there is a full strategy in place for managing retained species. Danish and Lithuanian vessels: There are no retained species in these fisheries. Neither the Danish vessels nor the Lithuanian vessel fishing for cold water prawn have quota that would allow them to land species other than shrimp. Sorting grids are used at all time and no net devices are applied to retain larger fish like cod. The team considers the use of sorting grids an effective strategy to manage (prevent the catch of) larger fish that could be retained.
	b	**Y**	**Testing** supports **high confidence** that the strategy will work, based on information directly about the fishery and/or species involved.

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			Research on the effectiveness of Nordmøre sorting grids (Richards & Hendrickson, 2006; Isaksen, B. & A.V. Solvdal, 1997) has shown that the sorting grid effectively reduces the bycatch of fish. Estonian vessels: There is a regular assessment of the Northeast Arctic cod stock and these assessments show that the stock is near an all-time high level and within safe biological limits (ICES, 2016b). Danish and Lithuanian vessels: Landings data show that there are no retained species.
	c	**Y**	There is **clear evidence** that the strategy is being **implemented successfully.**
			Estonian vessels: The fact that the Northeast Arctic cod stock is near an all-time high level and the fact that technical measures (sorting grids) are used on all vessels fishing in the area forms evidence that the strategy is implemented successfully. Danish and Lithuanian vessels: The fact that technical measures (sorting grids) are used on all vessels and no species other than shrimp are landed provides evidence that there are no retained species and that the strategy is implemented successfully.
	d	**Y**	There is some **evidence** that the strategy is **achieving its overall objective**.
			Estonian vessels: The fact that the Northeast Arctic cod stock is at an all-time high is evidence that the strategy is achieving its overall objective. Danish and Lithuanian vessels; Landings data show that there are no retained species. This provides clear evidence that the strategy is achieving its objective.
References			Richards A, and Hendrickson L., 2006 Isaksen, B. & A.V. Solvdal, 1997. ICES Advice June 2016, Book 3.3.2 Norwegian Regulations for the Svalbard zone (http://www.fiskeridir.no/english/fisheries/regulations E.G: Regulations relating to the design and mounting of sorting grids in shrimp trawls (081015) http://www.fiskeridir.no/english/fisheries/regulations/080115-regulations-relating-to-the-design-and-mounting-of-sorting-grids-in-shrimp-trawls Personal communications from: Relevant Ministries in Estonia, Denmark and Lithuania and skippers. Landing data for Estonian, Danish and Lithuanian vessels
OVERALL PERFORMANCE INDICATOR SCORE:			**100**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 2.1.3 – Retained species Information

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	**Qualitative information** is available on the amount of main retained species taken by the fishery.
			Estonian vessels: The quantity of cod landed by the UoC vessels is accurately recorded. These quantities are registered in the vessels' (electronic) logbooks and reported (sales notes) when the fish is landed. See SG80a. Danish and Lithuanian vessels: Landings data show that in the Danish and Lithuanian fisheries there are no retained species other than shrimp. See SG100a.
	b	**Y**	Information is **adequate to qualitatively** assess outcome status with respect to biologically based limits.
			Estonian vessels: All landings of Barents Sea cod are recorded and accounted for in the annual stock assessments. See SG80b. Danish and Lithuanian vessels: Not applicable, since there are no retained species other than shrimp.
	c	**Y**	Information is adequate to support **measures** to manage **main** retained species.
			Estonian vessels: The cod landed by the UoC is allocated to Estonia by the Norwegian authorities. The allocations are part of the management strategy that is in place. See SG80c. Danish and Lithuanian vessels: There is adequate information in place to support a comprehensive strategy to manage main retained species. See SG100c.
80	**a**	**Y**	**Qualitative information** and **some quantitative information** are available on the amount of main retained species taken by the fishery.
			Estonian vessels: The quantity of cod landed by the UoC vessels is accurately recorded. These quantities are registered in the vessels (electronic) logbooks and reported (sales notes) when the fish is landed. See SG80a. The quantities of undersized fish bycatches are estimated. It is estimated that the bycatch of undersized cod ranged between 2 and 67 million individuals per year since 1997. Since 2004 this estimated bycatch has not been higher than 7 million individuals (Hvingel, C. & T. Thangstad, 2012). So it is concluded that there is some quantitative information on the amount of main retained species by the fishery. Danish and Lithuanian vessels: Landings data show that in the Danish and Lithuanian fisheries there are no retained species other than shrimp. See SG100a.
	b	Y	Information is **sufficient to estimate** outcome status with respect to biologically based limits.
			Estonian vessels: All landings of Barents Sea cod are recorded and accounted for in the annual stock assessments. Danish and Lithuanian vessels: Not applicable, since there are no retained species other than shrimp.

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
	c	**Y**	Information is adequate to support a **partial strategy** to manage **main** retained species.
			Estonian vessels: The cod landed by the UoC is allocated to Estonia by the Norwegian authorities. The allocations are part of the management strategy that is in place. Danish and Lithuanian vessels: There is adequate information in place to support a comprehensive strategy to manage main retained species. See SG100c.
	d	**Y**	Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)
			Estonia vessels: The recording of all landings by the UoC vessels will continue. Since these landings are based on quota allocations of cod the impact (risk levels) of these landings on the cod stock are controlled by the management system. There is no risk that they will increase beyond unsustainable levels. Danish and Lithuanian vessels: The recording of all landings by the UoC vessels will continue. If there were any retained species in this fishery they would be recorded in the landings statistics of the Danish and Lithuanian authorities. See SG100d.
100	**a**	**N**	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
			Estonian vessels: The bycatch levels of undersized cod in this fishery are roughly estimated (Hvingel, C. & T. Thangstad, 2012). Therefore it cannot be concluded that accurate information is available on the exact catches of undersized cod. The SG100 is not met therefore for the Estonian vessels. As part of the EU Data Collection Framework (DCF), three fishing trips (about 35 days per trip) will be covered with an observer on board in 2016, and in future the output from the observer programme should provide more accurate and verifiable information. Danish and Lithuanian vessels; Landings data as collected by the Danish and Lithuanian authorities show that in this fishery there are no retained species other than shrimp. The information is accurate and verifiable. There is an Electronic Reporting System (ERS) in place for the vessels. Prior to landing a vessel has to notify the authorities of the state were the fish will be landed (the Port state) of the quantities on board. This state (in most cases Norway since most catch is landed in Tromso) will send a so called Port State Control Form (PSCF) to the Danish or Lithuanian authorities (the Flag state) for validation. With this procedure there is a check on the landed quantities with the quantities as reported in the logbook. Therefore accurate and verifiable information is available to show that there are no retained species and SG100 is met for Danish and Lithuanian vessels. As the Estonian vessels do not meet the SG100, the overall score for this scoring issue is 80.
	b	**N**	Information is **sufficient to quantitatively** estimate outcome status with **a high degree of certainty.**

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			Estonian vessels: The information on the bycatch levels of undersized cod is fragmentary and only provides for a rough estimate of the number of individuals that are caught and discarded. The SG100 is not met therefore for Estonian vessels. Danish and Lithuanian vessels: Not applicable, since there are no retained species other than shrimp. As the Estonian vessels do not meet the SG100, the overall score for this scoring issue is 80.
	c	**N**	Information is adequate to support a **comprehensive strategy** to manage retained species, and evaluate with a **high degree of certainty** whether the strategy is achieving its objective.
			Estonian vessels: The information on the bycatch levels of undersized cod is fragmentary and only provides for a rough estimate of the number of individuals that are caught and discarded. The SG100 is not met therefore for Estonian vessels. Danish and Lithuanian vessels: As described under SG100a there is adequate information on all catches and landings available. This information is adequate to support a comprehensive strategy to manage main retained species and evaluate with a high degree of certainty whether the strategy is achieving its objective. SG100 is met for Danish and Lithuanian vessels. As the Estonian vessels do not meet the SG100, the overall score for this scoring issue is 80.
	d	**N**	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
			Estonian vessels: The catches of undersized cod are estimations based on information collected on observer trips. Information is fragmented and therefore it is concluded that this scoring issue is not met for Estonian vessels. As part of the EU Data Collection Framework (DCF), three fishing trips (about 35 days per trip) will be covered with an observer on board in 2016, and in future the output from the observer programme should provide more accurate and verifiable information. Danish and Lithuanian vessels: The recording and reporting through electronic logbooks of all landings by the UoC vessels is mandatory and will be continued. If there were any retained species in this fishery they would be recorded in the landings statistics of the Danish or Lithuanian Fisheries Inspectorate. Therefore SG100 is met. As the Estonian vessels do not meet the SG100, the overall score for this scoring issue is 80.
References			Hvingel, C. & T. Thangstad, 2012. Personal communications from: Relevant Ministries in Estonia, Denmark and Lithuania and skippers. Landings data for Estonian, Danish and Lithuanian vessels. .
OVERALL PERFORMANCE INDICATOR SCORE:			**80**

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
CONDITION NUMBER (if relevant):			

The Bycatch species component 2.2 is not assessed again since the GAP analysis showed that the Lithuanian vessel will operate with identical fishing gear and mesh size to the Estonian and Danish vessels. The bycatch of the Lithuanian vessel will be similar (identical) and will have identical impacts on the stocks of bycatch species. The Bycatch species component in the new proposed UoA is the same as for the already certified fishery.

The ETP species component 2.3 is not assessed again since the GAP analysis showed that the Lithuanian vessel will operate with identical fishing gear and mesh size to the Estonian and Danish vessels. The interactions with ETP species of the Lithuanian vessel will be similar (identical) and will have identical interactions with ETP species. The ETP species component in the new proposed UoA is the same as for the already certified fishery.

Evaluation Table for PI 2.4.1 – Habitats outcome

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	**Issue**	**Met? (Y/P/N)**	**Justification/Rationale**
60	**a**	**Y**	The fishery is **unlikely** to reduce habitat structure and function to a point where there would be serious or irreversible harm. See SG 80.
80	**a**	**Y**	The fishery is **highly unlikely** to reduce habitat structure and function to a point where there would be serious or irreversible harm. The fishing gear used by the Estonian, Danish and Lithuanian vessels is a relatively light otter trawl gear, with rock hopper gear. The gear operates on or near the bottom, and may thus cause some damage to benthic habitats. The gear used by the fishery is equipped with large 'rockhopper' discs which hold the head rope of the trawl some 50 cm above the seabed, reducing damage substantially relative to a standard trawl with a tickler chain in contact with the bottom. The contact of the trawl doors (4.0–6.5 tonnes) for Estonian, Danish and Lithuanian vessels with the bottom, however, causes a clear trail which can be seen, for example, using side-scan sonar. The clump of the gear deployed by the unit of certification is a 6-9 tonne roller type. If deployed on muddy sediments this is likely to cause some impact. The degree of impact of the clump on sandy habitats is not investigated but is likely to be relatively minor given the overall width of the clump. Rockhopper gear also permits trawling in areas too rough for standard trawls, which would otherwise be protected. Generally speaking, however, the vessels stay within areas that are known to be trawlable, because of the risk of snagging gear on rough ground. This is beneficial to habitats because much of the damage done by trawls is done in the first pass Bottom trawl gears are known to impact on habitat structure and function. Particularly areas with biotic habitats generated by aggregations or colonial growth of single species are vulnerable. Such habitat-generating species are represented by a wide range of taxonomic groups, e.g. *Porifera*, *Polychaeta*, *Cnidaria*, *Mollusca* and *Bryozoa* (e.g., reviews in Jennings, 1998; Løkkeborg, 2005; Kaiser and de Groot, 2000; Moore and Jennings, 2000, Collie et al. 2000). In already disturbed areas, where the fauna consists of more opportunistic, short-lived organisms, the trawl damage is less than in more pristine areas (Olsgard et al., 2008). In general, the response of benthic organisms to disturbance differs with substrate, depth, gear, and type of organism (Collie et al.; 2000). Studies of long-term dynamics of bottom communities in the Barents Sea (Dennisenko, 2008) showed that significant increases in benthic biomass were observed during periods of reduced fishing intensity during the Second World War. Subsequently, following the peak in fishing intensity in the post war years and the 1960s and 70s, recovery of areas and bioresources of the most common species, large taxons and trophic groups of zoobenthos was again observed. Rate of recovery is dependent on a number of issues – frequency of disturbance (natural and anthropogenic), productivity, substrate

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	**Issue**	**Met? (Y/P/ N)**	**Justification/Rationale**
			type and species. Benthic recovery rates following trawling events, are typically in the range of 2.5 to 6 years with the fastest recovery being observed in mud habitats. The impacts of experimental trawling have been studied on a high seas fishing ground in the Barents Sea (Kutti et al. 2005.) Trawling seems to affect the benthic assemblage mainly through resuspension of surface sediment and through relocation of shallow burrowing infaunal species to the surface of the seafloor. In the Barents Sea although the majority of the habitats may fall within the more dynamic and sedimentary range (hence quicker recovery), it is notable that some of the species composition and the substrate types on the shelf edge may show slower recovery characteristics. The main species of coral (eg. *Lophelia* sp) which would be particularly vulnerable to trawl impact (potentially qualifying as a serious / irreversible impact) are mainly located in Norwegian coastal waters. Lophelia is located largely within the 12nm zone and only for a limited part outside this zone in the Norwegian EEZ. The client fishery does not take place in these areas (See VMS maps) and therefore there is no or very limited possible interaction with Lophelia. Skippers have informed the team that, with the goal of reducing fuel costs, the contact of the gear with the seafloor is minimized by applying a different technique with shorter fishing lines. There have also been tests with semi pelagic doors to reduce the impact further. Pictures of the catch show that the catch is very clean. Bycatch of bottom fauna is close to zero. The Lithuanian vessel has previously been fishing under the Estonian flag for many years, and because the owner is keeping the same crew, it is expected that the Lithuanian vessel (Taurus) will fish in the same areas as the Estonian and Danish vessels. The areas where the Lithuanian vessel (Taurus) will fish are therefore all well-known fishing areas for the cold water shrimp fishery where many vessels from different countries regularly fish. Since bycatch of benthic organisms would affect the shrimp catch negatively these bycatches and thus areas were these bycatches occur are avoided. The consequence is that the fishery predominantly takes place in areas with a sandy of muddy bottom. Not only do skippers not wish to fish in a manner that puts their gear at risk or diminishes the value of the catch, but with the position-fixing and ground-discrimination electronics at their disposal, there is no need for them to do so. They can identify and avoid significant coral features or dense and extensive sponge beds. Their fishing is most concentrated in areas that they know are “clean ground” or have already been cleared of obstructions. Hence vessels of all nations tend to fish the same ground repeatedly rather than stray into new areas. This established practice helps to minimise overhead costs (gear damage) and minimise the risk of reduced catch value (crushed fish). This approach and the environmental safeguards it represents (along with advisory and statutory protection measures) have been recognised, described and referred to both implicitly and explicitly in

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	**Issue**	**Met? (Y/P/ N)**	**Justification/Rationale**
			the MSC assessment reports on NE Arctic trawl fisheries. The fact that the ground rope does not touch the seafloor like in other trawl fisheries that target fish that dwell on the sea floor ensures that the impact on the bottom fauna is limited. The team has considered that the Estonian and Danish shrimp fleet only consists of 4 vessels and that with the addition of a Lithuanian vessel the Unit of Certification would increase to 5 vessels. The total impact of the fishery therefore remains very limited when the vast total area of the Barents Sea is taken into account. The areas that are fished by Estonian, Danish and Lithuanian vessels are generally fished before by other fleets in the past which means that these areas are already disturbed before and the fauna comprise of opportunistic, short-lived organisms. The trawl damage in such areas is less than in more pristine areas (Olsgard et al., 2008.). Fishing in new areas is regulated now by a new regulation of the Norwegian authorities. For these areas strict requirements apply. In existing fishing areas, where fishing has taken place for decades, the perceived impact on the ecosystem is considered tolerable and thus the fishing activity can continue. The team has evaluated the VMS data of Estonian and Danish vessels. The maps with fishing tracks confirm that both the Estonian and Danish fishery is concentrated in a limited area. The Lithuanian vessel is expected to fish in the same areas as it fished when it was under the Estonian flag. This means that huge areas are not impacted by the client fishery and the addition of the Lithuanian vessel will not change this. The areas where the Estonian and Danish vessels fish are visited year after year since the skippers are familiar with these fishing grounds and know where the good fishing places are. The team has placed a condition on the information PI 2.4.3. The client should provide the audit team with VMS data on every surveillance visit so that the team can ascertain itself that the fishery continues to target the same fishing grounds and does not shift to previously unfished fishing grounds where the bottom habitat might be more vulnerable to the impact of the gear. See Figure 9 for a map showing the fishing locations of the Estonian fleet and Figure 10 for a map showing the fishing locations of the Danish vessel. The limited scope of the fishery (5 vessels with the addition of the Lithuanian vessel), change to the lighter gears (new trawls doors are developed), large unfished areas and areas which were extensively fished in the past make it highly unlikely for this fishery to reduce habitat structure and function to a point where there would be serious or irreversible harm.
100	**a**	**N**	There is **evidence** that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
			Under SG80 it is concluded that the impact on bottom habitats is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. The judgement of the team is partly based on the general information from experimental studies on impacts of fishing, the type of gear used in this fishery, the spatial distribution of the fishery

PI 2.4.1		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis and function	
SG	**Issue**	**Met? (Y/P/ N)**	**Justification/Rationale**
			and interviews with fishing skippers on the nature of the fishing operations. However there have been not many studies specifically investigating or modelling the impact of shrimp trawling on the habitats in the Barents Sea. Therefore the team concludes that this issue is not met.
References			Collie, J.S., Hall, S.J., Kaiser ,M.J., and Poiner, I.R. 2000. A quantitative analysis of fishing impacts on shelfsea benthos. Journal of Animal Ecology, 69: 785-798. MAREANO Seabed mapping project - http://www.mareano.no Hiddink J.G., Jennings S., and Kaiser M.J (2006). Indicators of the Ecological Impact of Bottom-Trawl Disturbance on Seabed Communities. Ecosystems (2006) 9: 1190–1199. Denisenko N.V., Denisenko S.G. 1991. On impact of bottom trawling on benthos in the Barents Sea// Environmental situation and protection of flora and fauna of the Barents Sea. Apatity, published by Kola Science Centre of USSR Academy of Science. S. 158-164. Joint Norwegian-Russian environmental status Report on the Barents Sea Ecosystem, 2008 http://www.regjeringen.no/upload/MD/Vedlegg/Svalbard%20og%20polaromraadene/imr-pinro_2009.pdf) Kaiser, M.J., and De Groot, S.J. 2000. Effects of Fishing on non-target Species and Habitats. Blackwell, Oxford. Kutti, T., Høisæter, T., Rapp, H.T., Humborstad, O.B., Løkkeborg, S. and Nøttestad, L. 2005. Immediate effects of experimental otter trawling on a sub-arctic benthic assemblage inside Bear Island Fishery Protection Zone in the Barents Sea. In Benthic Habitats and the Effects of Fishing. P.W. Barnes and J.P. Thomas (Eds.). American Fishery Society Symposia. Løkkeborg S. 2005. Impacts of trawling and scallop dredging on benthic habitats and communities. FAO fisheries technical paper 472, 69 p. Olsgard, Schaanning, Widdicombe, Kendall, Austen. 2008. Effects of bottom trawling on ecosystem functioning. Journal of Experimental Marine Biology and Ecology 366:1-2:123-133. Moore, G., and Jennings, S. 2000. Commercial fishing: the wider ecological impacts. British Ecological Society, Blackwell Science, Cambridge.	
OVERALL PERFORMANCE INDICATOR SCORE:			**80**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	There are **measures** in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.
			The measures that are in place (closed areas, move on rules, introducing less damaging fishing gears) constitute a partial strategy, that is expected to achieve the Habitat Outcome 80 level of performance. See SG80a.
	b	**Y**	The measures are considered **likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).
			The measures that are in place (closed areas, move on rules, introducing less damaging fishing gears) constitute a partial strategy. The partial strategy is considered likely to work. See SG80b.
80	**a**	**Y**	There is a **partial strategy** in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.
			There are several measures in place that together form a partial strategy to ensure that the fishery does not pose a risk of serious or irreversible harm to habitat types. These measures are: <u>Fishing method:</u> As described under PI 2.4.1 the gear in use is a relatively light gear and bottom impact is reduced by the use of rubber discs that keep the ground rope above the sea floor. The Client is working towards the use of more semi pelagic trawls and trials have been done with semi-pelagic doors. The length of fishing lines has been reduced which results in a steeper angle and thus more lift of the gear and less bottom impact. . <u>Closed areas:</u> Both Norway and Russia have established areas closed for fishing. Norway did this in the Svalbard zone and Russia in its EEZ. <u>Regulations relating to bottom fishing activities:</u> The Norwegian Ministry of Fisheries and Coastal Affairs has issued a regulation that regulates fishing with bottom gear in the fisheries protection zone around Svalbard. The regulation entered into force from 1 September 2011. The regulation establishes a distinction in existing fishing areas (where the water depth is less than 1000 m) and new fishing areas (where the water depth is more than 1000 meters). In existing fishing areas a “move on” rule is established in case a vessel encounters sponges or corals in its catch. (An encounter is defined as catching more than 30 kg of live corals or 400 kg of live sponges in a single haul.) When a vessel encounters the given quantities the vessel shall cease fishing activities and relocate to a position at least two nautical miles from the position that on the basis of all available information is probably closest to the vulnerable benthic habitat that has been identified. The vessel shall without delay report the encounter to the Directorate of Fisheries, including the location and the type of habitat encountered. For new fishing areas vessels must hold a special permit from the Directorate of Fisheries to fish in new fishing areas. A special permit may only be issued if the vessel has submitted the following to the Directorate for approval: • a detailed protocol for the exploratory fishery, including a harvesting

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			plan describing fishing gear, target species, bycatches, dates and areas, and • a mitigation plan for avoiding damage to sensitive marine ecosystems, and • a plan for log-keeping and reporting, and • a plan for collection of data on vulnerable benthic habitats. For encounters with sensitive habitats the same rules apply as described above for the existing fishing grounds. The Directorate of Fisheries may lay down a requirement for a vessel to carry an observer when fishing in new fishing areas. The costs associated with carrying an observer on board, including wage costs, and also any interest on overdue payments, transport to and from the vessel, and board and lodging while at sea, shall be covered by the owner of the vessel. If sufficient documentation can be provided of bottom fisheries in areas that are deeper than 1000 metres, such areas may, on application to the Directorate of Fisheries, be classified as existing fishing areas. A similar approach for bottom fishing has been implemented by NEAFC in its Regulatory Area. A distinction between existing and new fishery areas has been established. For new fishing areas all bottom fishing activities (or when bottom gear have not been previously used in the area), shall be considered as exploratory fisheries and shall be conducted in accordance with an Exploratory Bottom Fisheries Protocol. These strategies imply that in existing fishing areas, where fishing has taken place for decades, the perceived impact on the ecosystem is considered tolerable and thus the fishing activity can continue, but with stricter monitoring and reporting requirements. In new fishing areas additional restrictions apply to protect vulnerable marine ecosystems (VME). <u>Sea bed mapping:</u> The integrated management plan for the Barents Sea includes a programme of research and mapping of benthic habitats for example the Norwegian MAREANO programme . This programme will contribute to periodic updates of the integrated management plan. <u>VMS data collection</u> NEAFC has recommended Member States to provide VMS data to ICES and NEAFC constituent bodies to meet the needs of both science and compliance. (Recommendation 10, 2013: made at the 31th Annual Meeting in November 2012.) The team has considered that the measures described here together constitute a partial strategy and that the partial strategy is expected to achieve the Habitat Outcome 80 level of performance or above.
	b	**Y**	There is some **objective basis for confidence** that the partial strategy will work, based on **information directly about the fishery and/or habitats** involved.

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			Regulations and fishing license requirements are strictly enforced in all fishing areas. There is no signs of any non-compliance. Estonian and Danish vessel captains have expressed that they never "encounter" sponges and corals in the quantities that are described in the "move on" rule, and the same is expected to apply to Taurus when it fishes under the Lithuanian flag. The fishing gear is designed in such a way that these animals are caught in much smaller quantities. The sea-bed mapping and the collection of VMS data is an ongoing process that will result in the accumulation of data needed to carry out the strategies as laid down in the Barents Sea Management plan. The team concluded that there is some objective basis for confidence that the measures will work.
	c	**Y**	There is **some evidence** that the partial strategy is being implemented successfully.
			Closures are well enforced, thanks to VMS and at sea enforcement. Research is on-going and regularly updated and feeds directly into management decision-making.
100	**a**	**N**	There is a **strategy** in place for managing the impact of the fishery on habitat types.
			The team has considered that the measures that are in place together form a partial strategy.
	b	**N**	**Testing** supports **high confidence** that the strategy will work, based on **information directly about the fishery and/or habitats** involved.
			The team has considered that the measures that are in place together form a partial strategy.
	c	**N**	There is **clear evidence** that that strategy is being implemented successfully.
			The team has considered that the measures that are in place together form a partial strategy.
	d	**N**	There is some evidence that the strategy is achieving its objective.
			The team has considered that the measures that are in place together form a partial strategy.
References			Consolidated text of all NEAFC recommendations on regulating bottom fishing. http://www.neafc.org/system/files/Consolidated_bottomfishing_regs_as_amended_by_rec_12_2013.pdf) *MAREANO Seabed mapping project - http://www.mareano.no* Norwegian Ministry of the Environment (2006). Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands. Report No. 8 to the Storting (2005–2006), recommendation of 31 March 2006 by the Ministry of the Environment.
OVERALL PERFORMANCE INDICATOR SCORE:			**80**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	There is **basic understanding** of the types and distribution of main habitats in the area of the fishery.
			Work by both PINRO and IMR has provided good understanding of seabed substrate types and characteristic benthic in-fauna in different areas of the Barents Sea.
	b	**Y**	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.
			The impact of trawls on different types of benthos has been well studied. Habitat mapping is ongoing and VMS data are available.
80	**a**	**Y**	The nature, distribution and **vulnerability** of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.
			Benthic mapping and sampling in the Barents Sea is carried out during an annual survey in close collaboration with Russian scientists. Annually since 2004, the Polar Research Institute of Fisheries and Oceanography- NM Knipovich (PINRO) and the Norwegian Institute of Marine Research (IMR) have had cooperation on studying and monitoring the invertebrate benthic animals, taken by bottom trawls, from the Norwegian-Russian Ecosystem Surveys covering the entire Barents Sea. The work is still ongoing. Benthic habitat mapping also takes place in the framework of the MAREANO project. Information from MAREANO is the main input into the benthic component of the Barents Sea integrated management plan. MAREANO provide a variety of interactive maps on their website. The areas of habitat that the MAREANO project have already mapped in detail give an indication of the level of information that is achievable, as this ambitious project continues and expands. The project has already identified main vulnerable areas. As stated above even before this project existing work by both PINRO and IMR provided good understanding of seabed substrate types and characteristic benthic in fauna in different areas of the Barents Sea. The team has considered that general information on the distribution of invertebrate benthic species is available to a level of detail relevant to the scale and intensity of the fishery.
	b	**Y**	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.
			There is information available from VMS on the exact location of fishing activity, which allows both the spatial extent and timing to be determined. There is also sufficient data on the nature of impacts of trawl gears on bottom habitats. There is also some more localised (Barents Sea) research on the impacts of trawl gears. In particular, the work by S.G. Denisenko and N.V. Denisenko has strengthened understanding of the impact of bottom trawling on benthic communities in the Barents Sea.
	c	**N**	Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation

			of the fishery or the effectiveness of the measures).
			The collection of VMS data on the exact location of fishing activity will be continued. However also data on the effectiveness of the move on rule concerning VMEs are needed in order to make it possible to conclude that sufficient data continue to be collected to detect any increase in risk to habitat. Therefore a Condition was formulated in the original certification report and also applied to the Danish vessel following the previous scope extension.. The Condition will also apply to the Lithuanian vessel following the current scope extension..
100	**a**	**N**	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
			The areas of habitat that the MAREANO project have already mapped in detail give an indication of the level of information that is achievable. Not all areas have been covered however so it cannot be concluded that the distribution of all habitat types is known over their range.
	b	**N**	The physical impacts of the gear on the habitat types have been quantified fully.
			General impacts of bottom trawl gear have been studied, but the impacts of the shrimp trawling in the Barents Sea have not been quantified yet.
	c	**N**	Changes in habitat distributions over time are measured.
			Changes in habitat distributions may be detected in the future when the benthic surveys are repeated over time. Given the vast area that has to be covered, distances between sample stations are large which make it difficult to conclude that changes in habitat distributions are measured over time.
References			Denisenko N.V., Denisenko S.G. 1991. On impact of bottom trawling on benthos in the Barents Sea// Environmental situation and protection of flora and fauna of the Barents Sea. Apatity, published by Kola Science Centre of USSR Academy of Science. S. 158-164.
OVERALL PERFORMANCE INDICATOR SCORE:			**75**
CONDITION NUMBER (if relevant):			**3**

The Ecosystem component 2.5 is not assessed again since the GAP analysis showed that the Lithuanian vessel will operate with identical fishing gear in the same geographic region and target the same stock as the Estonian and Danish vessels. The ecosystem impact of the Lithuania vessels will be similar (identical). The Ecosystem component in the new proposed UoA is the same as for the already certified fishery.

Principle 3

Evaluation Table for PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework.	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2.
			The management system that applies to the cold water prawn fishery in the Barents Sea is consistent with national and international laws. The fishery is covered by the management systems of the EU, Norway, Estonia, Denmark, Lithuania and NEAFC. There is the EU Common Fisheries Policy, the Estonian, Danish and Lithuanian legal systems and the Norwegian jurisdiction in the Svalbard fishing area. The NEAFC Commission regulates fisheries in the NEAFC Regulatory area in ICES Areas Ia and Ib (International waters). The EU, Norway, Estonia, Denmark and Lithuania have signed and ratified relevant international agreements such as the 1982 Law of the Sea Convention and the 1995 Straddling Stocks Agreement. All the management systems the fishery falls under are generally consistent with local, national or international laws or standards. The totality of national legal systems and in international cooperation delivers management outcomes consistent with MSC.
	b	**Y**	The management system incorporates or is subject by law to a **mechanism** for the resolution of legal disputes arising within the system.
			Administrative disputes are dealt within the Estonian, Danish and Lithuanian legal systems. Disputes arising within the Svalbard FPZ are dealt with and resolved by the Norwegian (Directorate of Fisheries) and Estonian, Danish and Lithuanian authorities.
	c	**Y**	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability of the fishery.
			Neither the management authorities nor the Estonian, Danish or Lithuanian vessels have been subject to court challenges in the last 5 years.
	d	**Y**	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
			It is a long-distance deep-water fishery in a very remote area and there are no people dependent on fishing shrimp for food and livelihood that applies to this fishery.
80	**b**	**Y**	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes which is **considered to be effective** in dealing with most issues and that is appropriate to the context of

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework.	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			the fishery.
			Legal disputes are dealt with within the Estonian, Danish and Lithuanian legal systems. In the case of infringements within the Svalbard FPZ, disputes could be also resolved within the Norwegian legal system. In the case of disputes involving EU regulations, the disputes could be referred to the European Court of Justice.
	c	**Y**	The management system or fishery is attempting to comply in a timely fashion within binding judicial decisions arising from any legal challenges.
			The management system is designed to deal with judicial decision in a timely fashion; however for this fishery no legal challenges have been reported or documented in recent years.
	d	**Y**	There are no people dependent on fishing shrimp for food and livelihood that applies to this fishery.
			It is a long-distance deep-water fishery in a very remote area and there are no people dependent on fishing shrimp for food and livelihood that applies to this fishery.
100	**b**	**N**	The management system incorporates or subject by law to a **transparent** mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been **tested and proven to be effective**.
			Legal disputes are dealt with within the Estonian, Danish and Lithuanian legal systems. In the case of infringements within the Svalbard FPZ, disputes could be also resolved within the Norwegian legal system. In the case of disputes involving EU regulations, the disputes could be referred to the European Court of Justice. The team received information from Estonia, Denmark and Lithuania on minor infringements within each fishery in recent years. However the team did not receive any information on the resolution of legal disputes in all three countries and therefore the team could not conclude that the system is proven to be effective.
	c	**Y**	The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges.
			The Estonian, Danish and Lithuanian fisheries authorities consult with all relevant stakeholder groups (e.g. Fisheries Council and Fisheries Commission in Estonia, Local Fisheries Councils and Long Distance Fishermen's Association in Lithuania) regarding new fisheries measures prior to their implementation. Fisheries authorities try to avoid legal disputes through dissemination of

PI 3.1.1			The management system exists within an appropriate legal and/or customary framework which ensures that it: • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework.
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			timely information though the various sources such as: - Estonian Fisheries Information Centre (sponsored by Ministry of Agriculture) - Publication of regulations on relevant web-pages - Direct contact with fishermen (e-mail, fax) Regulations set by Norway in the Svalbard FPZ are non-discriminatory in relation to other national fleets (Ref. Svalbard Treaty 1920, §2) and are published by the Norwegian Directorate of Fisheries (www.fiskeridir.no) and also communicated to relevant Estonian, Danish and Lithuanian authorities. Regulations in the NEAFC area (Ref. NEAFC Scheme of Control and Enforcement) are published on www.neafc.com. The team concluded that the management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges and that SG80e is met.
	d	**Y**	The management system has a mechanism to **formally commit** to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
			It is a long-distance deep-water fishery in a very remote area and there are no people dependent on fishing shrimp for food and livelihood. Mechanisms to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2 are not needed as far as the cold water prawn is concerned. However the Norwegian management system includes a principle for ensuring that management measures help to maintain the material basis for Sami culture (Section 7, bullet g) of the Norwegian Act of 6 June 2008 no. 37 relating to the management of wild living marine resources). The rights of fishery-dependent communities are explicitly stated in the Russian Federal Fisheries Act. For both countries bordering the Barents Sea there is thus a formal commitment to the legal rights of people dependent on these resources and therefore SG100d is met.
References			Svalbard Treaty 1920, §2 The Norwegian Ministry of Fisheries and Coastal Affairs: http://www.fisheries.no Norwegian Directorate on Fisheries:www.fiskeridir.no NEAFC Commission: www.neafc.org Fisheries Information centre www.kalateave.ee European Court of Justice www.curia.europa.eu Estonian Ministry of Agriculture: www.agri.ee Danish AgriFish Agency http://agrifish.dk/fisheries/ Lithuanian Fisheries Service http://www.zuv.lt/index.php?1381214678

PI 3.1.1		**The management system exists within an appropriate legal and/or customary framework which ensures that it:** • **Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2;** • **Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and** • **Incorporates an appropriate dispute resolution framework.**	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
OVERALL PERFORMANCE INDICATOR SCORE:			**95**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **generally understood.**
			Organisations involved in the management of the shrimp fisheries are identified and include the NEAFC Commission, relevant government ministries, scientific organisations (NAFO/ICES) and research institutes, fishery industry organisations and NGOs. Their roles and responsibilities are defined and generally understood. See PI 3.1.2 SG 80 and 100.
	b	**Y**	The management system includes consultation processes that obtain **relevant information** from the main affected parties, including local knowledge, to inform the management system.
			The Estonian fisheries authorities consult with all relevant stakeholder groups (e.g. Fisheries Council and Fisheries Commission) regarding new fisheries measures prior to their implementation. NGOs are represented through the Estonian Council of Environmental NGOs. In Denmark, National strategies and action plans are developed by Danish management authorities (Danish Agrifish Agency) involving a range of stakeholders in extensive consultation. The Lithuanian Fisheries Service consults with the Local Fisheries Council on all new fisheries regulations. Consultation will also occur with fishermen's associations such as Lithuanian long distance fishermen's association.
80	**a**	**Y**	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for key areas** of responsibility and interaction.
			Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined. See SG 100a.
	b	**Y**	The management system includes consultation processes that **regularly seek and accept relevant** information, including local knowledge. The management system demonstrates consideration of the information obtained.
			The Estonian fisheries authorities consult with all relevant stakeholder groups (e.g. Fisheries Council and Fisheries Commission) regarding new fisheries measures prior to their implementation. NGOs are represented through the Estonian Council of Environmental NGOs. Minutes of the meetings are available and meetings are open to observers In Denmark, National strategies and action plans are developed by Danish management authorities (Danish Agrifish Agency) involving a range of stakeholders in extensive consultation. The Lithuanian Fisheries Service consults with the Local Fisheries Council on all new fisheries regulations. Consultation will also occur with fishermen's associations such as Lithuanian long distance fishermen's association.

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			The management system for the cold water prawn fishery in the Barents Sea also demonstrates consideration of the information obtained mainly from scientific advice (ICES) and thus regularly seeks and accepts relevant scientific information.
	c	**Y**	**The consultation process provides opportunity for all interested and affected parties to be involved.**
			Estonian Fisheries Council meetings are open to fishing industry representatives and environmental NGO's the latter through their umbrella organisation (the Estonian Council of Environmental NGOs). Other interested parties are allowed to attend those meetings as observers. In Denmark, National strategies and action plans are developed by Danish management authorities (Danish Agrifish Agency) involving a range of stakeholders in extensive consultation. The Lithuanian Fisheries Service consults with the Local Fisheries Council on all new fisheries regulations. Consultation will also occur with fishermen's associations such as Lithuanian long distance fishermen's association. There is a strong tradition of stakeholder consultation in the Norwegian management process. Before new regulations are passed the relevant stakeholder organisations from all relevant sectors are consulted. In the EU for every renewal of the Common Fisheries policy there is an extensive consultation process. For NEAFC, the Commission adopt management measures for the fisheries in the NEAFC Regulatory Area. All Contracting parties are involved in the decision making process. At its 20th Annual Meeting, 5-9 November 2001, NEAFC agreed rules for observers in order to admit NGOs as observers to the meetings of the Commission. The rules in respect of observers state: All non- governmental organisations (NGOs) which support the objectives of the Convention, have a demonstrated interest in the species under the purview of NEAFC and are in good standing should be eligible to participate as an observer in all plenary meetings of the Commission, except meetings held in executive sessions or meetings of Heads of Delegations.
100	**a**	**Y**	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for key areas** of responsibility and interaction.
			Organisations and individuals involved in the management process have been identified. Main players in the general Barents Sea fisheries management system are the Norwegian Fisheries Directorate, the Russian fisheries ministry and NEAFC. Functions, roles and responsibilities are explicitly defined. In addition to the main players the following organisations are also involved in the management process: • EU Common Fisheries Policy (Structural policy, Surveillance) • Estonian Ministry of Agriculture (Allocation of fishing rights, licenses, ERS) • Estonian Ministry of Environment (Stock management, fisheries control, habitat protection, liaison with EU Commission) • Fisheries Inspectorate (fisheries control and inspection) • Estonian Marine Institute, University of Tartu (marine research)

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			• Estonian long-distance fishing association (represent the interests of the long-distance fleet) • Food and Veterinary Board (Food safety) • Estonian Maritime Academy (Education) • Maritime Administration (Safety at Sea) • Estonian Council of Environmental NGOs (nature conservation) Danish AgriFish Agency (administration, regulation, enforcement and inspection) • DTU Aqua (research and advice on Danish fisheries management) • Danish Fishermen's Association • Danmarks Fiskeriforening Producent Organisation (Danish Fishermen's Producer Organisation, DFPO) • Lithuanian Ministry of Agriculture incorporating Fisheries Service (responsibility for fisheries management, licensing, regulation and enforcement and research) • Lithuanian Local Fisheries Councils • Lithuanian long distance fishermen's association - Okeaninio žvejybos laivyno įmonių asociacija (Association of the enterprises of Oceanic fishery) There is clear and evident division of responsibility between EU, ICES and national institutions and authorities.
	b	**N**	The management system includes consultation processes that **regularly seek and accept relevant** information, including local knowledge. The management system demonstrates consideration of the information and **explains how it is used or not used**.
			The Estonian fisheries authorities run regular consultations with relevant stakeholder groups (e.g. Fisheries Council and Fisheries Commission) regarding new fisheries measures prior to their implementation. Minutes of the meetings are available and meetings are open to observers. In Denmark, National strategies and action plans are developed by Danish management authorities (Danish Agrifish Agency) involving a range of stakeholders in extensive consultation. The Lithuanian Fisheries Service consults with the Local Fisheries Council on all new fisheries regulations. Consultation will also occur with fishermen's associations such as Lithuanian long distance fishermen's association. Because the assessment team was not able to identify clear evidence on how "the management system demonstrates consideration of the information" and "explains how it is used or not used" it was considered that the second part of the scoring issue was not met.
	c	**N**	The consultation process **provides opportunity and encouragement** for all interested and affected parties to be involved, and **facilitates** their effective engagement.
			Estonian Fisheries Council meetings are open to fishing industry representatives and environmental NGO's (through the umbrella organisation, the Estonian Council of Environmental NGOs). Other interested parties are allowed to attend those meetings as observers. In Denmark there is opportunity for all interested and affected parties to be

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			involved in consultations on regulatory developments in fisheries, but certain stakeholders (environmental NGOs for example) stated that they are not able to effectively engage in the process. The Lithuanian Fisheries Service consults with the Local Fisheries Council on all new fisheries regulations. Consultation will also occur with fishermen's associations such as Lithuanian long distance fishermen's association. However it is not clear how effectively NGOs engage in the consultation process. Whilst the SG100 is clearly met, for the Estonian fishery, it is not clear that it is met for the Danish and Lithuanian fisheries, so overall the SG100 is not met.
References			http://www.fisheries.no Norwegian Directorate on Fisheries:www.fiskeridir.no Norwegian Ministry of Fisheries and Coastal Affairs: http://www.regjeringen.no/en/dep/fkd.html?id=257 NEAFC Commission: www.neafc.org
OVERALL PERFORMANCE INDICATOR SCORE:			**85**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach	
SG	**Issue**	**Met? (Y/P/N)**	**Justification/Rationale**
60	**a**	**Y**	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are **implicit** within management policy
			Long-term objectives are defined within the EU Common Fisheries Policy, the Estonian Fisheries strategy, the Danish Fisheries Act, the Lithuanian Law of Fisheries, the Norwegian Marine Resource Act, the Svalbard Treaty and the NEAFC convention and are consistent with the MSC Principles and Criteria and precautionary approach.
80	**a**	**Y**	**Clear** long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are **explicit** within management policy.
			Long-term objectives are clearly and explicitly defined within the EU Common Fisheries Policy, the Estonian Fisheries strategy, the Danish Fisheries Act, the Lithuanian Law of Fisheries, the Norwegian Marine Resource Act, the Svalbard Treaty and the NEAFC convention and are consistent with the MSC Principles and Criteria and precautionary approach. See SG100a.
100	**a**	**Y**	**Clear** long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are **explicit** within **and required by** management policy.
			Long-term objectives are clearly defined and explicit within the EU Common Fisheries Policy, the Estonian Fisheries Strategy, the Danish Fisheries Act, the Lithuanian Law of Fisheries, the Norwegian Marine Resource Act, the Svalbard Treaty and the NEAFC convention and are consistent with the MSC Principles and Criteria and precautionary approach. **The Norwegian Marine Resources Act states:** "The purpose of this Act is to ensure sustainable and economically profitable management of wild living marine resources and genetic material derived from them and to promote employment and settlement in coastal communities". Objectives for the protection of fish stocks in the Svalbard Fisheries Protection Zone area are formulated within the Zone act and Norwegian fisheries management system (Marine Resources Act). **Estonian Fisheries strategy states: "**In order to prevent the harmful environmental impact of fishing, several protection measures are applied: closed areas, closed seasons, establishing minimum fish sizes and catch limitations as well as various requirements and restrictions for fishing gear. In addition, technical supervision of fleet is conducted constantly. Training and dissemination of information have contributed considerably to raising environmental awareness among fishermen as well as people living near water bodies" (Paragraph 1.1.4). The objectives of the Estonian Fisheries Management System are focused at achieving a balance between fishing capacity and fishing possibilities and minimising impact of fisheries on the ecosystem through increasing the selectivity and other relevant measures. **Denmark**: The main Danish enabling legislation is the 1999 Fisheries Act (Act No. 281 of 1999, consolidated as LBK No. 978 of 26 September 2008) which makes provision for the management of fisheries for purposes of

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach	
SG	**Issue**	**Met? (Y/P/ N)**	**Justification/Rationale**
			protection and enhancement of living Resources in marine and freshwater and for the protection of other marine animal and plant live, and to safeguard the basic foundations of commercial fishing and related commercial activities and possibilities for sport fishing. **Lithuania**: The Lithuania Law on Fisheries (2000, revised 2016) regulates fishing, aquaculture, processing and marketing of fish. The objective of the Law is "to ensure sustainable fishing, protection of fish resources and their restocking, fishing control, with account of the ecological conditions, economy of fisheries and the interests of the fishermen, fish producers, processors and consumers." **The NEAFC convention states: "**The objective of this Convention is to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits (Article 2.) **For the EU** clear over-arching long term objectives are set out in the EU Common Fisheries Policy. These long term objectives are clear and explicitly defined and entirely consistent with MSC P&Cs. The 2002 reform of the CFP also embraced a more long-term approach to fisheries management, involving the establishment of multi-annual recovery plans for stocks outside safe biological limits and of multi-annual management plans for other stocks. It aimed to progressively implement an ecosystem-based approach to fisheries management. Article 15 of Council Regulation EC 1198/2006 on the European Fisheries Fund, requires that all member states: "Shall adopt, following appropriate consultation... a national strategic plan covering the fisheries sector (which) ...sets out the priorities, objectives, the estimated public financial resources (in accordance with the CFP) ...for: (a) ... adjustment of fishing effort / capacity with regard to the evolution of fisheries resources, promotion of environmentally-friendly fishing methods and sustainable development of fishing activities; (e) the sustainable development of fisheries areas, (g) preserving human resources in the fisheries sector, through upgrading professional skills, securing sustainable employment and enhancing the position and role of women; (h) protection and enhancement of the aquatic environment related to the fisheries sector". The CFP was revised in 2013 and Article 2, paragraphs 1-4, of the revised CFP establish a range of objectives for managing fisheries in the EU, including: long-term environmental sustainability; being consistent with achieving economic, social and employment benefits; using a precautionary approach and restoring resources above levels that will produce MSY; implementing an ecosystem approach; and contributing to the collection of scientific data (Regulation (EU) No 1380/2013). Therefore it is the view of the assessment team that clear long-term objectives are not only explicit but also required by management policy.
References			Estonian Fisheries Strategy

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach	
SG	**Issue**	**Met? (Y/P/ N)**	**Justification/Rationale**
			Danish Fisheries Act Lithuanian Law of Fisheries Norwegian Act of 6 June 2008 no. 37 relating to the management of wild living marine resources.
OVERALL PERFORMANCE INDICATOR SCORE:			**100**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.1.4 – Incentives for sustainable fishing

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing	
SG	**Issue**	**Met? (Y/P/N)**	**Justification/Rationale**
60	**a**	**Y**	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.
			The overarching principle of the Estonian fishing strategy is that fishing capacity should match fishing opportunities. Existing subsidies are designed to contribute to sustainable fishing practices, e.g. increase of selectivity. The Danish Fisheries Act makes provision for the management of fisheries for purposes of protection and enhancement of living Resources in marine and freshwater. The objective of the Lithuanian Law of Fisheries is to ensure sustainable fishing, protection of fish resources and their restocking, Authorities actively facilitate discussions between fishermen and scientists.
80	**a**	**Y**	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure **that perverse incentives** do not arise.
			The overarching principle of the Estonian fishing strategy is that fishing capacity should match fishing opportunities. The Danish Fisheries Act makes provision for the management of fisheries for purposes of protection and enhancement of living Resources in marine and freshwater. The objective of the Lithuanian Law of Fisheries is to ensure sustainable fishing, protection of fish resources and their restocking, Existing subsidies are designed to contribute to sustainable fishing practices, e.g. increase of selectivity. There are no subsidies within the Estonian, Danish or Lithuanian fisheries management systems that could result in increase of fishing capacity. Authorities actively facilitate discussions between fishermen and scientists.
100	**a**	**P**	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and **explicitly considers** incentives in a **regular review** of management policy or procedures to ensure they not contribute to unsustainable fishing practices.
			The overarching principle of the Estonian fishing strategy is that fishing capacity should match fishing opportunities. Existing subsidies are designed to contribute to sustainable fishing practices, e.g. increase of selectivity. There are no subsidies within the Estonian fisheries management system that could result in increase of fishing capacity. The Estonian Fishery Strategy is currently under revision for the period 2014-2020. Attention is paid to make sure that incentives do not contribute to unsustainable fishing practices. Whilst the policy is under review for the period 2014-2020, it is not clear that it is regularly reviewed so a score of 90 is found to be appropriate. The Danish Fisheries Act makes provision for the management of fisheries for purposes of protection and enhancement of living resources in marine and freshwater. There are no subsidies within the Danish fisheries management system that could result in increase of fishing capacity. The Danish Fisheries Act is regularly reviewed and updated. The objective of the Lithuanian Law of Fisheries is to ensure sustainable

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing	
SG	**Issue**	**Met? (Y/P/ N)**	**Justification/Rationale**
			fishing, protection of fish resources and their restocking. There are no subsidies within the Lithuanian fisheries management system that could result in increase of fishing capacity. The Lithuanian Law of Fisheries was updated in 2016, but it is not clear whether the law is regularly reviewed. The fishery is also subject to the EU Common Fishing Policy and Norwegian law (in the Svalbard area). Neither the Common Fishery nor the Norwegian regulations provide for incentives for unsustainable fishing practices. There are no subsidies in the Common Fishery Policy that lead to increase of fishing capacity, and the Norwegian management system does not support Estonian, Danish or Lithuanian companies to increase their fishing capacity. It is concluded that the management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2. The team did not see evidence that the respective management systems explicitly consider incentives in a **regular** review of management policy or procedures to ensure they do not contribute to unsustainable fishing practices. Therefore SG100 is partly met and a score of 90 is awarded.
References			Estonian Fisheries Strategy Danish Fisheries Act Lithuanian Law of Fisheries
OVERALL PERFORMANCE INDICATOR SCORE:			**90**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.2.1 Fishery-specific objectives

PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2	
SG	**Issue**	**Met? (Y/PN)**	**Justification/Rationale**
60	**a**	**Y**	**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.
			Objectives for the Barents Sea shrimp fishery are formulated within the Estonian Fisheries Strategy, the Danish Fisheries Act and the Lithuanian Law of Fisheries. These objectives amongst others are focused at achieving a balance between fishing capacity and fishing possibilities and minimising impact of fisheries on the ecosystem through increasing the selectivity and other relevant measures. See SG80a.
80	**a**	**Y**	**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.
			Long-term objectives for the Barents Sea shrimp fishery are formulated within the Estonian Fisheries Strategy, the Danish Fisheries Act and the Lithuanian Law of Fisheries. These objectives amongst others are focused at achieving a balance between fishing capacity and fishing possibilities and minimising impact of fisheries on the ecosystem through increasing the selectivity and other relevant measures. Short-term objectives are well established for this fishery and include the improvement of monitoring of fisheries activities through the implementation of ERS and the data-collection programme for 2014-2020. The fishery in the Svalbard area is managed by the Norwegian management system. Clear objectives for the protection of fish stocks in the Svalbard Fisheries Protection Zone area are formulated within the Zone act and the Norwegian fisheries management system (Marine Resources Act). The fishery in International waters (Ia and Ib) is managed by NEAFC (and Estonian authorities through license requirements). Clear objectives are formulated by NEAFC in the NEAFC convention and other supporting documents. The short and long-term objectives as they are formulated in the different management systems that apply to this fishery, are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, and are explicit within the fishery's management system.
100	**a**	**N**	**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.
			Although there are short and long-term objectives in place, not all of them could be measurable against well-defined targets, e.g. ICES sets the precautionary reference points for the shrimp fishery in the Barents Sea, but as yet there is no formal management plan in place incorporating TACs and well-defined harvest control rules. Therefore SG100 is not met.

PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2	
SG	**Issue**	**Met? (Y/PN)**	**Justification/Rationale**
References			Estonian Fisheries Strategy Danish Fisheries Act Lithuanian Law of Fisheries Svalbard Treaty 1920, §2 Norwegian Directorate on Fisheries: www.fiskeridir.no Norwegian Ministry of Fisheries and Coastal Affairs: http://www.regjeringen.no/en/dep/fkd.html?id=257 NEAFC Commission: www.neafc.org
OVERALL PERFORMANCE INDICATOR SCORE:			**80**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	There are **some** decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives. In the Norwegian, Estonian, Danish and Lithuanian management systems decision-making processes take place that have resulted in management measures for this fishery. For the Svalbard area Norway has developed several measures like closed areas, days at sea, technical measures. For International waters, Estonia, Denmark and Lithuania have implemented restrictions through a licensing system and technical measures. NEAFC Commission has taken several decisions to regulate the fishery in International waters.
	b	**Y**	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take **some** account of the wider implications of decisions. Decision making processes for this fishery are guided by scientific advice by NAFO/ICES. The scientific assessments are published rapidly on NAFO and ICES web-sites. Decision making processes take into account the wider implications of management measures.
80	**a**	**Y**	There are **established** decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. Within Norwegian, Estonian, Danish and Lithuanian fisheries management systems decision-making processes are in place that have resulted in management measures for this fishery. For the Svalbard area Norway has developed several measures like closed areas, days at sea, technical measures. For International waters, Estonia, Denmark and Lithuania have implemented restrictions through a licensing system and technical measures. Within the International waters, there are established decision making processes which have been used to develop measures and strategies for fisheries other than shrimps in the Barents Sea e.g. cod and haddock. Whilst there are some gaps in the management of shrimps in International waters, these established decision-making processes could be used to develop measures and strategies to achieve sustainability of the shrimp fishery. Whilst the gaps in management measures for shrimps in International waters have been addressed in Conditions 1 and 2, the assessment team believes that there are established decision-making processes in place which could be used to develop measures and strategies for the shrimp fishery and so the fishery meets the SG 80.
	b	**Y**	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			Findings and relevant recommendations emerging from research, monitoring, evaluation and review activity related to this fishery, such as catch levels, catch and fishing effort, potential impact of fishing on the marine environment, are formally reported and available on web-pages (e.g. e.g. Estonian Ministry of Agriculture and Ministry of Environment, Danish AgriFish Agency, Lithuanian Fisheries Service, Norwegian Ministry of Fisheries and Coastal Affairs, Fisheries Directorate, NEAFC Commission, ICES, NAFO, Estonian Marine Institute, DTU Aqua, IMR). Thus, it can be concluded that serious and other issues are dealt with in an effective and timely manner.
	c	**Y**	Decision-making processes use the precautionary approach and are based on best available information.
			Both in the Norwegian and the NEAFC management system, the precautionary approach is used and specifically mentioned. In Norway fish stock rebuilding takes place primarily under the Act relating to the Management of wild living marine resources. However, in special cases with a threatened and endangered marine species, this species can be prioritized according to the Nature Diversity Act. Then this Act sets out requirements to protect and implement recovery strategies for the species. The purpose of the Act relating to the management of wild living marine resources is among others to ensure sustainable and economically profitable management of wild living marine resources and genetic material derived from them. The Act also states that special importance shall be given to among others a precautionary approach in accordance with international agreements and guidelines, and an ecosystem approach that takes into account habitats and biodiversity, when managing living marine resources. The Institute of Marine Research (IMR) has been reorganized to take this into account. In the NEAFC Convention the use of the precautionary approach is described in Article 4.: It is stated that: “When making recommendations in accordance with Article 5 or 6 of this Convention the Commission shall in particular: a) ensure that such recommendations are based on the best scientific evidence available; b) apply the precautionary approach; c) take due account of the impact of fisheries on other species and marine ecosystems, and in doing so adopt, where necessary, conservation and management measures that address the need to minimize harmful impacts on living marine resources and marine ecosystems; and d) take due account of the need to conserve marine biological diversity.” Also in the OSPAR Convention the precautionary approach is mentioned: Article 3 (ii) reads: “to develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to particular species or habitats.” Within the Estonian, Danish and Lithuanian management systems the decision making process is based on the precautionary approach and stakeholder involvement and ensures that all relevant issues regarding research, monitoring, evaluation and consultation are considered annually.
	d	**Y**	**Explanations** are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
			Minutes from NEAFC Commission are published on www.neafc.org and minutes from the Estonian Fisheries Council are published and provide

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			explanations on management decisions. Danish AgriFish Agency and Lithuanian Fisheries Service websites provide explanations on management decisions. Information is also available on request and explanation on management actions are provided to stakeholders in regular consultations. Findings and relevant recommendations emerging from research, monitoring, evaluation and review activity related to this fishery, such as catch levels, catch and fishing effort, potential impact of fishing on the marine environment, are reported and available on web-pages (e.g. Estonian Ministry of Agriculture and Ministry of Environment, Danish AgriFish Agency, Lithuanian Fisheries Service, Norwegian Ministry of Fisheries and Coastal Affairs, Fisheries Directorate, NEAFC Commission, ICES, NAFO, Estonian Marine Institute, DTU Aqua, IMR).
100	**b**	**N**	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
			Existing decision-making processes have not yet responded to all issues identified. E.g. Absence of effort limitations on the shrimp fishery in the International waters and it's implication for the shrimp stock as a whole.
	d	**Y**	**Formal reporting** to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
			Minutes from the NEAFC Commission and the Estonian Fisheries Council are published and provide explanations on management decisions. Danish AgriFish Agency and Lithuanian Fisheries Service websites provide explanations on management decisions. Information is also available on request and explanation on management actions are provided to stakeholders in regular consultations. Findings and relevant recommendations emerging from research, monitoring, evaluation and review activity related to this fishery, such as catch levels, catch and fishing effort, potential impact of fishing on the marine environment, are **formally** reported and available on web-pages (e.g. Estonian Ministry of Agriculture and Ministry of Environment, Danish AgriFish Agency, Lithuanian Fisheries Service, Norwegian Ministry of Fisheries and Coastal Affairs, Fisheries Directorate, NEAFC Commission, ICES, NAFO, Estonian Marine Institute, IMR).
References			Svalbard Treaty 1920, §2 Norwegian Directorate on Fisheries: www.fiskeridir.no Norwegian Ministry of Fisheries and Coastal Affairs: http://www.regjeringen.no/en/dep/fkd.html?id=257 NEAFC Commission: www.neafc.org Estonian Ministry of Agriculture: www.agri.ee Danish AgriFish Agency http://agrifish.dk/fisheries/ Lithuanian Fisheries Service http://www.zuv.lt/index.php?1381214678
OVERALL PERFORMANCE INDICATOR SCORE:			**90**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	Monitoring, control and surveillance mechanisms exist are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.
			Norway, NEAFC, Estonia, Denmark and Lithuania maintain a robust and effective control and surveillance regime. There is a rigorous enforcement regime to ensure a high degree of compliance across all fishing fleets participating in this fishery. Monitoring, control and surveillance mechanisms are implemented and include the following: -VMS -ERS/Catch control/e-log books for Estonian, Danish and Lithuanian vessels -Port State Control (PSCF) in NEAFC -Landing control -EFCA -Inspections at sea by Norwegian Coast Guard and Russian Inspection authorities -NEAFC inspections (joint deployment plans) -EU inspections in the Barents Sea -Mission reports -National cross-check controls (e.g. landings against VMS position, etc.) -gear control at port
	b	**Y**	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.
			In the Estonian, Danish, Lithuanian and Norwegian management systems there is a set of sanctions and fines to deal with non-compliances. They have been applied in the past. For the Svalbard area where the jurisdiction of Norway is disputed, Norway has chosen a more gentle approach in which fines are seldom applied. Still the risks of heavy sanctions deter fishermen from infringements.
	c	**Y**	Fishers are **generally thought** to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.
			There have been occasional cases of non-compliance reported within the fishery in recent years, but Estonian, Danish and Lithuanian management authorities state that these non-compliances are minor and that fishers generally comply with the management system. All vessels must (and do) maintain up-to-date log books when fishing in the Svalbard zone and in International waters (Loop Hole) and comply with all reporting procedures.
80	**a**	**Y**	A monitoring, control and surveillance **system** has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.
			Norway, the EU, Estonia, Denmark and Lithuania maintain a robust and effective control and surveillance regime. Vessels can be, and are, warned, fined, have gear confiscated and licences suspended or withdrawn for non-compliance. See SG100a. Monitoring, control and surveillance mechanisms include the following: • VMS :all vessels are equipped with VMS)

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			• ERS/Catch control/e-log books : All vessels have to electronically report their catches (ERS) • Port State Control Form (PSCF): Before landing fish the master of a vessel has to fill in a PSCF. This form will be sent by the port state to the flag state in order to verify whether the vessel had sufficient quota for the catch reported and has fished in the area declared (by cross checking with VMS data). • Landing control: quantities and species landed will be controlled by the port state • EFCA: The European Fisheries Control Agency (EFCA) is a European Union body established in 2005 to organise operational coordination of fisheries control and inspection activities by the Member States and to assist them to cooperate so as to comply with the rules of the Common EU Fisheries Policy in order to ensure its effective and uniform application. • Inspections at sea by Norwegian Coast Guard, NEAFC inspections (joint deployment plans) • EU control vessels in the Barents Sea
	b	**Y**	Sanctions to deal with non-compliance exist, **are consistently applied** and thought to provide effective deterrence.
			In the management systems of Norway, the EU, Estonia, Denmark and Lithuania sanctions exist, are consistently applied and provide an effective deterrence. See SG100b.
	c	**Y**	**Some evidence exists** to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.
			Cross checks of fishing activity recorded on the VMS system and COE/COX forms and landings data did not identify any cases of systematic non-compliance within the fishery. Vessels have been inspected at sea by Norwegian, EU and NEAFC members and demonstrate that the fishery generally complies with fisheries regulations.
	d	**Y**	There is no evidence of systematic non-compliance.
			Cross checks of fishing activity recorded on the VMS system and COE/COX forms and landings data by Estonian, Danish and Lithuanian authorities did not identify any cases of systematic non-compliance within the fishery.
100	**a**	**Y**	A **comprehensive** monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
			Norway, the EU, Estonia, Denmark and Lithuania maintain a robust and effective control and surveillance regime. Vessels can be, and are, warned, fined, have gear confiscated and licences suspended or withdrawn for non-compliance. Throughout all fishing zones there is a rigorous enforcement regime to ensure a high degree of compliance across all fishing fleets participating in this fishery. All vessels must be equipped with VMS and maintain up to date logbooks which are subject to frequent at sea inspections by Norwegian and EU fishery inspection vessels. These inspections also ensure that technical measures are being complied with and the catches tally with log book

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			records and quota allocations. Vessels must also report when they intend to enter or leave the coastal states waters and may have to await inspection before commencing fishing or leaving a coastal state's waters. Monitoring, control and surveillance mechanisms are implemented and include the following: • VMS :all vessels are equipped with VMS • ERS/Catch control/e-log books : All vessels have to electronically report their catches (ERS) • Port State Control Form (PSCF): Before landing fish the master of a vessel has to fill in a PSCF. This form will be sent by the port state to the flag state in order to verify whether the vessel had sufficient quota for the catch reported and has fished in the area declared (by cross checking with VMS data. • Landing control: quantities and species landed will be controlled by the port state • EFCA: The European Fisheries Control Agency (EFCA) is a European Union body established in 2005 to organise operational coordination of fisheries control and inspection activities by the Member States and to assist them to cooperate so as to comply with the rules of the Common EU Fisheries Policy in order to ensure its effective and uniform application. • Inspections at sea by Norwegian Coast Guard, NEAFC inspections (joint deployment plans) • EU control vessels in the Barents Sea
	b	**Y**	Sanctions to deal with non-compliance exist, are consistently applied and **demonstrably** provide effective deterrence.
			Within the Estonian management system there is a set of sanctions and fines to deal with non-compliances.: • Fines, 5 times value of the catch • Withdrawal of licence for up to 1 year (on the second offence) • Permanent loss of licence As in the Estonian management system, within the Danish and Lithuanian management system there is a set of sanctions and fines to deal with non-compliances. The EU has implemented a point system for infringements (Control regulation 2009/1224; 2011/404). These sanction systems can lead to high fines or loss of fishing opportunities and are therefore a very effective deterrence for non- compliance. The coastal states apply severe penalties for any infringements of any regulations at any time a vessel is in their waters. Penalties can be financial, suspension or loss of licence all of which are effective deterrents against non-compliance. There is general satisfaction among all parties that application of penalties is consistent and effective. The international efforts coordinated through NEAFC for port-state reporting of landings has established a 'black-list' system to eliminate IUU fishing. Hønneland (2000) has investigated compliance in the Barents Sea fisheries for which previous studies have indicated a generally high level of compliance. According to his findings based on interviews with fishermen the extent of surveillance seems to be less important than the legitimacy of

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
			the management bodies. Fishermen have also indicated that the risks of non-compliance are considered too high. Consequently for the Svalbard FPZ inspections by Norway demonstrably provide effective deterrence although Norway rarely has arrested vessels in this zone.
	c	**Y**	There is a **high degree of confidence** that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
			Cross checks of fishing activity recorded on the VMS system and ERS and landings data did not identify any cases of systematic non-compliance within the fishery. Vessels have been inspected at sea by Norwegian, EU and NEAFC authorities and demonstrate that the fishery generally complies with gear regulations. Both among fishing skippers and officials there is a high degree of confidence that regulations are complied with by virtually all vessels, virtually all of the time. Insofar as there are any uncertainties they relate primarily to the frequency and extent that discarding may take place but the general perception is that any discarding is at a very low level.
References			Hønneland, G. Compliance in the Barents Sea Fisheries: How Fishermen Account for Conformity with Rules", *Marine Policy* 24(1): 11–19, 2000. https://psc.neafc.org/ NEAFC: www.neafc.org Site interviews with Estonian, Danish and Lithuanian officials and skippers.
OVERALL PERFORMANCE INDICATOR SCORE:			**100**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.2.4 – Research plan

PI 3.2.4		The fishery has a research plan that addresses the information needs of management	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	**Research** is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.
			The Barents Sea ecosystem is a well-studied ecosystem. Research conducted by research institutes in Russia and Norway has resulted in the publication of countless scientific publications on different aspects of the ecosystem. Research on shrimp and the Barents Sea shrimp fishery is undertaken by a joint NAFO/ICES Pandalus Assessment Working Group (NIPAG).
	b	**Y**	Research results are **available** to interested parties.
			Research findings are made available through annual reports and ICES papers published on ICES, IMR and PINRO web sites.
80	**a**	**Y**	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.
			Research is planned by Norway and Russia in the framework of the joint Russian-Norwegian scientific research programme on living marine resources. The research undertaken includes: investigations on fish and shrimp stocks, including stock size, structure and distribution, fishing technology and selectivity of fishing gear, optimal harvesting of commercial species in the Barents Sea, monitoring of the populations of marine mammals and birds. Research is also planned in a strategic manner annually through the joint NAFO/ICES Pandalus Assessment Working Group (NIPAG). NIPAG provides a peer review of the stock assessment of the Barents Sea fishery and identifies priorities for research that will fill gaps in the understanding of the biology of shrimp in the Barents Sea, and improve the assessment methodology and consequent management advice for the fishery. For example, in 2012 NIPAG recommended that demographic information should be collected from the Norwegian part of the ecosystem survey, a means of predicting recruitment to the fishable stock should be standardised, work should be continued on including explicit information on recruitment in the assessment model, and that the stock assessment should be documented more fully by including all background documents into a single technical annex. In addition the ICES Review Group makes recommendations on improvements to the assessment methodology particularly in relation to the provision of management advice.
	b	**Y**	Research results are **disseminated** to all interested parties in a **timely** fashion.
			Research findings are readily available through annual reports and ICES papers published on ICES, IMR and PINRO web sites.
100	**a**	**N**	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.
			Norway has maintained a comprehensive research programme throughout the Barents Sea for a many decades. De facto the shrimp fisheries are co-ordinated through or contribute to the joint Norway – Russia Barents Sea research programme, and the MAREANO project. All this work underpins

			the Barents Sea management plan and the JNRFC fish stock assessments helping to provide reliable and timely information to support the objectives consistent with MSC Principles 1 and 2. However the Barents Sea shrimp stock is not formally a part of the common research programme and doesn't include other fishing nations. So the SG100 Is not met.
	b	**N**	Research **plan** and results are **disseminated** to all interested parties in a **timely** fashion and are **widely and publicly available**.
			Planning takes place, but it cannot be concluded that a research plan is disseminated to all interested parties. Therefore SG100b is not met.
References			Russian-Norwegian scientific research programme on living marine resources (2012) www.neafc.org www.ices.dk Svalbard Treaty 1920, §2 Norwegian Directorate on Fisheries: www.fiskeridir.no Norwegian Ministry of Fisheries and Coastal Affairs: http://www.regjeringen.no/en/dep/fkd.html?id=257
OVERALL PERFORMANCE INDICATOR SCORE:			**80**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 3.2.5 – Management Evaluation

PI 3.2.5		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system	
SG	**Issue**	**Met? (Y/N)**	**Justification/Rationale**
60	**a**	**Y**	The fishery has in place mechanisms to evaluate **some** parts of the management system.
			Within the Estonian, Danish and Lithuanian management systems there are mechanisms in place to periodically evaluate parts of the management system based on internal review within the relevant Ministries.
	b	**Y**	The fishery-specific management system is subject to **occasional internal** review.
			The fishery-specific management systems in Estonia, Denmark and Lithuania are subject to regular internal review. See SG 80b.
80	**a**	**Y**	The fishery has in place mechanisms to evaluate **key** parts of the management system
			Within the Estonian, Danish and Lithuanian management systems there are mechanisms in place to periodically evaluate parts of the management system based on internal review within the relevant Ministries and through discussions with stakeholders. For example, in Estonia a new national fishing strategy was recently published, and the Lithuanian Law of Fisheries was updated in 2016. Within the Norwegian management system, reporting of regulations and enforcement to the Norwegian Parliament occur annually. The National audit office performed a major audit on the management system in 2003-2004 reviewing resource management, Ministerial management and enforcement by subsidiary bodies like the IMR and Fisheries Directorate, etc. The report was presented to the Parliament. Research is published in scientific journals and subject to regular peer review therein. IMR has also had two major scientific reviews over the last decade by independent committees. NEAFC has established a working group on the Future of NEAFC. This working group is asked to evaluate the role of NEAFC in taking a broader Ecosystem approach to fisheries management. The working group will report to the NEAFC Commission.
	b	**Y**	The fishery-specific management system is subject to **regular internal** and **occasional external** review.
			The Estonian, Danish and Lithuanian cold water shrimp fisheries in the Barents Sea are part of the larger fishery which is managed by Norway, Russia and NEAFC. Evaluations of management within these management systems could be considered occasional external review of the Estonian, Danish and Lithuanian distant water fisheries.
100	**a**	**N**	The fishery has in place mechanisms to evaluate **all** parts of the management system.
			The Barents Sea cold water prawn fishery is for a large extent managed by international management systems. These broader management systems are evaluated in international frameworks. Therefore it cannot be concluded that the Estonian, Danish and Lithuanian management systems have in place mechanisms to evaluate all parts of the management system for this fishery. Therefore SG100a is not met.

	b	**N**	The fishery-specific management system is subject to **regular internal and external review.**
			There is no regular external review of the Estonian, Danish and Lithuanian shrimp fisheries. Therefore SG100b is not met.
References			Estonian Fishing Strategy Danish Fisheries Act Lithuanian Law of Fisheries Estonian Ministry of Agriculture: www.agri.ee Danish AgriFish Agency http://agrifish.dk/fisheries/ Lithuanian Fisheries Service http://www.zuv.lt/index.php?1381214678 Norwegian Directorate on Fisheries: www.fiskeridir.no Norwegian Ministry of Fisheries and Coastal Affairs: http://www.regjeringen.no/en/dep/fkd.html?id=257 NEAFC Commission: www.neafc.org
OVERALL PERFORMANCE INDICATOR SCORE:			**80**
CONDITION NUMBER (if relevant):			

Appendix 1.2 Conditions

Condition 1

Performance Indicator	PI 1.2.1 There is a robust and precautionary harvest strategy in place
Score	70
Rationale	**SG 80 (a) Requirement:** The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy **work together** towards achieving management objectives reflected in the target and limit reference points. **Rationale:** A significant component of the Estonian, Danish and Lithuanian shrimp fisheries takes place in International waters, where only technical measures apply, and there is currently therefore no scope for limiting fishing effort within this sub-area of the fishery. Although the proportion of the stock which is in international waters is relatively small and there is a limit on the number of the Estonian, Danish and Lithuanian vessels, this is a significant weakness in the harvest strategy and the assessment team does not believe that the fishery achieves SG80 for this issue.
Condition	By the fourth annual surveillance, regulations limiting fishing effort in international waters (ICES Ia and Ib), that are responsive to the state of the stock, should be implemented to demonstrate that the elements of the harvest strategy work together towards achieving management objectives for the Barents Sea shrimp stock as a whole.
Milestones	**Annual surveillance 1**: Show written evidence of consultation with relevant authorities and stakeholder groups in relation to options limiting fishing effort in international waters **Annual surveillance 2:** Provide an evaluation of options considered for potential mechanisms for limiting fishing effort **Annual surveillance 3:** Propose regulations for limiting fishing effort to relevant authorities **Annual surveillance 4:** Implementation of regulations for limiting fishing effort through consultation with relevant authorities.
Consultation on condition	Relevant Ministries in Estonia, Denmark and Lithuania, NEAFC

Condition 2

Performance Indicator	PI 1.2.2 There are well defined and effective harvest control rules in place
Score	75
Rationale	**SG 80 (a) Requirement:** 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. **Rationale:** There are no well-defined harvest control rules in place which stipulate what management action will be invoked if the stock biomass declines to levels close to Btrigger or Blim, or if fishing mortality increases to levels close to Flim.
Condition	By the fourth annual surveillance, well defined harvest control rules shall be implemented for the shrimp stock as a whole to ensure that the exploitation rates are reduced as limit reference points are approached.
Milestones	**Annual surveillance 1:** Show written evidence of consultation with relevant authorities and stakeholder groups in relation to options for HCRs. **Annual surveillance 2:** Provide an evaluation of options considered for potential HCRs

	Annual surveillance 3: Propose HCR to relevant authorities **Annual surveillance 4:** Implementation of HCR through consultation with relevant authorities.
Consultation on condition	Relevant Ministries in Estonia, Denmark and Lithuania, NEAFC.

Condition 3

Performance Indicator	**PI 2.4.3 Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types**
Score	75
Rationale	**SG 80 (c) Requirement:** **Sufficient data continue to be collected to detect any increase in risk to habitat** (e.g. **due to** changes in the outcome indicator scores or the operation of the fishery or **the effectiveness of the measures**) **Rationale:** Based on the (VMS) information provided the team has concluded that the fishery is patchy and focused in limited areas. It is expected that the fishery will continue this fishing pattern and also that the same fishing grounds will be fished time after time, Additionally the move on rule concerning interactions with sponge or coral habitats requires vessels to move on when bycatch exceeds thresholds for VMEs in the NEAFC regulatory area of 30 kg of live coral and 400 kg of sponges. Therefore the conclusion is that large areas are not impacted by the fishery and the move on rule further reduces risk to bottom habitat. In order to detect any increase in risk for vulnerable bottom habitats information is needed to show that the fishery continues to be conducted in the same patchy and concentrated manner. More information is also needed to show that the move on rule is consequently applied and risks for habitat continue to be low.
Condition	The fishery is required to collect sufficient information on bycatches and spatial distribution of the fishery in order to detect any increase in risk for vulnerable bottom habitats (e.g. due to changes in fishing pattern or effectiveness of the move on rule).
Milestones	**Annual surveillance 1:** Develop and implement procedures for monitoring and recording all by-catches of coral and sponges in every fishing haul. Provide the team with the collected data preferably with a map showing all recorded bycatches of sponges and corals. Provide the team with a map with all the VMS data on all UoC fishing vessels. Together with the team analyse the collected data to determine whether significant impacts are likely and where necessary develop appropriate management responses. **Annual surveillance 2-4:** Provide the team with the collected data preferably with a map showing all recorded bycatches of sponges and corals. Provide the team with a map with all the VMS data on all UoC fishing vessels. Show proof that appropriate management responses are taken where necessary.
Consultation on condition	None. Client is advised to establish cooperation with the relevant scientific institutes in Estonia, Denmark and Lithuania in order to develop appropriate recording procedures and data analysis.

APPENDIX 2 CLIENT ACTION PLAN

Client action plan for MSC Fisheries assessment of Estonia NEA Cold Water Prawn fishery.

To Whom It May Concern:

Estonian NEA Cold Water Prawn fishing companies Reyktal AS and Reval Seafood OÜ are represented by the Estonian Long Distance Fishing Organization (ELDFA).

ELDFA vessels are having been active in the Barents Sea shrimp fishing in the international zones 1a and 1b. The areas are managed by the North East Atlantic Fisheries Commission (NEAFC). NEAFC is an organisation comprised of Contracting Parties which have signed up to the Convention on Multilateral Cooperation in North East Atlantic Fisheries, which entered into force in November 1982. The European Union represents Estonia within NEAFC. NEAFC has three permanent committees; PECCOE (Permanent Committee on Control and Enforcement), PECMAS (Permanent Committee on Management and Science) and FAC (Finance and Administration Committee). Furthermore, five on-going working groups are operating under NEAFC, which of one is WG Stats (Working Group on Statistics). ELDFA follows closely the work and discussion within PECMAS and WG Stats related to shrimp in the above mentioned areas.

The main functions of PECMAS;

- To draft requests for with the International Council for the Exploration of the Sea,
- Review proposals for management measures, to take due account of the impact of fisheries on other species and marine ecosystems and of the need to conserve marine biological diversity, adopting conservation and management measures that address the need to minimise harmful impacts on living marine resources and marine ecosystems.
- To ensure that management measures are based on the best scientific evidence available, and
- to review the support of conduct of scientific research to be used in the advisory process.

The shrimp in zones 1a and 1b has never been regulated and the Member States of NEAFC show the issue of defining a firm harvest rule limited interests. The biomass is though measured on a regular basis and a comprehensive catch statistic reports are made.

The reason why this stock is kept non-regulated is mainly connected with two things. Firstly, the shrimp stock has been massively underutilized for years and therefore the conservation arguments are not as relevant as for many other species. Secondly, Norway has been reluctant to the idea of establishing TAC system for the stock acceptable for other stake holders. Norway is currently working out own harvest control rule. Their position is that is enough because majority of the shrimp stock is inside their territorial waters. The Norwegian view about the distribution of the shrimp is not supported by the other NEAFC contracting parties.

Norway, as a costal state of NEAFC and one of the main shrimp fishing stakeholder, has informally expressed general views saying there is no need to regulate shrimp. According to the views expressed, the shrimp is highly distributed in an enormously large area. According to same, the nature of the shrimp fishing, which is highly fuel demanding, will make the fishing operation economically unsustainable before the stock is at risk. ELDFA does not support these views and has expressed its interests to regulate the shrimp fishing in zones 1a and b for several years. ELDFA has expressed its views about TAC system to the Estonian Ministry of Environment and to the EU Commission. As the utilization rate of the shrimp, compared to its biomass and generally accepted total catch quantity, has been relatively low, ELDFA views have not gained much support among the stakeholders.

ELDFA has limited power to influence harvest control rules. ELDFA can, and has, expressed its views and recommendations to the Ministry of Environment in Tallinn, which again can do same towards the EU Commission (DGMARE). EU is one of five contracting parties of NEAFC. The decision if to implement a harvest control rule is made and confirmed at the NEAFC Annual Meeting.

As it is stated in letter from Estonian Ministry of Environment (15.04.13): "*The interest of Estonia in the NEAFC is represented by the Community (EU) as from date of accession. As regards international fisheries agreements, Estonia needed to withdraw from the NEAFC Convention (in 2004, when Estonia became an EU member state).*"

There is stated as well: "*That Estonian Ministry of Environment, when participating working groups, can support organizations like ELDFA when lobbing for implementation of harvest control rule for the shrimp stock in the Barents Sea trough established international working groups between the NEAFC Costal States and the European Union Council and Commission working groups related quota distribution (MSY approach)* "

ELDFA is a member of the LDRAC (Long Distance Fleet Regional Advisory Council) and will do its outmost to influence the position of LDRAC to support view about establishing a harvest control rule for shrimp in the areas.

ELDFA is ready to work with Norwegian, Faroese fishing stakeholders involved in the MSC program in order to press further for a change within NEAFC towards an adoption of a harvest control rule for the above mentioned stock. ELDFA will continue to express its views and press for a harvest control rules.

Action plan: lobby work of ELDFA

- National Administrations (Estonian Ministry of Environment and Ministry of Agriculture): ELDFA plans to continue to monitor the fishing effort in the zones and notify the national administration as soon as the utilization rate will increase.
- Member States and National Governments: ELDFA will request the national administration to raise the issue on an EU member state level and internationally.
- EU Commissioners and Commission Services: ELDFA, through its membership of LDRAC, will express its opinion of implementing a harvest control rule in the zones as soon as possible.

EESTI KALAPÜÜDJATE LIIT
Estonian Long Distance Fishing Association

- Norwegian and Russian Administration: ELDFA will request that the local Estonian administration will advise the EU Commission about its views and express them to NEAFC costal states.
- NEAFC: ELDFA will follow the ongoing discussion within NEAFC and seek arguments to support its views.
- Environmental NGO's: ELDFA will open a dialog with the relevant NGO's and draw their attention to the matter.
- LDRAC: ELDFA will continue to be active with in LDRAC and express its views in the future.

Action Plan for Scientific approach:

- Engage in the ICES process: ELDFA will follow the ICES studies on the shrimp in NEAFC and offer assistance if needed, for example by provide any additional catch data identified by the scientific community
- ELDFA will continue to work closely with the Estonian Marine Institute, University of Tartu, based on its co-operation agreement.
- ELDFA (NEA Cold Water Prawn fishing companies Reyktal AS and Reval Seafood OÜ) will implement data collection program for recording by-catches corals and sponges in the NEAFC regulatory area and in the Svalbard zone. This program will be implemented by using "MaxSea" Marine Navigation Software which is in onboard use currently or by collecting data using MSC Logbook. All collected data will be provided to The Estonian Marine Institute for further analyzing.
- If management's response may be needed, it also ensured.

On behalf of ELDFA

9.10.2013, Tallinn Estonia

Mäti Sarevet
Managing Director
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APPENDIX 3 PEER REVIEW REPORT

Summary of Peer Reviewer Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes**	**CAB Response**
The report is well written and adequately addresses all the issues covered in the performance indicators. The scoring comments relate well to the text of the report and the team has fully justified their conclusions which are entirely appropriate. As noted in the optional comments at the end, section 3.4.2 needs to be updated to 2015.		Section 3.4.2 has been updated as suggested.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]	**Yes**	**CAB Response**
Justification: I do think that NEAFC should be listed as one of the authorities for Consultation on Conditions 1 and 2 and the client seems to accept that approach in their Client Action Plan.		NEAFC has been added to the list of authorities to be consulted. In practice the Client and the Estonian Ministries have been liaising with NEAFC since the original certification.

If included:

Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]	**Yes**	**CAB Response**
I am impressed by the tone of the client's action plans. Their response indicates a certain frustration at the lack of appropriate management action on the part of the various authorities including NEAFC. In my opinion this is a very healthy approach and hopefully it will end in some progress towards resolving the issues explicit in the three conditions.		Comment noted. No further response required.

Performance Indicator Review

Please complete the appropriate table(s) in relation to the CAB's Peer Review Draft Report:

Table 3 For reports using one of the default assessment trees:

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
Example:1.1.2	*No*	*No*	*NA*	*The certifier gave a score of 80 for this PI. The 80 scoring guidepost asks that there is evidence that rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within the timeline specified. However, no timeline has been specified based on previous performance, or simulation models.*	
1.1.1	N/A	N/A			
1.1.2		N/A			

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.1	Yes	Yes (mainly)	Yes	It is accepted that there is no formal management plan, only an implicit one based on the rules in place to control the fishery. I do not intend to contest the N at 80a but the evidence is rather weak bearing in mind that it is based on a very small element of the total fishery which takes place in the 'Loop Hole' with a strictly limited number of vessels.	The assessment team acknowledges that only a small proportion of the fishery takes place in international waters, and that the rationale that SG80a is not met seems rather harsh. However over recent years, the shrimp stock has been moving progressively eastwards due to changes in environmental conditions, and an increasing proportion of the total fishing effort has been occurring in the Loop Hole. The assessment team considers therefore that the original score remains appropriate.
1.2.2	Yes	Yes	Yes	Inevitably, with only an implicit management plan the requirment at 80a, for well defined harvest control rules, cannot be achieved together with the two scoring issues at SG 100.	Comment noted. No further response required.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.3	Yes	Yes	N/A	The team has presented a lot of releveant information in the report and in the scoring comments. However I am happy to acccept their judgement that this is not comprehensive and that it is not monitored at a level which addresses all the potential uncertainties.	Comment noted. No further response required.
1.2.4	Yes	No	N/A	The assessment model is very specific to *Pandalus* and I feel that the team has presented ample evidence that it is appropriate for the stock and the HCR and does take into account the major features of the biology of the species and the nature of the fishery. The reduced score at SG 100a and d is based mainly on the absence of a predation model. The first paragraph in SG 100d appears to support the score. I would score this at 95 but recognise that this is a minor point and not a significant change.	In relation to the scoring of SId, the assessment team agrees with the reviewer that "the assessment has been tested and shown to be robust" and that the first part of SG100d is met. However the alternative assessment approach of inlcuding predation in the model has not been attempted, and certainly not "rigorously explored". The assessment team considers therefore that the SG100d (and SG100a) are not met and that a score of 90 for this PI is justified.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.1.1	Yes	Yes	N/A	The fishery clearly goes to considerable lengths with gear design and operation, in particular the sorting grid and escape panels, to avoid any significant by-catch.	Comment noted. No further response required.
2.1.2	Yes	Yes	N/A	As above	Comment noted. No further response required.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.1.3	No	No	N/A	I do not understand why the records of undersized cod taken by Estonian vessels is not available. Surely if they are discarded there is a requirement for that to be recorded in the log book and thus available. If they are landed from areas which ban discarding then the landings record should be sufficient.	The recording of discarded cod in the Estonian shrimp fishery is not considered to be sufficiently accurate or verifiable to meet the SG100 for this PI. The NIPAG working group estimates discard rates based on at-sea inspections and research surveys. Observer sampling was implemented in late 2014 in the Estonian shrimp fishery and as part of the EU Data Collection Framework (DCF), three fishing trips (about 35 days per trip) will be covered with an observer on board in 2016. Output from the observer prograrnme should in future provide more accurate and verifiable records of undersized cod taken in the fishery. A note to that effect has been added to the rationale.
2.2.1	N/A	N/A	N/A		
2.2.2	N/A	N/A	N/A		

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.2.3	N/A	N/A	N/A		
2.3.1	N/A	N/A	N/A		
2.3.2	N/A	N/A	N/A		
2.3.3	N/A	N/A	N/A		
2.4.1	Yes	Yes	N/A	There is a considerable volume of research, reflected in the report and scoring comments, on sea-bed and habitat impact of bottom trawling. The general conclusion, in relation to other MSC certified fisheries in the same areas, seems to be that serious impact is unlikely but that there is currently insufficient evidence to support it This fishery, with its heavy roller clump weights appears to be no worse and no better, in terms of impact, than many others.	Comment noted. No further response required.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.4.2	Yes	Yes	N/A	There is good evidence of the partial strategy to minimise habitat impact in the form of closed areas and gear design. Again this one fails to get SG 100 based on a lack of evidence that this is a complete and well tested strategy futher reflected at PI 2.4.3	Comment noted. No further response required.
2.4.3	Yes	Yes	Yes	The team has correctly identified this PI to reflect the lack of firm evidence in relation to habitat impact of this fishery.	Comment noted. No further response required.
2.5.1	N/A	N/A	N/A		
2.5.2	N/A	N/A	N/A		
2.5.3	N/A	N/A	N/A		
3.1.1	Yes	No	N/A	Why does this not score 100? All the scoring issues have a (Y)	The score for SG100b was given incorrectly as a 'Y', when the rationale clearly states that the SG100 is not met. The correct score for this PI is 95.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.1.2	Yes	Yes	N/A	Score of 85 well justified	Comment noted. No further response required.
3.1.3	Yes	Yes	N/A	Score of 100 well supported. **NB This template does not support CR version 1.2 on which this assessment is based. As a result there is no space to comment on PI 3.1.4 related to social incentives and subsidies.** The score of 90 for this **PI 3.1.4** is well supported in the three scoring issues with a partial score at SG 100.	Comment noted. No further response required.
3.2.1	Yes	Yes	N/A	The lack of formal measurement of the short and long term objectives is corectly reflected in the score. However I feel that a partial score of 90 could be justified on the basis that some but not all of them are measured and invite the team to consider this	The assessment team notes the comments of the reviewer but considers that the lack of an explicit management plan incorporating TACs and well-defined harvest control rules does not justify a partial score of 90 for this PI. The rationale has been revised to strengthen the justification for not meeting SG100.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.2	Yes	Yes	N/A	It fails to make 100 based on this single issue of a lack of effort limitations on the fishery in International waters. This is an Isue for NEAFC to address	Comment noted. No further response required.
3.2.3	Yes	Yes	N/A	Fortunately most fisheries make 100 on this indicator. I would have concerns were that not to be the case!	Comment noted. No further response required.

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	**Justification** Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.4	Yes	Yes	N/A	One day I will see a fishery which fully complies with this PI. Because of ther nature of most fisheries, being international, appropriate research gets carried out but it is highly unlikely to be orchestrated by a formal, overarching, research plan. **NB This template does not support CR version 1.2 on which this assessment is based. As a result there is no space to comment on PI 3.2.5 related to the evaluation of the fishery specific management system.** The score of 80 for this **PI 3.2.5**, is well supported by the evidence presented	Comments noted. No further response required.

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary) can be added below and on additional pages

This is a well written and very informative Expedited Assessment Report. It is full of useful background information in support of the conclusions in the scoring section.
I have noted in the scoring comments that the Peer Review template provided does not fully relate to CR v 1.2 and that PIs 3.1.4 and 3.2.5 are missing.
Assessment team response: Comments noted. No further response required.

I appreciate that this report has benefitted from the initial report and in that context there is a problem in Section 3.4.2. This section appears to have suffered from 'cut and paste' as the most recent data quoted are for 2012. This section needs to be updated to 2016 and an assurance given that there has been no significant change over that period.
Assessment team response: Section 3.4.2 has been updated in the report to confirm that there has been no significant change over that period.

All the participants in the fishery are clearly identified and the pictures of the vessels provide the reader with a good feel for the fishery. Similarly the description of the gear, which is very specific to this fishery, in particular the sorting grid and escape panels, is very helpful. In terms of the seabed impact it is hoped that further development of the gear, to include pelagic doors and dispensing with the heavy wing end 'roller clumps, progresses quickly. Did the original team consider a Recommendation in that respect, and is it too late to include one in this expedited report?
Assessment team response: The original assessment team did not consider a recommendation on further development of the gear, and the current team considers that it is not appropriate to make such a recommendation on the Estonian fishery now at this advanced stage of the original certification period. At the expected re-assessment later in 2017, any recent gear developments will be evaluated and if little progress has been made, there will be an opportunity then for the re-assessment team to make appropriate recommendations.

I found the history of the fishery particularly informative and well supported by the charts. Figure 2 detailing the Svalbard zone, the Grey zone, the Loophole and the National limits is the best that I have seen and very helpful when reading the report and understanding the conclusions.
The biology and life history section is excellent and helps enormously when trying to understand and interpret the harvest strategy and rules in the context of the MSC certification process and scoring guidelines.
Assessment team response: Comments noted. No further response required.

APPENDIX 4 STAKEHOLDER SUBMISSIONS

Comments to the PCDR were received only from:

- MSC Technical Oversight

The comments are included in full below, followed by explicit responses from the team.

Marine House
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United Kingdom
Tel: +44 (0)20 7246 8900
Fax: +44 (0)20 7246 8901

Date: 20/03/2017

SUBJECT: MSC Review and Report on Compliance with the scheme requirements

Dear Julian Addison

Please find below the results of our partial review of compliance with scheme requirements.

CAB	Det Norske Veritas Certification AS (DNV)
Lead Auditor	Julian Addison
Fishery Name	Estonia North East Arctic cold water prawn fishery
Document Reviewed	Public Comment Draft Report

Ref	Type	Page	Requirement	Reference	Details	PI
26918	Guidance	58	FCR-7.6.2 v.2.0	If the eligibility date is set before the certification date, the CAB shall inform the fishery that any fish harvested after the eligibiltiy date and sold or stored as under-assessment fish shall be handled in conformity with relevant under-assessment product requiremetns in the MSC Chain of Custody Standard.	A reminder to ensure the client is aware of UMAF requirements as detailed in the MSC CoC Standard v4.0.	

www.msc.org						
26920	Minor	58	FCR-7.12.1.3 v.2.0	The CAB shall determine if the systems of tracking and tracing in the UoA are sufficient to ensure all fish and fish products identified and sold as certified by the UoA originate from the appropriate Unit of Certification (UoC). The CAB shll document the risk factors outlined in the "MSC Full Assessment Reporting Template", identifying any areas of risk for the integrity of certified products and how they are managed and mitigated.	As required by Annex PE3, the effective MSC Full Assessment Reporting Template must be used. However, there is no evidence of Table 4 of the template "Traceability Factors Within the Fishey" being completed in section 5.1.1 on page 58.	
26922	Minor	59	FCR_7.12.2.1 v.2.0	The CAB shall determine and document the scope of the fishery certificate, including the parties and categories of parties eligible to use the certificate and the point(s) at which chain of custody is needed	Sections 5.1.3 & 5.2 mention transport and movement of product from vessel to cold store and processing plants. CoC is not due to begin until change of ownership, and the product in cold store is under custody of the vessel. Therefore, these parties are covered by the fishery certificate, but they are not listed. The report does not describe the traceability evaluation of these intermediaries that are covered by the fishery certificate, whether risks of mixing with non-certified shrimp are present and if so, how they will be mitigated.	
26923	Guidance	17			Page 17 Section 3.1.3 The reference should be FCR v2.0 as from all assessments that commence after 1 April 2015 shall apply FCR v2.0 process requirements.	

This report is provided for action by the CAB and ASI in order to improve consistency with the MSC scheme requirements; MSC does not review all work products submitted by Conformity Assessment Bodies and this review should not be considered a checking service. If any clarification is required, please contact the relevant FAM for more information

If you have any questions regarding this response, please do not hesitate to contact the relevant Fisheries Assessment Manager for this fishery.

Marine Stewardship Council
cc: Accreditation Services International

CAB response to MSC comments

Ref	MSC details	CAB response
26918	A reminder to ensure the client is aware of UMAF requirements as detailed in the MSC CoC Standard v4.0.	Not needed
26920	As required by Annex PE3, the effective MSC Full Assessment Reporting Template must be used. However, there is no evidence of Table 4 of the template "Traceability Factors Within the Fishey" being completed in section 5.1.1 on page 58.	The report is amended and table 4 in the template is now included
26922	Sections 5.1.3 & 5.2 mention transport and movement of product from vessel to cold store and processing plants. CoC is not due to begin until change of ownership, and the product in cold store is under custody of the vessel. Therefore, these parties are covered by the fishery certificate, but they are not listed. The report does not describe the traceability evaluation of these intermediaries that are covered by the fishery certificate, whether risks of mixing with noncertified shrimp are present and if so, how they will be mitigated.	The report is amended with more details of the traceability system that included the intermediaries categories up to the change of ownership and start of Chain of custody.
26923	Page 17 Section 3.1.3 The reference should be FCR v2.0 as from all assessments that commence after 1 April 2015 shall apply FCR v2.0 process requirements.	The report is amended with the correct reference.

APPENDIX 5 SURVEILLANCE FREQUENCY

The surveillance frequency will be identical with the original certification report of the Estonia North East Arctic cold water prawn fishery.

However the fishery will start the recertification in the end of 2017, and in that process there will be done an evaluation of the surveillance frequency in the second certification period.

APPENDIX 6 OBJECTIONS PROCESS

(REQUIRED FOR THE PCR IN ASSESSMENTS WHERE AN OBJECTION WAS RAISED AND ACCEPTED BY AN INDEPENDENT ADJUDICATOR)

The report shall include all written decisions arising from an objection.

(Reference: FCR 7.19.1)

APPENDIX 7 LIST OF MEMBER VESSELS

Taurus (EK-9914) – part of the client group vessels until mid-October 2016
Steffano (EK-1601) – part of the client group vessels from July 2016
Ontika (EK 1502, previously EK-0101)
Reval Viking (EK-1202)

Ocean Tiger (R38)

Taurus (KL 898) – part of the Lithuanian fishery from mid-October 2016

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