

# **ME Certification Ltd.**

## **MSC Final Report and Determination (FR)**

**The SPSG, DPPO, PFA, SPFPO & KFO Atlanto-Scandian  
purse seine and pelagic trawl herring fishery**

**NOVEMBER 2015**

**Authors:     Jo Gascoigne  
                   Matt Cieri  
                   Chrissie Sieben  
                   Geir Hønneland**



ME Certification Ltd  
56 High Street, Lymington  
Hampshire SO41 9AH  
United Kingdom  
Tel: 01590 679016  
Fax: 01590 671573  
E-mail: [info@me-cert.com](mailto:info@me-cert.com)  
Website: [www.me-cert.com](http://www.me-cert.com)

# Contents

CONTENTS .....	1
GLOSSARY .....	3
1. EXECUTIVE SUMMARY .....	6
2. AUTHORSHIP AND PEER REVIEWERS .....	8
3. DESCRIPTION OF THE FISHERY .....	10
3.1. Units of Certification and scope of certification sought .....	10
3.1.1. Scope of Assessment in Relation to Enhanced Fisheries .....	13
3.1.2. Scope of Assessment in Relation to Introduced Species Based Fisheries (ISBF) .....	13
3.2. Presentation of the client group.....	14
3.2.1. SPSG Ltd. ....	14
3.2.2. DPPO .....	15
3.2.3. PFA .....	15
3.2.4. SPFPO .....	16
3.2.5. KFO .....	17
3.3. Overview of the fishery.....	17
3.3.1. History of the fishery .....	17
3.3.2. Stock definition .....	18
3.3.3. Migrations.....	18
3.3.4. Gear .....	19
3.3.5. Fishing areas.....	21
3.3.6. Quotas and landings .....	22
3.3.7. Description of management system and legal framework .....	24
3.4. Principle One: Target Species Background .....	28
3.4.1. Target species biology and ecology.....	28
3.4.2. Other fisheries on the stock .....	29
3.4.3. Current stock status .....	29
3.4.4. Recruitment .....	30
3.4.5. Reference points .....	31
3.4.6. Harvest strategy and control rules .....	31
3.4.7. Information .....	32
3.4.8. Stock assessment .....	35
3.4.9. Key LTL species.....	38
3.5. Principle Two: Ecosystem Background .....	39
3.5.1. Retained species.....	39
3.5.2. Discards .....	45
3.5.3. Protected species interacting with the fishery.....	51
3.5.4. Habitats .....	53
3.5.5. Ecosystem.....	54
3.6. Principle Three: Management System Background .....	59
3.6.1. Jurisdictions in the area of operation .....	59
3.6.2. Management systems and decision-making processes .....	59
3.6.3. Objectives for the fishery.....	60
3.6.4. Stakeholders and consultation processes .....	61
3.6.5. Monitoring, control and surveillance.....	61

4. EVALUATION PROCEDURE .....	63
4.1. Harmonised Fishery Assessment.....	63
4.2. Previous assessments .....	65
4.3. Assessment Methodologies .....	69
4.4. Evaluation Processes and Techniques .....	69
4.4.1. Site Visits and consultations .....	69
4.4.2. Stakeholder comments during evaluation .....	70
4.4.3. Evaluation Techniques .....	70
5. TRACEABILITY .....	72
5.1. Eligibility Date.....	72
5.2. Traceability within the Fishery .....	72
5.3. Eligibility to Enter Further Chains of Custody .....	75
5.4. Eligibility of Inseparable or Practically Inseparable (IPI) stock(s) to Enter Further Chains of Custody .....	75
6. EVALUATION RESULTS.....	76
6.1. Principle Level Scores.....	76
6.2. Summary of Scores.....	76
6.3. Summary of Conditions.....	77
6.3.1. Recommendations .....	78
6.4. Determination, Formal Conclusion and Agreement.....	78
6.5. Changes in the fishery prior to and since Pre-Assessment.....	78
7. REFERENCES.....	79
APPENDICES .....	83
APPENDIX 1 SCORING AND RATIONALES .....	83
APPENDIX 2. PEER REVIEW REPORTS .....	171
APPENDIX 3. STAKEHOLDER SUBMISSIONS .....	230
APPENDIX 4. SURVEILLANCE FREQUENCY .....	236
APPENDIX 5. CLIENT AGREEMENT .....	237
APPENDIX 6. CLIENT ACTION PLAN.....	239
APPENDIX 7. STAKEHOLDERS .....	244

## Glossary

Term / acronym	Definition
ACOM	ICES advisory committee
ASH	Atlanto-Scandian herring
$B_0$	Equilibrium unexploited total biomass
$B_{\text{current}}$	Equilibrium total biomass at $F_{\text{current}}$
BIM Seafood Stewardship Programme	Bord Iascaigh Mhara Seafood Stewardship Programme
$B_{\text{init}}$	Initial biomass at the start of the stock assessment model (for the albacore assessment, $B_{1960}$ )
$B_{\text{MSY}}$	Equilibrium total biomass at MSY
CAB	Conformity Assessment Body
CCTV	Closed Circuit Television
CFP	Common Fisheries Policy
CoC	Chain of Custody
CPUE	Catch per Unit Effort
CR	MSC Certification Requirements
DCF	Data Collection Framework
DPPO	Danish Pelagic Producers Organisation
EEZ	Exclusive Economic Zone
EFF	European Fisheries Fund
EM	Electronic Monitoring
ETP	Endangered Threatened or Protected species
EU	European Union
F	Fishing mortality
$F_{\text{current}}$	Average fishing mortality at age, July 2007 – June 2010
$F_{\text{MSY}}$	Fishing mortality at age resulting in MSY
HCR	Harvest Control Rule
IBWSS	International Blue Whiting Spawning Stock Survey
ICES	International Council for the Exploration of the Sea
IESNS	International Ecosystem Survey in the Nordic Seas

ITQ	Individual Transferable Quota
KFO	Killybegs Fishermen's Organisation
LRP	Limit Reference Point
LTL	Low-Trophic Level species
MBAL	Minimum biologically acceptable level
MCS	Monitoring, Control and Surveillance
MEC	ME Certification Ltd
MP	Management plan
MSC	Marine Stewardship Council
MSFD	Marine Strategy Framework Directive
MSY	Maximum Sustainable Yield
NAO	North Atlantic Oscillation
NEAFC	North East Atlantic Fisheries Commission
NSSH	Norwegian spring-spawning herring
NVWA	Nederlandse Voedsel en Waren Autoriteit
PCDR	Public Comment Draft Report
PFA	Pelagic Freezer-trawler Association
RAC	Regional Advisory Council
RSW	Refrigerated seawater
SAM	State–space assessment model
SPFPO	Swedish Pelagic Federation Producers Organisation
SPG	Sub-polar gyre
SPSG	Scottish Pelagic Sustainability Group
SSB	Spawning stock biomass
STECF	Scientific, Technical and Economic Committee For Fisheries
TAC	Total Allowable Catch
TRP	Target Reference Point
UoC	Unit of Certification
VMS	Vessel Monitoring System
vTI	(Johann Heinrich) von Thünen-Institut
WGBYC	ICES Working Group on Bycatch of Protected Species
WGINOR	ICES Working Group on the Integrated Assessments of the Norwegian Sea
WGWIDE	ICES Working Group on Widely Distributed Stocks
WKPELA	ICES Workshop on Pelagic Stocks

**NOTE TO READER:** MacAlister Elliott and Partners Ltd (MEP) acted as the accredited Conformity Assessment Body for this fishery assessment up to the 19<sup>th</sup> March 2015. On this date MEP transferred its accreditation status to the new entity, ME Certification Ltd (MEC) through an approved process with the Accreditation Body, Accreditation Services International (ASI).

On this basis this report is provided under the new entity name of ME Certification Ltd (MEC).

# 1. Executive Summary

This report is the Final Report for the Atlanto-Scandian herring fishery for the following clients:

- Scottish Pelagic Sustainability Group (SPSG)
- Danish Pelagic Producers Organisation (DPPO)
- Pelagic Freezer-Trawler Association (PFA)
- Swedish Pelagic Federation Producers Organisation (SPFPO)
- Killybegs Fishermen's Organisation (KFO)

The Atlanto-Scandian herring stock (ASH – also referred to as Norwegian spring-spawning herring; NSSH) is the largest stock of herring (*Clupea harengus*), and the largest commercial fish stock in the NE Atlantic region. The ASH occupies an area of the NE Atlantic more or less bounded by Norway–Faroe Islands–Iceland–Svalbard (Spitzbergen). The ASH stock is seasonally migratory, making more or less a clockwise movement around the Norwegian Sea during the course of the year.

Fishing is by mid-water trawls and purse seines (mainly the former); only the Danish and Swedish fleets use seines. The vessels are modern and technologically advanced with equipment such as sonar, net and catch monitors, which have greatly improved the precision of this method of fishing. The fish are taken in the upper part of the water column, typically in deep water off the continental shelf. With the exception of the PFA vessels, all vessels are refrigerated seawater (RSW) vessels with no freezer capacity. All PFA vessels however are freezer trawlers, which process and freeze the catch on board. Effort by SPFPO and KFO vessels in the fishery is sporadic, depending on quota availability early in the year; DPPO, SPSG and PFA vessels fish ASH more consistently. Note that it proved impossible for the team to separate purse seines from trawls in the scoring, because of very limited data specific to purse seines. Hence both gear types were considered in a single Unit of Certification (UoC) in this assessment. This is the approach that has also been taken by the other MSC assessments on this stock for which both gears are used.

The stock is managed via a Coastal States Agreement between the entities concerned – i.e. Norway, Iceland, Russia, the EU and the Faroe Islands, based on a TAC set following an agreed management plan and a stock assessment by ICES. All these entities accept this framework, but are currently in dispute as to how the TAC should be allocated between them. In 2014, this led to a sum of individual quotas, which exceeded the agreed TAC by 4.2%. The vessels in the UoCs for this assessment fish on the EU share of the TAC.

Fishing mortality is estimated to be more or less at the MSY and precautionary level defined by ICES, but above the target set in the management plan. Biomass is estimated to have been below the target reference points defined by the ICES precautionary/MSY frameworks and the management plan for the last two years (i.e. 2013 and 2014) – in contrast to the 2013 assessment, which estimated 2013 biomass to be above the target. Biomass is, however, estimated to be above the limit reference point. Stock biomass is largely driven by

recruitment (rather than vice versa), and is dominated by a few large year classes. Over the last 15 years, five large year classes have been produced, on which the fishery now operates: 1998, 1999, 2002, 2003 and 2004. Available information suggests that since then, year classes have been small. It is not known what factors create years with high levels of recruitment. Reportedly, the 2013 surveys indicate high levels of recent recruitment, but this is not yet confirmed.

There is a quantitative stock assessment, based on VPA, which is used for an annual assessment of stock status and to set the TAC. The model has significant issues with retrospective bias, and specifically has consistently under-estimated fishing mortality; hence why fishing mortality has been retrospectively evaluated to have been above management plan target levels in recent years, despite the TAC having been set according to the management plan and the best available scientific advice at the time. A benchmark in 2015 will review this issue in detail.

The only possible main retained species in the fishery was mackerel. The stock status of Northeast Atlantic mackerel is evaluated by ICES to be on the right side of reference points. No main bycatch species or significant interactions with ETP species were identified.

For Principle 3, under governance and policy the team evaluated the coastal states agreement in detail, including the current issues around quota allocations. Under fishery-specific management, the team mainly considered the EU fisheries framework, which applies to all the vessels in the UoC, but particularly for monitoring, control and surveillance (MCS), also considered the Norwegian system, since the fishery operates mainly in Norwegian waters.

The overall outcome for each principle was as follows:

- Principle 1 – aggregate score 86.9 one condition
- Principle 2 – aggregate score 83.0, no conditions
- Principle 3 – aggregate score 89.9, one condition

The conditions related to PI 1.2.2 – harvest control rules and tools and PI 3.1.1 – legal and customary framework. Specifically, in both cases, the problem related to the tools used to implement the harvest control rule (i.e. the quota allocation system), the effectiveness of the coastal states agreement and its dispute resolution system. Note that these are harmonised conditions with the other certified fisheries on this stock.

Since each Principle has been scored at above 80 and no single PIs scored below 60 the fishery is being recommended for certification pending no objections.



## 2. Authorship and Peer Reviewers

**The authors of this report (MEC assessment team) are:**

**Dr Jo Gascoigne (Team Leader):** Dr Gascoigne is a former research lecturer in marine biology at Bangor University, Wales. She is a fully qualified MSC Team Leader with particular expertise in the assessment of Principle 1, 2 and 3. She has been involved as expert and lead auditor for numerous MSC assessments and pre-assessments. For this assessment, Dr. Gascoigne was the team leader for this assessment.

**Dr. Matt Cieri:** Dr. Cieri received his PhD from the University of Maine in 1999 and has worked as a researcher at the Marine Biological Laboratory in Woods Hole. He currently works for the State of Maine as a fisheries scientist. He specializes in small pelagic species, and modelling their predator-prey interactions with important predators. Dr Cieri worked on the NAFO 5YZ and 4WX herring assessments for over 10 years. During that time he was involved in or primary analyst on the ADAPT-VPA, Statistical catch at age, SS3 and some statistical catch at length approaches (<http://www.nrcresearchpress.com/doi/abs/10.1139/cjfas-2012-0364#.UzWbGs5RHkE> ). Dr Cieri is also well versed with bottom trawl and acoustic estimates of pelagic stocks including Atlantic herring, having worked on industry-based and fisheries-independent acoustic surveys and their analytic approaches. Dr Cieri currently runs the Atlantic herring commercial catch/bycatch sampling as well as the age and growth lab for the State of Maine, coupled with analytic work on estimates of bycatch in large-scale pelagic fisheries using at-sea observers, as well as MSVPA work on a similar species, Atlantic menhaden. For this assessment, Dr. Cieri's key responsibility was with Principle 1 expert although he also brought additional Principle 2 expertise to the team.

**Chrissie Sieben:** Chrissie Sieben has a Master's Degree in Marine Environmental Protection, which she obtained at the University of Wales, Bangor. She is MSC fisheries manager at MEC and specialises in marine and fisheries ecology, marine environmental impact assessment and sustainable fisheries. As a fully qualified MSC assessment team member she is involved in MSC pre and full assessments and fishery surveillance audits and participates regularly in MSC CAB training sessions and workshops. During this full assessment she was in charge of Principle 2.

**Dr. Geir Hønneland** is Research Director of the Fridtjof Nansen Institute and adjunct professor at the University of Tromsø, Norway. He holds a Ph.D. in political science from the University of Oslo and mainly studies fisheries management and international relations in the European North. Among his books are Making Fishery Agreements Work: Post-Agreement Bargaining in the Barents Sea (Edward Elgar, 2012) and Coercive and Discursive Compliance Mechanisms in the Management of Natural Resources: A Case Study from the Barents Sea (Springer, 2000). He has also published extensively in peer reviewed journals. Before embarking on his academic career, Geir worked for several years as a fishery inspector for the Norwegian Coast Guard. He also has broad experience from evaluations and consultancies in the fisheries sector, e.g. for the FAO relating to the FAO Code of Conduct for Responsible Fisheries. He was a member of the team that performed the first MSC assessment of a Russian Barents Sea fishery in 2010, and has subsequently

participated in further assessments of cod and haddock fisheries in the Barents Sea, as well as herring assessments in the Norwegian and North Seas. He also has wide experience as an MSC peer reviewer, as well as from pre-assessments and surveillance audits. During this full assessment he was in charge of Principle 3.

**The peer reviewers for this report are:**

**Dr Jim Andrews**

Jim is a marine biologist with over 20 years' experience working in marine fisheries and environmental management. He currently works as an independent fisheries and marine environmental consultant. His previous experience includes running the North Western and North Wales Sea Fisheries Committee as its Chief Executive from 2001 to 2005, and previously working as the SFC's Marine Environment Liaison Officer. During this time he was responsible for the regulation, management and assessment of inshore finfish and shellfish stocks along a 1,500km coastline. He has an extensive practical knowledge of both fisheries and environmental management and enforcement under UK and EC legislation. Jim has formal legal training & qualifications, with a special interest in the policy, governance and management of fisheries impacts on marine ecosystems. He has worked as an assessor and lead assessor on more than 25 MSC assessments within the UK, in Europe and in India since 2007. In 2008 he worked with the MSC and WWF on one of the pilot assessments using the new MSC Risk Based Assessment Framework, and has subsequently used the Risk Based Framework in three fishery assessments. Jim has carried out numerous MSC Chain of Custody assessments within the UK.

**Dr Lisa Borges**

Lisa has been a fishery scientist for the last 18 years and now runs her own consultancy firm. Lisa has a BSc in Marine Biology & Fisheries from the University of the Algarve (Portugal), an MSc in Fisheries from the University of Porto (Portugal), and a PhD on discards from demersal fisheries from the National University of Ireland. She has worked for three national fisheries research institutes, which include IPIMAR (Portugal), the Marine Institute (Ireland), and IMARES (The Netherlands). Lisa has extensive knowledge and experience of assessing the environmental impact of fisheries, with a particular focus on discards and bycatch in particular. She also has knowledge and experience of fisheries management policies, including harvest control rules; management plans and discard policy development. Lisa developed conservation policies for Atlantic fish stocks when she worked for the European Commission in Belgium. Lisa has experience in both pelagic and demersal stock assessments, and is familiar with MSC assessment procedures, having participated as a principle 1 and 2 expert on four different assessments over the last year.

### 3. Description of the Fishery

#### 3.1. Units of Certification and scope of certification sought

MEC confirms that fishery under assessment is in conformity with Principle 3, Criterion A1 and Principle 3, Criterion B14 of the MSC Certification Requirements v1.3:

- Criterion A1: A fishery shall not be conducted under a controversial unilateral exemption to an international agreement.
- Criterion B14: Fishing operations shall not use destructive fishing practices such as fishing with poisons or explosives.

Therefore, MEC concludes that the fishery is within the scope of the MSC certification process.

In relation to A1, it is worth noting that the Faroese certified fishery on this stock was previously suspended further to the breakdown of the coastal states agreement (on division of the TAC – details given below). It was argued by the CAB for the Faroese fishery that suspension was warranted by the fact that the fishery was in breach of Scope Criterion A1. However, further to a harmonisation meeting between MSC and CABs on the various certified fisheries on this stock, it was agreed that this was not appropriate given the current situation (a softening of the Faroese position, alongside a more generalised disagreement between the coastal states), and the Faroese fishery is now in re-assessment.

A general description of the fishery under assessment is provided in the table below:

Species	Herring ( <i>Clupea harengus</i> )
Geographical range	ICES Sub-areas I, IIa & IIb, V & XIV
Method of capture	Purse seine and pelagic trawl
Stock	Atlanto-Scandian herring / Norwegian spring-spawning herring
Management Systems	The ASH fisheries are regulated in accordance with the joint EU, Norway, Faroe Islands, Iceland and Russia Agreement ('The Coastal States Agreement') which aims to constrain harvesting within safe biological limits and is designed to provide sustainable fisheries in the long term. The agreement is implemented through the EU Common Fisheries Policy in EC waters, through the national legislations and regulations of the respective EEZs and by the North East Atlantic Fisheries Commission (NEAFC) in international waters. The fishery is also subject to any national management measures implemented by the vessels' flag states.
Client group	Scottish Pelagic Sustainability Group (SPSG)

	Danish Pelagic Producers Organisation (DPPO) Pelagic Freezer-Trawler Association (PFA) Swedish Pelagic Federation Producers Organisation (SPFPO) Killybegs Fishermen's Organisation (KFO)
Other eligible fishers	None

The 'Unit of Certification' (UoC) is the definition of the fishery under assessment as follows: *The target stock(s) combined with the fishing method/gear and practice (including vessel/s) pursuing that stock.* It is important to note, however, (see Peer Review 2) that the CAB and the client have some discretion to arrange the client group into UoCs as is convenient (advice provided by MSC further to Peer Review 2). The UoCs have been defined as described in the tables below.

#### **UoC1 - SPSG**

Note: The Scottish Pelagic Sustainability Group Ltd Atlanto Scandian herring fishery is currently already certified (Certificate of compliance F-FCI-0006 - Valid 9th March 2010 to 31<sup>st</sup> July 2015). This assessment is therefore a reassessment for UoC1.

Species	Herring ( <i>Clupea harengus</i> )
Geographical range	ICES Sub-areas I, IIa & IIb, V & XIV EU waters, international waters and the EEZ of Norway and the Faroes
Method of capture	Pelagic trawl
Stock	Atlanto-Scandian herring
Management Systems	Cooperative management between EU member states, the Faroe Isles, Iceland, Norway and Russia
Client group	SPSG member vessels fishing for Atlanto-Scandian herring in ICES Sub-areas ICES Sub-areas I, IIa & IIb, V & XIV (EU waters, international waters and the EEZ of Norway) using pelagic trawl

#### **UoC2 – DPPO**

Note: The Danish Pelagic Producers Organisation Atlanto Scandian herring fishery is currently already certified (Certificate of compliance F-57716-2009 - Valid 17th July 2009 to 21st July 2015). This assessment is therefore a reassessment for UoC2.

Species	Herring ( <i>Clupea harengus</i> )
Geographical range	ICES Sub-areas I, IIa & IIb, V & XIV EU waters, international waters and the EEZ of Norway and the Faroes
Method of capture	Pelagic trawl and purse seine

Stock	Atlanto-Scandian herring
Management Systems	Cooperative management between EU member states, the Faroe Isles, Iceland, Norway and Russia
Client group	DPPO member vessels fishing for Atlanto-Scandian herring in ICES Sub-areas ICES Sub-areas I, IIa & IIb, V & XIV (EU waters, international waters and the EEZ of Norway) using pelagic trawl

### UoC3 - PFA

Note: The Pelagic Freezer-Trawler Association Atlanto-Scandian herring pelagic trawl fishery is currently already certified (Certificate of compliance MML-F-061 - Valid 7<sup>th</sup> July 2010 to 6<sup>th</sup> July 2015). This assessment is therefore a reassessment for UoC3.

Species	Herring ( <i>Clupea harengus</i> )
Geographical range	ICES Sub-areas I, IIa & IIb, V & XIV EU waters, international waters and the EEZ of Norway and the Faroes
Method of capture	Pelagic trawl
Stock	Atlanto-Scandian herring
Management Systems	Cooperative management between EU member states, the Faroe Isles, Iceland, Norway and Russia
Client group	PFA member vessels fishing for Atlanto-Scandian herring in ICES Sub-areas ICES Sub-areas I, IIa & IIb, V & XIV (EU waters, international waters and the EEZ of Norway) using pelagic trawl

### UoC4 – SPFPO

Note: This UoC is not currently certified and this assessment is therefore an initial assessment.

Species	Herring ( <i>Clupea harengus</i> )
Geographical range	ICES Sub-areas I, IIa & IIb, V & XIV EU waters, international waters and the EEZ of Norway and the Faroes
Method of capture	Pelagic trawl and purse seine
Stock	Atlanto-Scandian herring
Management System/s	Cooperative management between EU member states, the Faroe Isles, Iceland, Norway and Russia
Client group	SPFPO member vessels fishing for Atlanto-Scandian herring in ICES Sub-areas ICES Sub-areas I, IIa & IIb, V & XIV (EU waters, international waters and the EEZ of Norway) using pelagic trawl

### UoC5 - KFO

Note: This UoC is not currently certified and this assessment is therefore an initial assessment.

Species	Herring ( <i>Clupea harengus</i> )
Geographical range	ICES Sub-areas I, IIa & IIb, V & XIV EU waters, international waters and the EEZ of Norway and the Faroes
Method of capture	Pelagic trawl
Stock	Atlanto-Scandian herring
Management Systems	Cooperative management between EU member states, the Faroe Isles, Iceland, Norway and Russia
Client group	KFO member vessels fishing for Atlanto-Scandian herring in ICES Sub-areas ICES Sub-areas I, IIa & IIb, V & XIV (EU waters, international waters and the EEZ of Norway) using pelagic trawl

### 3.1.1. Scope of Assessment in Relation to Enhanced Fisheries

The MSC defines enhanced fisheries as: Any activity aimed at supplementing or sustaining the recruitment, or improving the survival and growth of one or more aquatic organisms, or at raising the total production or the production of selected elements of the fishery beyond a level that is sustainable by natural processes. It may involve stocking, habitat modification, elimination of unwanted species, fertilisation or combinations of any of these practices (MSC Certification Requirements v1.3).

The fishery under assessment is a wild capture fishery and does not meet the above definition. This fishery is therefore not considered enhanced.

### 3.1.2. Scope of Assessment in Relation to Introduced Species Based Fisheries (ISBF)

The MSC defines ISBF fisheries as: Any fishery which prosecutes a target fin or shellfish species that was intentionally or accidentally transported and released by human activity into an aquatic environment beyond its natural distribution range. This does not include species that are “introduced” into a location due to an expansion in their natural geographic range (MSC Certification Requirements v1.3).

The fishery under assessment does not meet the above definition. This fishery is therefore not considered ISBF.

## 3.2. Presentation of the client group

### 3.2.1.SPSG Ltd.

The Scottish Pelagic Sustainability Group Ltd (SPSG) is a grouping of Scottish pelagic fishing, processing and trading interests, established in 2007. Membership includes all Scottish pelagic vessels, the main pelagic Producer Organisations, and all the main pelagic processors and traders. It was established specifically to oversee the certification of pelagic fisheries (initially North Sea herring and Western Mackerel). The post of secretary of the SPSG is provided by the Scottish Pelagic Fishermen's Association (SPFA). All SPSG member vessels are part of the UoC, as shown in Table 1.

**Table 1. SPSG Ltd. member vessels as of January 2015 (all are part of the UoC).**

Vessel Name	Vessel Registration (PLN)	Home Port	Overall length (metre)	Catch holding method	Gear type
Adenia	LK193	Whalsay & Skerries	61.9	RSW	Pelagic Trawler
Altaire	LK429	Northmavine	76.4	RSW	Pelagic Trawler
Antares	LK419	Whalsay & Skerries	72.8	RSW	Pelagic Trawler
Antartic II	LK145	Whalsay & Skerries	61.9	RSW	Pelagic Trawler
Challenge	FR226	Fraserburgh	65	RSW	Pelagic Trawler
Charisma	LK362	Whalsay & Skerries	70.7	RSW	Pelagic Trawler
Chris Andra	FR228	Fraserburgh	71.2	RSW	Pelagic Trawler
Christina S	FR224	Fraserburgh	72	RSW	Pelagic Trawler
Forever Grateful	FR249	Fraserburgh	64	RSW	Pelagic Trawler
Havillah	N200	Killkeel	49	RSW	Pelagic Trawler
Kings Cross	FR380	Fraserburgh	70	RSW	Pelagic Trawler
Lunar Bow	PD265	Peterhead	69.3	RSW	Pelagic Trawler
Ocean Quest	BF77	Fraserburgh	61.5	RSW	Pelagic Trawler
Ocean Venture	FR77	Fraserburgh	61.5	RSW	Pelagic Trawler
Pathway	PD165	Peterhead	66.6	RSW	Pelagic Trawler
Quantus	PD379	Peterhead	65.5	RSW	Pelagic Trawler
Research W	LK62	Whalsay & Skerries	70.7	RSW	Pelagic Trawler
Resolute	BF50	Fraserburgh	64	RSW	Pelagic Trawler
Serene	LK297	Whalsay & Skerries	71.7	RSW	Pelagic Trawler
Stefanie-M	N265	Killkeel	49.2	RSW	Pelagic Trawler
Sunbeam	FR487	Fraserburgh	56.2	RSW	Pelagic Trawler
Taits	FR227	Fraserburgh	70.6	RSW	Pelagic Trawler
Unity	FR165	Fraserburgh	44.9	RSW	Pelagic Trawler
Zephyr	LK394	Whalsay & Skerries	72.8	RSW	Pelagic Trawler

### 3.2.2.DPPO

The Danish Pelagic Producers Organisation (DPPO) in Denmark was established in 1984 as an organisation for purse-seiners. In 2001 it was opened for membership to trawlers (DNV, 2009). At present, the organisation has 12 members, of which 4 are trawlers, and 8 combined trawlers and purse-seiners. All vessels are either refrigerated or cooled seawater vessels (RSW or CSW). All DPPO member vessels are part of the UoC, as shown in Table 2.

**Table 2. DPPO member vessels as of January 2015 (all are part of the UoC).**

Vessel Name	Vessel Registration (PLN)	Home Port	Overall length (metres)	Catch holding method	Gear type
Cattleya	E 349	Esbjerg	69.6m	RSW	Purse seiner / trawler
Rockall	E 532	Esbjerg	75.4m	RSW	Pelagic trawler
Beinur	HG 62	Hirtshals	57.6m	RSW	Purse seiner / trawler
Ruth	HG 264	Hirtshals	60.8m	RSW	Purse seiner / trawler
Asbjorn	HG 265	Hirtshals	75.4m	RSW	Pelagic trawler
Isafold	HG 333	Hirtshals	76.3m	RSW	Purse seiner / trawler
Themis	S 144	Skagen	42.6m	CSW	Pelagic trawler
Gitte Henning	S 349	Skagen	86.0m	RSW	Purse seiner / trawler
Ceton	S205	Skagen	55.9m	RSW	Purse seiner / trawler
Astrid	S264	Skagen	63.6m	CSW	Purse seiner / trawler
Lingbank	HM379	Hanstholm	37.7m	RSW	Pelagic trawler
Ariadne	L303	Thyborøn	53.0m	RSW	Purse seiner / trawler

### 3.2.3.PFA

The Pelagic Freezer-Trawler Association (PFA) represents the interests of nine European pelagic freezer-trawler companies. It includes vessels flagged in the Netherlands, the UK, France, Germany and Lithuania. All of its members catch and process pelagic fish for human consumption. The PFA fleet currently comprises a total of 21 freezer-trawler vessels, all of which are included in the UoC for this fishery (see Table 3). Note, however, that only the German and Dutch registered vessels have targeted ASH in recent years (ICES. 2014a).

**Table 3. PFA member vessels as of January 2015 (all are part of the UoC).**

Vessel Name	Vessel Registration (PLN)	Overall length (metres)	Catch holding method	Gear type	Flag
Afrika	SCH 24	126m	Freezer	Pelagic Trawler	NL
Johanna Maria	SCH 118	119m	Freezer	Pelagic Trawler	NL
Zeeland	SCH 123	113.97m	Freezer	Pelagic Trawler	NL



Annie Hillina	KW170	86.33m	Freezer	Pelagic Trawler	DE
Annelies Ilena	KW174	144.6m	Freezer	Pelagic Trawler	DE
Alida	SCH 6	100m	Freezer	Pelagic Trawler	NL
Franziska	SCH 54	119m	Freezer	Pelagic Trawler	NL
W. van der Zwan	SCH 302	142.5m	Freezer	Pelagic Trawler	NL
Carolien	SCH 81	126.22m	Freezer	Pelagic Trawler	NL
Frank Bonefaas	SCH 72	119m	Freezer	Pelagic Trawler	NL
Cornelis Vrolijk	H 171	113.97m	Freezer	Pelagic Trawler	UK
Wiron 5	PH 110	55.6m	Freezer	Pelagic Trawler	UK
Wiron 6	PH 220	55.6m	Freezer	Pelagic Trawler	UK
Sandettie	FC 716999	86m	Freezer	Pelagic Trawler	FR
Prins Bernhard	FC-716900	88.14m	Freezer	Pelagic Trawler	FR
Jan Maria	BX783	125.53m	Freezer	Pelagic Trawler	DE
Maartje Theadora	ROS171	140.8m	Freezer	Pelagic Trawler	DE
Helen Mary	ROS785	116.7m	Freezer	Pelagic Trawler	DE
Margiris	KL749	136.12m	Freezer	Pelagic Trawler	Lithuania
Atlantic Lady	H 180	51m	Freezer	Pelagic Trawler	UK

### 3.2.4.SPFPO

The Swedish Pelagic Federation Producers Organisation (SPFPO) was formed from Astrid Fiske and the Swedish Pelagic Producers Organisation (SPPO), and includes the member vessels of both these organisations. Astrid Fiske AB is a Swedish fishing company based at Rönnäng, West Goetaland. Svenges Pelagiska Producent Organisation (SPPO) served as the industry body for Swedish Pelagic vessels (<http://www.sppo.se/>) and in doing so played an important role in recent fishery developments such as the introduction of individual transferable fishing rights in the pelagic fishery. At present, the organisation has 11 members, of which 6 are trawlers, and 5 combined trawlers and purse-seiners. All vessels are RSW vessels. All SPFPO member vessels are part of the UoC, as shown in Table 4.

**Table 4. SPFPO member vessels as of January 2015 (all are part of the UoC).**

Vessel Name	Vessel Registration (PLN)	Home Port	Overall length (metre)	Catch holding method	Gear type
Ginneton	GG 203	Fiskeback	49.9	RSW	Purse seiner / trawler
Tor-On	GG 204	Fiskeback	44.9	RSW	Purse seiner / trawler
Ahlma	GG 206	Fiskeback	39.8	RSW	Pelagic Trawler
Torland	GG 207	Fiskeback	44.9	RSW	Purse seiner / trawler
Vastfjord	GG 218	Foto	40.1	RSW	Pelagic Trawler
Bristol	GG 229	Donso	49.9	RSW	Pelagic Trawler
Carmona	GG 330	Dyrön	49.9	RSW	Pelagic Trawler
Clipperton	GG 438	Donso	51.7	RSW	Pelagic Trawler

Polar	GG 505	Fiskeback	61.75	RSW	Purse seiner / trawler
Astrid	GG 764	Rörö	42	RSW	Purse seiner / trawler
Lövön	GG 778	Rönnäng	44	RSW	Pelagic Trawler

### 3.2.5.KFO

The Killybegs Fishermen's Organisation Ltd (KFO) is the largest fishermen's representative body in Ireland and is a recognised Fish Producer Organisation. It represents fishermen in pelagic, whitefish and shellfish sectors. Of the 23 RSW pelagic vessels in Ireland, 17 are members of KFO, all of which are part of the UoC as shown in Table 5.

**Table 5. KFO member vessels as of January 2015 (all are part of the UoC).**

Vessel Name	Vessel Registration (PLN)	Home Port	Overall length (metre)	Catch holding method	Gear type
Aine	SO734	Killybegs	48.6	RSW	Pelagic Trawler
Antarctic	D97	Killybegs	50.7	RSW	Pelagic Trawler
Atlantic Challenge	D642	Killybegs	59	RSW	Pelagic Trawler
Brendelen	SO709	Killybegs	64.6	RSW	Pelagic Trawler
Carmarose	SO555	Killybegs	27	RSW	Pelagic Trawler
Colmcille	G186	Killybegs	27.05	RSW	Pelagic Trawler
Father Mckee	SO708	Killybegs	64.6	RSW	Pelagic Trawler
Felucca	SO108	Killybegs	58	RSW	Pelagic Trawler
Girl Stephanie	G190	Killybegs	45	RSW	Pelagic Trawler
Neptune	SO715	Killybegs	48.6	RSW	Pelagic Trawler
Olgarry	SO591	Killybegs	40.4	RSW	Pelagic Trawler
Pacelli	D383	Killybegs	40.4	RSW	Pelagic Trawler
Paula	D165	Killybegs	62.6	RSW	Pelagic Trawler
Sheanne	SO716	Killybegs	61.6	RSW	Pelagic Trawler
Vigilant	SO109	Killybegs	53.06	RSW	Pelagic Trawler
Western Endeavour	D653	Killybegs	71	RSW	Pelagic Trawler
Westward Isle	G185	Killybegs	41.1	RSW	Pelagic Trawler

### 3.3. Overview of the fishery

#### 3.3.1.History of the fishery

Historically ASH were caught exclusively by drift nets and relatively small amounts were caught by purse-seiners and ring-netters that operated only in sheltered coastal waters and fjords. With the advent of pelagic trawling with acoustic fish detection equipment total ASH landings reached 1.5 Mt by the mid-1950s and then showed signs of decline. This trend was reversed by further technological developments such as the introduction of single-boat

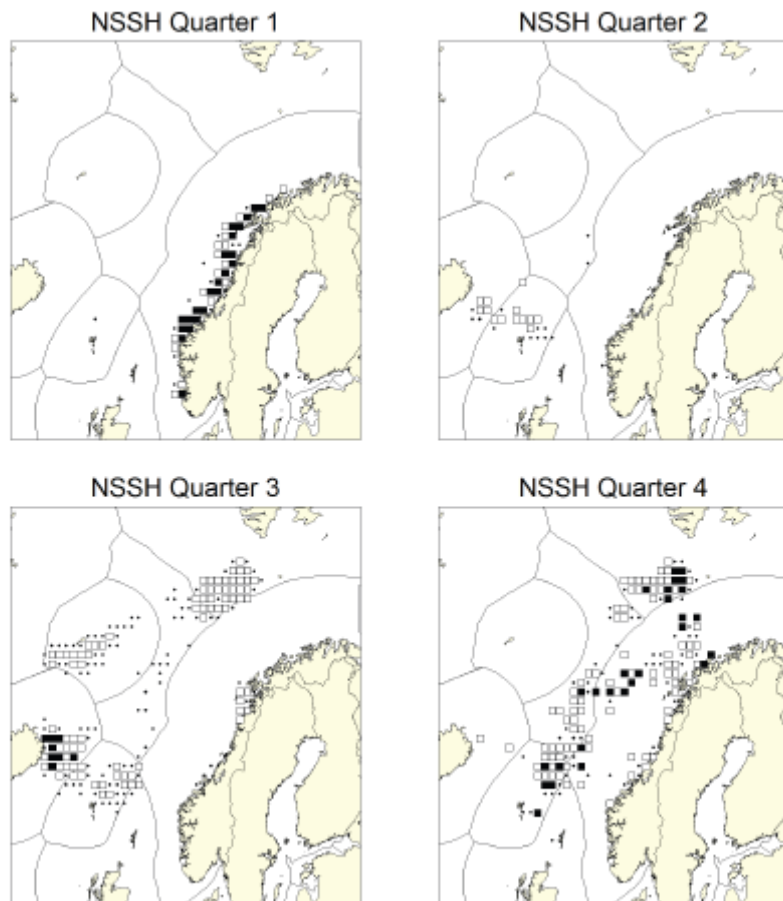
purse-seining techniques and the Puretic power block which increased the speed at which purse seines could be hauled up and therefore significantly increased fishing efficiency. At this time, the fishery was mainly prosecuted by Icelandic, Norwegian and Russian (USSR) fleets with little participation by EU vessels. Following these technological advances, however, the ASH stock collapsed in the early 1970s together with all other Northeast Atlantic herring stocks. Following this collapse there was a prolonged period of recruitment failure and the first signs of stock recovery only became apparent from the mid-1980s onwards. During the mid-1990s the EU nations also became involved in the fishery which is also when more robust international management measures were introduced. Since then, the stock has increased and landings have been relatively stable around one million tonnes for more than a decade (also see Andrews et al., 2010; Lockwood et al., 2009 and Southall et al. for a more in-depth presentation of the fishery's history).

### **3.3.2. Stock definition**

The Atlantic herring *Clupea harengus* is found throughout the cooler regions of the North Atlantic from the east coast of North America, to Iceland, the Barents Sea, around the British Isles and south as far as the Bay of Biscay. Within this global distribution the species is divided into a number of more or less independent stocks. The largest of these is the Atlanto-Scandian herring stock (ASH – also referred to as Norwegian spring-spawning herring; NSSH). ASH is the largest commercial fish stock in the NE Atlantic region (Andrews et al., 2010). The ASH occupies an area of the NE Atlantic more or less bounded by Norway–Faroe Islands–Iceland–Svalbard (Spitzbergen). The stock is defined by various morphological characteristics: a high number of vertebrae, large size at age, large maximum size and different scale characteristics from other herring stocks (ICES, 2013a).

### **3.3.3. Migrations**

The ASH stock is seasonally migratory, making more or less a clockwise movement around the Norwegian Sea during the course of the year. Early in the year, fish spawn on the Norwegian shelf (spawning area) before moving south and west into Icelandic / Faroese waters. In summer, the stock also expands northwards to Svalbard and is spread out across most of the Norwegian Sea (feeding areas), before moving back towards the Norwegian coast in the autumn to winter mainly in the Norwegian zone (wintering area) (Figure 1).



**Figure 1. Total reported catches of ASH in 2012 by quarter and by ICES square – showing the movement of the fishery and by extension the movement of the stock around the Norwegian Sea during the year. Symbols: black dots <300t, open squares 300-3000t, black squares >3000t (ICES, 2013a).**

Having outlined this general pattern, it is important to note that the stock appears to have rather variable and flexible migratory patterns, characterised by stable periods and changeable periods. Currently we appear to be in a changeable period in relation to wintering and feeding areas. For example, prior to about 2002, most of the stock appeared to winter in fjords, but at this point a new wintering area established itself in oceanic waters off the north Norwegian coast between ~69° and 72°N. In recent years, however, the November survey in this area has shown a decrease in overwintering biomass (not correlated with an overall decrease in stock biomass) which suggests that a new, and so far unknown, overwintering area may be establishing itself. WGWISE speculates that this may be associated with a westward shift in the summer feeding areas (towards Iceland and the Faroe Islands), meaning that the previous wintering areas are too far to reach in the autumn (ICES, 2013a – Annex 02C).

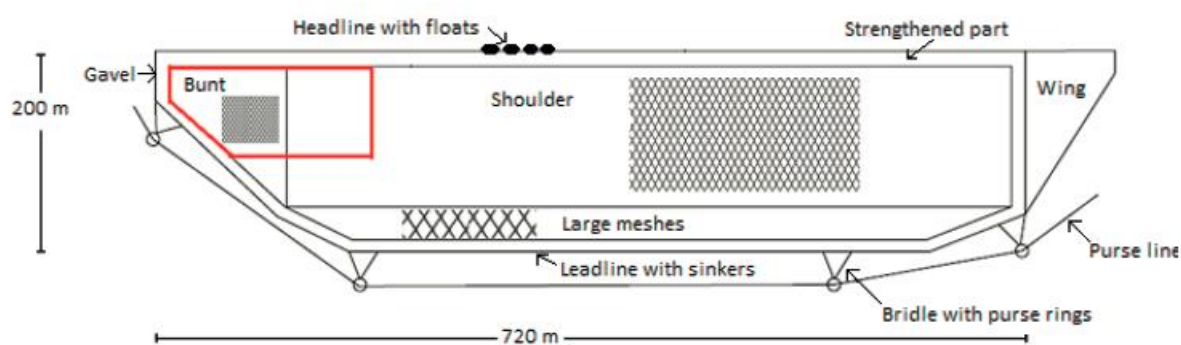
### 3.3.4. Gear

A combination of mid-water trawls and purse seine nets are used in the fishery, as previously shown in Table 1 to Table 5. The vessels involved in the ASH fishery are modern and technologically advanced with on-going investment in state of the art technology and modern electronic equipment such as sonar, net and catch monitors, which have greatly

improved the precision of this method of fishing (Southall et al., 2010). The fish are taken in the upper part of the water column, typically in deep water off the continental shelf. With the exception of the PFA vessels, all vessels included in the UoCs are refrigerated seawater (RSW) vessels with no freezer capacity. All PFA vessels however are freezer trawlers which process and freeze the catch on board.

### Purse seine

The purse seine gear is a wall of netting with floats mounted on the head rope to keep the net at the surface, and with lead weights and purse rings on its lower edge. Net design varies according to vessel type and size, the behaviour of target species and the type of fishing grounds (Fridman, 1986 cited in Tenningen, 2014). A typical purse seine used in the herring fishery is around 700 m in length and 200 m in depth, as shown in the schematic presentation in Figure 2. The fishing process consists of three main phases: shooting, pursing and hauling. First, the wall of netting is shot in a circle around a school of fish. Second, the bottom of the net is closed by hauling the purse line. Third, the net is hauled onboard and stacked in the aft of the vessel ready for a new set. During hauling the catch is gradually accumulated in the strengthened part of the net (the bunt) and eventually taken on board either using a brail or a pumping system (Tenningen, 2014). The net construction uses a variety of mesh sizes and shapes, ranging from over 24cm in the mouth of the net to a cod end mesh of 20mm. Fish are caught at depths between the surface and a depth of 400m. Nets are towed at a speed of around 3-4 knots (slower in cold water; faster in warmer water) (Andrews et al., 2010).

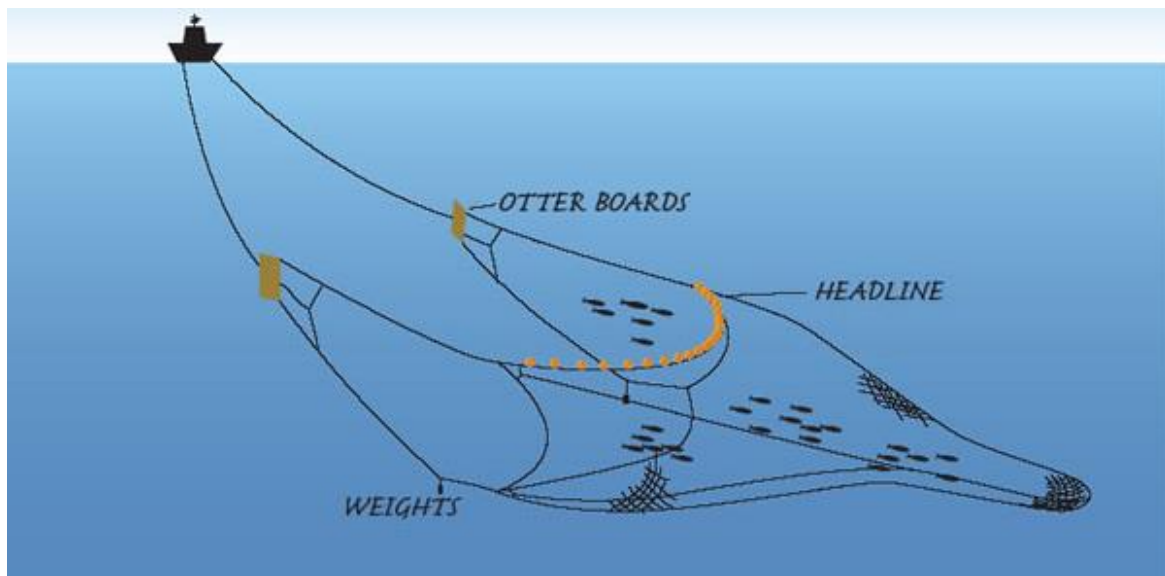


**Figure 2. Schematic presentation of a typical purse seine net used in the Atlanto-Scandian herring fishery (from Tenningen, 2014).**

### Pelagic/ mid-water trawl

The pelagic trawls used in this fishery are approximately 1400 m in circumference. The exact width, height, and length depends on the exact trawl model used as well as how the trawl is set with bridles etc. A schematic of a typical pelagic trawl is shown in Figure 3. Pelagic trawls are towed at the appropriate level in the water column to intercept target shoals, with gear depth being controlled by altering towing speed and/or warp length. The large net consists of a cone-shaped body, ending in a coded with lateral wings extending forward from the opening. The large mesh in the wings herds the fish before tapering to finer meshes in the

square, belly and eventually the cod end. The larger mesh near the start of the net is designed to facilitate the escape of small fish and other non-target species. The horizontal opening is maintained by mid-water otter boards (or by pair trawling for a small number of vessels in the fishery) whilst the vertical opening is most often maintained by weights on the ground line and floats on the headline (Southall et al., 2010).



**Figure 3. Schematic of a pelagic mid-water trawl as used by some of the vessels in the UoCs for this fishery (from afma.gov.au)**

### 3.3.5. Fishing areas

The ASH fishery generally follows a clockwise movement in the Norwegian Sea as the year progresses (as also shown in Figure 1). The fishery usually begins in January on the Norwegian shelf where it focuses on pre-spawning, spawning and post spawning fish. By spring, fishing effort shifts south to especially Faroese waters. Note, however that the client group only regained access to the Faroese zone in March 2015 and no ASH fishing has taken place in these waters in recent years. In summer the fishery expands into Icelandic waters and north to Jan Mayen and Svalbard, hence, covering the whole western part of the Norwegian Sea. In autumn, the fishery then shifts to the eastern part of the Norwegian Sea. In 2013, the largest proportion of the catches was taken in the fourth quarter (51 %) (ICES, 2014b).

The majority of the UoCs under assessment target ASH in the winter fishery in the south-eastern Norwegian Sea when the fish are in best condition in terms of size and fat content and command the highest price for the consumption market (with fish of lesser quality being sold for fishmeal). A summary of the main ASH fishing areas and seasons for each UoC is provided in Table 6.

**Table 6. Summary of main Atlanto-Scandian herring fishing areas and seasons for each UoC**

Client	Main fishing area	Main fishing season
SPSG	ICES Division IIa	January-February
DPPO	ICES Division IIa	December-February
PFA	ICES Division IIa and IIb	Autumn
SPFPO	ICES Sub-areas I, IIa & IIb	Year round – mainly autumn
KFO	ICES Sub-area IIa	January-February

### 3.3.6. Quotas and landings

Under the management plan, the TAC for 2014 is 418,487 tonnes. Under the Coastal States agreement, the five parties concerned in the fishery (Norway, Iceland, Russia, the EU and the Faroe Islands) should divide this TAC into quotas as follows:

- Norway: 255,277 tonnes (61%)
- Iceland: 60,722 tonnes (14.5%)
- Russia: 53,650 tonnes (12.8%)
- EU: 27,244 tonnes (6.5%)
- Faroe Islands: 21,594 tonnes (5.2%)

Four of the parties (excluding the Faroe Islands) have agreed these quotas for 2014; the Faroe Islands, however, have withdrawn from the Coastal States agreement. In 2013, they set a unilateral TAC of 17% of the TAC, and they initially proposed to do the same in 2014. However, the EU imposed trade sanctions on the Faroes in August 2013, and started a process of negotiation. Agreement was reached in August 2014 whereby the Faroes reduced their unilateral quota to 40,000 tonnes (9.6% of the TAC) (ICES, 2014b). This still exceeds their quota under the Coastal States Agreement by 18,406 tonnes, but a TAC overrun by this amount (4.2%) was not considered to put the sustainability of the stock in jeopardy<sup>1</sup>.

The fisheries concerned in this assessment are from the EU, and therefore fish from the EU share of the quota. The EU share is divided up by Member State as per Table 7. The system for division and management of the national quota varies by Member State. In the UK, quota is allocated in fixed proportions (FQAs - Fixed Quota Allocations) to Producer Organisations (POs), who allocate it to their members. It is relatively common for quota to be swapped between POs in the UK. In Ireland, quota is allocated to 3-5 of the eligible vessels by the PO each year, on a random/rotating basis; quota swaps are not permitted. The Netherlands, Denmark and Sweden have an ITQ system for small pelagics, such that Danish and Swedish vessels can swap, lease or purchase quota with other vessels of the same nationality as desired, without the mediation of POs (although there are some restrictions on quota ownership). International quota swaps, however, must go through national authorities.

<sup>1</sup> See <http://www.thegrocer.co.uk/fmcg/fresh/herring-wars-over-as-faroe-islands-strikes-deal-with-eu/358439.article>



It is reportedly not unusual for Swedish vessels to exchange their ASH quota with Danish or Dutch vessels, if their quota is insufficient to make the long distance to the fishing grounds economically worthwhile.

Landings by country for the last 5 years are given in Table 8, and by UoC in Table 9.

**Table 7. Quota allocation among EU Member States**

Member State	Relative Stability Share
Denmark	34.26%
United Kingdom	21.90%
Sweden	12.69%
Netherlands	12.26%
Ireland	8.87%
Germany	6.00%
Poland	1.73%
France	1.45%
Finland	0.53%
Spain	0.11%
Portugal	0.11%
Belgium	0.03%

**Table 8. Catches by country, 2009-13 ('000 t) (ICES. 2014a)**

Country	2009	2010	2011	2012	2013
Norway	1017	871	573	491	359
Russia	210	199	144	119	79
Denmark	32.3	26.8	26.7	21.8	17.2
Faroese	85.1	80.2	53.3	36.2	105
Iceland	265	206	151	121	90.7
Ireland	10	8.06	5.73	4.81	3.82
Netherlands	24	26.7	8.35	6.24	5.63
Greenland	3.73	3.45	3.43	1.49	11.8
UK (Scotland)	25.5	24.2	14	12.3	8.34
Germany	14.5	11.1	13.3	11.9	4.24
France	0	0	0	0	0
Poland	0	0	0	0	0
Sweden	0	0	0	0.71	0.02
Total	1687	1457	993	826	685



**Table 9. ASH catches by UoC, 2011-14. Note that although PFA vessels include UK (English), French and Lithuanian vessels, only Dutch and German members have targeted ASH in recent years (ICES. 2014a).**

Client Group		2011	2012	2013	2014
SPSG		14,045	11,923	8,342	4,233
DPPO				18,320	
SPFPO			721	5,805	
PFA	Dutch	7,955	6,092	9,978	
	German	13,296	11,945		
KFO		5,186	2,012	2,449	0

### 3.3.7. Description of management system and legal framework

#### *Regional management framework*

In 1996, the 'Coastal States' in the ASH fishery (Norway, Iceland, Russia, the EU and the Faroes) agreed and implemented a long-term management plan for the stock. The management plan (see Section 3.4.6) allows a TAC to be set, which is then divided proportionally by agreement between the Coastal States. This system operated from 1997-2002, and again from 2007-2012. From 2003-6 there was no agreement on the allocation of the TAC, and quotas were set unilaterally. In 2013 this situation arose again when the Faroe Islands withdrew from the Coastal States agreement on quota allocations. The other four Coastal States continue to implement the agreement and set aside for the Faroe Islands what they consider to be their agreed share under the agreement (ICES, 2013a). The Faroe Islands continue for the moment to operate outside the Coastal States Agreement, although in mid-2014 it reached an *ad hoc* agreement with the EU to reduce its unilateral TAC to what was considered by the EU to be a sustainable level (details given below).

#### *National management frameworks*

Below is provided a brief summary of the national fisheries management frameworks for each of the countries whose vessels are represented in the UoCs, as well as Norway, since much of the fishery operates in its EEZ.

Although there are some English-, French- and Lithuanian-registered members of the PFA, none of these vessels have targeted ASH in recent years (see ICES. 2014a). These jurisdictions are not, therefore, considered here further.

Scotland: In the UK, fisheries is a 'devolved power', meaning that it is dealt with by each of the constituent countries of the UK – in the case of this fishery, Scotland. There are, however, some exceptions to this; for example in relation to negotiations within the EU, which mostly pass through London. Marine Scotland is the body of the Scottish Government that deals with fisheries, as well as with other issues relevant to the marine environment such as marine spatial planning, marine renewables etc. Within Marine Scotland, Marine Scotland Science (MSS) carries out scientific work in relation to fisheries (marine research and stock assessments) and participates in ICES. Marine Scotland Compliance (MSC) is

responsible for enforcement and compliance in fisheries. Scottish National Heritage (SNH) is a quasi-autonomous government body responsible for conservation in Scotland, including marine conservation (marine habitat and biodiversity mapping, Natura 2000 sites and other marine protected areas) out to 12 miles – beyond 12 miles this is a UK role. Official landings data continue to be collated at UK level by the Marine Management Organisation (MMO), a body within the Department of Environment, Food and Rural Affairs (DEFRA).

Denmark: Denmark has a system of ITQs, so the Danish quota is allocated to individual vessels on the basis of the percentage of the total quota shares they own. The allocation of quota shares is subject to various rules, which aim to avoid too high a level of quota consolidation, to reserve shares for new entrants and to avoid 'slipper skippers'. Danish vessel owners can trade quota shares with each other on an online trading platform, and can also rent out quota shares to each other. There are, however, limits on these activities for herring and mackerel specifically, because the quota shares for these species are particularly valuable. Unlike in many other EU Member States, therefore, Danish POs are not involved in quota management on a day-to-day basis. Nevertheless, quota swaps with other Member States must be done through national authorities, and are usually arranged by POs on behalf of their members.

Ireland: As in Denmark, Irish POs do not have a role in managing quota, which is allocated by the Irish government directly to individual vessels. Unlike in Denmark, however, the Irish government has resisted anything that might be construed as giving individual vessels rights over quota, including individual-based quotas. This means that quota swaps (vessel to vessel or PO to PO) are not allowed in Ireland; hence it is more problematic for a vessel to exceed its quota allocation than in most other EU member states – although Ireland does swap quota with other member states if required. For ASH quota specifically, the government allocation is 85% to the RSW vessels (of which 18 out of 23 are members of KFO and hence part of our UoC) and 15% to polyvalent vessels (based mostly in Castletownbere and not in the UoC). The RSW quota is allocated equally by vessel; however, since a vessel requires 5-700 tonnes of quota to make a trip on ASH worthwhile, KFO has evolved a system where quota is pooled, and each year 3-5 vessels are drawn out of a hat to fish it (the number of vessels depending on how much quota is available). The system is quite complicated; vessels given quota the previous year are not included, and pair trawlers are drawn together with their habitual partners. Although this can be construed as individual quota swaps, the government has accepted this system and allocates a licence to each of the drawn vessels with an entitlement of 1/5 (or however many vessels are involved) of the total RSW ASH quota allocation.

The Netherlands: The Netherlands has a full ITQ-system. Dutch quota are allocated to individual vessels on the basis of the percentage of the total quota shares they own. There is virtually no limit regarding quota consolidation. Quota have to be tied to a vessel, although for some time (5 years) quota can be disconnected from vessels to allow for new building. Dutch vessel owners can trade quota shares with each other and can also rent out quota shares to each other without limitations. In the Netherlands the quota management is done by the POs for which they have a formal role given to them by Dutch law. This means that the PO has to monitor that the individual vessel-owner does not overshoot his available quota, and act accordingly when this is happening (by PO sanctions towards the ship-owner and by renting in quota nationally or internationally to undo the overshoot). This is the Dutch

system of co-management. Quota swaps with other Member States are initiated by PO/vessel-owners but formally carried out by the national authority.

Sweden: Fisheries management and regulation is the responsibility of the Swedish Agency for Marine and Water Management (SwAM)<sup>2</sup>. SwAM are responsible for fisheries monitoring, regulation, data and statistics and quota management. Within SwAM, the Fisheries Monitoring Centre deals with electronic logbooks and reporting as well as VMS. SwAM replaces the previous Swedish Board of Fisheries.

Germany: Sea fisheries in Germany are administered and managed by the Federal Government and by the federal states and the organisation responsible for managing German fisheries at the national level is the Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (BMELV, Federal Ministry of Food, Agriculture and Consumer Protection). The fishing quotas allocated to the Federal Republic of Germany are distributed every year by the Bundesanstalt für Landwirtschaft und Ernährung (BLE, the Federal Agency for Agriculture and Food) on the basis of the Sea Fisheries Act.

Norway: Government bodies involved in fisheries management in Norway are the Ministry of Fisheries and Coastal Affairs, the Directorate of Fisheries and the Coast Guard. Stakeholders play an important role (e.g. Norges Sildesalgslag (sales organisation for pelagic fish), Norges Fiskarlag (fishermen's association) and environmental NGOs. The roles, functions and responsibilities of these various actors are codified in the Marine Resources Act (2008): the Ministry of Fisheries and Coastal Affairs is responsible for policy and regulation, while the Directorate of Fisheries acts as a technical body with responsibility for secondary legislation, as well as monitoring and compliance, supported by the Coast Guard at sea. Quotas are allocated to fleet groups according to an elaborate distributional scheme based on vessel groups defined by gear and length of the vessels. Stakeholders can participate in twice-yearly Regulatory Meetings, open to all.

### *Organisations, roles and responsibilities*

Regional organisations involved in management are given in Table 10 below. National organisations are mentioned and described Principle 3 (Section 1.1) where relevant.

---

<sup>2</sup> See <https://www.havochvatten.se/en/swam/our-organization/about-swam.html>

**Table 10. Regional organisations involved in the management of this fishery, their roles and responsibilities.**

Organisation	Role / responsibility
Pelagic Advisory Council	EU stakeholder advisory council for pelagic fisheries, including the ASH fishery
EU Fisheries Council	Grouping of fisheries ministers of Member States – responsible for taking decisions on TACs and other management measures for EU fisheries
European Commission	Makes recommendation to EU Fisheries Council on TAC, represents EU in the Coastal States meetings
ICES	Provides stock assessments and scientific advice to Commission
STECF	Scientific, economic and technical advisory committee to Commission; reviews management plans and ICES advice periodically
NEAFC	RFMO with responsibility for management of fisheries in international waters in the North Atlantic; not much involvement with this fishery.

### 3.4. Principle One: Target Species Background

#### 3.4.1. Target species biology and ecology

Atlantic herring (*Clupea harengus*) are important members of the north Atlantic ecosystem, particularly in transferring energy between lower and higher trophic levels, being zooplanktivores that are important as prey for larger piscivorous fish, as well as marine mammals and birds. They feed mainly on copepods, either by direct visual capture, or by suspension feeding.

Herring live for approximately 15 years and mature at age 4-6. Year class size is highly variable, and the fishery depends mainly on large year classes (ICES, 2013a). For reproduction, fertilisation is external; females release eggs and males milt in a simultaneous cloud. Females may spawn up to 20% of their body weight as eggs in a given spawning event, with a typical fecundity of 20-50,000 eggs, although it may be much more for a large female. Eggs are demersal; they sink to the seabed and form sticky carpets, which can be several centimetres thick. After 8-10 days they hatch into larvae which are planktonic. The substratum of the spawning ground has been observed in the Gulf of Maine to be rock, cobble, gravel, pebble, seaweed and shell, in a depth range of 20-100m<sup>3</sup>. The protection of this spawning substrate from activities such as gravel extraction may be critical to the health of herring stocks and is a point of concern for the client group.

Herring are highly migratory, and the ASH stock in particular has been noted to have a very variable migration pattern, apparently in response to environmental cues. The herring spawn along the Norwegian west coast in February-April; the exact location has been highly variable for as long as there have been observations. The larvae drift north and northeast before recruiting as 0+ fish in fjords along the Norwegian coast and particularly in the Barents Sea, which is the most important juvenile area for the large year classes. Most of the young herring leave the Barents Sea age 3+ and feed in the north-eastern Norwegian Sea for 1–2 years before recruiting to the spawning stock. Juveniles from the Norwegian Sea grow faster than those in the Barents Sea and mature about one year earlier.

Adult herring (the spawning stock) start a feeding migration just after spawning. This migration is size-dependent with larger and older fish migrating further (typically further to the west) than younger ones, causing the stock to disperse. In autumn, the herring concentrate once more in several wintering areas. Again, as noted above, these areas are unstable: in the 1970s they moved from an area east of Iceland to the Norwegian fjords, and again in 2001-02 to an area off the Norwegian coast. More recently, the herring moved to an area which has yet to be determined. After wintering, the spawning migration starts around mid-January (ICES, 2013a – Annex 02C)

It is not clear what drives these long-term changes in the migration; oceanographic features may be important (e.g. avoidance of very cold areas), but the biomass and production of zooplankton is also a likely factor. The age distribution of the stock (depending on year-class

---

<sup>3</sup> See [http://www.gma.org/herring/biology/life\\_cycle/default.asp](http://www.gma.org/herring/biology/life_cycle/default.asp)

distribution) also influences the location of the majority of the stock during summer, because of differences in behaviour by size/age.

### 3.4.2. Other fisheries on the stock

As already described previously (see Section 3.3.6), the EU have as their agreed quota only a relatively small proportion of the total TAC for the ASH stock. The largest fishery, taking more than half the total catch, is Norwegian, while the Icelandic and Russian fisheries are also larger than the total EU fishery. The Faroese fishery is slightly smaller, although with aspirations to expand, apparently. Up until 2013, these five jurisdictions cooperated in the management of the fishery, until the Faroe Islands withdrew from the agreement, as described previously.

**Table 11. Unit of Certification share of the total ASH TAC**

2013 Unit of Certification share of the total TAC (619,000 tonnes)		
Client group	Catch	% Total TAC
SPSG	8,342 tonnes	1.35
DPPO	18,320 tonnes	2.96
PFA	9,978 tonnes	1.61
SPFPO	5,805 tonnes	0.94
KFO	2,428 tonnes	0.39
Total UoC TAC	40,359 tonnes	6.52

There is also a small amount of reported catch from Greenland: 1,490 tonnes in 2012 (ICES, 2013a) or about 0.2% of the total reported catch.

### 3.4.3. Current stock status

During the site visits for this assessment (see Section 4.4.1), the most recent advice from ICES dated from October 2013. However, during the period of on-going data collection and reporting, prior to the finalisation of the Draft Client Report, new ICES advice was published (October 2014). This section, and the P1 scoring, was therefore updated to reflect the new ICES assessment of the stock status.

The ICES summary of their evaluation of stock status in relation to reference points from October 2014 is given in Figure 4. Fishing mortality is estimated to be more or less at the MSY and precautionary level defined by ICES, but above the target set in the management plan. Biomass is estimated to have been below the target reference points defined by the ICES precautionary/MSY frameworks and the management plan for the last two years (i.e. 2013 and 2014) – in contrast to the 2013 assessment that estimated 2013 biomass to be above the target. Biomass is, however, estimated to be above the limit reference point (ICES, 2014a). (The definition and use of the various reference points is described in detail in Section 3.4.5.) Trends in fishing mortality and spawning stock biomass are also given in Figure 4.

	Fishing pressure			
	2011	2012	2013	
MSY ( $F_{MSY}$ )	✓	✓	✓	Appropriate
Precautionary approach ( $F_{pa}$ , $F_{lim}$ )	✓	○	✓	Harvested sustainably
Management plan ( $F_{MGT}$ )	✗	✗	✗	Above limit
	Stock size			
	2012	2013	2014	
MSY ( $B_{trigger}$ )	✓	✗	✗	Below trigger
Precautionary approach ( $B_{pa}$ , $B_{lim}$ )	✓	○	○	Increased risk
Management plan ( $SSB_{MGT}$ )	✓	✗	✗	Below target

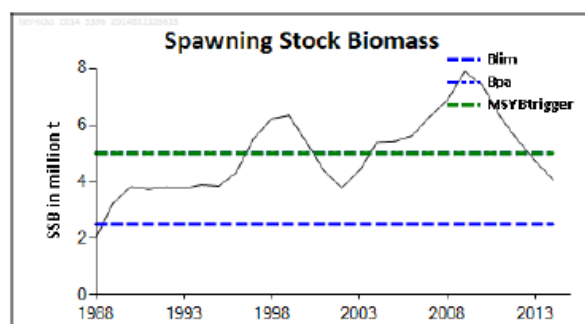
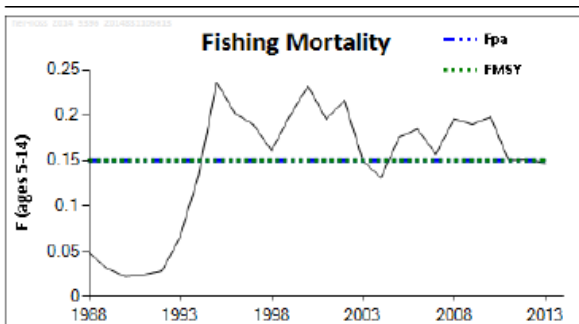
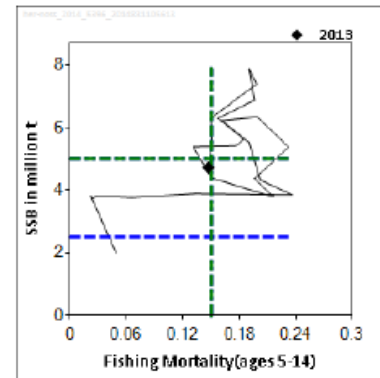


Figure 4. ICES summary of stock status in relation to reference points (top left) and stock trajectory of estimates of  $B$  (y-axis) and  $F$  (x-axis) (top right). Trends in fishing mortality (bottom left) and spawning stock biomass (bottom right) in relation to reference points. From ICES, 2014a.

### 3.4.4. Recruitment

One of the main challenges for the management of this stock is the strong variability in recruitment, and the dependence of the biomass (and hence the fishery) on a few large year classes. Stock biomass is largely driven by recruitment (rather than vice versa). Over the last 15 years, five large year classes have been produced, on which the fishery now operates: 1998, 1999, 2002, 2003 and 2004. Available information suggests that since then, year classes have been small (ICES, 2014a, Figure 5). It is not known what factors create years with high levels of recruitment. Reportedly, the 2013 surveys indicate high levels of recent recruitment, but this will not be confirmed (or otherwise) until late 2014 (ICES, 2014b).



Figure 5. ICES estimates of recruitment, 1998 to 2013 (2014 estimated). From ICES, 2014a

### 3.4.5. Reference points

The reference points used in ICES' stock assessment, as well as for management of the stock (via the management plan) are set out in Table 12, which also describes how they are defined. Both target and limit reference points are defined for biomass, but only a target is formally defined in terms of fishing mortality.

**Table 12. Reference points used in the ICES assessment and management plan for the ASH stock**

Parameter	Role	Description	Value	Source
Biomass	Target, MSY	$SSB_{MP}$ , $B_{pa}$ , $MSY B_{trigger}$	5.0 million tonnes	$B_{pa}$ set as a multiple of $B_{lim}$ , $MSY B_{trigger}$ set equal to $B_{pa}$ , medium-term simulations conducted during evaluation of management plan (2001)
	Limit	$B_{lim}$	2.5 million tonnes	'Minimum biologically acceptable level (MBAL)' – in practice defined as (just above) $B_{loss}$ - the lowest point in the time series (the start of the series).
Fishing mortality	Target	$F_{MP}$	0.125	Medium-term simulations conducted during evaluation of management plan (2001)
	Limit	Not defined	-	No limit value of $F$ has been defined, however, if $B \leq B_{lim}$ , $F$ should be $\leq 0.05$ , according to MP
	MSY	$F_{MSY}$	0.15	Stochastic equilibrium analysis using data 1950-2009

ICES evaluated the reference points in 2013, in response to a request from the North East Atlantic Fisheries Commission (NEAFC), which specifically asked ICES to consider whether  $F_{MP}$  should be put equal to  $F_{MSY}$  (i.e. increased from 0.125 to 0.15). ICES recommended that the reference points be left as they are (ICES, 2013b).

### 3.4.6. Harvest strategy and control rules

Management of the ASH stock involves five key players: the 'coastal states' comprised of Norway, Iceland, Russia, the Faroe Islands and the EU. The coastal states agreed in 1996 to manage the stock cooperatively via a joint long-term management plan and a 'coastal states agreement' on how to distribute the TAC into quotas for each coastal state. The management plan was most recently revised in 1999, and is used by ICES to provide advice on the TAC. All the coastal states agree on the management plan, but there have been several disagreements on how the TAC should be allocated between the coastal states. During the period 2003-06, coastal states allocated quotas unilaterally, leading to total catches above the TAC (although the coastal states agreed in principle on the TAC). More recently (2013 and 2014), a similar situation has arisen, whereby the Faroe Islands have withdrawn from the coastal states agreement on the allocation of the quota, and have unilaterally set a higher quota. The Faroe Islands and the EU have reached an *ad hoc* agreement for 2014, whereby the Faroe Islands reduce their unilateral quota from 102,000 t to 40,000 t, which is still higher than the allocation foreseen under the coastal states agreement (32,000 t) but which is not likely to result in overall catches significantly above the agreed TAC. This *ad hoc* agreement was reached in order to bring to an end a trade dispute



between the EU and the Faroe Islands, and cannot be considered to be a long-term solution to the issue of quota distribution, particularly since the other coastal states (Norway, Russia, and Iceland) are not involved.

The coastal states agreed in 1999 on a long-term management plan. This plan consists of the following elements:

1. *Every effort shall be made to maintain a level of Spawning Stock Biomass (SSB) greater than the critical level ( $B_{lim}$ ) of 2,500,000 t.*
2. *For the year 2001 and subsequent years, the Parties agreed to restrict their fishing on the basis of a TAC consistent with a fishing mortality rate of less than 0.125 for appropriate age groups as defined by ICES, unless future scientific advice requires modification of this fishing mortality rate.*
3. *Should the SSB fall below a reference point of 5,000,000 t ( $B_{pa}$ ), the fishing mortality rate referred to under paragraph 2, shall be adapted in the light of scientific estimates of the conditions to ensure a safe and rapid recovery of the SSB to a level in excess of 5,000,000 t. The basis for such an adaptation should be at least a linear reduction in the fishing mortality rate from 0.125 at  $B_{pa}$  (5,000,000 t) to 0.05 at  $B_{lim}$  (2,500,000 t).*
4. *The Parties shall, as appropriate, review and revise these management measures and strategies on the basis of any new advice provided by ICES.*

As is usual, the management plan has been reviewed by ICES, who reportedly concluded that it is consistent with the precautionary approach. In response to an NEAFC request in 2013, ICES considered whether it would be appropriate to increase the target  $F$  ( $F_{MP}$ ) from 0.125 to 0.15 (estimate of  $F_{MSY}$ ), but ICES advised against this, on the basis that following the management plan already implied a risk of >5% that the biomass would fall below  $B_{lim}$  by 2017, given the current stock status. This is a particular issue given the bias in the stock assessment (described in more detail further on) such that over the last 15 years biomass has been overestimated by an average of 26%, leading to higher than intending levels of  $F$ . When the historical bias in the stock assessment is included in simulations, the short-term risk of SSB dropping to below  $B_{lim}$  increases from ~6% to either 60% (according to ICES, 2013a) or 77% (ICES, 2013b).

### **3.4.7. Information**

The information available and used by the stock assessment is summarised in Table 13. For the vessels in the UoC, the EU data collection regulation (Council Regulation (EC) No 199/2008) applies. This requires that all vessels (except small vessels) must report all catches >50kg via an electronic logbook system. This is done, although because of the nature of the fishery (large volume, brought on board by pump), it may be difficult to evaluate catches precisely if small quantities of bycatch are mixed in. For RSW vessels, the catch is, however, sorted and graded at the factory on landing, and it is data from the processing factories rather than the logbooks that are used in the official landing statistics. For PFA freezer-trawlers, the catch is sorted and graded on board; upon landing, the control authorities weigh the total landings per species, which make up the official landings statistics.

**Table 13. Data sources used in the stock assessment. Information from ICES (2014b) unless otherwise indicated.**

Data	Source and description	
Catch	Catches in tonnes by ICES division, ICES rectangle and quarter from Denmark, Faroe Islands, Germany, Greenland, Iceland, Ireland, the Netherlands, Norway, Russia, Scotland and Sweden. From Greenland total catch (tonnes) only.	
Catch sampling	For 2012, all countries provided catch samples (length, weight) except Greenland, Scotland and Sweden (see Table 7.5.1.2 in ICES, 2014b). Used to convert catch by weight into catch by numbers using the SALLOC and Intercatch programmes (results were very similar).	
Discards and slipping	Considered likely to be low compared to landings, so not accounted for in the stock assessment since 1994, although accounted for in estimated of catches before that, when total landings were lower. Estimates of discarding existing from the Netherlands (2008-9) and Germany (2010 and 12), suggesting total discards of ~2% of the catch, but 0% of herring (ICES, 2013a). Data from the Norwegian fleet and the Norwegian Coastguard also suggests that the frequency of slipping is low, even when there is a risk of excessively large catches due to dense aggregations of fish (ICES, 2013a).	
Weight at age	Weight-at-age is estimated from catch samples using the Intercatch software for the first time in 2013 – prior to that, SALLOC was used. In 2013, both programmes were used so that differences could be evaluated (they were reportedly negligible).	
Maturity at age	The maturity ogive used in the assessment was revised in 2010 at the Workshop on estimation of maturity ogive in Norwegian spring spawning herring (WKHERMAT) (ICES, 2010) because it could not be covered in the 2008 benchmarking. Two different ogives are used, one for normal year classes and one for strong year classes (i.e. year classes 1983, 1991, 1992, 1998, 1999, 2002) which assumes slightly slower maturity (100% maturity by 6 vs 7).	
Natural mortality	Assumed $M=0.9$ for ages 0-2 and $M=0.15$ for ages 3+	
Surveys	9 survey datasets are available for the tuning of the assessment, some of which are historical data only:	
	Survey 1: Norway acoustic survey Feb/March	Acoustic survey on the spawning grounds along the Norwegian coast. No new information: 1994-2005 used in tuning the assessment
	Survey 2: Norway acoustic survey Nov/Dec	Acoustic survey in the wintering area in Vestfjorden. No new information: 1992-2001 used in tuning the assessment
	Survey 3: Norway acoustic survey Jan	As above, in January. No new information: 1991-1999 used in tuning the assessment
	Surveys 4 and 5: International ecosystem survey in Nordic seas (Barents Sea, May/June; Norwegian Sea, May)	Ongoing acoustic survey of young herring in the Barents Sea in May (survey 4), and in the Norwegian Sea in May (survey 5). 1996-2014 used in the assessment.
	Surveys 6 and 7: Ecosystem surveys in the Barents Sea (acoustic, autumn)	Ongoing joint IMR-PINRO survey in August-September; indices for ages classes 4 (survey 6) and 0 (survey 7) used in assessment
	Survey 8: Norwegian herring	Ongoing, provides larval index of SSB; used in

	larvae survey on the Norwegian shelf, spring	assessment except for 2003 and 2009 due to poor coverage
	Survey 9: International ecosystem survey, Norwegian Sea, July-August	Norwegian shelf since 2004, extended to Norwegian Sea, Faroese and Icelandic waters in 2009. General survey of pelagic fish and plankton – not so far used in the assessment.

In relation to discards of ASH, ICES WGWIDE (ICES 2014a) notes the following:

*The Working Group has no comprehensive data to estimate discards of the herring. Although discarding may occur on this stock, it is considered to be low and a minor problem to the assessment. This is confirmed by estimates from sampling programmes carried out by some EU countries in the Data Collection Framework. Estimates on discarding in 2008 and 2009 of about 2% in weight were provided for the trawl fishery carried out by the Netherlands. In 2010 and 2012, this metier was sampled by Germany. No discarding of herring was observed (0%) in either of the two years.*

*During the Norwegian fishery in the first quarter the stock is migrating fast southward in dense aggregations. This is a challenge to the fleet by increasing the risk of slipping of the catch or breaking of the net during fishing operations due to extremely large catches. There are no data to estimate the amount of slipping. However, the Coastguard maintains a close presence with the pelagic fishing fleet during the season with several vessels and a plane. IMR has cooperation with a number of reference vessels in the pelagic fleet, primarily for the purposes of biological sampling but also recording losses through gear damage or slipping. These data indicate that the frequency of slipping and the total quantities of fish slipped are low and, although the quantity remains unknown, are too small to have a significant effect on the reliability of the assessment.*

### 3.4.8. Stock assessment

The stock assessment is based on a VPA (Virtual Population Analysis) population model and an analysis package called TASACS. The model is developed from catch, catch-at-age and biological data, and tuned using various survey indices as set out above. The assessment was benchmarked in 2008, and since then has been updated using the same model settings as proposed by the benchmarking exercise (ICES 2008, see also stock annex 4 of ICES 2014b). The analysis is run from 1988-2014 (considered to be a period with a consistent production and exploitation regimes). The only change made to the assessment in 2013 compared to previous years was an updated algorithm for estimating  $F$  for the final year, and this was also done in 2014. In addition, some exploratory analyses were carried out using another analysis package (TISVPA), but this system was not used for the final assessment. An evaluation of the uncertainty in the assessment was carried out using bootstrapping (1000 replica runs), either using randomly drawn residuals from the dataset (or the same source of data for modelled options), or for catch-at-age, by adding random noise with a log-normal distribution and a CV of 0.1.

The 'uncertainty analysis' described above evaluates uncertainty coming from variability in the data, but not uncertainty relating to the structure of the model. There is clearly some problem with the assessment model, because it shows quite strong retrospective patterns – i.e. a consistent difference from year to year in the outcome of the assessment for a given year, as is clear from Figure 6. A similar retrospective pattern occurs in the TASACS and TISVPA model runs (Figure 7). This retrospective pattern is a significant problem for the assessment of the stock and the scientific advice, as can be seen by comparing the ICES advice for this stock for 2013 and 2014. The advice in 2013 estimated that the stock was on the correct side of all reference points except for  $F_{MP}$ , while the 2014 assessment estimated that for 2013, the stock biomass was also below biomass reference points  $SSB_{MP}$  and  $MSY B_{trigger}$ .

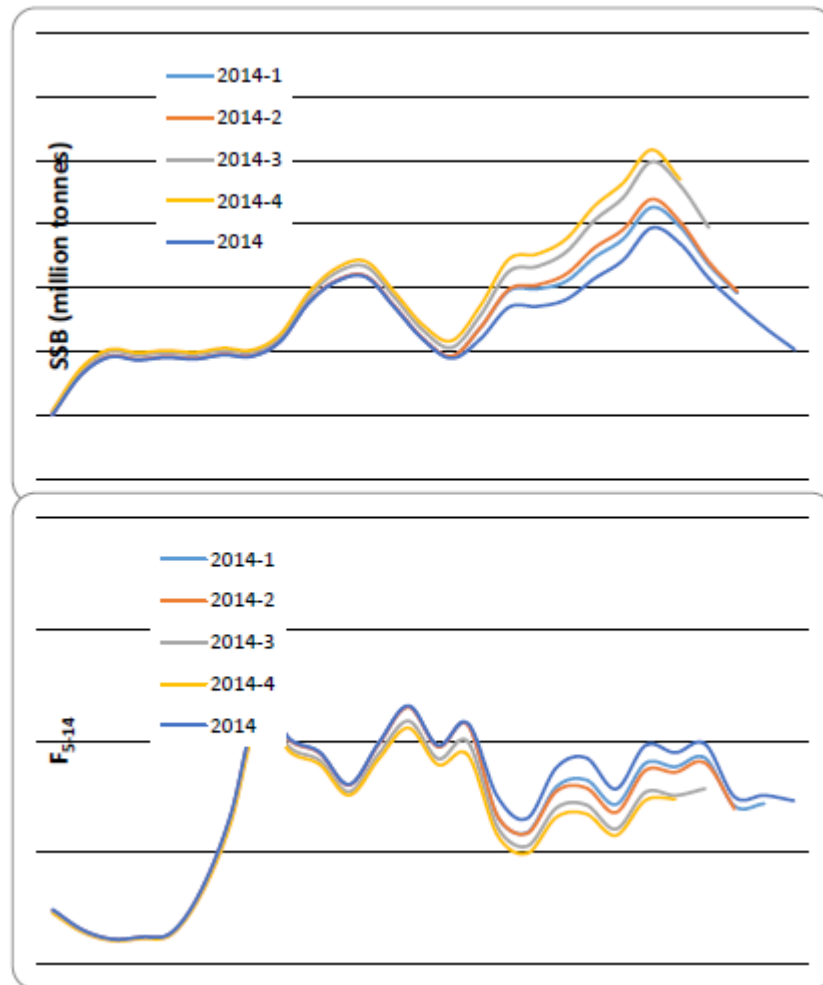


Figure 6. Retrospective runs for SSB (top) and F (bottom): blue=2014 assessment, other colours=re-runs of previous assessments (as shown by the end point of the time series). (ICES, 2014b)

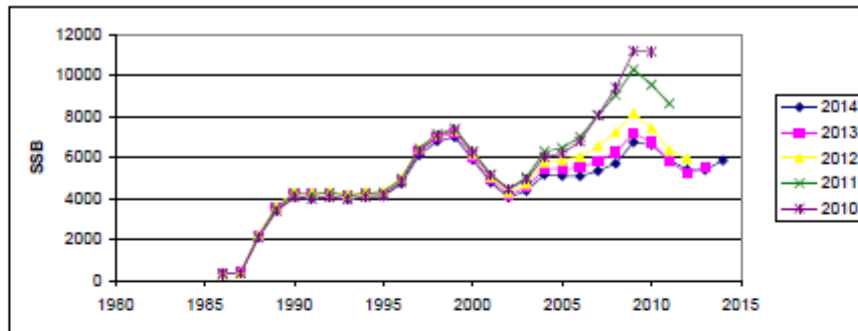


Figure 7.7.2.2. Norwegian spring spawning herring. Results of the TISVPA retrospective runs obtained when inputs only from catch-at-age and survey 5 were used.

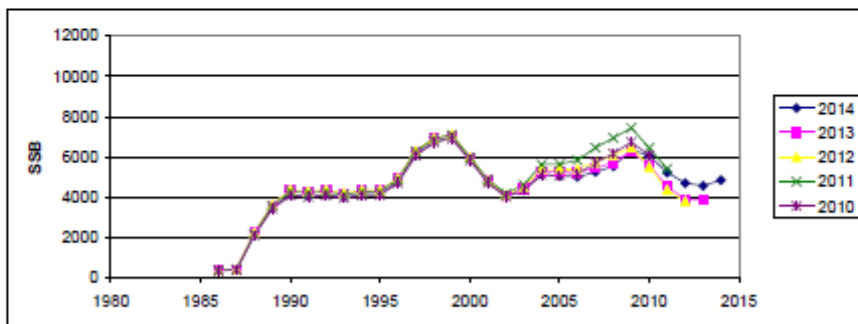


Figure 7.7.2.3. Norwegian spring spawning herring. Results of the TISVPA retrospective runs obtained when input only from age proportions in the data of survey 5 was used.

Figure 7. Retrospective runs using the TISVPA model: using inputs from catch-at-age and survey 5 (top) and using only age proportions of the data from survey 5 (bottom). (ICES, 2014b)

The cause for this retrospective pattern is unclear, but the ICES working group notes that the population is dominated by a few strong year classes. It is clear that since the occurrence of these high recruitment years is impossible to predict, any forward predictions of stock status are by definition extremely uncertain. In addition, this population structure means that the catchability of surveys is variable from year to year; and the variable migration pattern of the stock means that survey coverage is also likely to be variable from year to year. It may be that the retrospective pattern in the assessment is driven by changes in catchability, of the surveys, the fishery, or both (Figure 8).

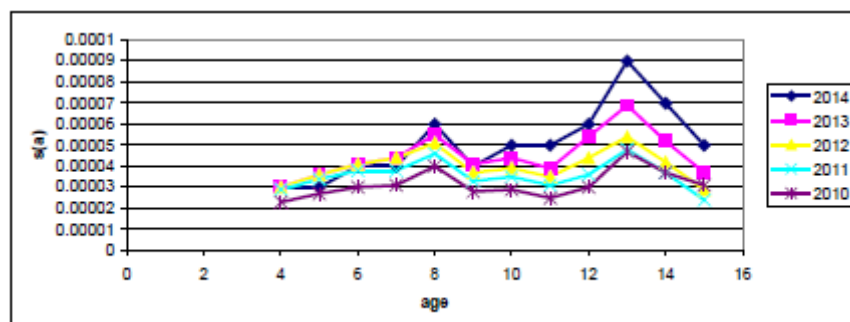


Figure 8. Average catchability by age for survey 5, as estimated by running the assessment as for years 2010-2014 (retrospective analysis), using TISVPA. (ICES, 2014b)

### 3.4.9. Key LTL species

There is no question that Atlantic herring is a low-trophic level species, since it is planktivorous. However, in order to be considered as a 'key low-trophic-level species' as per the MSC definition, in addition to being a clupeid, it must meet at least two of the following three criteria (see paragraph CB2.3.13 of Certification Requirements version 1.3):

- a large proportion of the trophic connections in the ecosystem involve this stock, leading to significant predator dependency;
- a large volume of energy passing between lower and higher trophic levels passes through this stock;
- there are few other species at this trophic level through which energy can be transmitted from lower to higher trophic levels, such that a high proportion of the total energy passing between lower and higher trophic levels passes through this stock (i.e. the ecosystem is 'wasp-waisted').

In the ASH herring, there are numerous small pelagic species other than herring which provide prey for piscivorous fish, seabirds and marine mammals, including capelin and mackerel, but also polar cod, Norway pout, sandeel, blue whiting, argentine and other species, as well as juveniles of demersal species such as saithe and cod. The most recent ICES estimates of biomass for some of these species are: ~4 million tonnes for herring, ~3.5 million tonnes for Barents Sea capelin, ~400,000 tonnes for Iceland capelin and ~4 million tonnes for Northeast Atlantic mackerel (ICES, 2014b) – i.e. even from those small pelagic species which are fished and therefore formally assessed in this area, herring only makes up about one third of the biomass. Essington and Pláganyi (2013) estimate connectance for this stock at 0.0005 (0.05%), below the 4% threshold defined by MSC (see MSC Certification Requirements Guidance, GCB2.3.13). Most of these species are also partly planktivorous, either throughout their life history or during their juvenile phase (e.g. mackerel, juvenile cod and saithe) – there are therefore numerous routes for energy to pass up through the trophic levels, other than herring, and the ecosystem cannot be characterised as 'wasp-waisted'.

In line with the other recent MSC assessment on the ASH stock (DNV, 2014), the assessment team concluded that the ASH stock is not a 'key low-trophic-level stock' as per the MSC definition (CR v1.3).

### 3.5. Principle Two: Ecosystem Background

This section of the report outlines the fishery's potential impacts on the wider ecosystem. Five key components are considered to cover the range of potential ecosystem elements that may be impacted by the fishery. These are:

- (i) Retained, non-target species: species that are retained by the fishery (usually because they are commercially valuable or because they are required to be retained by management rules).
- (ii) Bycatch (discarded) species: organisms that have been taken incidentally and are not retained (usually because they have no commercial value).
- (iii) ETP species: Endangered Threatened or Protected species
- (iv) Habitats: the habitats within which the fishery operates
- (v) Ecosystem: broader ecosystem elements such as trophic structure and function, community composition, and biodiversity.

Under each of those five components, particular attention was paid to:

- (i) Outcome: the status of the impact or the risk that the fishery poses to that component.
- (ii) Management: the management strategy for the component.
- (iii) Information: the monitoring and information available to inform the outcome and management of the component.

#### 3.5.1.Retained species

Declared landings data were used as the principal data source to determine retained species in this fishery. For RSW vessels, the catch is only sorted and graded once it arrives in the factory at which stage the official weights per species are recorded. For PFA freezer-trawler vessels, the catch is sorted and graded on board and the official weights by species are recorded at landing by the national authorities. For this assessment official landings data were obtained for the SPFPO, DPPO and SPSG fleets. Although data were also requested from the Dutch and Irish fisheries authorities (NVWA and SFPA) these were not provided in time to be included in the report. Although the catch patterns for the PFA freezer-trawlers could be inferred from the data presented below, the team recommends that annual catch data are made available in time for any subsequent MSC assessments and surveillance audits (a specific recommendation has been made in Section 6.3.1).

**The SPSG, DPPO and SPFPO landings data are summarised in Table 14 to**

Table 16. The Atlanto-Scandian herring fishery can generally be described as a clean, single-species fishery targeting shoals of herring. Small quantities of other species such as mackerel and blue whiting can, however, occur. Note that for the SPFPO fleet, an opposite pattern exists with mackerel making up the bulk of the catch. KFO reported no landings of any species other than herring for 2011-13.



**Table 14. 2013/2014 landings data for the SPSG Atlanto-Scandian herring fishery**

Species	Total landings (tonnes)		Average composition (% total)
	2013	2014	
Herring	8,342.2	4,233.3	99.73
Blue Whiting		22.2	0.26
Saithe	1.5		0.01
Mackerel		0.2	0.00
Total	8,343.7	4,255.7	100.00

**Table 15. 2013 landings data for the DPPO Atlanto-Scandian herring fishery (includes both pelagic trawl and purse seine – see further information below).**

Species	Total landings (tonnes)	% Composition
Herring	18,319.8	99.76
Blue Whiting	14.3	0.08
Saithe	5.1	0.03
Norway Pout	4.98	0.03
Haddock	2.4	0.01
Redfish	0.9	0.01
Whiting	0.3	0.00
Mackerel	0.1	0.00
Other*	17.9	0.09
Total	18,364.7	100.00

\* Non-identified or damaged

**Table 16. 2013 landings data for the SPFPO Atlanto-Scandian herring fishery (note: this was all taken by pelagic trawl; purse seine is rarely used).**

	Total landings (tonnes)	% Composition
Herring	50.5	5.73
Mackerel	831.7	94.27
Total	882.3	100.00

For the PFA Dutch and German freezer-trawler vessels (the only ones that have targeted ASH in recent years), 2011/ 2012 landings data for ICES divisions IIa and IIb were presented by van Overzee et al. (2013), as obtained from the VISSTAT and FiStat databases (Table 17 and Table 20). Herring make up the bulk of the catches, with mackerel and blue whiting contributing less than 5%. In the MSC context, “main” retained species are typically identified as those species which constitute over 5% of the total catch, or which can

be considered as vulnerable, or of particularly high value to the fisher. In this assessment, vulnerable or valuable species were designated as 'main' if they made up more than 2% of the total catch.

**Table 17. 2011 – 2012 landings by species in ICES divisions IIa and IIb by the Dutch pelagic trawl fleet. VISSTAT data presented by van Overzee et al. (2013).**

Species	2011		2012	
	Volume landed (tonnes)	% Total landings	Volume landed (tonnes)	% Total landings
Herring	7,955.00	97.24	6,092.00	98.59
Horse mackerel	1.00	0.01	0.00	0.00
Mackerel	178.00	2.18	5.00	0.08
Blue whiting	47.00	0.57	82.00	1.33
Total	8,181.00	100.00	6,179.00	100.00

**Table 18. 2011 – 2012 landings by species in ICES divisions IIa and IIb by the German pelagic trawl fleet. German FiStat data presented by van Overzee et al. (2013).**

Species	2011		2012	
	Volume landed (tonnes)	% Total landings	Volume landed (tonnes)	% Total landings
Herring	13,296.00	99.76	11,945.00	99.02
Horse mackerel	0.00	0.00	0.00	0.00
Mackerel	0.00	0.00	106.00	0.88
Blue whiting	32.00	0.24	12.00	0.10
Total	13,328.00	100.00	12,063.00	100.00

For the purse seine catch specifically, there are no data from Sweden where the gear is only rarely used. For Denmark, DPPO provided total landings data from four purse seine hauls by three vessels, which all showed 100% herring. Because the amount of purse seine data is small (because the gear is less commonly used), the team concluded that it was not appropriate to evaluate the purse seine and pelagic trawl fisheries separately in relation to retained bycatch. This seemed reasonable given that the mechanism of discarding (slipping) would be the same in both cases (see extensive discussion in ref FCI. SPSG PCR 2010), as is the regulation (discarding of commercial and most other species prohibited in the Norwegian EEZ, as well as elsewhere by all EU pelagic vessels as of 2015).

On the basis of these RSW and freezer-trawler landings data, the team considered mackerel as the only 'main' retained species. The following sections explore the available information on mackerel in terms of outcome status, management and information.

### 3.5.1.1. Mackerel (*Scomber scombrus*)

#### Outcome

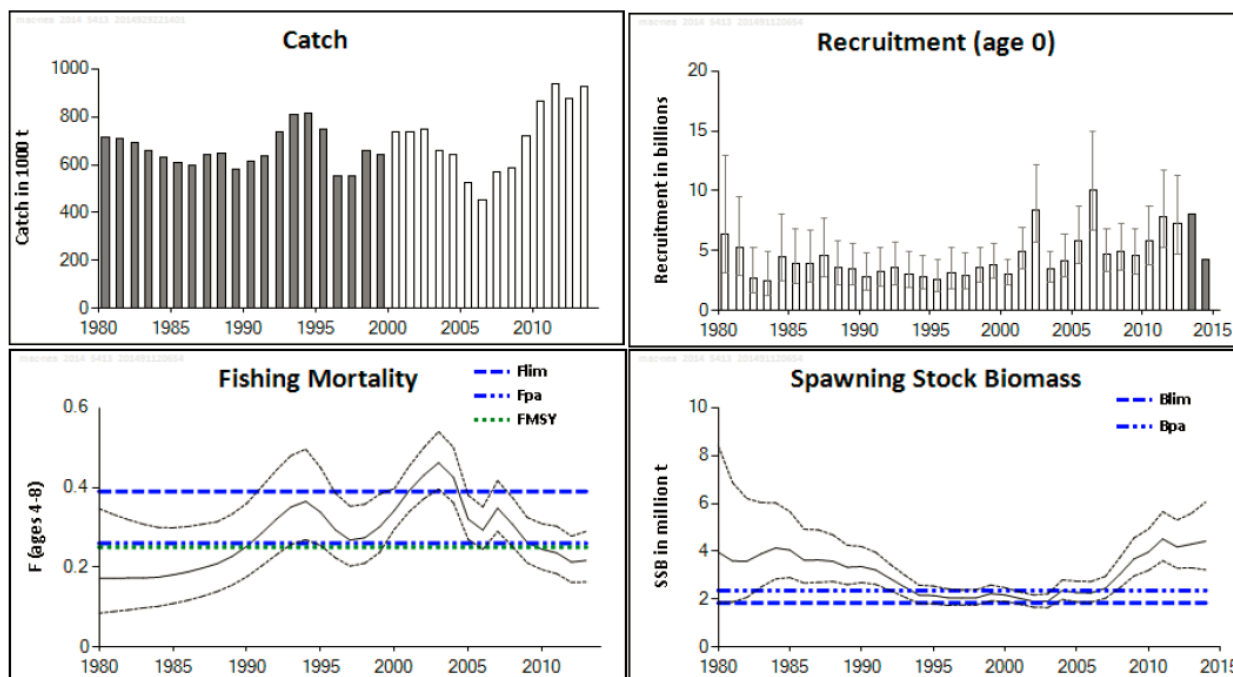
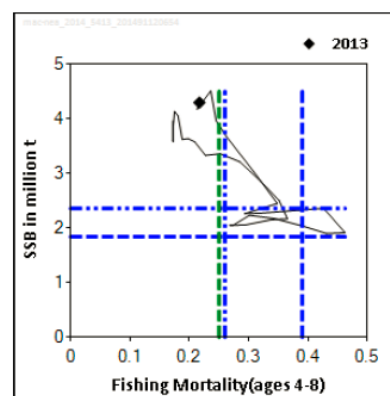
Mackerel (*Scomber scombrus*) is treated by ICES as a single Northeast Atlantic stock, comprising three spawning components: the combined southern and western components and a separate North Sea spawning component.

Most of the Northeast Atlantic mackerel catches are made by pelagic trawl, purse seine and handline fleets (~98.3% of 893,000 tonnes in 2012). Traditionally, the fishing areas with higher catches of mackerel have been in the northern North Sea (along the border of Divisions IVa and IIa), around the Shetland Islands, and off the west coast of Scotland and Ireland, as well as off Spain's northern coast. Catch and survey data from recent years indicate that the stock has expanded north-westwards during spawning and the summer feeding migration. Reports from the pelagic fishing industry over the last five years also describe large shoals of mackerel over the entire distribution area which has expanded both south and north. Significant catches are now being taken in Icelandic and Faroese waters, areas where almost no catches were reported prior to 2008. In 2012, catches in this area constituted approximately half of the total reported landings. Catches from Greenland were reported for the first time in 2011, and have increased in 2012. It is uncertain what has caused this distributional change and factors including changes in food availability, increased water temperature and/or increased stock size may be involved (ICES, 2014c).

In 2014, a benchmark evaluation was carried out for this stock by WKPELA (within the ICES working group for the stock, WGWIDE), providing a more optimistic picture than previous evaluations (ICES, 2014d). The advice for September 2014 has been updated accordingly: Although fishing mortality ( $F$ ) was above  $F_{lim}$  during the early 2000s,  $F$  has been decreasing in recent years and was estimated to be 0.22 in 2013, below  $F_{MSY}$  and  $F_{pa}$ . SSB has increased considerably since 2002 and remains high, above  $B_{pa}$  and  $MSY B_{trigger}$ . The 2002 and 2006 year classes are the strongest year classes in the time-series. The incoming 2011 and 2012 year classes appear to be above average (see Figure 9). The current advice released in September 2014, based on the Norway, Faroe Islands, and EU management plan (see management section further on) is that catches in 2015 should be between 831,000 and 906,000 tonnes, representing a catch decrease between 35% and 40% compared to the estimated catch in 2014 (ICES, 2014e). Note that the May 2014 advice for this stock (ICES, 2014c) indicated a catch increase between 4% and 13% compared to the estimated catches in 2013 – the reasons for this change in approach are further explained in the management section below.

## Stock status

	Fishing pressure		
	2011	2012	2013
MSY ( $F_{MSY}$ )	✓	✓	✓ Appropriate
Precautionary approach ( $F_{pa}, F_{lim}$ )	✓	✓	✓ Harvested sustainably
Management plan ( $F_{MGT}$ )	✗	✓	✓ At target
	Stock size		
	2012	2013	2014
MSY ( $B_{trigger}$ )	✓	✓	✓ Above trigger
Precautionary approach ( $B_{pa}, B_{lim}$ )	✓	✓	✓ Full reproductive capacity
Management plan ( $SSB_{MGT}$ )	✓	✓	✓ Above trigger



**Figure 9. Mackerel in the Northeast Atlantic. Summary of stock assessment.** The shaded landings are the years that have been down-weighted in the assessment due to the considerable underreporting that is suspected to have taken place. The shaded recruitment values are from RCT3 in 2012 and the geometric mean of 1990–2011 for 2013. Bottom: SSB and F over the years. The black dotted lines represent the 95% confidence intervals. Source: ICES, 2014e)

## Management

The Northeast Atlantic mackerel stock is subject to a management plan agreed by Norway, Faroe Islands, and the EU in October 2008. ICES has evaluated this plan to be precautionary although it does recommend that it be reviewed and possibly revised to reflect the new perception of the stock and the revised precautionary reference points (following the 2014 benchmarking). The management plan sets out the following:

1. For the purpose of this long-term management plan, “SSB” means the estimate according to ICES of the spawning stock biomass at spawning time in the year in which the TAC applies, taking account of the expected catch.
2. When the SSB is above 2,200,000 tonnes, the TAC shall be fixed according to the expected landings, as advised by ICES, on fishing the stock consistent with a fishing mortality rate in the range of 0.20 to 0.22 for appropriate age groups as defined by ICES.
3. When the SSB is lower than 2,200,000 tonnes, the TAC shall be fixed according to the expected landings as advised by ICES, on fishing the stock at a fishing mortality rate determined by the following:

$$\text{Fishing mortality } F = 0.22 * \text{SSB} / 2,200,000$$

4. Notwithstanding paragraph 2, the TAC shall not be changed by more than 20% from one year to the next, including from 2009 to 2010.
5. In the event that the ICES estimate of SSB is less than 1,670,000 tonnes, the Parties shall decide on a TAC which is less than that arising from the application of paragraphs 2 to 4.
6. The Parties may decide on a TAC that is lower than that determined by paragraphs 2 to 4.
7. The Parties shall, as appropriate, review and revise these management measures and strategies on the basis of any new advice provided by ICES.

Between 2009 and 2014 this plan was not implemented as there was no international agreement on TAC (due to disagreement over the unilateral TACs set by the Faroes and Iceland). As of March 2014, however, an agreement has been reached between the EU, Norway, and the Faroe Islands, setting a TAC of 1.24 million tonnes for 2014, of which 1,046, 560 tonnes is reserved for the three parties. Greenland has, however, declared a catch limit of 100,000 tonnes in its waters, and Iceland a catch limit of 147,721 tonnes for its fisheries. ICES considers that both the agreed TAC and the sum of the declared catch limits (including significant catches by Russia) exceed the advised fishing mortality based on  $F_{MSY}$  ( $F_{MSY} = 0.25$ ) as well as the precautionary limit for  $F$  ( $F_{pa} = 0.26$ ) (ICES, 2014c). Note, however, that these quotas were all set prior to the availability of ICES advice based on the 2014 benchmark assessment.

Following the benchmark, ICES considers that advising using the management plan is still precautionary, provided the year-on-year TAC constraint is not implemented in the first year of the re-adoption of the plan. Therefore, in its latest advice of September 2014, ICES has not included the percentage constraints stated in clause 4 of the management plan in calculating the TAC for 2015. The plan implies a catch between 831 000 and 906 000 tonnes in 2015. As previously stated, this corresponds to a catch decrease between 35% and 40% compared to the estimated catch in 2014 (ICES, 2014e).

## Information

The Working Group on Widely Distributed Stocks (WGWIDE) carries out stock assessments for this species. In 2014 a benchmark assessment was carried out, which takes into account uncertainty associated to historical catches and therefore provides less uncertain estimates of SSB and F than has been the case in the past. The new assessment model is considered to give reliable information on the state of the stock and provides estimates of uncertainty in all stock parameters. The precision on F, SSB, and R (Recruitment) in the most recent year is 25%, 28%, and 57%, respectively.

The information used in the latest evaluation includes catch numbers-at-age for the period 1980–2012, triennial mackerel egg survey estimates of SSB from 1992 to 2013, age-disaggregated area-standardized abundance indices from the International Ecosystem Summer Survey in the Nordic Seas (IESSNS) (2007, 2010–2013), tagging–recapture time-series (1980–2005), and a recruitment index (age 0) with time-series between 1998 and 2012 which is used with the RCT3 software package to estimate age 1 in the final year of the assessment (ICES, 2014d).

### **3.5.2. Discards**

In Norwegian waters, where most of this fishery takes place, there is a presumption that all catch must be landed, although there are some limited exemptions (see Norwegian Marine Resources Act, 2009; Gullestad et al. 2015). In EU waters, slipping is equally forbidden for mackerel, herring or horse mackerel under Council Regulation (EC) No 850/98, and since 1 January 2015, discarding by pelagic vessels is not allowed.

With the exception of SPFPO, all client fleets operate under some form of sustainability policy; the key points of which in relation to discarding are summarised in the table below.

PFA	<p>PFA policy states that:</p> <ul style="list-style-type: none"><li>- Where possible, the PFA takes initiatives (or supports initiatives) for activities that lead to adequate measures to counter by-catches and discards.</li><li>- The member vessels of the PFA are not permitted to deliberately discard marketable fish to make room for fish of a higher commercial value that are caught later ('highgrading'). This is subject to strict monitoring.</li><li>- The members of the PFA do all possible, through the application of modern technology, to further reduce the occurrence of by-catches and discards to less than 3%.</li><li>- Fishing grounds where undersized fish occur are avoided</li></ul> <p>Several research activities are being carried out by PFA and these include electronic monitoring aboard vessels, gear selectivity, the use of state of the latest broadband echo sounding equipment – these projects are discussed further on in this section.</p>
-----	---

SPSG	<p>SPSG vessels complete a special logsheet: "Occurrence of Exceptional / Unusual Events During Fishing Activity". Events to be reported include slippage events, interactions with endangered, threatened or protected species and gear contact with seabed or gear loss.</p> <p>SPSG policy further includes (<i>inter alia</i>):</p> <ul style="list-style-type: none"> <li>- Following the occurrence of a poor quality or unsuitable catch, the skipper/master shall be responsible for communicating information and relevant circumstances of the event to all other pelagic vessels in the vicinity as soon as is practicable to prevent other vessels in the vicinity from experiencing similar adverse catches</li> <li>- The fleet participates in the Seafish Responsible Fishing Scheme and as such is committed to make every effort to minimise unselective fishing practice and minimise interactions resulting with incidental by-catch.</li> <li>- Pelagic fishing vessels should take all reasonable precautions to ensure that their fishing activity is only directed towards stocks of the species for which they intend to catch and for which they have the necessary licenses and entitlements.</li> </ul>
SPFPO	<p>SPFPO vessels do not operate under any given sustainability policy. No self-reporting mechanism is in place. This fleet relies to come extent on research (e.g. on gear selectivity) undertaken by its Norwegian and Danish counterparts which operate larger fisheries. <b>To meet the standard of the other fleets in the client group, the audit team felt that SPFPO would benefit from running a similar self-reporting mechanism for discarding events (including slipping), gear loss and interactions with ETP species. The team therefore recommends that such a system is put in place for SPFPO member vessels.</b></p>
KFO	<p>Although KFO do not operate under a sustainability policy (which goes above and beyond what is required under government regulations), the PO's member vessels do complete an environmental management form as part of having signed up to the BIM Seafood Stewardship Programme which includes recording of slipping, gear loss and seabed interaction, and interactions with ETP species.</p>
DPPO	<p>DPPO vessels complete a special logsheet on which discards and interactions with ETP species must be recorded.</p> <p>The DPPO Code of Conduct further specifies that DPPO members are engaged in avoiding unwanted catches (undersized fish or unwanted species) and reducing discards by:</p> <ul style="list-style-type: none"> <li>- Helping to develop search tools that increase the possibility for identifying fish species and size, before commencing fishing</li> <li>- Immediately leaving areas with small fish or other unwanted catch</li> </ul>

- Exchanging experience with colleagues - both Danish and foreign fishermen - on positions, size and quality of individual fishing grounds
- Using the best electronic search tools
- Giving fish on to colleagues if the vessel's capacity or quota is exhausted

Compliance with the Code of Conduct is verified by each member vessel during an internal audit procedure.

In its September 2014 advice for Atlanto-scandian herring, ICES states that discards in the ASH fisheries are considered to be negligible, although some slippage is (or has been) known to occur (ICES, 2014a).

The main reasons for discarding are considered to be: when fish are i) of no commercial interest, ii) below the minimum landings size, iii) of low quality or damaged and iv) exceeding quota limitations. All vessels involved in the ASH fishery make use of state of the art hydro-acoustic equipment: sonar is used and shows the shoal type and size. Echosounding equipment enables species to be identified in terms of location, depth, timing and signal. Once identified, the net is deployed and fishing commences. A tunnel sensor then gives a picture of what is entering the net and catch sensors give an indication of how much has entered the net so the net can be hauled at the right time. This approach has been designed and adapted over time by the fishermen involved in the fishery to keep catches clean and therefore make the fishery as efficient as possible. In this fishery, discarding can take place either by slippage (i.e. opening the net and releasing the fish before they are brought on-board) or after sorting. Note however that for the RSW (refrigerated seawater) vessels, sorting rarely takes place aboard the vessels as fish are pumped directly from the net into holding tanks; sorting therefore generally takes place upon landing (most often when the fish are pumped into the factory). For these fleets the only source of discarding would be slippage, which is further discussed below. For the freezer trawlers vessels (PFA only), sorting can take place before the catch is processed and then frozen in the factory aboard the vessels.

Undesirable mixtures of species in the catch or lack of storage capacity at the end of the trip could be reasons for slipping catch, either directly from the net (net slippage) or from the cooling tanks aboard the vessel (tank slippage). For the five fleets in question, the practice of slipping is generally avoided due to the cost in fuel, gear wear and time. Additionally, overcapacity of the hold can be largely avoided by the skipper's skill in estimating fish school size prior to catches from sonar and sounder information, and by information provided in real-time by the netsonde which allows to estimate the amount of fish entering the net. Nonetheless, excessive catch can occur and in this case the fish are usually not loaded on board but released from the net at the end of the haul (Morizur et al., 1996) with partial but non-quantified mortality. As previously stated, in Norwegian waters, discarding (including slipping) of most commercial species such as cod, haddock, saithe, redfish, mackerel, herring, greater argentine, capelin, Greenland halibut, whiting, monkfish, shrimps and snow crabs is illegal. In EU waters, slipping is equally illegal for mackerel, horse mackerel or herring. Furthermore, it makes commercial sense to keep catches as clean as possible as



mixed catches (e.g. herring with mackerel) are sold as fishmeal and are therefore significantly less lucrative. For this reason, most vessels in the UoC predominantly fish during the beginning of the year in Norwegian waters, when the quality of the fish is best and when the risk of mixed catches is lowest. Nevertheless, it has been recognised that some degree of slipping does occur. Although some skippers suggest that there may be some survival of slipped catches, research evidence suggests that actual mortality for slipped fish from pelagic trawls is likely to be substantial (Lockwood et al 1977, Pawson & Lockwood 1980, Holeton et al 1982, Lockwood et al 1983 – all cited in Southall et al., 2010). In this context, scientists assume 100% mortality level when factoring a slippage estimate into assessment models (Southall et al., 2010).

As the discards are never brought on board, species composition and length frequency of “slipped” catch is unknown and accurate numbers of discards per species can therefore not be calculated (Andrews et al., 2010). Although a formal requirement for sampling discards in pelagic fisheries was initiated by the EU in 2002, relatively little discard sampling takes place and any estimates that do exist are likely to be an underestimate. Nevertheless, some sampling is carried out by the research institutes IMARES and Johann Heinrich von Thünen-Institut (vTI) for the Dutch and German PFA fleets; however, no trips were sampled in ICES divisions IIa and b in 2013 (Harriet van Overzee, IMARES, pers. comm.). The data presented in Table 19 and Table 20 were instead obtained from the 2011 and 2012 observer campaigns in ICES divisions IIa and IIb. Overall discard rates ranged from 0 to 10.65% with no single species contributing more than 2% of the catch. For the SPSG fleet, there is currently no government-run observer programme as it was discontinued in 2012 due to limited funding (FCI, 2014). Before its termination, 3 observer trips were carried out in the ASH fishery in 2011 – 2012. There are however no reports specific to individual trips and although annual reports on the observer programme are submitted to the Commission, these focus on the implementation of Regulation 812/2004 relating to cetacean bycatch (see Section 3.5.3). For the DPPO, SPFPO and KFO fleets, no observer data exist for the Atlanto-Scandian herring fishery, which has been evaluated by compliance authorities to be low risk. The assessment of this component is therefore based on the discard data presented by van Overzee et al. (2013) (Table 19 and Table 20) in which no ‘main’ discard species were identified.

**Table 19. Total catch, landings, discards (tonnes), discard percentage and unsampled discards per sampled pelagic discard trip in 2011 in ICES divisions IIa and IIb (German and Dutch pelagic trawl fleet combined). Adapted from van Overzee et al. (2013).**

Trip reference	P93			G6			G7		
Species	Catch	Discarded	% Discards out of total catch	Catch	Discarded	% Discards out of total catch	Catch	Discarded	% Discards out of total catch
Blue whiting	0.9	0.9	0.04	11.6	11.6	0.94	35.9	0	0.00
Herring	1834.2	23.9	1.18	1035.6	11.3	0.92	3706.4	0	0.00
Mackerel			0.00			0.00	0.6	0.6	0.02
Others*	0.9	0.9	0.04	187.4	2.2	0.18	12.6	12.6	0.34

Unsampled**	190	190	9.38			0.00			0.00
Total	2026	215.7	10.65	1234.6	25.1	2.03	3755.5	13.2	0.35

\* Other species landed include: black seabream (*Spondyliosoma cantharus*), bonito (*Sarda sarda*), gilt head (*Sparus aurata*), hake (*Merluccius merluccius*), redfish (*Sebastes mentella*), sprat (*Sprattus sprattus*) and sea bass (*Dicentrarchus labrax*)

\*\* Discarding events during which part of or the whole catch within a haul is discarded.

**Table 20. Total catch, landings, discards (tonnes), discard percentage and unsampled discards per sampled pelagic discard trip in 2012 in ICES divisions IIa and IIb (German and Dutch pelagic trawl fleet combined). Adapted from van Overzee et al. (2013).**

Trip reference	P107			G14		
Species	Catch	Discarded	% Discards out of total catch	Catch	Discarded	% Discards out of total catch
Blue whiting	90.1	1.8	0.09	0.9	0	0.00
Herring	3102.1	6.1	0.30	448.3	0	0.00
Mackerel	0.2	0	0.00	0	0	0.00
Others*	2.1	0.1	0.00	114.4	0	0.00
Unsampled**	10	10	0.49	0	0	0.00
Total	3204.5	18	0.89	563.6	0	0.00

\* Other species landed include: black seabream (*Spondyliosoma cantharus*), golden redfish (*Sebastes norvegicus*), hake (*Merluccius merluccius*), redfish (*Sebastes mentella*) and sprat (*Sprattus sprattus*)

\*\* Discarding events during which part of or the whole catch within a haul is discarded.

This information has been supplemented with information from the self-sampling programme run by DPPO (Table 21).

**Table 21. Self-sampling data from DPPO vessels (Source: DNV 2013 supplemented by additional data from DPPO).**

Year	Vessel	Self-reported slipping / discard events	Self-report catch of ETP species
2012	Cattleya	None	None
	Rockall	None	None
	Beinur	None	None
	Ruth	None	None
	Isafold	None	None
	Gitte Henning	None	None
	Asbjorn	None	None
2013	Rockall	None	One porbeagle - released
	Isafold	None	None

Following the Common Fisheries Policy (CFP) reform (in effect from January 2014), a so-called discard ban (or landing obligation) will be introduced for pelagic fisheries in January 2015. This means that all catches of fish subject to catch limits in EU waters will need to be recorded, landed and counted against quota, and also requiring techniques for at-sea monitoring to document compliance with the new regulation. In 2013, the PFA started several pilot projects, in cooperation with IMARES, the NVWA (Dutch Control Agency) and BLE (German Control Agency) and funded by the European Fisheries Fund (EFF), to investigate the implications of the discard ban on the fishery. The following projects are being carried out:

- Pilot project on electronic monitoring (EM) on pelagic freezer-trawlers: the EM system records sensor and image data from fishing operations, and thus can be used to provide 100% monitoring of fishing activity. A first pilot project was completed in 2014. In this second pilot project, the focus is on taking the lessons a step further and engaging the inspection agencies in a concrete and active manner. CCTV trials are currently being carried out aboard the German vessel Jan Maria (in cooperation with BLE) and aboard the Dutch vessel SCH 81 – Carolien (in cooperation with NVWA). A trial is also due to commence aboard the UK vessel H171 - Cornelis Vrolijk (in cooperation with the MMO).
- Pilot project on net-innovation: development and testing of specific grids that will allow the escape of unwanted fish (small size, species). The grids will be tried and scientifically monitored on four PFA vessels (Dutch, German) during their fisheries for mackerel, horse mackerel and blue whiting in the autumn and winter of 2014-2015
- Pilot project on broadband echosounders: the new generation of broadband echosounders are expected to provide a much higher resolution for better species recognition. The project will test the potential applicability of this technique for commercial fisheries.
- Pilot project on making best-use of unwanted bycatch

In the context of the EU discard ban, one vessel, Pathway PD 165 has been fitted with CCTV cameras since August 2013 as part of the Marine Scotland discard trial project. The data are with Marine Scotland and are not publically available (analysing CCTV footage has proved to be a slow process for these projects).

### Management

In addition to the fleet-specific discard policies outlined previously, the following management regulations apply to the fisheries under assessment:

- Mesh size range of 32 - 54mm, with the retained catch consisting of at least 90% of any mixture of two or more target species, or at least 60 % of any one of the target species (Council Regulation (EC) No 850/98)
- Prohibition on discarding (including slipping) in Norwegian waters (see Norwegian Marine Resources Act, 2009).

Summary of relevant measures to reduce discarding under Regulation (EC) No 227/2013 of 13 March 2013 amending Council Regulation (EC) No 850/98:

- Prohibition of highgrading (Within Regions 1, 2, 3 and 4 the discarding, during fishing operations, of species subject to quota which can be legally landed shall be prohibited)
- Moving-on provisions and prohibition on slipping (Within Regions 1, 2, 3 and 4, where the quantity of undersized mackerel, herring or horse mackerel exceeds 10 % of the total quantity of the catches in any one haul, the vessel shall move fishing grounds; Within Regions 1, 2, 3 and 4 it is prohibited to release mackerel, herring or horse mackerel before the net is fully taken on board a fishing vessel resulting in the loss of dead or dying fish)
- Restrictions on fishing for herring in Union waters of ICES division IIa (It shall be prohibited to land or retain on board herring caught in Union waters of ICES division IIa in the periods from 1 January to 28 February and from 16 May to 31 December)
- Measures for the redfish fishery in international waters of ICES sub-areas I and II (Vessels shall limit their by-catches of redfish in other fisheries to a maximum of 1 % of the total catch retained on board)
- Measures for the redfish fishery in the Irminger Sea and adjacent waters (It shall be prohibited to catch redfish in international waters of ICES sub-area V and Union waters of ICES sub-areas XII and XIV, except under derogation)
- Catch handling and discharge restrictions on pelagic vessels (The maximum space between bars in the water separator on board pelagic fishing vessels targeting mackerel, herring and horse mackerel operating in the NEAFC Convention Area as defined in Article 3(2) of Regulation (EU) No 1236/2010 shall be 10 millimetres; Pelagic vessels operating in the NEAFC Convention Area shall be prohibited from discharging fish under their water line from buffer tanks or Refrigerated seawater (RSW) tanks)

### Information

Information on discards for the fleets under assessment was based on the companies' various self-reporting mechanisms, as well as the IMARES and vTI observer campaigns which take place under the EC Data Collection Framework (DCF) 1543/2000 and 1639/2001 and Commission Decision 949/2008 and revisions (2008/949/EC). The DCF requires all EU member states to collect, manage and make available a wide range of fisheries data needed for scientific advice, including discard data. The data are collected on the basis of National Programmes and member states must report annually on the implementation of their National Programmes to the Commission. The Scientific, Technical and Economic Committee for Fisheries (STECF) then evaluates these Annual Reports.

### **3.5.3. Protected species interacting with the fishery**

As stated in Section 3.3.5, this fishery takes place predominantly in ICES subareas I and II, potentially overlapping with the ETP species listed in Table 22. ETP species have been identified based on protected species in each relevant country, plus species on CITES

Appendix 1. In Norway, legislation states that all species should be considered protected unless other specified (e.g. if there are regulations in place to manage hunting, fishing or collection)<sup>4</sup>. The identification of ETP species has therefore been based on a list of EU protected species<sup>5</sup>, fisheries regulations (Council Regulation 42/2014) and on CITES Appendix 1.

**Table 22. ETP species which the fishery may interact with**

EU protected species	EU fisheries regulations prohibited species*	CITES Appendix I species
Cetaceans (all species) Marine turtles Sturgeon <i>Acipenser</i> spp.	Porbeagle <i>Lamna nasus</i> Common skate species complex <i>Dipturus batis</i> and related species Starry ray <i>Amblyraja radiata</i> Undulate ray <i>Raja undulata</i> Norwegian skate <i>Dipturus nidarosiensis</i> White skate <i>Raja alba</i> Spurdog <i>Squalus acanthias</i>	Bowhead whale Right whale Humpback whale Blue whale rorquals Grey whale Sperm whale Beaked whale Bottlenose whale  Marine turtles  Sawfish Sturgeon

\* Defined as species which may not be landed and must be returned to the sea alive and in good condition as far as possible

Observer data are usually the best source of information to determine the extent of interaction between a fishery and ETP species. For most of this fleet, however (with the exception of the PFA and SPSP fleets), no observer data exist. Both because of the cost involved in running these observer programmes and because this fishery is generally perceived as low-risk to ETP species (see Southall et al. 2010; Andrews et al., 2010; Lockwood et al., 2009). Except SPFPO, however, all client fleets do operate some form of sustainability policy which requires member vessels to fulfil auto-reporting requirements on interactions with ETP species. This assessment therefore used both the available observer data as well as the auto-reporting data.

**DPPO:** as part of the DPPO Code of Conduct, vessels have to report any interactions with ETP species. In 2013, one porbeagle (*Lamna nasus*) was caught and subsequently released by the vessel Rockall (see Table 21). No further interactions with ETP species were reported.

<sup>4</sup> <http://www.environment.no/Topics/Biological-diversity/Species-in-Norway/Protected-species/#E>

<sup>5</sup> [http://www.biodiversityplanningtoolkit.com/stylesheet.asp?file=613\\_full\\_list\\_of\\_european\\_protected\\_species](http://www.biodiversityplanningtoolkit.com/stylesheet.asp?file=613_full_list_of_european_protected_species)

PFA: for the PFA fleet, an observer programme is being run by IMARES (for Dutch vessels) and the Johann Heinrich von Thünen-Institut (JHvTI) (for German vessels) in accordance with EC regulation 812/2004. Although the ASH fishery was not sampled in 2013, some data were available for 2011 and 2012 and these were submitted to the ICES Working Group on Bycatch of Protected Species (WGBYC) (ICES, 2014g). The report states the following: *‘Only one cetacean bycatch event of a long-finned pilot whale (Globicephala melas) in a midwater otter trawl was observed. The observed bycatch rate of 0.01 cetaceans per day in the pelagic trawl fishery is in line with the findings in 2006–2011 when the bycatch rate was 0.00–0.01 cetacean per day’* (ICES, 2014g). Similarly, no bycatch of cetaceans were recorded for the German PFA fleet in recent years: *‘The bycatch of five long-finned pilot whales was observed in the midwater otter trawl fishery targeting mackerel in ICES Area VIIIfghj. During all other observed trawl fisheries in the North Atlantic, North Sea and in the Baltic, no bycatch of cetaceans was observed’* (ICES, 2013c).

KFO: The Marine Institute operates an observer programme for the pelagic trawl fishery (in accordance with EC regulation 812/2004); however no observer campaigns have taken place for the Atlanto-Scandian fishery. As explained in Section 3.5.2, KFO member vessels do complete an environmental management form having signed up to the BIM Seafood Stewardship Programme which requires all interactions with ETP species to be recorded. No interactions were reported for this fishery during the site visit.

SPSG: For the SPSG fleet, the government-run observer programme was discontinued in 2012 due to limited funding (FCI, 2014). However, prior to its discontinuation, three observer trips were carried out in the ASH fishery since 2011. None of these trips recorded any bycatch of marine mammals or other ETP species. More observer emphasis is being placed on the other pelagic fisheries (blue whiting, boarfish) (Al Kingston, University of St Andrews, pers. comm.) and generally, the UK is undertaking more limited monitoring in its pelagic trawl fleets, except where cetacean bycatch is known to be a concern such as the pelagic fishery for bass (Northridge et al., 2011). As explained in Section 3.5.2, SPSG member vessels also complete an ‘unusual events logsheet’ which requires all interactions with ETP species to be recorded. No interactions were reported for this fishery during the site visit.

SPFPO: as previously stated, no observer data exist for the SPFPO fleet and no self-reporting system is currently in place. Although this fishery operates similarly to the other client fleets and information on ETP interactions can therefore be inferred from those fleets, **the team reiterates its recommendation (see Section 3.5.2) that a self-reporting system is put in place for SPFPO member vessels.**

### 3.5.4.Habitats

Mid-water pelagic trawls or purse seines are not configured to interact with the seabed and damage to the gear is likely to occur before substantial damage to seafloor structures occurs (Donaldson et al., 2010). These gear types are therefore considered very low-impact gears with respect to benthic habitats (Chuengpagee et al., 2003; Morgan and Chuengpagee, 2003). The gear used by the vessels in the UoC is used in deep waters and equipped with hydro-acoustic equipment including depth sounders, sonars and trawl sensors which enables the skippers to maintain control over the position of the net in the water column, thus further reducing the likelihood of interaction. Vessels are also continually aware of the

location of protected deep-sea habitats (as per regulation (EU) No 227/2013) which are plotted into their on-board navigation systems. Note that none of the access restrictions for vulnerable deep-sea habitats prohibit pelagic fisheries from operating in these areas on the basis of low impact (regulation (EU) No 227/2013). Within the Norwegian EEZ (where this fishery predominantly takes place), habitat regulations apply to bottom gear fisheries only.

Although ghost fishing can be caused by nets and cod ends discarded at sea (noting that this would be against regulations and unlikely considering the cost of the gear), lost trawl gear is generally perceived to have a low potential for ghost fishing (Morgan and Chuenpagdee, 2003, cited in Donaldson et al., 2010). However, if a seine set is lost and the fish do not survive, there may be considerable localized harm to the benthos through organic enrichment and disturbance (ICES, 2006, cited in Donaldson et al., 2010). Occurrences of gear loss are, however, recorded by PFA, SPSG, KFO and DPPO member vessels and are reported to be very rare.

### **3.5.5.Ecosystem**

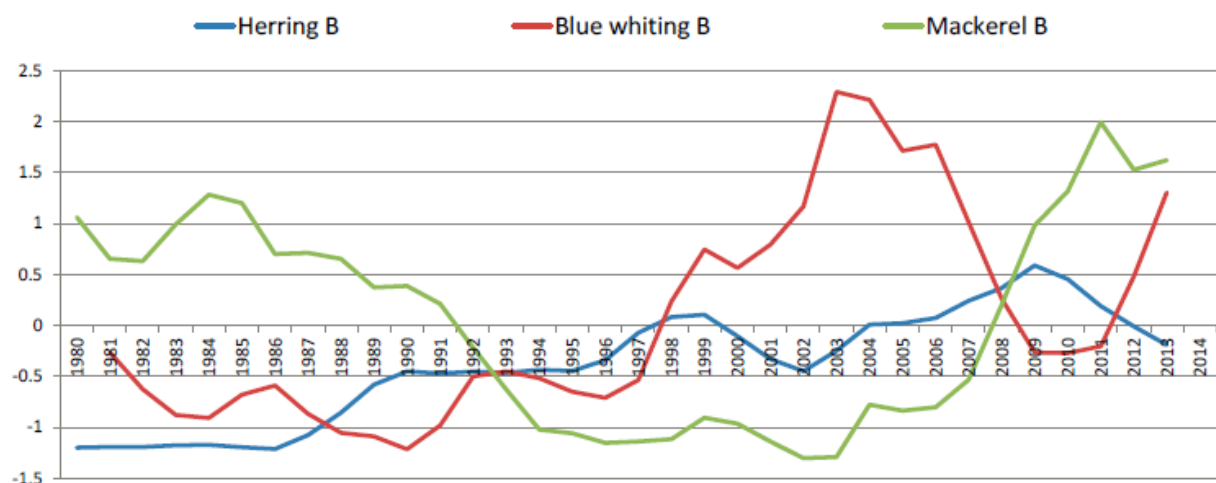
The circulation of the North Atlantic Ocean is characterized by two large gyres: the subpolar gyre (SPG) and subtropical gyre (Rossby, 1999, cited in ICES, 2014b). When the SPG is strong it extends far eastwards bringing cold and fresh subarctic water masses to the Northeast Atlantic, while a weaker SPG allows warmer and more saline subtropical water to penetrate further northwards and westwards. The Northeast Atlantic is also influenced to a great extent by the North Atlantic Oscillation (NAO), a recurrent pattern of variability in circulation of air masses, corresponding to the alternation of periods of strong and weak differences between Azores high and Icelandic low pressure centres. The combination of oceanic and atmospheric forces leads to large oceanographic anomalies, regulating the living conditions in the entire Northeast Atlantic. Such changes are likely to have an impact on the spatial distribution of spawning and feeding grounds and on migration patterns of certain pelagic species (ICES, 2014b). These and other ecosystem factors may have a determinant effect on the productivity of fish stocks (including recruitment, growth or natural mortality), and may therefore be a source of variation as important as exploitation by fisheries (ICES, 2014b). Within the Northeast Atlantic, the Norwegian Sea is the feeding ground for some of the largest fish stocks in the world, including Atlanto-Scandian herring, blue whiting and Northeast Atlantic mackerel. These planktivorous stocks have substantial spatial and dietary overlap and are often collectively referred to as the 'pelagic complex' in the Norwegian Sea (Huse et al., 2012).

### **Outcome**

The species that make up the pelagic complex occupy a dual role in the ecosystem: they represent an important food source for many top predators such as marine mammals, seabirds and other species of pelagic fish, while also regulating the abundance of their prey (zooplankton including eggs and larvae of predatory species). Species such as herring therefore occupy a central role, meaning that a stock collapse can release predation on its prey species as well as constrain the food resource of its predators. Because the species are so abundant, the effects on the other species that depend on it are likely to be considerable (Skjoldal et al. 2004, cited in ICES, 2014b; Dickey-Collas et al., 2010). Further complexity is added by other factors that are at play, such as density-dependent

mechanisms and inter-specific competition which may have contributed to the increasing trends in the mackerel and blue whiting stocks while the herring stock continues to decrease and recruitment continues to be poor (Figure 10, also see Section 3.4.4) (ICES, 2014h). The ASH stock collapse in the late 1960s is also thought to have occurred concurrently with an increase in the blue whiting population (Huse et al., 2012).

Since the start of fisheries management in the Northeast Atlantic, most stocks have been managed with a single species approach focused on keeping stocks above a precautionary biomass level to avoid stock collapse, and from 2012, ICES transitioned its fisheries advice to be based on maximum sustainable yield (MSY). While this approach ignores to a large extent those factors affecting stock development and can introduce biased results in estimations of future stock status (ICES, 2014h), maintaining SSB at sustainable levels remains a key tool in maintaining stock status and ecosystem health. In the absence of a full ecosystem-based approach to fisheries management, monitoring SSB, compliance with the harvest control rule (such as TACs), and an enforced quota regime should therefore deliver most of the management requirements for preventing stock collapse, thereby preventing any effects the fishery may have on the wider ecosystem. As already explained in Section 3.4.3, the ASH stock is currently above the point at which recruitment would be impaired and is fluctuating around its target reference point. On this basis, the vessels in the UoC are highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm.



**Figure 10. Anomalies of biomass of pelagic fish in the Norwegian Sea. Source: ICES (2014h).**

## Management

The key elements contributing to the management of the Northeast Atlantic ecosystem in the context of this fishery are as follows:

- Regulation (EU) No 1380/2013 on the Common Fisheries Policy (CFP) outlining a set of rules for managing European fishing fleets and for conserving fish stocks. Under the CFP fishing levels should be set at MSY levels by 2015 where possible, and at the latest by 2020 for all fish stocks;



- the ASH fishery is managed through a joint long-term management plan between the EU, Norway, Iceland, Faroe Islands and Russia which provides a framework for setting an annual TAC and is based on current scientific advice as provided by ICES;
- In the Norwegian EEZ: Norwegian regulations out provisions to limit ecosystem impacts from fisheries. These include but are not limited to the Regulations relating to seawater fisheries, including the prohibition against discarding fish and processing to fish meal (see Norwegian Marine Resources Act, 2009);
- EC Council Regulations setting out provisions to limit ecosystem impacts from fisheries. These include but are not limited to:
  - o Council Regulation (EC) No 812/2004 of 26 April 2004 laying down measures concerning incidental catches of cetaceans in fisheries,
  - o Council Regulation (EC) No 850/98 of 30 March 1998 for the conservation of fisheries resources through technical measures for the protection of juveniles of marine organisms
  - o Council Regulation (EC) No 1185/2003 of 26 June 2003 on the removal of fins of sharks on board vessels
  - o Following the implementation of the reformed CFP in 2014, a landing obligation (so-called discard ban) will be gradually introduced. For pelagic fisheries this will come into effect from January 2015, requiring that all species subject to quota regulations have to be kept on board, landed and counted against their quotas.
  - o Directive 2008/56/EC on establishing a framework for community action in the field of marine environmental policy (so-called Marine Strategy Framework Directive). The MSFD outlines the legislative framework for an ecosystem-based approach to the management of human activities which supports the sustainable use of marine goods and services. The overarching goal of the Directive is to achieve 'Good Environmental Status' by 2020 across Europe's marine environment. The MSFD in the context of the Northeast Atlantic is discussed further on.
- The OSPAR Convention is the current legal instrument guiding international cooperation on the protection of the marine environment of the North-East Atlantic. Its role is further discussed below.

## **OSPAR and the MSFD**

The role of the OSPAR Commission is to harmonise policies and strategies, including the drawing up of programmes and measures, for the protection of the marine environment. The OSPAR Commission also undertakes and publishes at regular intervals joint assessments of the quality status of the marine environment and of the effectiveness of the measures taken and planned. On the basis of *inter alia* these Quality Status Reports, the OSPAR Commission identifies priorities for action for the protection of the marine environment.

The work of the OSPAR Commission is directed by "Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010–2020 (the North-

East Atlantic Environment Strategy or NAE Strategy), adopted by contracting parties in 2010. The strategy focuses on the Ecosystem Approach to conserve marine ecosystems and safeguard human health and, when practicable, restore marine areas which have been adversely affected in the North-East Atlantic by preventing and eliminating pollution and by protecting the maritime area against the adverse effects of human activities. The Strategy is guided by the following principles:

- The precautionary principle;
- The polluter pays principle;
- The application of best available techniques and best environmental practice, including, where appropriate, clean technology;
- The principle of sustainable development through the application of the Ecosystem Approach;
- The principle that preventive action should be taken;
- The principle that environmental damage should as a priority be rectified at source.

Some of the key strategic objectives of the OSPAR Commission in the context of this fishery are listed below. Each of these have specific operational objectives and measurable indicators and targets are due to be developed and implemented, either by Contracting Parties or, where appropriate, within the OSPAR Commission:

- To halt and prevent by 2020 further loss of biodiversity in the OSPAR maritime area, to protect and conserve ecosystems, and to restore, where practicable, marine areas which have been adversely affected through *inter alia* monitoring and assessment, targeted actions for the protection and conservation of species, habitats and ecosystem processes, and developing an ecologically coherent OSPAR network of well-managed marine protected areas (“the OSPAR Network”)
- To ensure integrated management of human activities in order to reduce impacts on the marine environment, taking into account the impacts of, and responses to, climate change and ocean acidification;
- To facilitate and coordinate the work of relevant Contracting Parties in achieving good environmental status under the EU Marine Strategy Framework Directive (MSFD) by 2020.

The OSPAR Commission is the main platform through which EU member states coordinate their work to implement the MSFD in the North-East Atlantic. In the context of the MSFD, the NAE Strategy and the Joint Assessment and Monitoring Programme (JAMP, OSPAR Agreement 2010-4), include the following milestones for contracting parties:

- By 2012: determination of a set of characteristics for good environmental status for the marine waters and their environmental targets and associated indicators, using Ecological Quality Objectives, where applicable, and other existing tools as appropriate
- By 2014: monitoring programmes for the ongoing assessment of the environmental status of their marine waters feeding into the review by the OSPAR Commission of the Joint Assessment and Monitoring Programme by 2014

- By 2015: identification of their programmes of measures in order to maintain or achieve good environmental status in their marine waters throughout the OSPAR maritime area
- By 2018: first review by the relevant Contracting Parties of the initial assessment of their marine waters, their descriptions of good environmental status, and their environmental targets and associated indicators

### Information

ICES and the various Working Groups therein routinely collect and assess information on *inter alia* fisheries performance, stock status and bycatch species (e.g. WGBYC, WGWIDE). Although the traditional ICES approach to fisheries science and management is based on single-species dynamics, mostly without considering environmental or ecosystem interactions of drivers, the Working Group on the Integrated Assessments of the Norwegian Sea (WGINOR) aims to conduct and further develop Integrated Ecosystem Assessments for the Norwegian Sea as a step towards implementing the ecosystem approach.

A fair amount of work has been done in the past to explore the interaction between the ecosystem components in Norwegian Sea (ICES, 2014h). The INFERNO project 'Effects of interactions between fish populations on ecosystem dynamics and fish recruitment in the Norwegian Sea' focused on the hypothesis that the planktivorous fish populations feeding in the Norwegian Sea have interactions that negatively affect individual growth, mediated through depletion of their common zooplankton resource. The project was funded and lasted for the period 2006-2009 and involved cooperation with scientists from Russia, the Faeroe Islands and Iceland (Huse et al., 2012). International ichthyoplankton surveys have been carried out in the Norwegian Sea since the mid-1990s and in recent years these have transitioned into ecosystem surveys that capture most of the key components of the ecosystem: the International Ecosystem Survey in the Nordic Seas (IESNS) is aimed at observing the pelagic ecosystem with particular focus on Atlanto-Scandian herring and blue whiting in the Norwegian Sea. The survey is carried out by the Faroes, Iceland, Norway, and Russia and the EU (ICES, 2014b). Datasets of this type are a firm foundation for undertaking integrated assessment of ecosystem status in the Norwegian Sea. A multispecies fisheries model and ecosystem model are being set up with the aim of investigating the effects of existing single species and alternative multispecies harvest control rules on ecosystem structure and functioning (ICES, 2014h).

### **3.6. Principle Three: Management System Background**

#### **3.6.1. Jurisdictions in the area of operation**

The Atlanto-Scandian herring is a shared, straddling stock. The fishery takes place in the EEZs of Norway, EU and the Faroe Islands, as well as in international waters extending beyond the EEZs in the Norwegian Sea, where enforcement is administered by the North East Atlantic Fisheries Commission (NEAFC).

#### **3.6.2. Management systems and decision-making processes**

The Coastal States agreement, negotiated in 1999 between the EU, Faroe Islands, Iceland, Norway and Russia, is the fundamental mechanism for the management of Atlanto-Scandian herring. The main objective of that agreement is to set the annual allocation to participating countries, and the EU, based on the advised and agreed annual TAC. The allocation of the share to each participant is not based on any legally binding long-term agreement, but is negotiated annually once the TAC is agreed. In some years the allocation percentages are carried over from previous years, but this is not the result of a binding agreement on quota shares. These annual negotiations are dependent on all parties reaching an agreement on the share allocation in relation to the ICES advised TAC. If an agreement cannot be reached on the allocation of shares, an annual TAC cannot be set. In that situation sustainable management of the stock, in line with the harvest strategy, becomes dependent on the realized intentions of each participant in the fishery. This has the obvious potential to over-exploit the stock and compromise the harvest strategy. This situation has arisen in relation to the Faroese withdrawal from the international management regime in 2013 and 2014, which highlights the lack of a formal, and legally backed system, for the allocation of shares, and also the lack of any dispute resolution mechanism for the fishery.

In June 2014, political understanding was reached between EU and the Faroe Islands to end the dispute on the management of Atlanto-Scandian herring. As part of the understanding, the Faroe Islands agreed to put an end to what the EU regarded as their unsustainable herring fishing whilst the Commission would repeal the trade and access to EU port restrictions that were adopted against the Faroe Islands in August 2013, as a response to the latter's withdrawal from the coastal states regime. The agreement implied that the Faroe Islands would adopt a catch limit for herring in 2014 at 40,000t., which is considerably lower than the limit they had set for themselves the year before. However, the lifting of the measures does not represent a tacit agreement by the EU that 40,000t is the legitimate share of the stock for the Faroe Islands. It is rather indicative of the fact that the sustainability of the stock is no longer in jeopardy. The decision is also without prejudice to subsequent consultations among the five coastal states on the future sharing of the stock.

The negotiations in January 2015 ended with Coastal States setting unilateral quotas for 2015. However parties stated at the January meeting that they would respect the NEAFC Recommendation 18:2015 (Recommendation on conservation and management measures for Norwegian Spring-Spawning (Atlanto-Scandian) herring in the NEAFC Convention Area in 2015).

Quotas are distributed and quota levels and other management measures enforced through relevant EU agencies and national authorities. Typically, there is a regulatory agency (like the Swedish Agency for Marine and Water Management, the Danish Agrifish Agency, the Irish Department of Agriculture, Food and the Marine, the UK Department for Environment, Food & Rural Affairs, Marine Scotland and the Netherlands Food and Consumer Product Safety Authority), responsible for the regulation of fisheries and/or enforcement of fisheries regulations in collaboration with the respective national scientific research institutes and enforcement bodies.

The national share of the EU quota is distributed by the relevant national fisheries management agency among vessels. POs are normally not involved in the quota allocation, with the exception of the UK. Most countries use individual transferable quotas (ITQs); Ireland does not. There are quota swapping regimes in place both at the international and the national level. The Coastal States Agreement allows for a certain degree of quota sharing among the contracting parties. There is also some flexibility in quota uptake; member states may exceed their quota by up to 10 per cent provided the excess is paid back the next year through a quota deduction. Parties may also transfer unutilized quota shares from one year as a 'credit' for the following year, again limited to 10 per cent. These arrangements thus allow for ongoing adjustments in the fishing activities within the overall management framework of the fishery. At national level, again with the exception of Ireland, quota shares can be swapped between different vessels, sometimes via POs and sometimes directly.

### **3.6.3.Objectives for the fishery**

The 2013 CFP Regulation sets out a wide range of objectives, including that fishing activities are environmentally sustainable in the long-term; that the precautionary approach to fisheries management is applied in order to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield; and that the ecosystem-based approach to fisheries management is implemented so as to ensure that negative impacts of fishing activities on the marine ecosystem are minimized, and that fisheries activities avoid the degradation of the marine environment.

All the coastal states have fisheries laws and lower-level legal acts that define clear long-term objectives that are consistent with the MSC Principles and Criteria and the precautionary approach. Some legal texts, like the 2014 Danish Law on Fisheries and Aquaculture, do not explicitly use the concept 'precautionary approach' in its statement of overarching objectives, but rather terms such as 'protection' and 'sustainability'. Seen in the context of the requirements in the remaining law text, and legal acts at lower levels, the objectives are consistent with the precautionary approach to fisheries management, as defined, e.g., in the FAO Code of Conduct for Responsible Fisheries.

Long-term objectives for the fishery are defined in the management plan: fisheries consistent with the precautionary approach intended to constrain harvesting within safe biological limits and designed to provide for sustainable fisheries. The management plan further provides for specific reference points for spawning stock biomass and fishing mortality. Short-term objectives explicitly addressed in EU and coastal state legislation include that TACs are not

exceeded, that discarding does not take place and that catch of non-target species is minimized.

### **3.6.4. Stakeholders and consultation processes**

All coastal states have a long tradition of continuous consultation and close cooperation between government agencies and user-group organisations, for the current fishery in particular the POs. SPFPO, for instance, has an agreement with the Swedish Agency for Marine and Water Management about regular meetings concerning the regulation and allocation of quota shares for pelagic species once information about TACs is released by the EU Commission (SPFPO, for instance, reports this to be an 'automatic process'), in addition to more informal consultations throughout the year. In Denmark as well, stakeholders are consulted both at meetings and in writing. Ahead of all EU fisheries council meetings, there is a stakeholder consultation, followed by consultation in parliament. The ministry gets its mandate on that basis; this applies also to the coastal states negotiations. KFO and PFA also report that they are involved in continuous and open consultations with national management authorities and other relevant stakeholders. Environmental NGOs are also invited to take part in consultation processes.

The situation is similar at the international level, where user-groups participate in Coastal State negotiations, while NGOs may participate at meetings in regional organizations such as the Pelagic AC, NEAFC and OSPAR.

All stakeholders interviewed for this assessment report consultation processes to be inclusive and transparent, with management authorities displaying consideration of the information obtained from stakeholders and how it is used.

### **3.6.5. Monitoring, control and surveillance**

The fishery primarily takes place in the Norwegian Economic Zone, under the jurisdiction of Norwegian enforcement authorities, and most fish is landed in Norwegian ports. The Norwegian Directorate of Fisheries keeps track of how much fish is taken of the respective national quotas, based on reports from the fishing fleet. Electronic catch logs, or more specifically Electronic Reporting Systems (ERS), are now in place with all countries involved in the fishing for Atlanto-Scandian herring, including in NEAFC waters. This implies that real-time data are forwarded to the Directorate of Fisheries, with the possibility to make corrections of data submitted each day within 12 hours into the next day. Norway has agreements in place with the EU, Russia and Iceland about exchange of ERS data, and is working actively to reach agreement on similar arrangements with the Faroe Islands and Greenland.

The self-reported catch data can be checked at sales operations through the sales organizations, which have monopoly on first-hand sale of fish in Norway. They are required to record all landings of fish in Norway and also have their own inspectors who carry out physical controls of landings. For instance, the Fishermen's Sales Organization for Pelagic Fish has five inspectors scattered along the Norwegian coastline. The Directorate has seven regional offices along the coast, staffed with inspectors who carry out independent physical control of the fish at the point of landing, including total volume, species and fish size. The

landed volumes are then compared to the volumes reported to the Directorate through the ERS system.

The Norwegian Coast Guard carries out inspections at sea, where the accuracy of reported data is checked. It is administratively part of the Norwegian Navy, but performs tasks on behalf of several ministries, including the Ministry of Trade, Industry and Fisheries. Its most important field of work, in practice, is fisheries inspections. Coast Guard inspectors board fishing vessels and control the catch (e.g. catch composition and fish size) and fishing gear (e.g. mesh size) on deck and the volume of fish in the holds. Using the established conversion factors for the relevant fish product, the inspectors calculate the volume of the fish in round weight and compare this with the catches reported to the Directorate through the logbooks.

In addition, national enforcement authorities perform control with the fishery in the EU zone and with landings in their respective ports. All catches landed in the NEAFC area are reported to the flag states under the port state control regime.

Hence there is ample opportunity for enforcement authorities to physically check whether the data provided by fishers through self-reporting are indeed correct. In addition, VMS data enable control of whether area restrictions are observed, among other things.

## 4. Evaluation Procedure

### 4.1. Harmonised Fishery Assessment

For this assessment, harmonisation was required for Principle 1 and parts of Principle 3 (component 3.1 – Governance and Policy) with the fisheries listed in Table 23:

**Table 23. Fisheries in the MSC programme with which harmonisation was required**

Fishery name	Status	Public Certification Report reference	Harmonisation with
Faroese Pelagic Organization (FPO) Atlanto-Scandian herring	Certified February 2010, previously suspended but now in re-assessment	DNV (2010)	P1, P3
MINSAs North East Atlantic mackerel	In assessment by FCI	N/A	P3
Norway spring spawning herring	Re-certified July 2014	DNV (2014)	P1, P3
PFA, DPPO, KFO, SPSG & Compagnie des Pêches St Malo Northeast Atlantic blue whiting pelagic trawl	In assessment by MEC	N/A	P3

NB Due to no longer meeting MSC's scope requirements (Principle 3, Criterion A1): "A fishery shall not be conducted under a controversial unilateral exemption to an international agreement".

The Faroese fishery was suspended, not because of any rescoring but because the Faroes' rejection of the Coastal States Agreement was considered to constitute a 'controversial unilateral exemption to an international agreement', and hence put the fishery out of scope. A harmonisation meeting was held with the support of MSC between all the CABs working on fisheries on this stock. At this meeting it was concluded that the breakdown of the coastal states agreement, although initiated by the Faroes, should now be regarded as a more general problem for all the fisheries, and should be considered in the scoring of Principle 3. This has been done here.

**A comparison of the relevant scores for Principle 1 and 3 is given in**

Table 24. Note that preliminary scores for P1 were shared with the P1 expert for the Norwegian fishery (Dr John Nichols); differences were not substantive as shown in the table below.



**Table 24. Comparison of scores given in similar fishery assessments**

PI	This fishery	DNV (2010)	DNV (2014)	FCI 2014
1.1.1	90	100	90	90
1.1.2	90	95	90	80
1.2.1	85	95	90	95
1.2.2	80 / 75*	90	90	90
1.2.3	90	90	90	90
1.2.4	85	95	95	85
3.1.1	65	85	65	85
3.1.2	100	100	100	95
3.1.3	100	100	100	100
3.1.4	90	100	100	100
3.2.1	90	90	90	90
3.2.2	85	100	90	80
3.2.3	100	95	100	95
3.2.4	90	100	100	90
3.2.5	80	90	100	90

\* See below

Harmonisation is also potentially required with blue whiting because a similar situation has arisen in relation to the Coastal States Agreement for this fishery, although in the case of blue whiting it is Norway who disputes the quota allocation. Discussions were held between the assessments teams for this fishery and the EU blue whiting fishery (under assessment by MEC), and it was agreed that the situation is not directly comparable, because of the ad hoc agreement between the Faroes and the EU which brings the likely TAC overshoot for this fishery in 2014 down to a level which is most likely compatible with the sustainable management of the stock. The outcome for blue whiting for 2015 is obviously not yet clear, but if no agreement is reached, the TAC overshoot risks being considerably larger. Nevertheless, the assessment teams will continue to liaise throughout the assessment/audit process.

On the 16<sup>th</sup> March 2015, a harmonisation meeting took place addressing the issue of Coastal States disputes in Northeast Atlantic pelagic fisheries and how CABs could address this in their assessments in a harmonised manner. The meeting took place between Jo Gascoigne and Geir Hønneland, the MSC and the respective experts for the fisheries listed in Table 23. The key outcomes from the meeting are presented in Appendix 8.

Subsequent to this analysis, the Faroese fishery entered re-assessment and was provisionally scored by the CAB. A harmonisation meeting was convened on 23 October 2015 involving MEC, DNV GL and Acoura, to ensure harmonised scoring of Principle 1 in relation to the problems in implementing the coastal states agreement. At that meeting, it

was agreed that the score for 1.2.2 should be reduced to 75, reflecting the deterioration of the situation since the original scoring of this fishery. We therefore use the agreed score and rationale in the scoring of 1.2.2. A summary of the outcome of this harmonisation meeting is also provided in Appendix 8.

#### **4.2. Previous assessments**

The SPSG, PFA and DPPO Atlanto-Scandian herring fisheries have been previously assessed against the MSC standard and are currently certified:

- [Scottish Pelagic Sustainability Group Ltd Atlanto Scandian herring](#): certified on 9th March 2010.
- [Pelagic Freezer-Trawler Association Atlanto-Scandian herring pelagic trawl](#): certified in July 2010.
- [Danish Pelagic Producers Organisation Atlanto Scandian herring](#): certified on the 21<sup>st</sup> July 2009.

None of the above fisheries were certified with conditions. Several recommendations were, however, made during the initial assessments and during the surveillance programme. The recommendations and progress against them have been summarised in Table 25.

**Table 25. Summary of recommendations made and corresponding progress for the SPSG, DPPO and PFA Atlanto-Scandian herring fisheries.**

Client	Recommendations	Progress
PFA	1. In response to ICES current concerns about the status of redfish stocks, the PFA should try to keep the by-catches of redfish as low as possible in this fishery, and ideally should refrain from participation in the directed pelagic redfish fishery	The PFA fleet has not participated in the redfish fishery since 2012.
	2. The score awarded for the performance indicators relating to effects on ETP species could be improved if the PFA adopted a formal and comprehensive strategy for managing impacts on all ETP species that is above national and international requirements for protecting these species; and also adopted a strategy for gathering quantitative information about these species.	Records of ETP species capture (including null records where no ETP species were caught) are submitted by all PFA vessels at the end of each fishing trip. The surveillance team inspected records for all fishing trips for the Atlanto-Scandian Herring fishery by PFA vessels since 2012. No ETP species interactions were reported.
	3. The score awarded for Performance Indicators 1.2.2, 1.2.3 and 1.2.4 would be improved if the extent and effect of slippage was better understood. New enforcement measures, such as the use of CCTV on fishing vessels, may improve understanding of this issue and should be supported	In 2013 the PFA decided to start a pilot project to examine the use of CCTV equipment (sourced from Canada) aboard one of its vessels, the Carolien, in collaboration with the Dutch control authorities. This work was being carried out in preparation for the introduction of the EU landing obligation due for implementation on the 1st January 2015. This work has been continued during 2014. Other PFA vessels are also participating in electronic monitoring trials – the Cornelis Vrolijk (working with the MMO in the UK); and the Jan Maria (working with BLE in Germany).
	4. All bycatches of salmon in the Atlanto-Scandian herring fishery should be officially reported even if only one or a few fish are caught. NASCO and ICES can only evaluate the impact of high seas fisheries on the wild salmon stocks if this information becomes available.	Y4 surveillance report: There have been no reports of any salmon bycatch in the fishery since certification.

DPPO	<p>1. EXTERNAL REVIEW AND/OR VERIFICATION OF COMPLIANCE OF THE DPPO CODEX: The DPPO should establish a formal annual external review protocol for assessing members' compliance with the provisions of the Codex.</p>	<p>Y3 surveillance report: The DPPO has, as part of the implementation of the Codex for a Sustainable and Responsible Pelagic Fishery, established a formal recording protocol for retained by-catches including slipped catches. Copies of forms filled in with information on by-catches including slipping by each vessel were presented to the surveillance team. No by-catches or slipping in the NEA herring fishery was reported by DPPO vessels. However, no formal annual external review protocol for assessing the compliance of the Codex by members of the DPPO has been implemented. A system for annual external review should be implemented before the next annual surveillance.</p> <p>Y4 surveillance report: A formal recording protocol for non-retained bycatch has been implemented and a formal annual review process for assessing DPPO members' compliance with the provisions of the Codex has been implemented as well. A responsible for the formal review process has been appointed (Claus Redtz Sparrevohn).</p>
SPSG	<p>1. The trip reporting protocols recently developed by the SPSPG for use in other fisheries to record interactions with ETP species, and instances of slippage should be extended for use in the Atlanto-Scandian herring fishery. Consult with relevant bodies to ensure all key elements, appropriate to the fishery are included.</p>	<p>Y4 surveillance report: The trip protocols developed for West of Scotland herring fishery ('exceptional events' logs) have been adopted for the Atlanto-Scandian herring fishery, as the vessels follow SPSPG protocol and Code of Conduct. The client confirmed that 'at the start of each fishery a correspondence letter is sent out to each owner/skipper reminding him of the requirement to document any "exceptional events" and state they must return a form if that occurs. In addition, at the quarterly board meetings the fisheries are discussed, including discard'. When asked during board meetings in 2013, the skippers did not report any 'exceptional events' and they all reported a very clean fishery on this herring stock. The client did not provide an 'exceptional event' logsheet for this audit, indicating that no 'exceptional events' appear to have occurred. A copy of the Vessel Operating manual was provided, which includes detailed ETP identification, and is on board of each SPSPG vessel.</p>

	<p>2. It would be beneficial to future assessments, if observer reports are provided for the Atlanto-Scandian fishery, giving quantitative corroboration of issues such as ETP species interactions and slippage. This is no more than would be expected for a fishery of this scale and would further enhance the sustainability credentials of the fishery. SPSG could liaise with Scottish research bodies, to facilitate further involvement in future observer programs or to collaborate in any relevant research, which may require observers.</p>	<p>Year 4 surveillance report: There is currently no Government run observer programme, it was discontinued in 2012, as funding is limited. However, the client pointed out that if an observer requests a trip aboard a vessel they are always welcome. Indeed, University of St Andrews mammal observer unit are sending an observer out with Kings Cross on the blue whiting fishery (Client information update). Marine Scotland Science has not included plans of a pelagic observer scheme due to financial constraints. SPSG has been notified that the SFF (Scottish Fishermen's Federation) observer scheme cannot be used to provide coverage for pelagic fisheries. Regarding the use of CCTV, instead of observer programmes, SPSG firmly believes all fleets working in a particular fishery should be monitored by the same method, thus introducing a level playing field (Client – information update). However, the new CFP has been adopted which includes legislation banning discarding or slipping, starting with pelagic fisheries in January 2015. At this time it is still unclear how this will be monitored, this will become apparent by June when Member States submit a discard plan to the Commission for evaluation (Client - pers.com.). One vessel, Pathway PD 165 has been fitted with CCTV cameras since August 2013 as part of the Marine Scotland discard trial project (This recommendation remains in progress)</p>
	<p>3. The harvest control rule as implemented (i.e. without the 1.5 million tonne cap on the TAC) should be tested through simulation.</p>	<p>Year 4 surveillance report: Since this recommendation was first formulated in 2010 (as part of the original assessment), it is now debatable how much the Client can actually act upon this. However, latest ICES Advice, October 2013, and ICES Special request May 2013 (NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock) tested the HCR under various scenarios (This recommendation remains in progress)</p>

### 4.3. Assessment Methodologies

The assessment methodology is given in Table 26.

**Table 26. Assessment methodology used.**

Version of Certification Requirements used	1.3
Version of Full Assessment Reporting Template used	1.3
Default assessment tree used with adjustments?	No
Details of adjustments made	N/A

### 4.4. Evaluation Processes and Techniques

#### 4.4.1. Site Visits and consultations

During the assessment process, two site visits were held: one in Gothenburg, Sweden on the 3<sup>rd</sup> and 4<sup>th</sup> June 2014, and one in Killybegs Ireland on the 23<sup>rd</sup> and 24<sup>th</sup> July 2014. The stakeholders consulted with during and after the site visit are listed in Table 27.

**Table 27. Stakeholders consulted with during and after the site visit**

Name	Role / organisation	Type of consultation
Bengt Gunnarsson	SPFPO representative	Provision of information during Gothenburg site visit
Geir Hønneland	MEC	Assessor
Jo Gascoigne	MEC	Assessor
Bjorn Lindblad	SPFPO representative	Provision of information during Gothenburg site visit
Chrissie Sieben	MEC	Assessor
Karin Linderholm	Swedish Agency for Marine and Water Management	Provision of information during Gothenburg site visit
Sean O'Donoghue	KFO - CEO	Provision of information during Killybegs site visit
Ted Breslin	KFO - Executive Assistant and Deputy CEO	Provision of information during Killybegs site visit
Paddy Gallagher	Killybegs Sea-Fisheries Protection Authority	Provision of information during Killybegs site visit
Gerard van Balsfoort	PFA – president	Provision of information at separate client meeting in Copenhagen
Esben Sverdrup-Jensen	DPPO - president	Provision of information at separate client meeting in London and Copenhagen
Ian Gatt	SPSG – Secretary	Provision of information at separate client meeting in Copenhagen

Name	Role / organisation	Type of consultation
Leon Bouts	Nederlandse Voedsel en Waren Autoriteit	Remote provision of information
Seamus Gallagher	Sea-Fisheries Protection Authority	Remote provision of information
Conor O'Shea	Sea-Fisheries Protection Authority	Remote provision of information
Simon Dryden	Marine Scotland	Remote provision of information
David Turnbull	Marine Scotland	Remote provision of information
Ulla Wiborg	Danish Ministry of Food, Agriculture and Fisheries	Remote provision of information
Andras Kristiansen	Faroese Ministry of Fisheries	Remote provision of information
Kjetil Grødahl	Norwegian Directorate of Fisheries	Remote provision of information
Sabine Manthey-Ehrich	German Federal Office for Agriculture and Food	Remote provision of information
Jonny Høgseth	Norwegian Coast Guard	Remote provision of information

At key stages of the assessment process, stakeholders were contacted and provided with an opportunity to comment (for a full list of stakeholders, please see Appendix 7). Stakeholders were contacted at the following stages:

- i. Fishery announcement – 29 April 2014
- ii. Assessment team and timeline - 29 April 2014
- iii. Assessment team confirmation – 19 May 2014
- iv. Use of Default Assessment Tree – 1 May 2014
- v. Site visit notification – 1 May 2014 and 17 June 2014
- vi. Revised timeline due to delays in data provision – 3 February 2015
- vii. Proposed peer reviewers – 17 March 2015

#### **4.4.2. Stakeholder comments during evaluation**

The consultations with stakeholders focused on the provision of information for the assessment and no concerns were raised about the fishery by any of the stakeholders.

#### **4.4.3. Evaluation Techniques**

##### **a) Media announcements**

MEC selected two media outlets: Fishing News EU and the MSC website. Fishing News EU was selected because it reaches a wide range of seafood professionals in the EU, while the MSC press release targeted a wide range of stakeholders within the sustainable seafood industry. The combination of both ensured that key stakeholders were notified of this fishery's announcement.

##### **b) Methodology for information gathering**

Information for the assessment was gathered during the site visit and through separate consultation and correspondence with individual stakeholders. The PO representatives listed in Table 27 were key in providing most of the information regarding the operation and management of the fishery. Catch data for the fleets under assessment were obtained from

the respective sea fisheries authorities. Scientific information was mostly available on the ICES website.

### c) Scoring process

Scoring was partly completed during the site visit and partly completed afterwards. Some Principle 2 information was lacking during the site visits (for reasons outside the control of the assessment team or the client) and PIs 2.3.1 - 2.5.3 were therefore mainly scored after the site visit, by remote discussion.

The scores were decided as follows:

How many scoring issues met?	SG60	SG80	SG100
All	60	80	100
Half	FAIL	70	90
Less than half	FAIL	65	85
More than half	FAIL	75	95

Note that where there is only one scoring issue in the SG, the issue can be partially scored – in this case the team used their judgement to determine what proportion of it was met, e.g. at the 100 level, a small part met = 85, about half met = 90, nearly all met = 95.

### d) Decision rules for final outcome

The decision rule for MSC certification is as follows:

- No PIs scores below 60;
- The aggregate score for each Principle, rounded to the nearest whole number, is 80 or above.

The aggregate score for each Principle is calculated by taking the average score for each section followed by the average of all the section scores (see Section 6.2).

### e) Scoring elements

For Principle 1, only one scoring element was considered, i.e. the Atlanto-Scandian herring stock. The set of scoring elements that were considered in the outcome PIs under retained, discarded and ETP species in Principle 2 is listed in Table 28.

**Table 28. Scoring elements**

Component	Scoring elements	Main/not main	Data-deficient or not
1.1 – Target species	Atlanto-Scandian herring	N/A	No
2.1 – Retained species	Mackerel	Main	No
2.2 – Discards	None	N/A	N/A
2.3 – ETP species	Marine mammals	N/A	No



## 5. Traceability

### 5.1. Eligibility Date

The target eligibility date for this fishery has been set as the date of certification.

#### (REQUIRED FOR PCR ONLY)

1.	The report shall include:
a.	The actual eligibility date.
b.	The rationale for any difference in this date from the target eligibility date

### 5.2. Traceability within the Fishery

#### a) Description of the tracking, tracing and segregation systems within the fishery

For RSW vessels, no processing takes place on board and the catch is landed as fresh. For PFA freezer-trawler vessels, all catch is however processed on board. After processing, the catch is graded and placed into vertical plate freezers where blocks of whole frozen fish are formed. These are placed into cartons which indicate the date of catch, species, batch date and fishing area. Fish from separate production batches are kept on separate pallets and are never mixed (Andrews et al., 2010). All PFA catch is destined for human consumption and is therefore subject to EU traceability requirements.

In accordance with EU regulations, retained volumes by species are fed into electronic logbooks which are submitted to the authorities every 24 hours (as described in Section 3.6.5). All UoC vessels must be equipped with an operational vessel monitoring system (VMS) unit. Through the VMS, flag states can monitor the location of each of their vessels at any time. As most of this fishery takes place in Norwegian waters, at-sea inspections are routinely carried out by the Norwegian Coast Guard, who may access VMS data and board fishing vessels and control the catch (e.g. catch composition and fish size) and fishing gear (e.g. mesh size) on deck and the volume of fish in the holds. Port-of-landing authorities must be notified at least 4 hours before a vessel arrives into port. Upon landing, the catch is sampled by the port-of-landing authorities who verify total volume, species and fish size and validate this against the electronic logbook data (a 10% discrepancy is however permitted). For PFA vessels, a fishery inspector checks each pallet against log-sheet records for total weight and a statutory subsample of pallets is set aside, allowed to thaw, and the actual carton contents weighed to verify the accuracy of the log-sheet and labelling records (Andrews et al., 2010). For RSW vessels, for which the landed catch is only sorted and weighed after pumping/transporting into the factory, the inspection occurs in the processing factories. The validated landings data are then counted towards the official landing statistics and quota uptake. The combination of electronic logbooks, at-sea inspections, port controls and VMS data makes that this fishery is subject to a robust traceability system. For PFA vessels, further traceability is provided by the client's own internal systems that record the date and time of fishing activities, and the date and time of packaging on board vessels. All

of the frozen fish landed from this fishery can be traced back to the date and location of the trawl haul in which the fish were caught (Andrews et al., 2010).

#### **b) Evaluation of the possibility of vessels fishing outside the unit of certification**

The UoC covers the entire area of distribution of the ASH stock and client vessels only operate the gear as described in the UoC. There is therefore no risk of mixing certified with non-certified ASH aboard the client vessels.

#### **c) Evaluation of the opportunity for substitution of certified fish with non-certified fish prior to and at the point of landing**

As illustrated in Section 3.3, the ASH fishery is a geographically and seasonally restricted fishery, predominantly carried out in the first quarter of the year in Norwegian waters. Although other herring such as North Sea herring are morphologically different from ASH herring (much smaller), there is also a minimal chance of overlap between these two fisheries. For RSW vessels, all catch is pumped directly into the hold after which it is pumped/transported directly to the processing factory, no processing takes place on board and the catch is landed as fresh. In addition, the fishery verifies its landings data, which are used for official monitoring of quota up-take and national statistics. A high level and sophisticated system of at sea monitoring, control and surveillance, both in EU and Norwegian waters provide confidence in a limited ability to substitute certified with non-certified fish. Routine boarding and inspection, spotter planes, reporting to checkpoints when crossing international boundaries, VMS are all methods by which the separation systems are interrogated by the fishery.

On PFA vessels, fish from separate production batches are kept on separate pallets and are never mixed. The catch is graded and the fish frozen whole as blocks on board. The frozen blocks are boxed up in cartons, which indicate the date of catch, species, batch date and fishing area. Fish from separate production batches are kept on separate pallets and are never mixed. All PFA catch is destined for human consumption and is therefore subject to EU traceability requirements. On landing, all catches are subject to thorough inspection regimes at designated landing sites (see Table 29 and Table 30). The traceability systems previously described further make that the risk of substitution of certified fish with non-certified fish is minimal.

#### **d) Details of the use of trans-shipping in the fishery**

All transshipment operations in EC waters are prohibited and may only take place in designated ports in EU Member States subject to authorisation from the relevant authorities. None of the vessels in the UoC carry out transshipment activities. It was noted, however, that in exceptional circumstances, if a vessel overhauls, the surplus catch is pumped onto another vessel. However this would always be within the same UoC and count towards the quota of that other vessel.

#### **e) Points of landing**

The choice of landing point is made on the basis of market proximity and price – with market price being the single most important determining factor. It is often the case that buyers have

already been identified prior to the trip taking place, or are identified via electronic auction prior to landing. With the exception of PFA vessels, the catch is thus not stored but changes ownership immediately after landing. For PFA vessels, the catch is landed in one of the major Dutch ports (Vlissingen, IJmuiden, Scheveningen), irrespective of the vessel's flag state and subsequently stored in port storage facilities. Note that these storage facilities are not part of the UoC and would therefore be subject to separate CoC certification.

In accordance with Commission Regulation (EC) No 1542/2007 of 20 December 2007 on landing and weighing procedures for herring, mackerel and horse mackerel, landings of pelagic species such as herring<sup>6</sup>, mackerel and horse mackerel (and exceeding a combined volume of 10 tonnes) must be made at designated EU and non-EU landing sites, as shown in Table 29 and Table 30. In most cases, the RSW vessels pump their catch directly into the factory (however, in Killibegs where no such system exists, the catch is transported in refrigerated trucks to the processing factory).

**Table 29. Designated EU landing sites for pelagic species (herring, mackerel and horse mackerel)**

Member state	Ports
Denmark	Esbjerg, Thyborøn, Hanstholm, Hirtshals, Skagen, Grenå, Gilleleje
France	Boulogne-sur-Mer, Fécamp, Cherbourg, Saint-Malo, Douarnenez
Germany	Cuxhaven, Bremerhaven, Rostock, Sassnitz
Ireland	Killybegs, Rós a Mhíl (Rossaveal), Castletownbere, An Daingean (Dingle), Rathmullen, Howth, Ringaskiddy (in the Port of Cork), Baltimore, Dunmore East, Duncannon
The Netherlands	IJmuiden, Scheveningen, Vlissingen, Velsen-Noord, Harlingen
Sweden	Träslövsläge, Rönäng, Mollösund, Ellös, Lysekil, Kungshamn
UK - England and Wales	Brixham, Douglas, Peel, Port St Mary, Ramsey, North Shields, Scarborough, Humberside, Grimsby, Lowestoft, Plymouth, Newlyn, Holyhead, Fleetwood, Whitehaven
UK - Scotland	Eyemouth, Aberdeen, Peterhead, Fraserburgh, Lerwick, Ullapool, Oban, Mallaig
UK – Northern Ireland	Ardglass, Kilkeel, Portavogie, Warren Point, Londonderry

<sup>6</sup> taken in ICES zones I, II, IIIa, IV, Vb, VI, and VII

Outside the EU, the following landings may occur at the following designated ports:

**Table 30. Designated non-EU landing sites for pelagic species (herring, mackerel and horse mackerel)**

Country	Ports
Faroe Islands	Fuglafjørð, Kollafjørð
Norway	Engelsviken, Lyngdal, Egersund, Sirevåg, Skudeneshavn, Avaldsnes, Haugesund, Brandasund, Storebø, Bergen, Florø, Kalvåg, Iglandsvik, Måløy, Deknepollen, Selje, Fosnavåg, Leinøy, Moltustranda, Liavågen, Fiskarstrand, Ålesund, Ellingsøy, Longva, Misund, Dyrnes, Vikan, Uthaug, Rørvik, Lovund, Træna, Bodø, Værøy, Leknes, Gimsøysand, Kabelvåg, Svolvær, Skrova, Lødingen, Sortland, Sigerfjorden, Bø, Eidet, Myre, Torsken, Husøy, Senjahopen, Sommarøy, Tromsø, Vannøy, Båtsfjord

### 5.3. Eligibility to Enter Further Chains of Custody

Atlanto-Scandian herring caught in the manner specified in the UoCs (see Section 3.1) and by the PFA, DPPO, SPSG, KFO and SPFPO member vessels listed in Table 1 to Table 5 after the date of certification will be eligible to enter further chains of custody, pending the outcome of this evaluation. Any changes to the membership of these POs should be communicated to MEC so that an updated list of vessels can be made available on the MSC website.

Separate chain of custody certification will be required from the point of landing (and as required by the MSC Chain of Custody requirements Version 1.3).

The eligible points of landing are as shown in **Table 29** and **Table 30**.

### 5.4. Eligibility of Inseparable or Practically Inseparable (IPI) stock(s) to Enter Further Chains of Custody

There are no IPI stocks involved in this assessment.

## 6. Evaluation Results

### 6.1. Principle Level Scores

**Table 31. Final Principle Scores**

Principle	Score
Principle 1 – Target Species	86.9
Principle 2 – Ecosystem	83.0
Principle 3 – Management System	88.9

### 6.2. Summary of Scores

Principle	Component	Weighting	PI number	Performance Indicator	Score
1	Outcome	0.5	1.1.1	Stock status	90
			1.1.2	Reference points	90
			1.1.3	Stock rebuilding	N/A
	Management	0.5	1.2.1	Harvest Strategy	85
			1.2.2	Harvest control rules and tools	75
			1.2.3	Information and monitoring	90
			1.2.4	Assessment of stock status	85
2	Retained species	0.2	2.1.1	Outcome	80
			2.1.2	Management	80
			2.1.3	Information	85
	Bycatch species	0.2	2.2.1	Outcome	80
			2.2.2	Management	85
			2.2.3	Information	80
	ETP species	0.2	2.3.1	Outcome	80
			2.3.2	Management	80
			2.3.3	Information	80
	Habitats	0.2	2.4.1	Outcome	90
			2.4.2	Management	90
			2.4.3	Information	95
	Ecosystem	0.2	2.5.1	Outcome	80
			2.5.2	Management	80
			2.5.3	Information	80
3	Governance	0.5	3.1.1	Legal and customary framework	65

	and Policy		3.1.2	Consultation, roles and responsibilities	100
			3.1.3	Long term objectives	100
			3.1.4	Incentives for sustainability	90
	Fishery-specific management system	0.5	3.2.1	Fishery specific objectives	90
			3.2.2	Decision making processes	85
			3.2.3	Compliance and enforcement	100
			3.2.4	Research plan	90
			3.2.5	Management performance evaluation	80

### 6.3. Summary of Conditions

The conditions are summarised in Table 32 below. For more details, including milestones please see Appendix 1.2.

**Table 32. Summary of Conditions**

Condition number	Condition	Performance Indicator
1	<p>The SG80 requirement for SI c) above must be met. 'Available evidence' may be any relevant evidence, provided through ICES or other verifiable means, that shows the implications of all available management actions (e.g. by coastal states and/or agreements with other relevant states in controlling fishing mortality) in achieving exploitation levels consistent with appropriate harvest control rules and the requirements of PI 1.1.1.</p> <p>This condition is closely aligned to Condition 2.</p>	1.2.2
2	<p>There is a mechanism in place for international cooperation in the fishery (the Coastal States Agreement) but it is not apparently completely effective, since it is currently not working properly due to the withdrawal of the Faroes, and as of 2015 a failure of the coastal states in general to agree a TAC. The dispute has now lasted more than a year, with no sign of formal resolution as yet (although the issue has been mitigated by negotiation) – hence it is not clear that the dispute resolution framework is effective.</p> <p>The fishery should work with the EU, the Pelagic Advisory Council, other certified or suspended UoCs in the fishery and/or other parties as appropriate to support the resolution of the dispute between the coastal states and to re-establish an effective international cooperation mechanism for the fishery.</p>	3.1.1

### 6.3.1.Recommendations

The following non-binding recommendations are made:

**Recommendation 1:** To meet the standard of the other fleets in the client group, the audit team felt that SPFPO would benefit from running a similar self-reporting mechanism for discarding events (including slipping), gear loss and interactions with ETP species. The team therefore recommends that such a system is put in place for SPFPO member vessels.

**Recommendation 2:** The team stresses the importance of the PFA observer data in obtaining the SG80 level under the bycatch/discard (2.2) and ETP (2.3) components. It is strongly recommended that observer campaigns in the ASH fishery are maintained.

### 6.4. Determination, Formal Conclusion and Agreement

Following review of the draft Final Report, as well as all stakeholder comments submitted prior to and in relation to the Public Comment Draft Report, the Assessment Team was in unanimous agreement to grant MSC certification to this fishery, pending the outcome of the objections period.

#### (REQUIRED FOR PCR)

- |  |
|--|
| 1. The report shall include a formal statement as to the certification action taken by the CAB's official decision-makers in response to the Determination recommendation. |
|--|

### 6.5. Changes in the fishery prior to and since Pre-Assessment

No pre-assessment was undertaken for this fishery.

## 7. References

- Andrews, J., Eltink, A., Lockwood, S.J. 2010. MSC Public Certification Report for the Pelagic Freezer-Trawler Association Atlanto-Scandian Herring Fishery. Moody International Certification Report. Available online at: <http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/pelagic-freezer-trawler-association-atlanto-scandian-herring/assessment-downloads-1/01.06.2010-pfa-as-herring-pcr.pdf>
- Chuengpagee, R., Morgan, L.E., Maxwell, S.M., Norse, E.A. & Pauly, D. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. *Frontiers in Ecology and the Environment*. 1, 10, 517-524.
- Dickey-Collas, M., Nash, R. D. M., Brunel, T., van Damme, C. J. G., Marshall, C. T., Payne, M. R., Corten, A., Geffen, A. J., Peck, M. A., Hatfield, E. M. C., Hintzen, N. T., Enberg, K., Kell, L. T., and Simmonds, E. J. 2010. Lessons learned from stock collapse and recovery of North Sea herring: a review. – *ICES Journal of Marine Science*, 67: 000–000.
- DNV. 2009. MSC Public Certification Report for the Danish Pelagic Producer Organisation Atlanto-Scandian Herring Fishery. DET NORSKE VERITAS AS. REPORT NO. 2009-0003. Available online at: <http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/DPPO-Atlanto-Scandian-herring/assessment-downloads-1/16.07.2009-Public-Certification-Report-DPPO-AS-Herring.pdf>
- DNV. 2010. MSC Public Certification Report for the Faroese Pelagic Organisation Felagið Nótaskip Atlanto-Scandian Herring Fishery. DET NORSKE VERITAS AS. REPORT NO. 2009-0004.
- DNV. 2013. MSC Year 4 surveillance report for the Danish Pelagic Producers Organisation Atlanto-Scandian Herring Fishery. DET NORSKE VERITAS AS. REPORT NO. 2013-018. Available online at: [http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/DPPO-Atlanto-Scandian-herring/assessment-downloads-1/20131118\\_SR\\_HER32.pdf](http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/DPPO-Atlanto-Scandian-herring/assessment-downloads-1/20131118_SR_HER32.pdf)
- DNV. 2014. MSC Public Certification Report for the Re-assessment of the Norway Spring Spawning herring fishery. DET NORSKE VERITAS AS. REPORT NO. 2013-009. Available online at: [http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/norway-spring-spawning-herring/re-assessment-downloads-1/20140703\\_PCR\\_HER91.pdf](http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/norway-spring-spawning-herring/re-assessment-downloads-1/20140703_PCR_HER91.pdf)
- Dommasnes, A., Christensen, V., Ellertsen, B., Kvamme, C., Melle, W., Nøttestad, L., Pedersen, T., Tjelmeland, S. and Zeller, D. 2001. An Ecopath Model for the Norwegian and Barents Sea. *In*: S. Guénette, Christensen, V. and Pauly, D. (eds.). *Fisheries impacts on North Atlantic ecosystems: models and analyses*. Fisheries Centre Research Reports 9(4).
- Donaldson, A., Gabriel, C., Harvey, B.J. & Carolsfeld, J. 2010. Impacts of Fishing Gears other than Bottom Trawls, Dredges, Gillnets and Longlines on Aquatic Biodiversity and Vulnerable Marine Ecosystems. Research Document 2010/011. Canadian Science Advisory Secretariat. Fisheries and Oceans Canada.



- Ernst and Young, et al. 2011. Interim evaluation of the European Fisheries Fund (2007-2013) Synthesis of the 26 national evaluation reports, 91p. From [http://ec.europa.eu/fisheries/documentation/studies/eff\\_evaluation/eff\\_evaluation\\_synthesis\\_en.pdf](http://ec.europa.eu/fisheries/documentation/studies/eff_evaluation/eff_evaluation_synthesis_en.pdf)
- Essington ,T. and Pláganyi, E.E. 2013. Model and data adequacy for Marine Stewardship Council key low trophic level species designation and criteria and a proposed new assessment index. Marine Stewardship Council Science Series 1: 171 – 191.
- FCI. 2010. Public Certification Report for the Scottish Pelagic Sustainability Group Ltd (SPSG)
- Atlanto-Scandian Herring Fishery
- FCI. 2014. Off-Site Surveillance Audit - Report for Scottish Pelagic Sustainability Group Ltd Atlanto Scandian herring Fishery. 4th Annual Surveillance. Food Certification International Ltd Report. Available online at: [http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring/assessment-downloads-1/20140401\\_SR\\_HER115.pdf](http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring/assessment-downloads-1/20140401_SR_HER115.pdf)
- Gullestad,P., Blom, G., Bakke, G. and Bogstad, B. 2015. The ‘Discard Ban Package’: Experiences in efforts to improve the exploitation patterns in Norwegian fisheries. Marine Policy, Volume 54, Pages 1-9
- Huse, G., Holst, J.C., Utne, K., Nottestad, L., Melle, W., Slotte, A., Ottersen, G., Fenchel, T. and Uiblein, F. 2012. Effects of interactions between fish populations on ecosystem dynamics in the Norwegian Sea - results of the INFERNO project, Marine Biology Research, 8:5-6, 415-419.
- ICES. 1998. Report of the Study Group on the precautionary approach to fisheries management. ICES CM 1998/ACFM:I0 Ref. D. ICES Headquarters 3 – 6 February 1998.
- ICES. 2008. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 21 – 1 September 2008, ICES Headquarters Copenhagen. Diane. 67 pp.
- ICES, 2012. Report of the Workshop for the Revision of Long Term Management Plans, WKHELP. ICES CM 2012 / ACOM:72
- ICES. 2010. Report of the Workshop on estimation of maturity ogive in Norwegian spring spawning herring (WKHERMAT), 1-3 March 2010, Bergen, Norway. ICES CM 2010/ACOM:51. 47 pp.
- ICES. 2013a. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 27 August - 2 September 2013, ICES Headquarters, Copenhagen, Denmark. ICES CM 2013/ACOM:15. 950 pp.
- ICES. 2013b. NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock - Special request, Advice May 2013. Report of the ICES Advisory Committee 2013. ICES Advice, 2013. Book 9.
- ICES. 2013c. Report of the Working Group on Bycatch of Protected Species (WGBYC), 4–8 February, Copenhagen, Denmark. ICES CM 2013/ACOM:27. 73 pp.

- ICES. 2014a (WGWIDE report) Report of the WGWIDE subgroup for updated Mackerel advice for 2014. ICES CM/2014/ACOM:48
- ICES. 2014b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 26 August - 1 September 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:15. 938 pp..
- ICES. 2014c. Mackerel in the Northeast Atlantic (combined Southern, Western, and North Sea spawning components) - Advice May 2009. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.
- ICES. 2014d. Report of the Benchmark Workshop on Pelagic Stocks (WKPELA), 17–21 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 43. 341 pp.
- ICES. 2014e. Mackerel in the Northeast Atlantic (combined Southern, Western, and North Sea spawning components) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.
- ICES. 2014f. Beaked redfish (*Sebastes mentella*) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 3, Section 3.3.6.
- ICES. 2014g. Report of the Working Group on Bycatch of Protected Species (WGBYC), 4–7 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM:28. 96 pp.
- ICES. 2014h. 2nd Interim Report of the Working Group on Integrated Assessments of the Norwegian Sea (WGINOR), 18-22 August 2014, Torshavn, Faroe Islands. ICES CM 2014/SSGRSP:07. 25 pp.
- ICES. 2014i. Golden redfish (*Sebastes norvegicus*) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 3, Section 3.3.7.
- ICES. 2014j. Advice basis. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 1.
- ICES, 2014k. Blue whiting in Subareas I–IX, XII, and XIV. Advice September 2014. ICES Advice, Book 9, Sec 9.3.5.
- ICES, 2014m. Capelin in Subareas I and II, excluding Division IIa west of 5°W (Barents Sea capelin). Advice September 2014. ICES Advice, Book 3, Sec 3.3.1.
- ICES. 2014n. Report of the Workshop to consider reference points for all stocks (WKMSYREF2), 8-10 January 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:47. 91 pp.
- ICES, 2014o. Report of the Arctic Fisheries Working Group (AFWG), 23-29 April 2014, Lisbon. ICES CM 2014/ACOM:05. 656 pp.
- ICES. 2014p. Herring in Subareas I, II, and V, and in Divisions IVa and XIVa (Norwegian spring-spawning herring) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9
- Lockwood, S., Sverdrup-Jensen, S., Chaudhury, S. 2009. MSC Public Certification Report for the Danish Pelagic Producer Organisation Atlanto-Scandian Herring Fishery. DET NORSKE VERITAS REPORT NO. 2009-0003. Available online at: <http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east->

[atlantic/DPPO-Atlanto-Scandian-herring/assessment-downloads-1/16.07.2009-Public-Certification-Report-DPPO-AS-Herring.pdf](#)

- Morgan, L.E. & Chuenpagdee, R. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. Pew Science Series. Washington, DC: Island Press.
- Morizur, Y., Tregenza, N., Heessen, H., Berrow, S., Pouvreau, S. 1996. By-catch and Discarding in Pelagic Trawl Fisheries -Final report - Contract EC DG XIV-C-1, Study BIOECO /93/017, 213 p.
- Northridge. S. Kingston, A., Thomas. L. 2011. Report to the European Commission on the implementation of regulation 812/2004 by the United Kingdom for the Calendar year 2011. Sea Mammal Research Unit /Scottish Oceans Institute and the Centre for Research into Ecological and Environmental Modelling, University of St Andrews. 24 pp.
- Southall, T., Medley, P., Carleton, C., Gill, M. and McFadden M. 2010. MSC Public Certification Report for the Scottish Pelagic Sustainability Group Ltd (SPSG) Atlanto-Scandian Herring Fishery. Food Certification International Ltd Report. Available online at: <http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring/assessment-downloads-1/09.03.2010-as-herring-pcr.pdf>
- STECF. Scientific, Technical and Economic Committee for Fisheries – Consolidated Advice on Fish Stocks of Interest to the European Union (STECF-14-24). 2014. Publications Office of the European Union, Luxembourg, EUR 27028 EN, JRC 93360, 747 pp.
- Tenningen, M.M. 2014. Unaccounted Mortality in Purse Seine Fisheries: Qualification and mitigation of slipping mortality. PhD Theses Bergen University. Available online at: <https://bora.uib.no/bitstream/handle/1956/8303/dr-thesis-2014-Maria-Mikaela-Tenningen.pdf?sequence=1>
- van Overzee, H., van Helmond, A.T.M., Ulleweit, J., Panten, K. 2013. Discard sampling of the Dutch and German pelagic freezer fishery operating in European waters in 2011 and 2012. CVO report: 13.013. 68 pp.

## Appendices

### Appendix 1 Scoring and Rationales

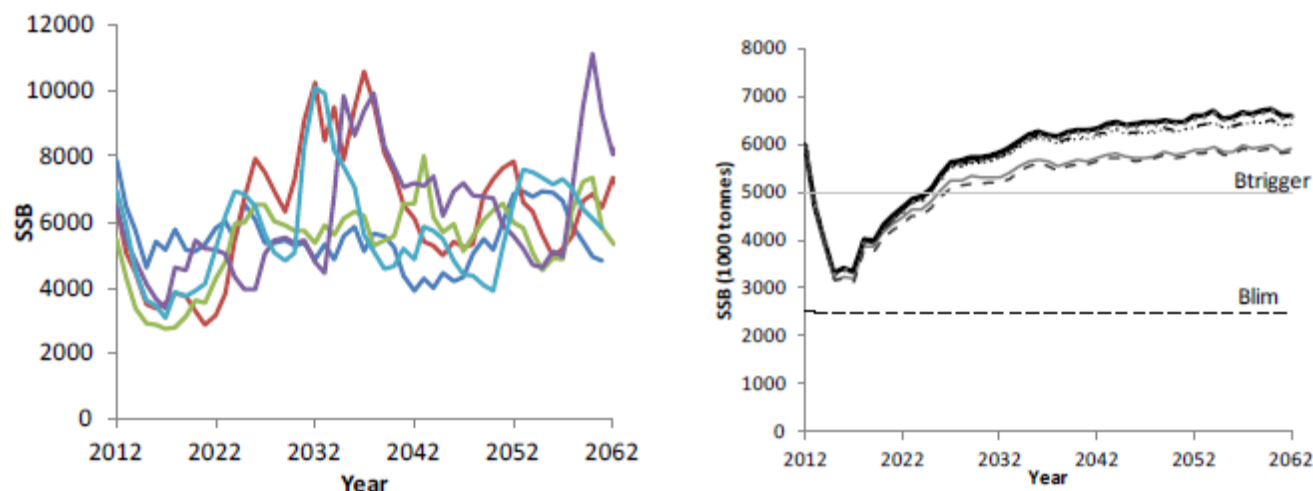
#### Appendix 1.1 Performance Indicator Scores and Rationale

Evaluation table 1 - PI 1.1.1

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
	Met?	Y	Y	Y
	Justification	The most recent estimate of stock biomass (2013) suggested that the stock was more or less at the target reference point level of 5 million tonnes (ICES, 2014a). The limit reference point (2.5 million tonnes) was set at the 'minimum biologically acceptable level' (MBAL) – in this case taken to be the lowest point in the time series. There is no evidence that at this level, recruitment was impaired. The target reference point ( $B_{pa}$ / $MSYB_{trigger}$ ) was defined such that there is a low probability of the actual stock status being below $B_{lim}$ when the estimate from the stock assessment is above $B_{trigger}$ , taking into account the uncertainty in the stock assessment (ICES, 1998). Therefore, we conclude that there is a high degree of certainty that the stock is above the point at which recruitment is impaired.		
b	Guide post		The stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.
	Met?		Y	N
	Justification	According to the most recent ICES stock assessment (ICES, 2014b), spawning stock biomass was above the target level from 2004 to 2012, peaking in 2009 and declining since then. In 2013 and 2014 the biomass dropped below the target level. Fishing mortality has		

fluctuated around the MSY level ( $F_{MSY}$  estimated to be 0.15) since 2002, although it has been more or less consistently above the target level set in the management plan ( $F_{MP}=0.125$ ). The stock assessment has a tendency to over-estimate biomass and hence under-estimate fishing mortality, which is presumably the cause of this overshoot.

Meeting SG80 requires the stock to be 'fluctuating around' the Biomass target reference point. In 2013, ICES (2013) conducted long-term projection for the stock using normal recruitment, and the results are given below (left: 5 random stock biomass trajectories under the current management plan; right: evaluation of the current plus 5 modified management plans – current is the solid black line). This shows that in the short term, the stock was predicted to continue to decline but then increase. At no point was it predicted to decline below  $B_{lim}$



The team considered the scoring of this PI very carefully, particularly in relation to concerns expressed by the peer reviewers and the MSC Technical Oversight (see Annex 3). The scoring was discussed at a harmonisation meeting facilitated by MSC on 23 October 2015, the conclusions of which are presented in Annex 8. This scoring is consistent with the outcome of this meeting.

Initially the Team noted that:

- While the stock has been estimated below  $B_{trigger}$  the last two years, 2013 was the first time the stock had been below  $B_{trigger}$  since 2004, and was only estimated below  $B_{trigger}$  in the most recent assessment retroactively

		<ul style="list-style-type: none"> <li>• The 10, 5, and 3 year average SSB was ~ 5.9, 5.1, and 4.5 million tons respectively compared with 5.0 million tons for <math>B_{trigger}</math>.</li> <li>• The terminal estimate in 2014 of SSB was 20% lower than <math>B_{trigger}</math></li> <li>• While uncertainty estimates were not available it was likely that <math>B_{trigger}</math> was within the uncertainty envelope of the terminal SSB estimate</li> <li>• That the exploratory TISVPA results place the stock above <math>B_{trigger}</math></li> <li>• That while recruitment 2013 was uncertain, as that year class had not entered full selection; the 2013-year class is documented to be average appearing mostly in the Barents (in surveys 4, 6 and 7).</li> <li>• While longer-term projections past 2015 were not available in the most recent update, it seemed probable that the stock would increase above <math>B_{trigger}</math> by 2017-2019.</li> </ul> <p>Therefore the Team indicated that the stock has been in oscillation (Figure 4) around <math>B_{trigger}</math> several times since the 1990s. And while currently below <math>B_{trigger}</math>, would again be above <math>B_{trigger}</math> within one-generation time from 2013 (2023).</p> <p>Conversely, the MSC TO and peer reviewer 2 noted the following:</p> <ul style="list-style-type: none"> <li>• SSB has been below <math>B_{trigger}</math> for the last 2 years and is expected to continue below <math>B_{trigger}</math> for several more years (depending largely on recruitment).</li> <li>• Although <math>F</math> is now at <math>F_{MSY}</math>, there has been a history of it being higher over many years.</li> <li>• <math>B_{trigger}</math> is not defined in relation to <math>B_{MSY}</math> (which is unknown for this stock). MSC Guidance GCB2.3.2.4 requires that the 'target' should be defined as some level consistent with <math>B_{MSY}</math>. If <math>F</math> has consistently been higher than <math>F_{MSY}</math> until recently, then it is not clear that the stock status is consistent with <math>B_{MSY}</math>.</li> <li>• ICES' had recommended increasing <math>B_{trigger}</math> from 5 million to 6 million tonnes, on the basis that there is a &gt;5% probability of the stock dropping below <math>B_{lim}</math> when <math>B_{trigger}</math> is taken as a biomass target.</li> </ul> <p>Because of these comments, the team revisited the scoring of 1.1.1 in light of the most recent stock assessment update and further guidance found at <a href="https://www.msc.org/certifiers/certifier-training-support/sep2014_scoring-a-fishery-p1-focus">https://www.msc.org/certifiers/certifier-training-support/sep2014_scoring-a-fishery-p1-focus</a>. The Team noted that</p> <ul style="list-style-type: none"> <li>• The current SSB was estimated at 80% <math>B_{MSY}</math></li> <li>• Recruitment in 2013 showed promise, near time series average, but nearly two times the last 10 and 5 year averages</li> <li>• Biomass was below <math>B_{trigger}</math> but less than expected from projections in 2013 and 2014 (3.9 mt vs predicted in 2014 at 3.5 mt)</li> <li>• Catch was reduced, down from 684 kt in 2013 to 461 kt in 2014</li> <li>• Fishing mortality below <math>F_{pa}</math> (<math>F = 0.11</math> vs <math>F_{pa}</math> at 0.15)</li> <li>• Retrospective pattern in the assessment was improved, reducing uncertainty</li> </ul> <p>Additionally the Team found that the Target was consistent with <math>B_{MSY}</math>. The MSC TO assumed that <math>B_{trigger}</math> was set below <math>B_{MSY}</math>, as is often the case in other stocks. In this case, however <math>B_{MSY}</math> is not estimated and is unknown. Therefore it cannot be said whether the biomass</p>
--	--	---

		<p>target is at, above or below <math>B_{MSY}</math>. Conversely, <math>F_{MSY}</math> is estimated. In their review of reference points (ICES 2014), the ICES working group noted:</p> <p>“ICES reviewed the reference points of Norwegian spring spawning herring in 2013 in combination with the NEAFC request to evaluate of alternative management plans for this stock (ICES 2013d). ICES concluded that <math>B_{lim}</math> should remain unchanged at 2.5 million tonnes. <math>B_{pa}</math> is not to be revised as it is defined based on <math>B_{lim}</math>. ICES has evaluated <math>F_{MSY}</math> and considers it should remain unchanged at <math>F_{MSY} = 0.156</math>.”</p> <p>As such the team found the Target to be robust given the advice of the working group.</p> <p><u>Conclusion</u></p> <p>In light of the information provided, as well as the observations of the MSC TO and peer reviewers, the Team settled on a score of 80 for this scoring issue. It did so hesitantly, however, given the trend in biomass over the most recent time. Much or the teams rational was based in part on the strength of the 2013 year class, which is uncertain. If recruitment continues to decline, or if the 2013 yea class is not as strong as indicated, this stock may not increase back to <math>B_{trigger}</math>. As such, stock status, fishing mortality, and management response should be monitored closely over the next few years to ensure that increases in biomass materialize.</p>	
References	<p>ICES. 2014a. Herring in Subareas I, II, and V, and in Divisions IVa and XIVa (Norwegian spring-spawning herring) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.</p> <p>ICES. 2014b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 26 August - 1 September 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:15. 938 pp.</p> <p>ICES. 2013b. NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock - Special request, Advice May 2013. Report of the ICES Advisory Committee 2013. ICES Advice, 2013. Book 9.</p> <p>ICES. 1998. Report of the Study Group on the precautionary approach to fisheries management. ICES CM 1998/ACFM:10 Ref. D. ICES Headquarters 3 – 6 February 1998.</p>		
Stock Status relative to Reference Points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Conventional limit Reference Point	$B_{pa} / MSY_{B_{trigger}}$	5 million tonnes	$SSB_{2014} = 4$ million tonnes $SSB_{2013}/B_{target} = 0.8$

Precautionary Reference Point	$F_{MP}, F_{MSY}$	$F_{MP}=0.125$ $F_{MSY}=0.15$	$F_{2014} \text{ (weighted)} = 0.15$ $F_{2014}/F_{MSY} = 1$ $F_{2014}/F_{MP} = 1.2$
Target Reference Point in harvest control rule	$B_{lim} / B_{loss} / MBAL$	2.5 million tonnes	$SSB_{2014} / B_{lim} = 1.6$
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>N/A</b>



Evaluation table 2 - PI 1.1.2

PI 1.1.2		Limit and target reference points are appropriate for the stock		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated.	
	Met?	Y	Y	
	Justification	<p>The biomass limit reference point (<math>B_{lim}=2,500,000</math> t) and a fishing mortality target reference point (<math>F_{pa} = 0.15</math>) were originally defined by an ICES reference point workshop in 1998 (ICES, 1998). The workshop decided that <math>B_{lim}</math> should be defined as the 'minimum biologically acceptable level' (MBAL), being the point below which there is a risk of recruitment impairment. However, there was (and is) no evidence about the stock-recruit relationship, if any, for this stock, which is dominated by highly variable recruitment and hence intermittent large year classes. ICES therefore defined MBAL as <math>B_{loss}</math>, the lowest point in the time series (<math>B_{1988}</math> – actually the start of the time series). They report that this value was considered suitable based on 'medium-term simulations' but give no further details.</p> <p>The workshop set out a framework for defining <math>B_{pa}</math> as the point above which there is 'little probability' that a biomass estimate above <math>B_{pa}</math> is actually below <math>B_{lim}</math>. Mathematically, this is defined as <math>B_{pa} = B_{lim} * \exp(1.645\sigma)</math>, where <math>\sigma</math> is an estimate of the uncertainty in biomass estimates ('usually <math>0.2=0.3</math>') (ICES, 1998). The workshop did not actually suggest a value for this stock for <math>B_{pa}</math>, because it preferred a fishing mortality target to a biomass target for stocks with high natural variability, but a <math>B_{pa}</math> was computed later on this basis at 5 million tonnes. It did, however, define <math>F_{pa}</math> at 0.15, although on what basis is not quite clear. This value was later evaluated to be a suitable proxy for <math>F_{MSY}</math>, but the agreed management plan takes a slightly more precautionary target fishing mortality of 0.125 as a target (<math>F_{MP}</math>).</p> <p>On this basis, the team concluded that reference points are appropriate for the stock and can be estimated (SG80 is met).</p>		
b	Guide post		The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues.
	Met?		Y	Y

	<b>Justification</b>	<p>As noted above, the limit reference point is set above the level where reproductive capacity is impaired (SG80 is met). This stock is characterised by periodic large year classes interspersed with years of poor recruitment. The factors leading to this variable recruitment are not known, but environmental factors may be involved. Because of this variability the stock-recruitment relationship is poorly defined, rendering traditional MSY-based reference points less desirable compared to a historical performance approach.</p> <p>ICES recently reviewed the reference point levels in the context of a (partial) review of the management plan (ICES, 2013b), and although they suggested that the target reference points might be adjusted (<math>B_{\text{trigger}}</math> increased from 5 million tonnes to 6 million tonnes to reduce the risk of biomass dropping below <math>B_{\text{lim}}</math> under the current HCR), they propose that <math>B_{\text{lim}}</math> remain unchanged.</p> <p>On this basis, the team concluded that the limit reference point is likely to be well above the point of recruitment impairment, and that since it was defined, a series of evaluations by ICES have concluded that it is appropriate and precautionary. SG100 is therefore met.</p>		
<b>c</b>	<b>Guide post</b>		The target reference point is such that the stock is maintained at a level consistent with $B_{\text{MSY}}$ or some measure or surrogate with similar intent or outcome.	The target reference point is such that the stock is maintained at a level consistent with $B_{\text{MSY}}$ or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.
	<b>Met?</b>		Y	N
	<b>Justification</b>	<p>As part of the process of converting from precautionary to MSY-based reference points, ICES evaluated the reference point originally defined as <math>B_{\text{pa}}</math> and concluded that it was an appropriate reference point for <math>\text{MSY}_{B_{\text{trigger}}}</math> within the MSY framework. <math>F_{\text{MSY}}</math> was estimated at 0.15 (ICES, 1998), and a target <math>F</math> has been set in the management plan at <math>F=0.125</math>, on the basis of ensuring a low probability of the stock biomass dropping below <math>B_{\text{lim}}</math> (assuming <math>F=F_{\text{target}}</math>). These two targets are therefore consistent with maintaining the stock at the MSY level, as defined by ICES as a general term for maintaining the stock at a productive level. SG80 is met.</p> <p>ICES' (partial) review of the management plan, however, (ICES, 2013b) noted that with a target biomass reference point of 5 million tonnes, there is estimated to be a greater than 5% probability of biomass dropping below <math>B_{\text{lim}}</math>, and suggested that in the short term, this could be fixed by increasing the biomass target to 6 million tonnes. On this basis, the team did not consider that the current biomass target 'takes into account relevant precautionary issues', as required for SG100. Likewise, the uncertainty in the stock assessment means that the stock status is not known with a 'high degree of certainty'. SG100 is therefore not met.</p>		
<b>d</b>	<b>Guide post</b>		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	<b>Met?</b>		Not relevant	

	<b>Justification</b>	<p>In order to qualify as a key LTL stock, two of the three criteria below should be met:</p> <ul style="list-style-type: none"> <li>• a large proportion of the trophic connections in the ecosystem involve this stock, leading to significant predator dependency;</li> <li>• a large volume of energy passing between lower and higher trophic levels passes through this stock;</li> <li>• there are few other species at this trophic level through which energy can be transmitted from lower to higher trophic levels, such that a high proportion of the total energy passing between lower and higher trophic levels passes through this stock (i.e. the ecosystem is 'wasp-waisted').</li> </ul> <p>In relation to predator dependence, an ecosystem model of the Norwegian and Barents Sea ecosystem (Dommasnes et al., 2001) suggests that adult herring are a prey species mainly of marine mammals (particularly toothed whales and dolphins), while juvenile herring are also prey for baleen whales, seabirds, seals and to a lesser extent cod and other roundfish. They are, however, less important to toothed whales than blue whiting, and of similar importance to capelin, redfish, squid and prawns. For seals, they are less important than polar cod, and similar to krill and amphipods, with cod and other demersal species, capelin, blue whiting and other fish species also making a significant contribution. For seabirds, 'fat fish' (a category which apparently includes herring and sandeels, and perhaps other small pelagic species) makes up overall about half of the diet in the Barents Sea, but considerably less in the Norwegian sea. Cod are considered to be more dependent on capelin than any other prey species. On this basis, the team concluded that there is no evidence of predator dependence on this herring stock. The team also noted that there are a variety of other species at the same or similar trophic level to herring (only species where biomass estimates are available have been included):</p> <table border="1"> <thead> <tr> <th>Species</th><th>Trophic level from Dommasnes et al. (2001)</th><th>Estimated biomass (ICES)</th></tr> </thead> <tbody> <tr> <td>Herring +4</td><td>3.2</td><td>4 million tonnes (ICES, 2014a)</td></tr> <tr> <td>Blue whiting</td><td>3.4</td><td>5.5 million tonnes (ICES, 2014k)</td></tr> <tr> <td>Mackerel</td><td>3.1</td><td>4 million tonnes (ICES, 2014e)</td></tr> <tr> <td>Capelin</td><td>3.3</td><td>4 million tonnes (ICES, 2014m)</td></tr> </tbody> </table>	Species	Trophic level from Dommasnes et al. (2001)	Estimated biomass (ICES)	Herring +4	3.2	4 million tonnes (ICES, 2014a)	Blue whiting	3.4	5.5 million tonnes (ICES, 2014k)	Mackerel	3.1	4 million tonnes (ICES, 2014e)	Capelin	3.3	4 million tonnes (ICES, 2014m)
Species	Trophic level from Dommasnes et al. (2001)	Estimated biomass (ICES)															
Herring +4	3.2	4 million tonnes (ICES, 2014a)															
Blue whiting	3.4	5.5 million tonnes (ICES, 2014k)															
Mackerel	3.1	4 million tonnes (ICES, 2014e)															
Capelin	3.3	4 million tonnes (ICES, 2014m)															

		<p>Therefore, the total biomass of these species approximates 20 million tonnes or more, of which ASH herring makes up at most ~a quarter. Note that this calculation is based solely on those species for which there is an estimate of stock biomass, and excludes other species of pelagic and mesopelagic fish, as well as all invertebrates. On this basis, the ecosystem cannot be characterised as 'wasp-waisted'. Of course, the availability of forage species depends not only on their biomass at any given moment, but also on their natural mortality (turn-over). Capelin, in particular, are likely to have higher natural mortality than herring, since they are mainly semelparous (die after spawning) and live on average 3-5 years, in contrast to ASH, for which ICES estimated that the 2013 landings were dominated by ages 7-9 year classes. This means that while capelin have a similar standing stock, they have a higher rate of turnover and are therefore more available as prey species than herring in this area.</p> <p>Overall, therefore, it does not appear likely that herring is a key LTL species in this ecosystem.</p>
<b>References</b>		<p>Dommasnes, A., Christensen, V., Ellertsen, B., Kvamme, C., Melle, W., Nøttestad, L., Pedersen, T., Tjelmeland, S. and Zeller, D. 2001. An Ecopath Model for the Norwegian and Barents Sea. In: S. Guénette, Christensen, V. and Pauly, D. (eds.). Fisheries impacts on North Atlantic ecosystems: models and analyses. Fisheries Centre Research Reports 9(4).</p> <p>ICES. 2014p. Herring in Subareas I, II, and V, and in Divisions IVa and XIVa (Norwegian spring-spawning herring) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.</p> <p>ICES, 2014k. Blue whiting in Subareas I–IX, XII, and XIV. Advice September 2014. ICES Advice, Book 9, Sec 9.3.5.</p> <p>ICES. 2014e. Mackerel in the Northeast Atlantic (combined Southern, Western, and North Sea spawning components) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.</p> <p>ICES, 2014m. Capelin in Subareas I and II, excluding Division IIa west of 5°W (Barents Sea capelin). Advice September 2014. ICES Advice, Book 3, Sec 3.3.1.</p> <p>ICES. 2014n. Report of the Workshop to consider reference points for all stocks (WKMSYREF2), 8-10 January 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:47. 91 pp.</p> <p>ICES, 2014o. Report of the Arctic Fisheries Working Group (AFWG), 23-29 April 2014, Lisbon. ICES CM 2014/ACOM:05. 656 pp.</p> <p>ICES. 2014b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 26 August - 1 September 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:15. 938 pp.</p> <p>ICES. 1998. Report of the Study Group on the precautionary approach to fisheries management. ICES CM 1998/ACFM:I0 Ref. D. ICES Headquarters 3 – 6 February 1998.</p> <p>ICES. 2013b. NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock - Special request, Advice May 2013. Report of the ICES Advisory Committee 2013. ICES Advice, 2013. Book 9.</p>

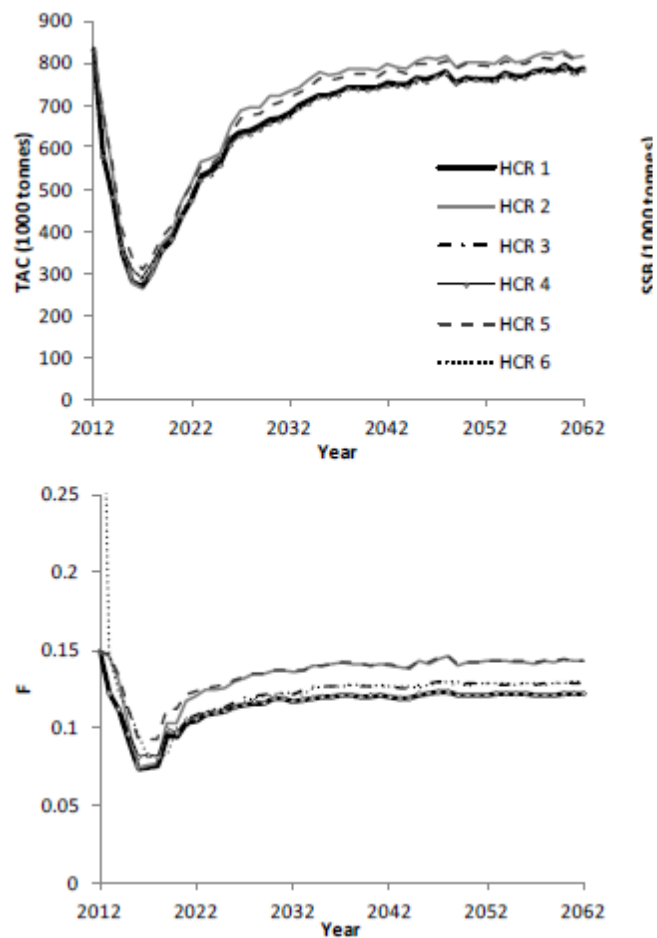
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>N/A</b>

**Evaluation Table for PI 1.1.3 – not applicable, only scored if PI 1.1.1 60-80**

**Evaluation table 3 - PI 1.2.1**

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	<b>Guidepost</b>	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.	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.	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.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>According to the MSC definition, the harvest strategy is composed of the following elements:</p> <ul style="list-style-type: none"> <li>• Monitoring</li> <li>• Stock assessment</li> <li>• Harvest control rule, which may be in the form of a management plan</li> <li>• Management actions</li> </ul> <p>Monitoring is done via flag states (electronic logbooks, landings), and the data are collated at national level and submitted to ICES, who conduct a stock assessment regularly (every year) with a periodic benchmarking (see further information in PIs 1.2.3 and 1.2.4). The harvest control rule takes the form of a management plan, which has been evaluated by ICES and found to be consistent with the precautionary approach. Reference points have been set by ICES following precautionary and MSY strategies, and have also been evaluated (ICES, 2013b). The advice from ICES is implemented via the Coastal States Agreement, which sets out how the TAC is to be divided between jurisdictions, and likewise within the EU, the EU quota is divided between member states according to an agreed formula.</p> <p>The Coastal States Agreement is currently not working as it should, because the Faroes feel that they should be allocated a higher proportion of the TAC, and have unilaterally increased their share – not accepted by the other parties. However, the Faroes are at pains to point out that they accept the principle of the agreement (setting the TAC according to scientific advice and dividing it according to agreed proportions) – it is just the proportional division that they disagree with. A review of this issue by the CABs involved at that time (DNV, 2013), as well as the re-assessment of the Norwegian fishery on this stock (DNV, 2014) concluded that</p>		

		<p>this issue was most appropriately dealt with under Principle 3, and in relation to the Faroese fishery.</p> <p>The harvest strategy is clearly responsive to the status of the stock, as can be seen in the projections below (from ICES, 2013): as the biomass is projected to decline due to low recruitment in recent years (see projections given in the rationale for PI 1.1.1), both fishing mortality and the TAC decline under the existing harvest strategy (the solid black line – HCR 1).</p>
--	--	---



The harvest strategy is therefore responsive to the status of the stock (as reflected in scientific advice and in the management plan) and the team considered that it had been ‘designed’ to achieve stock management objectives – because all the components fit together seamlessly and because the system has been largely developed and evaluated by ICES on the basis of scientific analysis. On this basis, SG100 is met.



b	<b>Guidepost</b>	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	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.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>The stock status is currently and has in the recent past been fluctuating around target reference points (see detailed rationale for PI 1.1.1). Fishing mortality has been retrospectively evaluated to have overshot <math>F_{MP}</math> (although not <math>F_{MSY}</math>), because of issues with the stock assessment, but these problems are not a problem with the harvest strategy per se, and are considered under PI1.2.4 (stock assessment). On this basis, the team considered that ‘evidence exists that it is achieving its objectives’. The management plan has been evaluated by ICES as precautionary. It is fully implemented and scientific advice accepted by all parties (even those who dispute how the agreed TAC should be allocated – this is considered in Principle 3). A strong monitoring and stock assessment process is in place. The team therefore considered that there is evidence that suggests that the harvest strategy is achieving its objective (sustainable exploitation of the stock as quantified in the target reference points), so SG80 is met.</p> <p>ICES evaluated the harvest control rule and reference points in the current management plan relative to several other options, all of which were less precautionary (see rationale for PI 1.2.2 for details). That ICES advised retention of the existing harvest control rule and reference points. However this should not be taken as a full endorsement by ICES of the current harvest strategy. They note the following points:</p> <ul style="list-style-type: none"> <li>the current management plan results in a probability of slightly above 5% that the biomass will drop below <math>B_{lim}</math> (6.1%) (higher than the usual precautionary threshold of 5%, but this might be acceptable in a naturally variable stock)</li> <li>bias in the stock assessment has led to an overestimate of spawner biomass by an average of 21% - taking this into account, the probability of biomass falling below <math>B_{lim}</math> increases from 6.1% to 77%</li> <li>they note that the present harvest control rule does not reduce <math>F</math> fast enough when <math>B</math> drops below <math>B_{trigger}</math>, and suggest that an increase in <math>B_{trigger}</math> to 6 million tonnes (equivalent to an <math>F_{target}</math> of 0.09) would reduce the probability of <math>B &lt; B_{lim}</math> to less than 5% in the short term.</li> </ul> <p>SG100 requires that the harvest strategy is ‘clearly able to maintain stocks at target levels’, and on the basis of ICES’ comments (above), the team did not feel that this was met.</p>		

<b>c</b>	<b>Guidepost</b>	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	<b>Met?</b>	Y		
	<b>Justification</b>	The fishery has a strong monitoring system in place which ensures that TACs are not exceeded by more than the annual tolerance limits, and there are also several annual fishery-independent surveys assessing adult and juvenile biomass. Full details are given in the rationale for PI 1.2.3.		
<b>d</b>	<b>Guidepost</b>			The harvest strategy is periodically reviewed and improved as necessary.
	<b>Met?</b>			N
	<b>Justification</b>	<p>The management plan and reference points have been reviewed by ICES (ICES, 2014n), the stock assessment is reviewed either internally or externally, and ICES advice is reviewed by STECF (EU), who also review the implementation of management and the data collection systems of member states. On this basis, it is certainly arguable that the harvest strategy is periodically reviewed.</p> <p>As noted above, the review of the management plan by ICES in May 2013 was partial (whether to retain the existing harvest control rule or replace it by other specified options). ICES concluded it should be retained, but made some unilateral suggestions as to other changes which could be made so that the probability of B dropping below <math>B_{lim}</math> is &lt;5% (ICES' official definition of 'precautionary'). There has, however, been no move to implement these suggestions, and no comment on them by Coastal States during their 2014 meeting, except for noting that the management plan is consistent with the precautionary approach according to ICES. On this basis, the team did not feel that there was good enough evidence that the harvest strategy is 'improved as necessary' to justify a score of 100 here.</p>		
<b>e</b>	<b>Guidepost</b>	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	<b>Met?</b>	Not relevant	Not relevant	Not relevant
	<b>Justification</b>	The target species is not a shark.		
<b>References</b>		<p>DNV. 2013. MSC Year 4 surveillance report for the Danish Pelagic Producers Organisation Atlanto-Scandian Herring Fishery. DET NORSKE VERITAS AS. REPORT NO. 2013-018. Available online at: <a href="http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/DPPO-Atlanto-Scandian-herring/assessment-downloads-1/20131118_SR_HER32.pdf">http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/DPPO-Atlanto-Scandian-herring/assessment-downloads-1/20131118_SR_HER32.pdf</a></p> <p>DNV. 2014. MSC Public Certification Report for the Re-assessment of the Norway Spring Spawning herring fishery. DET NORSKE</p>		

	<p>VERITAS AS. REPORT NO. 2013-009. Available online at: <a href="http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/norway-spring-spawning-herring/re-assessment-downloads-1/20140703_PCR_HER91.pdf">http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/norway-spring-spawning-herring/re-assessment-downloads-1/20140703_PCR_HER91.pdf</a></p> <p>ICES. 2013b. NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock - Special request, Advice May 2013. Report of the ICES Advisory Committee 2013. ICES Advice, 2013. Book 9.</p> <p>ICES. 2014n. Report of the Workshop to consider reference points for all stocks (WKMSYREF2), 8-10 January 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:47. 91 pp.</p>	
OVERALL PERFORMANCE INDICATOR SCORE:		85
CONDITION NUMBER (if relevant):		N/A

Evaluation table 4 - PI 1.2.2

PI 1.2.2		There are well defined and effective harvest control rules in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	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.	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.	
	Met?	Y	Y	
	Justification	The harvest control rule is defined in the management plan (given in full in the main report – see Section 3.4.6), which forms the centre of the harvest strategy. The harvest control rule includes a target fishing mortality when biomass is above $B_{trigger}$ , a low $F$ (0.05) when biomass is below $B_{lim}$ , and a linear reduction in between these two points. SG80 is therefore met.		
b	Guide post		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules takes into account a wide range of uncertainties.
	Met?		Y	N

<b>Justification</b>	<p>Further to a comment by peer reviewer 1, the team evaluated the issue of TAC overshoot as a key uncertainty, as follows:</p> <p>2007-2013 (coastal states agreement in place):</p> <p>Sum total of ICES advice: 8364 kt</p> <p>Sum total of TACs: 8436 kt</p> <p>Sum total of ICES estimate of catch: 8461 kt</p> <p>i.e. over this period the catch exceeded the TAC by 0.3% and the advice by 1.2%</p> <p>In relation to 2014, catch is not yet known, but the total of individual quotas (the 'TAC') was 437 kt, compared to a management plan TAC of 418 kt – a 4.2% overshoot. Overall, the team considered that these were not significant compared to the other uncertainties in the harvest strategy.</p> <p>When ICES reviewed the harvest control rule and reference points in May 2013 (ICES, 2013b), they evaluated a range of 7 options, as follows:</p> <ul style="list-style-type: none"> <li>• Current management plan</li> <li>• Current management plan with <math>F_{\text{target}} = F_{\text{MSY}} = 0.15</math>, instead of <math>F_{\text{MP}}=0.125</math></li> <li>• <math>F_{\text{target}} = 0.125</math> when recent recruitment &lt; long term average, 0.15 when recent recruitment &gt; long term average</li> <li>• Linear decrease from <math>F_{\text{target}}</math> at <math>B=B_{\text{target}}</math> to <math>F=0</math> at <math>B=0</math></li> <li>• As above with <math>F_{\text{target}}=F_{\text{MSY}}</math></li> <li>• As above with <math>F</math> dependent on recent recruitment</li> <li>• As current, but adding <math>B_{\text{trigger2}}</math> at a higher biomass, above which <math>F</math> increases linearly.</li> </ul> <p>ICES evaluated these options, taking into account uncertainties in the stock dynamics (notably recruitment) and uncertainties in the stock assessment (notably evidence of consistent bias), and concluded that the current rule should remain unchanged. On this basis, the team felt that the selection of the harvest control rule takes into account the main uncertainties. However, ICES also presented some suggestions as to other changes which might be implemented to reduce the risk of <math>B</math> falling below <math>B_{\text{lim}}</math> (set out above), taking full account of the issue of uncertainty and bias in the stock assessment. These suggestions have not (so far) been taken up by the Coastal States. The team felt that, if ICES were to be given the opportunity now of designing the harvest control rule from scratch, taking into account the uncertainties in the evaluation of stock status, they would most likely arrive at a more precautionary harvest control rule than the one currently in place. Therefore, the team concluded that SG100 is not met.</p>
----------------------	--

<b>c</b>	<b>Guide post</b>	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	<b>Met?</b>	Y	N	N
	<b>Justification</b>	<p>Note: This rationale was changed and updated in November 2015 to reflect the outcome of a harmonisation meeting held on 23 October 2015.</p> <p>At the generic level, setting an annual TAC, based on a reliable annual estimate of stock status, backed by a precautionary long term Management plan, together with technical measures, does have a reliable track record for many stocks in the Northeast Atlantic. The management of the Norwegian Spring Spawning herring stock has all these elements in place supported by rigorous surveillance, monitoring and enforcement of the national quotas and technical measures. The problem of slippage, discarding and underreporting of landings is not considered to be a problem in relation to the annual stock assessment and subsequent advice. Although the SSB fell below the Management plan level in 2013 for the first time since 2003, the harvest control rules have ensured an appropriate reduction in fishing effort to safeguard the stock from falling to the critical biomass limit level. This provides some evidence from past performance, that the harvest control rules and tools, currently in place, are effective and are appropriate methods to control exploitation satisfying the requirements at SG60.</p> <p>It is accepted that the overarching TAC rule, which underpins the Management Plan, has been effective and has worked successfully in the past to control exploitation. Responsibility for the allocation of the annual TAC is administered by a Coastal States Agreement which for this fishery involves the European Union, the Faroe Islands, Iceland, Norway and the Russian Federation. The share of the advised TAC between participating countries in this fishery was agreed and established in 2007. The agreement is based on an annual share of available quota of 61% to Norway, 14,51% to Iceland, 12.82% to the Russian Federation, 6.51% to the EU and 5.61% to the Faroe Islands. There are currently internal issues in relation to that agreement which have caused problems for the successful implementation of the harvest control rules. Since 2013 there has been a lack of agreement within the Coastal States on an equitable share of the ICES advised catch. The situation has further deteriorated for the current fishery in 2015 where there has been no agreement on sharing the advised TAC level between the coastal states. All participating countries have declared their intention to set autonomous quotas.</p>		

	ICES advice *	TAC *	ICES catch*	% catch vs advice
2007	1280	1280	1267	-1%
2008	1518	1518	1546	+2%
2009	1643	1643	1687	+3%
2010	1483	1483	1457	-2%
2011	988-1170	988	993	-
2012	833	833	826	-
2013	619	692 <sup>1</sup>	685	+10.7%
2014	418	436 <sup>1</sup>		
2015	283			

\*Weights in thousands of tonnes

<sup>1</sup> Sum of the national quotas

The record of compliance with the annual advised TAC, set in line with the scientific advice on sustainable exploitation levels, provides the only benchmark with which to judge the effectiveness of the rules and tools in achieving appropriate exploitation levels. Since 2013 the ad hoc arrangement for sharing the advised TAC, through the Coastal States agreement, has not functioned. This has resulted in the sums of the declared intentions of participating countries exceeding the advised TAC. This situation is expected to continue in 2015. This overarching management problem is occurring against a background of a lengthy period of poor recruitment. This together with the tendency for the SSB to be overestimated serves only to exacerbate the management problems.

All the evidence over recent years clearly shows that current management actions (tools in use) used to share the scientifically advised annual TAC are not appropriate nor effective in achieving the exploitation levels required under the harvest control rules. As a consequence the fishery does not meet the SG 80 scoring guideposts.

#### References

ICES. 2013b. NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock - Special request, Advice May 2013. Report of the ICES Advisory Committee 2013. ICES Advice, 2013. Book 9.

ICES. 2014p. Herring in Subareas I, II, and V, and in Divisions IVa and XIVa (Norwegian spring-spawning herring) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.

**OVERALL PERFORMANCE INDICATOR SCORE:**

**75**

**CONDITION NUMBER (if relevant):**

**1**

Evaluation table 5 - PI 1.2.3

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	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.
	Met?	Y	Y	Y
	Justification	<p>In relation to the fishery, the following data are available for the stock assessment:</p> <ul style="list-style-type: none"> <li>Catch data by quarter and ICES rectangle for all fleets except Greenland (annual catch only – NB this is a very small percentage of the overall catch)</li> <li>Fleet composition and effort for each fleet (except possibly Greenland)</li> <li>Weight and length distribution in the catch, from sampling by several fleets, although not all; programmes (SALLOC, Intercatch) are available to convert these to age distributions</li> <li>Discards – several studies are available to indicate very low rates of discarding</li> </ul> <p>In relation to the productivity of the stock, some biological work has been done on growth and maturity curves (e.g. see ICES, 2010).</p> <p>In addition, the following fishery-independent surveys are used in the stock assessment (3 old and 5 ongoing):</p> <ul style="list-style-type: none"> <li>Survey 1: Norwegian acoustic survey on spawning grounds in spring, 1994-2005</li> <li>Survey 2: Norwegian acoustic survey in November/December, 1992-2001</li> <li>Survey 3: Norwegian acoustic survey in January, 1991-1999</li> <li>Surveys 4 and 5: international ecosystem survey in the Nordic seas (ongoing)</li> <li>Surveys 6 and 7: ecosystem survey in the Barents Sea (ongoing)</li> <li>Survey 8: Norwegian herring larvae survey on the Norwegian shelf (ongoing)</li> <li>Survey 9: international ecosystem survey in the Norwegian Sea in July-August (ongoing – not used in the stock assessment at present)</li> </ul>		

		<p>Information related to ecosystem considerations are also available, including stomach content analysis, information about variation in the spatial distribution of the stock and information on prey (zooplankton) concentrations and distributions.</p> <p>In relation to discarding, ICES consider that mortality from slippage is too low to take into account in the stock assessment. ICES report that data on discards from the Netherlands and Germany suggest that total discards account for ~2% of the total catch, but 0% of herring, while information from the Norwegian coastguard also suggests that slippage is very unusual (see main report Section 3.4.7).</p> <p>The team concluded that this dataset constitutes a 'comprehensive range of information, and as well as sufficient data to support the harvest strategy, it includes some data that are not used directly to support the harvest strategy or stock assessment, but nonetheless inform knowledge about the stock and its role in the ecosystem. SG100 is therefore met.</p>		
<b>b</b>	<b>Guide post</b>	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.	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.	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.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>The data listed above, including good estimates of fishery removals, are sufficient to allow a stock assessment every year which estimates stock abundance (benchmarked periodically – most recently in 2008 and next in 2015). The assessment provides estimates of spawner biomass and fishing mortality and is used to provide advice on the TAC, following the harvest control rule. SG80 is therefore met.</p> <p>While it is arguable, given the extensive range of data available (see above) that 'all information required by the harvest control rule' is monitored, SG100 also requires 'high frequency' and 'a high degree of certainty'. In relation to frequency, quarterly catch data are probably sufficient for the stock assessment, but it is a loss of information compared to operational (logsheet-type) data, which is often available for stock assessments. It is also hard to argue for a high degree of certainty, given that WGWISE note that the stock is difficult to sample by survey, because of its high levels of natural variability both spatially and in terms of biomass (ICES, 2014b). ICES have considered the issue of uncertainty in the data in depth over the years (ICES, 2008), but new sources can be discovered – e.g. in 2013, WGWISE note variability in survey catchability as an issue that may not have been fully recognised previously, and which may impact on the robustness of the assessment (ICES, 2013a). SG100 is therefore not met.</p>		
<b>c</b>	<b>Guide post</b>		There is good information on all other fishery removals from the stock.	
	<b>Met?</b>		Y	



	<b>Justification</b>	Catch is reported from all the fisheries on the stock – Iceland, Norway, Russia, Faroes, EU and Greenland (although Greenland in less spatial/temporal detail). There have been studies on discards in the fishery, which suggest that discard rates are small to negligible – this includes slippage in this and other fisheries targeting the ASH stock, as well as discards of herring in other small pelagic fisheries such as those targeting mackerel and blue whiting. In the Norwegian and Icelandic EEZs, where a significant proportion of the fishery takes place, discarding is illegal, and this will also be the case for EU pelagic fisheries from January 2015, although at time of writing the details of implementation remain to be worked out.
	<b>References</b>	ICES. 2008. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 21 – 1 September 2008, ICES Headquarters Copenhagen. Diane. 67 pp. ICES. 2010. Report of the Workshop on estimation of maturity ogive in Norwegian spring spawning herring (WKHERMAT), 1-3 March 2010, Bergen, Norway. ICES CM 2010/ACOM:51. 47 pp. ICES. 2013a. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 27 August - 2 September 2013, ICES Headquarters, Copenhagen, Denmark. ICES CM 2013/ACOM:15. 950 pp. ICES. 2014b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 26 August - 1 September 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:15. 938 pp.
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>

Evaluation table 6 - PI 1.2.4

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	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.
	Met?		Y	N
	Justification	<p>The stock assessment uses the full range of data available, and estimates the status of the stock relative to a series of reference points, including those in the management plan which are used for management. The stock assessment model incorporates the significant features of the biology of the stock – for example, it uses different maturity ogives for the strong vs normal year classes. The data from fisheries (catch and catch-at-age) are considered to be robust, without problems such as unreported discards which may pose problems in other fisheries. The assessment relies mainly on fishery-independent data (surveys) as indices of stock biomass, rather than fisheries CPUE – a method which is usually considered to be more robust. On this basis, the team considered that the assessment is appropriate for the stock and the harvest control rule (management plan).</p> <p>Nevertheless, it is clear that the stock assessment has problems – specifically a rather strong retrospective pattern over the last few years, which suggests that stock biomass has been consistently overestimated and renders projections uncertain. It is not clear why this is, but the ICES working group speculate that it is caused by the fact that the stock biomass is dominated by a few large year classes, leading to year-to-year variability in survey catchability, and/or that the variable migration patterns of the stock mean that survey coverage is also variable.</p> <p>On this basis, the team considered that the assessment is currently finding it difficult to take into account some of the major features of the biology of the species, although the team does not have any constructive suggestions for ICES on how to improve the situation. SG100 is not met.</p>		
b	Guide post	The assessment estimates stock status relative to reference points.		
	Met?	Y		

	<b>Justification</b>	The assessment estimates stock status in relation to $MSY_{B_{trigger}}$ ( $B_{MP}$ ) and $B_{loss}$ ( $B_{lim}$ ), and estimates $F$ in relation to $F_{MSY}$ and $F_{MP}$ (see PI 1.1.1 above).		
<b>c</b>	<b>Guide post</b>	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	WGWIDE estimates sources of uncertainty coming from the input data to the model using bootstrapping, and considers sources of uncertainty inherent in the model qualitatively. In the recent (partial) evaluation of the management plan, ICES estimated the probability of the biomass dipped below $B_{lim}$ under various scenarios, including both kinds of uncertainty in quantitative way (ICES, 2014b). On this basis, the team considered that SG80 is met. ICES does not, however, provide in its yearly advice a probabilistic estimate of stock status in relation to reference points and does not communicate the uncertainty around its terminal estimates of stock status. SG100 is not met.		
<b>d</b>	<b>Guide post</b>			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	<b>Met?</b>			N
	<b>Justification</b>	Alternative approaches and hypotheses are rigorously explored during the benchmarking process – most recently in 2008 (ICES, 2008), with the next one scheduled for 2015. However, the retrospective patterns in the assessment mean that it cannot be characterised as completely ‘robust’.		
<b>e</b>	<b>Guide post</b>		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	<b>Met?</b>		Y	Y
	<b>Justification</b>	The assessment method is peer-reviewed by ICES through the benchmarking process; benchmarking reports are reviewed by several external experts. The annual WGWIDE reports are internally peer-reviewed within ICES by the advisory committee on management (ACOM) before the promulgation of the Annual Advice documents. In addition, the yearly assessment produced by ICES is reviewed annually (in part) by the Scientific, Technical and Economic Committee For Fisheries (STECF) before reaching managers, a procedure that forms part of the management system (STECF, 2014). The STECF review was considered by the team to be an external peer review and as such SG100 is met.		
<b>References</b>		ICES. 2014b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 26 August - 1 September 2014, ICES Headquarters,		

	<p>Copenhagen, Denmark. ICES CM 2014/ACOM:15. 938 pp.</p> <p>ICES. 2008. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 21 – 1 September 2008, ICES Headquarters Copenhagen. Diane. 67 pp.</p> <p>STECF. Scientific, Technical and Economic Committee for Fisheries – Consolidated Advice on Fish Stocks of Interest to the European Union (STECF-14-24). 2014. Publications Office of the European Union, Luxembourg, EUR 27028 EN, JRC 93360, 747 pp.</p>
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>N/A</b>

Evaluation table 7 - PI 2.1.1

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		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	Met?	Y	Y	N
	Justification	<p>Also see Section 3.5.1</p> <p>One main retained species was identified for the fishery under assessment: mackerel (<i>Scomber scombrus</i>), also see Section 3.5.1.1. Note that the team have not tried to make a distinction between the pelagic trawl and purse seine scoring elements, because of limited data on the purse seine element (because the gear is less commonly used). These limited data show catches of 100% herring, but the team considered it would be more precautionary to apply mackerel as a main retained species over the whole fishery.</p> <p>In 2014, a benchmark evaluation was carried out for the Northeast Atlantic mackerel stock, indicating that <math>F</math> has been decreasing in recent years and was estimated to be 0.19 in 2012, below <math>F_{MSY}</math> and <math>F_{pa}</math>. SSB has also increased considerably since 2002 and remains high, above <math>B_{pa}</math> and <math>MSY B_{trigger}</math> (see Figure 9 in the main report) (ICES, 2014d and 2014e). The SSB estimate for 2013 is estimated with a precision of +/- 25%, with the lower estimate well above <math>B_{lim}</math> (ICES, 2014b). Based on these findings, there is a high degree of certainty that this stock is within biologically based limits. As such, SG100 is met for this species.</p> <p>In addition to mackerel, small volumes of other species can also be retained (see Table 14 to Table 18 in the main report). For redfish (<i>Sebastes</i> spp.) in particular, there is no high degree of certainty that either <i>S. norvegicus</i> or <i>S. mentella</i> are within biologically based limits (see ICES, 2014f and 2014i). The overall score for this scoring issue is therefore that SG80 is met.</p>		
b	Guide post			Target reference points are defined for retained species.
	Met?			N
	Justification	Although reference points have been defined for mackerel, this is not the case for all retained species. This scoring issue is not met.		

<b>c</b>	<b>Guide post</b>	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.	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.	
	<b>Met?</b>	Y	Y	
	<b>Justification</b>	Mackerel is not considered to be outside biological limits. Both SG60 and SG80 are met by default.		
<b>d</b>	<b>Guide post</b>	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.		
	<b>Met?</b>	Y		
	<b>Justification</b>	The stock status for mackerel is known (see ICES, 2014b). This scoring issue is therefore met.		
<b>References</b>		<p>ICES, 2012. Report of the Workshop for the Revision of Long Term Management Plans, WKHELP. ICES CM 2012 / ACOM:72ICES (2014b)</p> <p>ICES. 2014d. Report of the Benchmark Workshop on Pelagic Stocks (WKPELA), 17–21 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM: 43. 341 pp.</p> <p>ICES. 2014e. Mackerel in the Northeast Atlantic (combined Southern, Western, and North Sea spawning components) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.</p> <p>ICES. 2014f. Beaked redfish (<i>Sebastes mentella</i>) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 3, Section 3.3.6.</p> <p>ICES. 2014i. Golden redfish (<i>Sebastes norvegicus</i>) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 3, Section 3.3.7.</p>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>80</b>

CONDITION NUMBER (if relevant):	N/A
---------------------------------	-----

Evaluation table 8 - PI 2.1.2

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		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	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.	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.	There is a strategy in place for managing retained species.
	Met?	Y	Y	N
	Justification	<p><u>Mackerel</u> (also see Section 3.5.1.1): the Northeast Atlantic mackerel stock is subject to a management plan agreed by Norway, Faroe Islands, and the EU in October 2008 which sets out provisions for the fixing of the TAC in relation to stock status. Although this plan was not implemented in the period 2008 – 2014 due to disagreement over the unilateral TACs set by the Faroes and Iceland, its re-adoption is foreseen following the reaching of an agreement between the EU, Norway, and the Faroe Islands. Following the 2014 benchmark for this stock, ICES has evaluated that this plan remains precautionary (despite the projected TAC overshoot for 2014) as long as the plan is only partially readopted in its first year, i.e. by not applying the percentage constraints stated in clause 4 of the management plan in calculating the TAC for 2015 (see Section mackerel and ICES (2014e). This plan constitutes at least a partial strategy, expected to maintain the species at levels which are highly likely to be within biologically based limits. As such, SG80 is met for mackerel. A strategy for the management of all retained species (e.g. redfish) is, however, not in place. SG100 is therefore not met</p>		
b	Guide post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	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.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	Y	Y	N
	Justification	<p><u>Mackerel</u>: given the high degree of certainty that this stock is within biologically based limits (see PI 2.1.1), there is some objective basis for confidence that the partial strategy is working. Furthermore, as explained in scoring issue a, following the 2014 benchmark, ICES has evaluated the management plan to be precautionary provided that the plan is only partially readopted in its first year, i.e. by not applying the percentage constraints stated in clause 4 of the management plan in calculating the TAC for 2015 (see Section 3.5.1.1). This provides a further objective basis for confidence that this partial strategy will work. SG80 is met. However, much will depend on the 2015 catch levels and whether these will exceed the recommended TAC. There is therefore no high confidence that the plan will work. SG100 is not met.</p>		



		In the absence of a full strategy for all retained species SG100 cannot be met. This scoring issue therefore meets SG80.		
c	Guide post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	N
	Justification	<p><u>Mackerel</u>: although the management plan was not implemented between 2008 and 2014 (as explained in scoring issue a), the plan is now being readopted (at least partially in its first year). Catch levels in 2015 will provide clear evidence as to whether or not the plan is being implemented successfully – until then, the team felt that the progress made by the EU, Norway, and the Faroe Islands in reaching an agreement to implement the plan provides some evidence that the partial strategy is being implemented successfully. SG80 should therefore be met but not SG100.</p> <p><u>All retained species</u>: Compliance with EU and Norwegian regulations are routinely monitored through at sea inspections and upon landing. Given that no systematic non-compliance has been reported for the vessels in the Uoc, there is some evidence that the partial strategy is being implemented successfully. As such SG80 is met. In the absence of clear evidence, or of a full strategy however, SG100 is not met.</p>		
d	Guide post			There is some evidence that the strategy is achieving its overall objective.
	Met?			N
	Justification	In the absence of a full strategy, this scoring issue is not met.		
e	Guide post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	No sharks are retained in this fishery. This scoring issue is therefore not relevant.		
References		<p>ICES. 2014e. Mackerel in the Northeast Atlantic (combined Southern, Western, and North Sea spawning components) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.</p> <p>ICES. 2014f. Beaked redfish (<i>Sebastes mentella</i>) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice</p>		

	2014, Book 3, Section 3.3.6. ICES. 2014i. Golden redfish ( <i>Sebastes norvegicus</i> ) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 3, Section 3.3.7.
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>N/A</b>

Evaluation table 9 - PI 2.1.3

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		
Scoring Issue		SG 60	SG 80	SG 100
a	Guided post	Qualitative information is available on the amount of main retained species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
	Met?	Y	Y	N
	Justification	Catch and landings data are recorded by each vessel in electronic logbooks, with the data then fed to the respective fisheries authorities (see Section 3.6.5). Discards of mackerel are considered to be negligible by ICES (ICES, 2014e). Accurate and verifiable information is thus available on the catch of all retained species (SG80 is met and part of SG100 met). For all retained species, ICES monitor catch trends and carry out stock assessments where the data allow it. For the fishery under assessment, the data available are sufficient for any increase in risk to the status of affected populations to be detected. However, the team notes that for DPPO vessels, 0.09% of the retained catch could not be identified (see Table 15 in the main report) and for this reason SG 100 is not met.		
b	Guided post	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
	Met?	Y	Y	N
	Justification	As explained in PI 2.1.1 (scoring issue a), the information available on mackerel was sufficient for outcome status to be determined with a high degree of certainty. For other species such as redfish however the uncertainty in stock assessments precludes outcome status to be determined with a high degree of certainty. For this reason, SG100 is not met.		

c	<b>Guided post</b>	Information is adequate to support measures to manage main retained species.	Information is adequate to support a partial strategy to manage main retained species.	Information is adequate to support a strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	For all retained species, fisheries-dependent and independent data continue to be monitored by ICES which issues advice on the basis of trends in these data. For the main retained species, mackerel, the advice is based on a state of the art stock assessment which is then fed into the parameters of the management plan which makes up the partial strategy. The team felt that the level of information available for the main species was appropriate to the partial management strategy and that SG80 should be met. In the absence of a full management strategy for all retained species, SG100 is not met.		
d	<b>Guided post</b>		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)	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
	<b>Met?</b>		Y	Y
	<b>Justification</b>	The combination of catch and landings data for the vessels in the UoC and fisheries-dependent data collected by ICES for all retained species allows for ongoing mortalities to those species to be assessed. Although DPPO landings data include 0.09% of unidentified species (see Table 15 of the main report), the team felt that this was an extremely minor proportion of the catch and that this should not preclude SG100 from being met.		
<b>References</b>		<p>ICES. 2014e. Mackerel in the Northeast Atlantic (combined Southern, Western, and North Sea spawning components) - Advice September 2014. Report of the ICES Advisory Committee 2014. ICES Advice, 2014. Book 9.</p> <p>ICES. 2014f. Beaked redfish (<i>Sebastes mentella</i>) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 3, Section 3.3.6.</p> <p>ICES. 2014i. Golden redfish (<i>Sebastes norvegicus</i>) in Subareas I and II. In Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 3, Section 3.3.7.</p>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>

Evaluation table 10 - PI 2.2.1

PI 2.2.1		The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).	There is a high degree of certainty that bycatch species are within biologically based limits.
	Met?	Y	Y	N
	Justification	Also see Section 3.5.2. The fishery under assessment is a very clean fishery and effectively discard-free. On the basis of the PFA observer data presented by van Overzee et al. (2013), no main discard species could be identified. Other evaluations of the component fisheries of this assessment (FCI 2010, DNV 2009) as well as the Norwegian fishery (DNV 2013) have concluded that slippage is rare (and illegal in most cases); this is also supported by ICES (ICES. 2014a) WG WIDE. Self-reporting information from DPPO likewise suggests that discards are rare (although these data are not independent). SG60 and SG80 are therefore met by default. The available observer data represent only a relatively small fraction of the fishing effort in this fishery, however. As such it could not be determined with a high degree of certainty that there is absolutely no discarded bycatch in this fishery (as explained in detail in Section 3.5.2). SG100 is therefore not met.		
b	Guide post	If main bycatch species are outside biologically based limits there are mitigation measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding.	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	
	Met?	Y	Y	
	Justification	As no main bycatch species were identified, SG60 and SG80 are met by default.		

<b>c</b>	<b>Guide post</b>	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.		
	<b>Met?</b>	Y		
	<b>Justification</b>	As no main bycatch species were identified, this scoring issue is met by default.		
<b>References</b>		van Overzee, H., van Helmond, A.T.M., Ulleweit, J., Panten, K. 2013. Discard sampling of the Dutch and German pelagic freezer fishery operating in European waters in 2011 and 2012. CVO report: 13.013. 68 pp.		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>

Evaluation table 11 - PI 2.2.2

<b>PI 2.2.2</b>		<b>There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Guide post</b>	There are measures in place, if necessary, that are expected to maintain the main bycatch 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.	There is a partial strategy in place, if necessary, that is expected to maintain the main bycatch 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.	There is a strategy in place for managing and minimizing bycatch.
	<b>Met?</b>	Y	Y	Y

	<b>Justification</b>	In the absence of main bycatch species (see Section 3.5.2), SG60 and SG80 are met by default. The vessels in the UoC use state of the art acoustic equipment (long-range sonar, vertical echo-sounder, netsonde). This, combined with the skipper's skill enables schools of herring to be relatively easily identified. Catches therefore tend to be clean, as demonstrated by the observer data. Note that apart from the PFA freezer vessels, no processing or sorting takes place aboard these vessels; the catch generally goes straight into the hold which further limits the possibility of discarding. In Norwegian waters, where most of this fishery takes place, discarding (including slipping) is forbidden in accordance with the Norwegian Marine Resources Act (2009). In EU waters, slipping is equally forbidden for mackerel, herring or horse mackerel under Council Regulation (EC) No 850/98. With the exception of the SPFPO vessels, all vessels under assessment adhere to a strict sustainability code which stipulates that every effort should be made to minimise discarding, with clear reporting requirements. The PFA, DPPO, SPSG and KFO codes of conduct and the bycatch minimisation measures therein are explained in detail in Section 3.5.2. The team considered that this constitutes a strategy for managing and minimising bycatch and that SG100 should be met. Although SPFPO does not have a similar policy in place, the team did not feel a lower score was warranted as this is a very clean fishery. A recommendation has, however, been made for the PO to adopt a similar sustainability policy (see Section 6.3.1).		
<b>b</b>	<b>Guide post</b>	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	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.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	Based on the van Overzee et al. (2013) observer data, it is clear that bycatch in this fishery – if any – is minimal. This provides an objective basis for confidence that the strategy is working. This is supported by the self-reporting information provided by DPPO, as well as the ICES WGWIDE report (see Section 1.1.3). SG80 is therefore met. It is unclear, however, to what extent this strategy has been tested formally – SG100 is thus not met.		
<b>c</b>	<b>Guide post</b>		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	<b>Met?</b>		Y	N
	<b>Justification</b>	As per scoring issue b, the van Overzee et al. (2013) data provide clear evidence that the strategy is being implemented successfully. The team had high confidence that the slippage ban would be enforced by the Norwegian authorities (see rationale for PI 3.2.3; also ICES WGWIDE report p. 18. Nevertheless, the lack of independent observer data limits the scoring to 'some evidence' (80) rather than 'clear evidence' (100).		

<b>d</b>	<b>Guide post</b>			There is some evidence that the strategy is achieving its overall objective.
	<b>Met?</b>			N
	<b>Justification</b>	As per scoring issues b and c, the absence of bycatch in observer reports and the self-sampling information provides some evidence for part of the UoC, but overall, further to comments by Peer Reviewer 2, the team agreed that there is not sufficient objective information to meet this scoring issue.		
<b>References</b>		van Overzee, H., van Helmond, A.T.M., Ulleweit, J., Panten, K. 2013. Discard sampling of the Dutch and German pelagic freezer fishery operating in European waters in 2011 and 2012. CVO report: 13.013. 68 pp. Norwegian Marine Resources Act (2009) Council Regulation (EC) No 850/98 of 30 March 1998 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms ICES. 2014a (WGWIDE report) Report of the WGWIDE subgroup for updated Mackerel advice for 2014. ICES CM/2014/ACOM:48		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>

Evaluation table 12 - PI 2.2.3

<b>PI 2.2.3</b>		<b>Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Guide post</b>	Qualitative information is available on the amount of main bycatch species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery.	Accurate and verifiable information is available on the catch of all bycatch species and the consequences for the status of affected populations.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	The only independent source of information on discards in this fishery is the van Overzee et al. (2013) data which represent a relatively small proportion of the effort by this fishery. While qualitative and some quantitative information is available on bycatch (SG80 is met), the assessment team could not be certain that there is absolutely no bycatch (as explained in Section 3.5.2) and it can therefore not be stated that accurate and verifiable information is available on all bycatch. SG100 is therefore not met.		

<b>b</b>	<b>Guide post</b>	Information is adequate to broadly understand outcome status with respect to biologically based limits	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	In the absence of main bycatch species, SG60 and SG80 are met by default. Because it could not be ascertained that there are absolutely no discards (due to relatively low observer coverage), information is not considered sufficient to estimate outcome status with a high degree of certainty. SG100 is not met.		
<b>c</b>	<b>Guide post</b>	Information is adequate to support measures to manage bycatch.	Information is adequate to support a partial strategy to manage main bycatch species.	Information is adequate to support a strategy to manage bycatch species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	In the absence of main bycatch species, SG60 and SG80 are met by default. The same rationale as presented in scoring b applies here and SG100 is not met.		
<b>d</b>	<b>Guide post</b>		Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).	Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.
	<b>Met?</b>		Y	N
	<b>Justification</b>	As above, SG80 is met, but not SG100.		
<b>References</b>		van Overzee, H., van Helmond, A.T.M., Uilleweit, J., Panten, K. 2013. Discard sampling of the Dutch and German pelagic freezer fishery operating in European waters in 2011 and 2012. CVO report: 13.013. 68 pp.		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>80</b>



CONDITION NUMBER (if relevant):	N/A
---------------------------------	-----

Evaluation table 13 - PI 2.3.1

PI 2.3.1		The fishery meets national and international requirements for the protection of ETP species		
		The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Guidepost	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species.
	Met?	Y	Y	N
	Justification	<p>Also see section 3.5.3.</p> <p>The ETP species under consideration here are those listed in national and EU legislation and CITES Appendix I (see Table 22 in main report). As explained in Section 3.5.2, the Atlanto-Scandian herring fishery is only currently included in the Dutch and German PFA observer programmes run by IMARES and the Johann Heinrich von Thünen-Institut (JHvTI) respectively. Although no data were available for 2013, 2011 and 2012 data indicate an observed bycatch rate of 0.01 cetaceans per day in the Dutch pelagic trawl fishery which is in line with the findings in 2006–2011 when the bycatch rate was 0.00–0.01 cetacean per day' (ICES, 2014g). For the German fleet, no bycatch of cetaceans was observed (ICES, 2013c). The SPSG fleet is the only other fleet where an observer programme existed for the ASH fishery; however this was discontinued in 2012 due to limited funding (FCI, 2014). Prior to its discontinuation, three observer trips were carried out in the ASH fishery since 2011. None of these trips recorded any bycatch of marine mammals or other ETP species.</p> <p>With the exception of the SPFPO, all client fleets in this fishery operate some form of sustainability policy which requires member vessels to fulfil auto-reporting requirements on interactions with ETP species. To date, none of these auto-reporting forms have indicated systematic interactions with ETP species (In 2013, one porbeagle, <i>Lamna nasus</i>, was caught by a DPPO vessel and subsequently released).</p> <p>The team considered that information on interactions with ETP species could be inferred from the 2011/2012 SPSG observer data and from the ongoing IMARES/ JHvTI PFA observer programmes. On the basis of this information, the team concluded that the fishery is highly unlikely to lead to impacts outside national or international conservation targets for ETP species. SG80 is therefore met. The team did acknowledge, however, that improvements could be made with respect to the level of observer coverage which remains low. For this reason, SG100 is not met.</p> <p>The team stresses the importance of the PFA observer data in obtaining the SG80 level and strongly recommends that observer</p>		

		campaigns in the ASH fishery are maintained.		
<b>b</b>	<b>Guidepost</b>	Known direct effects are unlikely to create unacceptable impacts to ETP species.	Direct effects are highly unlikely to create unacceptable impacts to ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the fishery on ETP species.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	Although other ETP species are also considered under this PI (see Table 22 in main report), cetaceans are key in that interactions with this group are most likely. Having established that interactions with non-cetacean ETP species are highly likely to be rare (based on the observer and auto-reporting data mentioned in scoring issue a), unacceptable impacts are defined here as those exceeding the ASCOBANS conservation objective of 1.7% of the estimated population size (currently the most widely cited estimate for impacts on cetacean populations – ICES (2014g)). For the fishery under assessment this is highly unlikely to be the case (see scoring issue a above). On that basis, SG80 is met. The relatively low level of observer coverage, however, precludes SG100 from being met.		
<b>c</b>	<b>Guidepost</b>		Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.
	<b>Met?</b>		Y	N
	<b>Justification</b>	On the basis of the observer and auto-reporting data, interactions with cetaceans and other ETP species are perceived to be rare; by extension, any indirect effects are therefore also likely to be rare and would not lead to unacceptable impacts on ETP populations. SG80 is therefore met. In the absence of more extensive observer coverage and more targeted research into indirect impacts on ETP species, however, SG100 is not met.		
<b>References</b>		OSPAR Commission's List of Threatened and/or Declining Species and Habitats (Reference Number: 2008-6) ICES. 2014g. Report of the Working Group on Bycatch of Protected Species (WGBYC), 4–7 February 2014, Copenhagen, Denmark. ICES CM 2014/ACOM:28. 96 pp. ICES. 2013c. Report of the Working Group on Bycatch of Protected Species (WGBYC), 4–8 February, Copenhagen, Denmark. ICES CM 2013/ACOM:27. 73 pp. FCI. 2014. Off-Site Surveillance Audit - Report for Scottish Pelagic Sustainability Group Ltd Atlanto Scandian herring Fishery. 4th Annual Surveillance. Food Certification International Ltd Report. Available online at: <a href="http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring/assessment-downloads-">http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring/assessment-downloads-</a>		

	<a href="#">1/20140401_SR_HER115.pdf</a>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>

Evaluation table 14 - PI 2.3.2

PI 2.3.2		The fishery has in place precautionary management strategies designed to: <ul style="list-style-type: none"> <li>• Meet national and international requirements;</li> <li>• Ensure the fishery does not pose a risk of serious harm to ETP species;</li> <li>• Ensure the fishery does not hinder recovery of ETP species; and</li> <li>• Minimise mortality of ETP species.</li> </ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
	Met?	Y	Y	N
	Justification	At international level, the OSPAR convention provides the mechanism for cooperation on the protection of threatened and/or declining species, in addition to the Convention on Migratory Species (Bonn Convention) and Convention on the Conservation of European Wildlife and Natural Habitats (Berne Convention) which Norway, where this fishery predominantly takes place, is a party to. Harvesting and other utilisation of wild living marine resources in the Norwegian EEZ is covered by the Marine Resources Act which states that ' <i>All harvesting and other utilisation of wild living marine resources shall be carried out as in such a way as to minimise impact</i> ' and includes provisions on gear selectivity, bycatch, discards, closed areas and seasons, etc. There are no specific fisheries regulations pertaining to protected species as these are covered under the Nature Diversity Act (19 June 2009 No. 100) which sets out – <i>inter alia</i> – regulations governing priority species (Section 24 of the Act). These regulations all act together to form a strategy for managing impacts on ETP species, designed to be highly likely to achieve national and international requirements. As such, SG80 is met. This strategy was not seen as comprehensive because there is no observer programme operating in the fishery. SG100 is therefore not met.		
b	Guide post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is an objective basis for confidence that the strategy will work, based on information directly about the fishery and/or the species involved.	The strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.
	Met?	Y	Y	N

	<b>Justification</b>	On the basis of the PFA and SPSG observer data described in Section 3.5.2 of the main report, it is highly likely that interactions with and bycatch of ETP species are minimal in this fishery. This provides an objective basis for confidence that the strategy is being effective. SG80 is thus met. However, because observer data are not available for all fleets in this fishery there is no high level of confidence that this is the case. As such, SG100 is not met.		
<b>c</b>	<b>Guide post</b>		There is evidence that the strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	<b>Met?</b>		Y	N
	<b>Justification</b>	The lack of systematic non-compliance in this fishery (see Section 3.6.5 ), as well as the PFA and SPSG observer data and the self-reporting data provide evidence that the strategy is being implemented successfully. Again, the observer coverage is not considered high enough to provide clear evidence that this is the case; SG100 is therefore not met.		
<b>d</b>	<b>Guide post</b>			There is evidence that the strategy is achieving its objective.
	<b>Met?</b>			N
	<b>Justification</b>	The observer data available are currently not sufficient to enable an analysis that is robust enough to determine whether the strategy is meeting its objective. This scoring issue is not met.		
<b>References</b>		Norwegian Marine Resources Act, 2009 Nature Diversity Act (19 June 2009 No. 100) OSPAR Commission's List of Threatened and/or Declining Species and Habitats (Reference Number: 2008-6) Appendices I and II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) Convention on the Conservation of European Wildlife and Natural Habitats		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>

Evaluation table 15 - PI 2.3.3

PI 2.3.3		Relevant information is collected to support the management of fishery impacts on ETP species, including: <ul style="list-style-type: none"> <li>Information for the development of the management strategy;</li> <li>Information to assess the effectiveness of the management strategy; and</li> <li>Information to determine the outcome status of ETP species.</li> </ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.	Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.
	Met?	Y	Y	N
	Justification	The PFA and SPSG observer data described in Section 3.5.3 of the main report provide sufficient qualitative and quantitative information for this fishery's impacts on ETP species to be estimated (see PI 2.3.1 – scoring issue a). In this respect, SG80 is met. Because of the low observer coverage, however, impacts cannot be quantitatively estimated with a high degree of certainty. SG100 is not met.		
b	Guide post	Information is adequate to broadly understand the impact of the fishery on ETP species.	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.	Accurate and verifiable information is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.
	Met?	Y	Y	N
	Justification	As per scoring issue a, the observer data available are sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species. SG80 is met. Information on the magnitude of all impacts is however not available at this low level of observer coverage. SG100 is not met.		
c	Guide post	Information is adequate to support measures to manage the impacts on ETP species.	Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.	Information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	Y	Y	N

	<b>Justification</b>	The information stemming from the observer data, as well as the auto-reporting data described in Section 3.5.3 of the main report shows that ETP interactions in this fishery are relatively rare and would enable any increase in risk level to be detected. This information is therefore sufficient for SG80 to be met. In the absence of a comprehensive strategy, however, SG100 cannot be met.
	<b>References</b>	PFA and SPSG observer data (see Section 3.5.3 main report)
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>



Evaluation table 16 - PI 2.4.1

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		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	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.
	Met?	Y	Y	P
	Justification	Mid-water pelagic trawls or purse seines are not configured to interact with the seabed and damage to the gear is likely to occur before substantial damage to seafloor structures occurs (Donaldson et al., 2010). These gear types are therefore considered very low-impact gears with respect to benthic habitats (Chuengpagee et al., 2003; Morgan and Chuengpagee, 2003). The gear used by the vessels in the UoC is used in deep waters and equipped with hydro-acoustic equipment including a netsonde which enables the skippers to maintain control over the position of the net in the water column, thus further reducing the likelihood of interaction. Although ghost fishing can be caused by nets and cod ends discarded at sea (noting that this would be against regulations and unlikely considering the cost of the gear), lost trawl gear is generally perceived to have a low potential for ghost fishing (Morgan and Chuenpagdee, 2003, cited in Donaldson et al., 2010). However, if a seine set is lost and the fish do not survive, there may be considerable localized harm to the benthos through organic enrichment and disturbance (ICES, 2006, cited in Donaldson et al., 2010). Occurrences of gear loss are, however, recorded by PFA, SPSG, KFO and DPPO member vessels and are reported to be very rare. The team considered that while information on gear interactions with the seabed is inferential and is not based on scientific data specific to the fishery in question, it constitutes some evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm. SG100 is therefore partially met.		
References		<p>Chuengpagee, R., Morgan, L.E., Maxwell, S.M., Norse, E.A. &amp; Pauly, D. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. <i>Frontiers in Ecology and the Environment</i>. 1, 10, 517-524.</p> <p>Morgan, L.E. &amp; Chuenpagdee, R. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. <i>Pew Science Series</i>. Washington, DC: Island Press.</p> <p>Donaldson, A., Gabriel, C., Harvey, B.J. &amp; Carolsfeld, J. 2010. Impacts of Fishing Gears other than Bottom Trawls, Dredges, Gillnets and Longlines on Aquatic Biodiversity and Vulnerable Marine Ecosystems. Research Document 2010/011. Canadian Science Advisory Secretariat. Fisheries and Oceans Canada.</p>		

<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>N/A</b>

Evaluation table 17 - PI 2.4.2

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		
Scoring Issue		SG 60	SG 80	SG 100
a	<b>Guide post</b>	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	The onboard measures used by the vessels in the UoC constitute a partial strategy (SG80 is met): these include the use of sophisticated electronics, including depth sounders, sonars and trawl monitoring systems. Scanning sonars on all vessels reveal seabed depth and topography ahead of the vessels, so that there is sufficient advance warning of changes in depth or seabed obstructions to allow altering of course or raising of gear (Southall et al., 2010). The trawl sensors provide information on the spread and height of the net opening, depth of the footrope of the net and the clearance between the footrope and the seabed so that control over the position of the net in the water column can be maintained. Vessels are also continually aware of the location of protected deep-sea habitats (as per regulation (EU) No 227/2013) which are plotted into their on-board navigation systems. Note that none of the access restrictions for vulnerable deep-sea habitats prohibit pelagic fisheries from operating in these areas on the basis of low impact (regulation (EU) No 227/2013). The team therefore felt that there is a strategy in place which incorporates knowledge of how pelagic gear interacts with specific vulnerable habitats in the Northeast Atlantic (the coordinates of which are provided in regulation (EU) No 227/2013). Within the Norwegian EEZ (where this fishery predominantly takes place), habitat regulations apply to bottom gear fisheries only. Specific regulations do exist relating to gear loss, including the duty to search for the gear and to report any lost gear components to the Norwegian Coast Guard (see Norwegian Marine Resources Act). Overall, the team considered that this constitutes a strategy for managing the impact of the fishery on habitat types. SG100 should therefore be met.		

<b>b</b>	<b>Guide post</b>	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	Based on the numerous studies assessing habitat impacts of pelagic trawl fisheries (see Chuengpagee et al., 2003; Morgan and Chuengpagee, 2003; Donaldson et al., 2010) there is some objective basis for confidence that the partial strategy will work. SG80 is met. This has however not been specifically tested for the fishery in question and as such SG100 is not met.		
<b>c</b>	<b>Guide post</b>		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	<b>Met?</b>		Y	N
	<b>Justification</b>	As per scoring issue b, there is some evidence (inferred from literature on benthic interactions in pelagic fisheries) that the partial strategy is being implemented successfully. SG80 is met. However, in the absence of fisheries-specific evidence, SG100 is not met.		
<b>d</b>	<b>Guide post</b>			There is some evidence that the strategy is achieving its objective.
	<b>Met?</b>			Y
	<b>Justification</b>	There have been no indications to date of habitat damage in the ASH fishery. This provides some evidence that the strategy is achieving its objective. This scoring issue is therefore met.		
<b>References</b>		<p>Southall, T., Medley, P., Carleton, C., Gill, M. and McFadden M. 2010. MSC Public Certification Report for the Scottish Pelagic Sustainability Group Ltd (SPSG) Atlanto-Scandian Herring Fishery. Food Certification International Ltd Report. Available online at: <a href="http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring/assessment-downloads-1/09.03.2010-as-herring-pcr.pdf">http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/scottish-pelagic-sustainability-group-ltd-atlanto-scandian-herring/assessment-downloads-1/09.03.2010-as-herring-pcr.pdf</a></p> <p>Chuengpagee, R., Morgan, L.E., Maxwell, S.M., Norse, E.A. &amp; Pauly, D. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. <i>Frontiers in Ecology and the Environment</i>. 1, 10, 517-524.</p> <p>Morgan, L.E. &amp; Chuenpagdee, R. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. Pew Science Series. Washington, DC: Island Press.</p> <p>Donaldson, A., Gabriel, C., Harvey, B.J. &amp; Carolsfeld, J. 2010. Impacts of Fishing Gears other than Bottom Trawls, Dredges, Gillnets and Longlines on Aquatic Biodiversity and Vulnerable Marine Ecosystems. Research Document 2010/011. Canadian Science Advisory</p>		

	<p>Secretariat. Fisheries and Oceans Canada.</p> <p>Regulation (EU) No 227/2013 of the European Parliament and of the Council of 13 March 2013 amending Council Regulation (EC) No 850/98 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms and Council Regulation (EC) No 1434/98 specifying conditions under which herring may be landed for industrial purposes other than direct human consumption.</p>	
OVERALL PERFORMANCE INDICATOR SCORE:		90
CONDITION NUMBER (if relevant):		N/A

Evaluation table 18 - PI 2.4.3

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		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	There is basic understanding of the types and distribution of main habitats in the area of the fishery.	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.	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
	Met?	Y	Y	Y
	Justification	The distribution of demersal habitats, including vulnerable habitats, is known (e.g. OSPAR and MAREANO mapping). Since the fishery is a pelagic fishery and does not impact demersal habitats, it was not considered necessary to understand habitats at a significant level of detail in order to evaluate the impacts of this fishery. SG100 is met.		
b	Guide post	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.	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.	The physical impacts of the gear on the habitat types have been quantified fully.
	Met?	Y	Y	N
	Justification	Sufficient information is available from scientific and grey literature investigating benthic interactions in pelagic trawl fisheries (see Chuengpagee et al., 2003; Morgan and Chuengpagee, 2003; Donaldson et al., 2010). The spatial extent of vulnerable habitat types is known (see scoring issue a) and the location and timing of use of the fishing gear is known through VMS and logbook data. SG80 is therefore met. The impacts of the gear used in this fishery, however, have not been fully tested and quantified and SG100 is therefore not met.		

<b>c</b>	<b>Guide post</b>		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).	Changes in habitat distributions over time are measured.
	<b>Met?</b>		Y	Y
	<b>Justification</b>	As above, the team considered that the information available is sufficient for any increase in risk to vulnerable habitats to be detected since there are no impacts on habitats. As such, the team considered that sufficient data continue to be collected to detect any increase in risk to habitat (SG80 is met) and changes in habitat distributions over time are measured (SG100 is met).		
<b>References</b>		<a href="http://www.ospar.org">www.ospar.org</a> <a href="http://www.eunis.org">www.eunis.org</a> OSPAR Joint Assessment and Monitoring Programme 2010 – 2014 EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) <a href="http://www.mareano.no/kart/viewer.php?language=en&amp;bbox=654539.1,7864860.0,808175.9,7950520.0&amp;KARTBILDE_ID=115">http://www.mareano.no/kart/viewer.php?language=en&amp;bbox=654539.1,7864860.0,808175.9,7950520.0&amp;KARTBILDE_ID=115</a> Chuengpagee, R., Morgan, L.E., Maxwell, S.M., Norse, E.A. & Pauly, D. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. <i>Frontiers in Ecology and the Environment</i> . 1, 10, 517-524. Morgan, L.E. & Chuenpagdee, R. 2003. Shifting gears: assessing collateral impacts of fishing methods in U.S. waters. <i>Pew Science Series</i> . Washington, DC: Island Press. Donaldson, A., Gabriel, C., Harvey, B.J. & Carolsfeld, J. 2010. Impacts of Fishing Gears other than Bottom Trawls, Dredges, Gillnets and Longlines on Aquatic Biodiversity and Vulnerable Marine Ecosystems. Research Document 2010/011. Canadian Science Advisory Secretariat. Fisheries and Oceans Canada.		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>

Evaluation table 19 - PI 2.5.1

PI 2.5.1		The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Y	Y	N
	Justification	Also see Section 3.5.5. Within the Northeast Atlantic, the Norwegian Sea is the feeding ground for some of the largest fish stocks in the world, including Atlanto-Scandian herring, blue whiting and Northeast Atlantic mackerel. Species such as herring occupy a central role, meaning that a stock collapse can release predation on its prey species as well as constrain the food resource of its predators. Because the species are so abundant, the effects on the other species that depend on it are likely to be considerable (Skjoldal et al. 2004, cited in ICES, 2014b; Dickey-Collas et al., 2010). Further complexity is however added by other factors that are at play, such as density-dependent mechanisms and inter-specific competition which may have contributed to the increasing trends in the mackerel and blue whiting stocks while the herring stock continues to decrease and recruitment continues to be poor. Since the start of fisheries management in the Northeast Atlantic, most stocks have been managed with a single species approach focused on keeping stocks above a precautionary biomass level to avoid stock collapse, and from 2012, ICES transitioned its fisheries advice to be based on maximum sustainable yield (MSY). While this approach ignores to a large extent those factors affecting stock development and can introduce biased results in estimations of future stock status (ICES, 2014h), maintaining SSB at sustainable levels remains a key tool in maintaining stock status and ecosystem health. In the absence of a full ecosystem-based approach to fisheries management, monitoring SSB, compliance with the harvest control rule (such as TACs), and an enforced quota regime should therefore deliver most of the management requirements for preventing stock collapse, thereby preventing any effects the fishery may have on the wider ecosystem. The ASH stock is currently above the point at which recruitment would be impaired and is fluctuating around its target reference point. On this basis, the vessels in the UoC are highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be serious or irreversible harm. SG80 is met. However, because of the complex Northeast Atlantic environment where the influence of oceanic and atmospheric anomalies coupled with intra- and interspecific interactions is not yet well understood (see Section 3.5.5), the team felt that 'evidence' of the fishery's impact on the ecosystem is currently lacking. SG100 is therefore not met.		
References		ICES. 2014b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 26 August - 1 September 2014, ICES		

<b>PI 2.5.1</b>	<b>The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function</b>	
	<p>Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:15. 938 pp.</p> <p>Dickey-Collas, M., Nash, R. D. M., Brunel, T., van Damme, C. J. G., Marshall, C. T., Payne, M. R., Corten, A., Geffen, A. J., Peck, M. A., Hatfield, E. M. C., Hintzen, N. T., Enberg, K., Kell, L. T., and Simmonds, E. J. 2010. Lessons learned from stock collapse and recovery of North Sea herring: a review. – ICES Journal of Marine Science, 67: 000–000.</p> <p>ICES. 2014h. 2nd Interim Report of the Working Group on Integrated Assessments of the Norwegian Sea (WGINOR), 18-22 August 2014, Torshavn, Faroe Islands. ICES CM 2014/SSGRSP:07. 25 pp.</p>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>



Evaluation table 20 - PI 2.5.2

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	There are measures in place, if necessary.	There is a partial strategy in place, if necessary.	There is a strategy that consists of a plan, in place.
	Met?	Y	Y	N

<b>Justification</b>	<p>The key elements contributing to the management of the Northeast Atlantic ecosystem in the context of this fishery are listed in Section 3.5.5. Amongst those listed, the Regulation (EU) No 1380/2013 on the Common Fisheries Policy (CFP) (which requires fishing levels to be set at MSY levels by 2015 where possible, and at the latest by 2020 for all fish stocks) and the joint long-term management plan between the EU, Norway, Iceland, Faroe Islands and Russia (which provides the framework for setting an annual TAC in the form of a management plan based on current ICES scientific advice) are key in ensuring that the ASH stock is maintained at healthy levels. Norwegian fisheries policy (as set out in the Marine Resources Act 2009) requires that ecosystems be considered, via <i>inter alia</i>, the use of the precautionary approach and the ecosystem approach to fisheries management, and the requirement that the impacts of fishing gear on the wider ecosystem be considered.</p> <p>Amongst the EC Council Regulations which set out provisions to limit ecosystem impacts from fisheries (listed in Section 3.5.5), Directive 2008/56/EC on establishing a framework for community action in the field of marine environmental policy (so-called Marine Strategy Framework Directive) outlines the legislative framework for an ecosystem-based approach to the management of human activities which supports the sustainable use of marine goods and services. The overarching goal of the Directive is to achieve 'Good Environmental Status' by 2020 across Europe's marine environment. To do so, a series of detailed criteria and indicators have been produced by the Commission (see 2010/477/EU: Commission Decision of 1 September 2010 on criteria and methodological standards on good environmental status of marine waters (notified under document C (2010) 5956) Text with EEA relevance) which are used by member states as a blueprint for the implementation of the MSFD. The OSPAR Commission (see Section 3.5.5 for further details) is the main platform through which EU member states coordinate their work to implement the MSFD in the North-East Atlantic. OSPAR's North-East Atlantic Environment Strategy and the Joint Assessment and Monitoring Programme (JAMP, OSPAR Agreement 2010-4), include the following milestones for contracting parties:</p> <ul style="list-style-type: none"> <li>- By 2012: determination of a set of characteristics for good environmental status for the marine waters and their environmental targets and associated indicators, using Ecological Quality Objectives, where applicable, and other existing tools as appropriate</li> <li>- By 2014: monitoring programmes for the on-going assessment of the environmental status of their marine waters feeding into the review by the OSPAR Commission of the Joint Assessment and Monitoring Programme by 2014</li> <li>- By 2015: identification of their programmes of measures in order to maintain or achieve good environmental status in their marine waters throughout the OSPAR maritime area</li> <li>- By 2018: first review by the relevant Contracting Parties of the initial assessment of their marine waters, their descriptions of good environmental status, and their environmental targets and associated indicators</li> </ul> <p>Norway has a policy for incorporating ecosystem issues into fisheries management, including the precautionary approach, marine protected areas, the discard ban, and presumption of protection for all non-exploited species etc. However, although an ecosystem plan has been developed for the Barents and North Sea, it has not yet been finalised for the Norwegian Sea.</p> <p>The team considered that the above for the EU constitutes an overarching strategy which consists of a plan; however because the MSFD has not yet been fully implemented, not all of SG100 is met. Likewise for Norway, there is a strategy but no formal plan for this area as yet. A score of 80 is therefore awarded.</p>
----------------------	---

<b>b</b>	<b>Guide post</b>	The measures take into account potential impacts of the fishery on key elements of the ecosystem.	The partial strategy takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	<p>The strategy, which consists of a plan, contains measures to address all main impacts of the fishery on the ecosystem, and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem.</p> <p>This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery does not cause serious or irreversible harm.</p>
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>The following overarching criteria exist as part of the MSFD (for more detail on indicators see 2010/477/EU: Commission Decision of 1 September 2010 on criteria and methodological standards on good environmental status of marine waters), designed to address all main anthropogenic impacts on the marine environment across EU member states, including fisheries. Some of these criteria are already being met through the various council directives listed in Section 3.5.5. For the MSFD's development, the Commission consulted all interested parties, including regional sea conventions, in particular on the scientific and technical assessment prepared by the Task Groups set up by the Joint Research Centre and ICES to support the development of criteria and methodological standards. The developed indicators are therefore based on well understood functional relationships between anthropogenic impacts (including fisheries) and the marine environment's ecosystem components. :</p> <p>Descriptor 1: Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climate conditions.</p> <p>Descriptor 2: Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem</p> <p>Descriptor 3: Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.</p> <p>Descriptor 4: All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.</p> <p>Descriptor 5: Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.</p> <p>Descriptor 6: Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and</p>		

	<p>benthic ecosystems, in particular, are not adversely affected</p> <p>Descriptor 7: Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.</p> <p>Descriptor 8: Concentrations of contaminants are at levels not giving rise to pollution effects</p> <p>Descriptor 9: Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards</p> <p>Descriptor 10: Properties and quantities of marine litter do not cause harm to the coastal and marine environment.</p> <p>Descriptor 11: Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment</p> <p>Some of the key strategic objectives of the OSPAR Commission in the context of this fishery are listed below. Each of these have specific operational objectives and measurable indicators and targets are due to be developed and implemented, either by Contracting Parties or, where appropriate, within the OSPAR Commission:</p> <ul style="list-style-type: none"> <li>- To halt and prevent by 2020 further loss of biodiversity in the OSPAR maritime area, to protect and conserve ecosystems, and to restore, where practicable, marine areas which have been adversely affected through <i>inter alia</i> monitoring and assessment, targeted actions for the protection and conservation of species, habitats and ecosystem processes, and developing an ecologically coherent OSPAR network of well-managed marine protected areas (“the OSPAR Network”)</li> <li>- To ensure integrated management of human activities in order to reduce impacts on the marine environment, taking into account the impacts of, and responses to, climate change and ocean acidification;</li> <li>- To facilitate and coordinate the work of relevant Contracting Parties in achieving good environmental status under the EU Marine Strategy Framework Directive (MSFD) by 2020.</li> </ul> <p>In relation to Norway specifically, as noted above, the country is in the process of developing ecosystem management plans, but so far has focussed on the Barents and North Seas; there is no plan for the Norwegian Sea as yet. In the meantime, Norwegian fisheries policy and legislation provides a general framework for the respect of marine ecosystems, as set out above.</p> <p>On the basis of the above information, the team considered that both the MSFD (EU) and the OSPAR Strategy (EU plus Norway) provide the framework for a plan which restrains impacts on the ecosystem to ensure that human activities, including fisheries, do not cause serious or irreversible harm. Likewise, Norwegian legislation requires that wider ecosystem impacts of fishing be considered in a precautionary way. However, because the MSFD has not yet been fully implemented, OSPAR measurable indicators and targets are still due to be developed and implemented and the Norwegian ecosystem management plan for the Norwegian Sea is still in preparation, SG100 is only partially met and a score of 80 is awarded.</p>
--	---

<b>c</b>	<b>Guide post</b>	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The partial strategy is considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	Management measures put in place for the herring fishery (through the CFP and the joint long-term management plan between the EU, Norway, Iceland, Faroe Islands and Russia) have thus far succeeded in maintaining the stock in a healthy state, albeit with large fluctuations in biomass which are probably recruitment driven (see PI1.1.1). There are further no issues in this fishery with retained or discarded bycatch, benthic habitats or ETP species. On this basis, the partial strategy is considered likely to work and SG80 is met. In the absence of a fully implemented ecosystem management strategy, however, SG100 is not met.		
<b>d</b>	<b>Guide post</b>		There is some evidence that the measures comprising the partial strategy are being implemented successfully.	There is evidence that the measures are being implemented successfully.
	<b>Met?</b>		Y	N
	<b>Justification</b>	The lack of systematic non-compliance in this fishery provides some evidence that those measures that are already in place (listed in Section 3.5.5) are being implemented successfully by the fishery. SG80 is therefore met. However because the strategy is not yet fully in place, SG100 is not met.		
<b>References</b>		2010/477/EU: Commission Decision of 1 September 2010 on criteria and methodological standards on good environmental status of marine waters Regulation (EU) No 1380/2013 on the Common Fisheries Policy Joint long-term management plan between the EU, Norway, Iceland, Faroe Islands and Russia Marine Resources Act 2009 (Norway) – English summary available here: <a href="https://www.regjeringen.no/globalassets/upload/FKD/Vedlegg/Diverse/2010/MarineResourcesAct.pdf">https://www.regjeringen.no/globalassets/upload/FKD/Vedlegg/Diverse/2010/MarineResourcesAct.pdf</a> Directive 2008/56/EC on establishing a framework for community action in the field of marine environmental policy Joint Assessment and Monitoring Programme (JAMP, OSPAR Agreement 2010-4) <a href="http://www.fisheries.no/ecosystems-and-stocks/Environmental-measures/Environmental_principles_in_fisheries_management/#.VZqdM_IViko">http://www.fisheries.no/ecosystems-and-stocks/Environmental-measures/Environmental_principles_in_fisheries_management/#.VZqdM_IViko</a>		

<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>N/A</b>

Evaluation table 21 - PI 2.5.3

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Information is adequate to identify the key elements of the ecosystem (e.g., trophic structure and function, community composition, productivity pattern and biodiversity).	Information is adequate to broadly understand the key elements of the ecosystem.	
	Met?	Y	Y	
	Justification	See Section 3.5.5 for further details. Information on key elements of the ecosystem continues to be collected by ICES and the various Working Groups therein (e.g. WGBYC, WGWIDE). The Working Group on the Integrated Assessments of the Norwegian Sea (WGINOR) aims to conduct and further develop Integrated Ecosystem Assessments for the Norwegian Sea as a step towards implementing the ecosystem approach. The interaction between ecosystem components in Norwegian Sea is also being investigated through the INFERNO project 'Effects of interactions between fish populations on ecosystem dynamics and fish recruitment in the Norwegian Sea' (Huse et al., 2012), the International Ecosystem Survey in the Nordic Seas (IESNS) (ICES, 2014b) and ongoing modelling studies (ICES, 2014h). Information is thus adequate to broadly understand the key elements of the ecosystem. SG80 is met.		
b	Guide post	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, and have not been investigated in detail.	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail.	Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated.
	Met?	Y	Y	N
	Justification	The studies listed in scoring issue a and particularly the work currently being undertaken by WGINOR provides evidence that the main impacts of the fishery on key ecosystem elements are being investigated with some having been investigated in detail (e.g. INFERNO). SG80 is therefore met. Not all interactions have been investigated however and SG100 is thus not met.		
c	Guide post		The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known.	The impacts of the fishery on target, Bycatch, Retained and ETP species are identified and the main functions of these Components in the ecosystem are understood.

	<b>Met?</b>		Y	N
	<b>Justification</b>	As detailed in Sections 3.5.1, 3.5.2 and 3.5.3 the main functions of the ecosystem components and how these are impacted by the fishery are known. SG80 is therefore met. However, because of the low level of observer coverage in this fishery, it cannot be said that all impacts of the fishery on in particular ETP and bycatch species are identified. SG100 is not met.		
<b>d</b>	<b>Guide post</b>		Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.	Sufficient information is available on the impacts of the fishery on the Components and elements to allow the main consequences for the ecosystem to be inferred.
	<b>Met?</b>		Y	N
	<b>Justification</b>	As per scoring issue c, sufficient information is available on the impacts of the fishery on retained species, bycatch and ETP species to allow the main consequences for the ecosystem components to be inferred. As such SG80 is met. However the low level of observer coverage precludes SG100 from being met.		
<b>e</b>	<b>Guide post</b>		Sufficient data continue to be collected to detect any increase in risk level (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	Information is sufficient to support the development of strategies to manage ecosystem impacts.
	<b>Met?</b>		Y	N
	<b>Justification</b>	Information on key elements of the ecosystem continues to be collected under the various EU Directives (Marine Strategy Framework Directive, Habitats Directive), the OSPAR Convention and the ICES working groups (WGINOR, WGWIDE, WGBYC) so that any increase in risk level would be detected. In the absence of a fully implemented ecosystem management strategy, however, SG100 is not met.		
<b>References</b>		<p>ICES Working Group on Bycatch of Protected Species (WGBYC)</p> <p>ICES Working Group on Widely Distributed Stocks (WGWIDE)</p> <p>ICES Working Group on the Integrated Assessments of the Norwegian Sea (WGINOR)</p> <p>Huse, G., Holst, J.C., Utne, K., Nottestad, L., Melle, W., Slotte, A., Ottersen, G., Fenchel, T. and Uiblein, F. 2012. Effects of interactions between fish populations on ecosystem dynamics in the Norwegian Sea - results of the INFERNO project, Marine Biology Research, 8:5-6, 415-419.</p> <p>ICES. 2014b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 26 August - 1 September 2014, ICES</p>		



	Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:15. 938 pp. ICES. 2014h. 2nd Interim Report of the Working Group on Integrated Assessments of the Norwegian Sea (WGINOR), 18-22 August 2014, Torshavn, Faroe Islands. ICES CM 2014/SSGRSP:07. 25 pp.	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>

Evaluation table 22 - PI 3.1.1

PI 3.1.1		<p><b>The management system exists within an appropriate legal and/or customary framework which ensures that it:</b></p> <ul style="list-style-type: none"> <li>• <b>Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and</b></li> <li>• <b>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</b></li> <li>• <b>Incorporates an appropriate dispute resolution framework.</b></li> </ul>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	There is an effective national legal system and <u>a framework for cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and <u>binding procedures governing cooperation with other parties</u> which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	Y	N	N
	Justification	<p>The countries involved in the management of this fishery all have well-established systems for fisheries management. Typically, there is a regulatory agency (like the Swedish Agency for Marine and Water Management, the Danish Agrifish Agency, the Irish Department of Agriculture, Food and the Marine, the UK Department for Environment, Food &amp; Rural Affairs and the Netherlands Food and Consumer Product Safety Authority), responsible for the regulation of fisheries and/or enforcement of fisheries regulations in collaboration with the respective national scientific research institutes and enforcement bodies. Through national and EU legislation, binding procedures for cooperation between the different governmental agencies involved are in place, and are able to provide management outcomes that are consistent with MSC Principles 1 and 2.</p> <p>According to MSC CR 1.3, the international perspective has to be taken into account in the assessment of shared stocks (CBA 4.2.1.2). In that context, the fishery meets the requirements of SG60 in that a framework for international cooperation exists through the overarching NEAFC framework and annual meetings under the Coastal States agreement for Atlanto-Scandian herring, which proved to be effective from 2007 onwards. There is also evidence of continued international cooperation on scientific research, ensuring management outcomes consistent with MSC Principles 1 and 2. However, during the 2012–2013 Coastal States negotiations on the national quota allocations for the 2013 fishery a serious disagreement arose (see PI 1.2.2) which highlighted the lack of a well-organized and effective system with legally backed binding procedures, governing cooperation able to provide management outcomes consistent with MSC Principles 1 and 2. This situation was repeated at the negotiations for the 2014 national quotas.</p> <p>In June 2014, political understanding was reached between EU and the Faroe Islands to end the dispute on the management of Atlanto-Scandian herring. As part of the understanding, the Faroe Islands agreed to put an end to their unsustainable herring fishing</p>		

		<p>whilst the Commission would repeal the trade and access to EU port restrictions that were adopted against the Faroe Islands in August 2013, as a response to the latter's withdrawal from the Coastal States regime. The agreement implied that the Faroe Islands would adopt a catch limit for herring in 2014 at 40,000t., which is considerably than the limit they had set for themselves the year before. However, the lifting of the measures does not represent a tacit agreement by the EU that 40,000t is the legitimate share of the stock for the Faroe Islands. It is merely indicative of the fact that the sustainability of the stock is no longer in jeopardy. The decision is also without prejudice to subsequent consultations among the five coastal states on the future sharing of the stock. As a consequence the fishery does not meet the SG 80 and SG 100 scoring issues.</p> <p>According to CBA4.2.1.3, cooperation shall at least deliver the intent of the UN Fish Stocks Agreement, Article 10, relating to the collection and sharing of scientific data, the scientific assessment of stock status, and the development of scientific advice. Despite the partly breakdown of the Coastal States regime, the scientific tier of the management system is still taken care of by ICES; hence SG 60 is met.</p>		
<b>b</b>	<b>Guide post</b>	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	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 the fishery.	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.
	<b>Met?</b>	Y	N	N
	<b>Justification</b>	<p>At national level in the coastal states, there are effective, transparent dispute resolution mechanisms in place, as fishers can take their case to court if they do not accept the rationale behind an infringement accusation by enforcement authorities, or the fees levied against them. Verdicts at the lower court levels can be appealed to higher levels. There is also a legal system in place within the EU, which provides for resolution of disputes between actors from the same or different EU member states, for instance in the European Court of Justice.</p> <p>The Atlanto-Scandian herring is a shared, straddling, high-seas stock subject to international cooperation for its management. The Coastal States agreement is the fundamental mechanism to achieve management based on the agreed harvest strategy endorsed as precautionary by ICES. The main core of that agreement is to set the annual allocation to participating countries, and the EU, based on the advised and agreed annual TAC. The allocation of the share to each participant is not based on any legally binding long-term agreement, but is negotiated annually once the TAC is agreed. In some years the allocation percentages are carried over from previous years, but this is not the result of a binding agreement on quota shares. These annual negotiations are dependent on all parties reaching an agreement on the share allocation in relation to the ICES advised TAC. If an agreement cannot be reached on the allocation of shares, an annual TAC cannot be set. In that situation sustainable management of the stock, in line with the harvest strategy, becomes entirely dependent on the realized intentions of each participant in the fishery. This has the obvious potential to</p>		

		<p>over-exploit the stock and compromise the harvest strategy. There are currently no binding dispute resolution mechanisms within the Coastal States agreement which can effectively and legally resolve such disputes. This situation has arisen in relation to the 2013 and 2014 fishery (see PI 1.2.2), highlighting the lack of a formal, and legally backed system, for the allocation of shares, and also the lack of any dispute resolution mechanism for this fishery.</p> <p>At the international level, a state can institute proceedings against another state through mechanisms such as the International Court of Justice and the International Tribunal for the Law of the Sea. This has so far not been widely used as a means for solving fisheries disputes, but more in disputes about jurisdiction. The same holds true for dispute resolution mechanisms within NEAFC.</p>		
<b>d</b>	<b>Guide post</b>	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.	The management system has a mechanism to observe 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.	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.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>The historical fishing rights of countries particularly depending on fishing for food and livelihood are generally respected, observed and legally committed to through the appropriate regional fisheries management bodies, e.g. the Coastal State Agreement and NEAFC. This follows from the established allocation of quota rights based on traditional fishing.</p> <p>The NEAFC Declaration recognizes social benefits as part of sustainable management insofar as it requires that NEAFC ensure the long-term conservation and optimum utilization of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits.</p> <p>The CFP also requires that fisheries are managed in a way that is consistent with the objectives of achieving economic, social and employment benefits.</p>		
<b>References</b>		<p>Agreed Record of Conclusions of Fisheries Consultations on the Management of the Norwegian Spring-spawning (Atlanto-Scandian) Herring Stock in the North-East Atlantic for 2014, 2014</p> <p>Declaration on the Interpretation and Implementation of the Convention on the Future Multilateral Cooperation in North-East Atlantic Fisheries (North East Atlantic Fisheries Commission “new” Convention), 2007</p>		

	NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004 Interviews during site visits REGULATION (EU) No 1380/2013 Of The European Parliament And Of The Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC	
OVERALL PERFORMANCE INDICATOR SCORE:		65
CONDITION NUMBER (if relevant):		2

Evaluation table 23 - PI 3.1.2

PI 3.1.2		<b>The management system has effective consultation processes that are open to interested and affected parties.</b> <b>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</b>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.	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 and well understood for all areas of responsibility and interaction.
	Met?	Y	Y	Y
	Justification	<p>In both NEAFC and the Coastal State negotiations, the roles and responsibilities of each state are explicitly defined and well understood for all areas of responsibility and action. There is no evidence to the contrary in the team's interviews during site visits or other documentation provided by stakeholders.</p> <p>In each coastal state, management authority rests with a national body of governance (see 3.1.1 a)), whose interaction with POs, enforcement bodies and NGOs in all areas of responsibilities are well understood in the management system, according to our interviews during site visits and communication with stakeholders. The details of various organizations' or individuals' roles might not be codified in legislation, but nevertheless explicitly defined and well understood according to long-standing practice in the respective coastal states.</p>		
b	Guide post	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	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 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.
	Met?	Y	Y	Y

	<b>Justification</b>	<p>All coastal states have a long tradition of continuous consultation and close cooperation between government agencies and user-group organizations, for the current fishery in particular the POs. SPFPO, for instance, has an agreement with the Swedish Agency for Marine and Water Management about regular meetings concerning the regulation and allocation of quota shares for pelagic species once information about TACs is released by the EU Commission (during site visit, SPFPO representatives reported this to be an 'automatic process'), in addition to more informal consultations throughout the year. In Denmark as well, stakeholders are consulted both at meetings and in writing. Ahead of all EU fisheries council meetings, there is a stakeholder consultation, followed by consultation in parliament. The ministry gets its mandate on that basis; this applies also for the coastal states negotiations. Also KFO, PFA and SPSG report that they are involved in continuous and open consultations with national management authorities and other relevant stakeholders. Environmental NGOs are also invited to take part in consultation processes, but do not seem to prioritize this fishery.</p> <p>The situation is similar at the international level, where user-groups participate in Coastal State negotiations, and NGOs participate at meetings in regional organizations such as the Pelagic Advisory Council (PAC), NEAFC and OSPAR. The PAC is the main consultation mechanism through which industry engages with management authorities. It includes European industry and NGO representatives ensuring local knowledge is considered within the management system. The PAC actively develops policy and advice to the European Commission, which are considered as part of the EC's management system.</p> <p>All stakeholders report consultation processes to be inclusive and transparent, with management authorities displaying consideration of the information obtained from stakeholders and how it is used.</p>		
<b>c</b>	<b>Guide post</b>		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.
	<b>Met?</b>		Y	Y
	<b>Justification</b>	As follows from 3.1.2 c), the consultation processes provide opportunity for all interested and affected parties to be involved at both national and international level. All stakeholders consulted during the assessment report that management authorities actively facilitate their involvement, for instance through formal invitations to take part in meetings, and more widely by seeking the advice of stakeholders on their own initiative, not just responding to queries.		
<b>References</b>		<p>Agreed Record of Conclusions of Fisheries Consultations on the Management of the Norwegian Spring-spawning (Atlanto-Scandian) Herring Stock in the North-East Atlantic for 2014, 2014</p> <p>Declaration on the Interpretation and Implementation of the Convention on the Future Multilateral Cooperation in North-East Atlantic Fisheries (North East Atlantic Fisheries Commission "new" Convention), 2007</p> <p>REGULATION (EU) No 1380/2013 Of The European Parliament And Of The Council of 11 December 2013 on the Common Fisheries</p>		

	Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC  Interviews during site visits  www.pelagic-rac.org	
OVERALL PERFORMANCE INDICATOR SCORE:		100
CONDITION NUMBER (if relevant):		N/A

Evaluation table 24 - PI 3.1.3

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		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Guide post</b>	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy.	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.
	<b>Met?</b>	Y	Y	Y



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
Justification	<p>The 2013 CFP Regulation sets out a wide range series of objectives, including that fishing activities are environmentally sustainable in the long-term; that the precautionary approach to fisheries management is applied in order to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield; and that the ecosystem-based approach to fisheries management is implemented so as to ensure that negative impacts of fishing activities on the marine ecosystem are minimized, and that fisheries activities avoid the degradation of the marine environment.</p> <p>All the coastal states have fisheries laws and lower-level legal acts that define clear long-term objectives that are consistent with the MSC Principles and Criteria and the precautionary approach. Some legal texts, like the 2014 Danish Law on Fisheries and Aquaculture, do not explicitly use the concept 'precautionary approach' in its statement of overarching objectives, but rather terms such as 'protection' and 'sustainability'. Seen in the context of the requirements in the remaining law text, and legal acts at lower levels, the objectives are consistent with the precautionary approach to fisheries management, as defined, e.g., in the FAO Code of Conduct for Responsible Fisheries.</p> <p>In Norway the Marine Resources Act from 2008, which covers all living marine resources, requires that Norwegian fisheries management be guided by the precautionary approach and by an ecosystem approach that takes into account habitats and biodiversity. The same objectives are found in the most relevant policy documents, such as the integrated management plans for the Barents and Norwegian Seas, and for the North Sea and Skagerrak</p> <p>At the international level, the five coastal states in 2007 agreed on a long-term management plan for spring spawning herring, which is declared to be consistent with a precautionary approach, intended to constrain harvesting within safe biological limits and designed to provide for sustainable fisheries. There are also clear long-term objectives in NEAFC, explicitly stating the precautionary approach.</p>
References	<p>Agreement on the Long-term Management of the Norwegian Spring-spawning (Atlanto-Scandian) Herring Stock, 2007</p> <p>Declaration on the Interpretation and Implementation of the Convention on the Future Multilateral Cooperation in North-East Atlantic Fisheries (North East Atlantic Fisheries Commission "new" Convention), 2007</p> <p>REGULATION (EU) No 1380/2013 Of The European Parliament And Of The Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC</p> <p>Norway Marine Resources Act 2008: <a href="http://www.fisheries.no/Publications/The-marine-resources-act/#.VZpN1fIVikp">http://www.fisheries.no/Publications/The-marine-resources-act/#.VZpN1fIVikp</a></p> <p>Report to the Storting No. 8 (2005–2006) Integrated Management of the Marine Environment in the Barents Sea and Ocean Areas around Lofoten (Management Plan), Government of Norway</p>

<b>PI 3.1.3</b>	<b>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</b>	
	<ul style="list-style-type: none"> <li>- Report to the Storting No. 37 (2008–2009) Integrated Management of the Marine Environment in the Norwegian Sea (Management Plan), Government of Norway</li> <li>- Report to the Storting No. 37 (2012–2013) Integrated Management of the Marine Environment in the North Sea and Skagerrak (Management Plan), Government of Norway</li> </ul>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>

Evaluation table 25 - PI 3.1.4

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		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	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 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 do not contribute to unsustainable fishing practices.
	Met?	Y	Y	P
	Justification	The management system provides for negative incentives designed to prevent fishers from violating regulations (see PI 3.2.3 on the enforcement system for details), designed to meet the outcomes expressed by MSC Principles 1 and 2 (see PI 3.1.3 and 3.2.1 on the objectives of the general and fishery-specific management systems, respectively). These incentives are subject to regular internal review of enforcement policies, in Norway and EU. A risk-based framework aimed at utilizing resources to optimize compliance at any given moment is applied, implying that priorities are regularly amended. Also, the allocation of fixed quota shares gives incentives for sustainable fishing operations, as the quota can be lost in the case of serious infringements. The introduction of the Landing Obligation under the reformed CFP (from January 2015 in pelagic fisheries) takes a results-based approach requiring vessel operators to find ways to avoid or minimize by-catch for which they have no quota. Incentives are explicitly considered in some areas of management – e.g. in relation to EU support for fisheries under the EMFF (e.g. see Ernst and Young et al. 2011) However, the team has not been provided evidence that incentives are explicitly considered in a regular review of management policies for all areas of management. Hence SG100 is partially but not fully met.		
References		<p>REGULATION (EU) No 1380/2013 Of The European Parliament And Of The Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC</p> <p>Ernst and Young, et al. 2011. Interim evaluation of the European Fisheries Fund (2007-2013) Synthesis of the 26 national evaluation reports, 91p. From <a href="http://ec.europa.eu/fisheries/documentation/studies/eff_evaluation/eff_evaluation_synthesis_en.pdf">http://ec.europa.eu/fisheries/documentation/studies/eff_evaluation/eff_evaluation_synthesis_en.pdf</a></p> <p>Interviews during site visits</p>		

<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>N/A</b>

Evaluation table 26 - PI 3.2.1

PI 3.2.1		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
	Met?	Y	Y	P
	Justification	Long-term objectives for the fishery are defined in the management plan: fisheries consistent with the precautionary approach intended to constrain harvesting within safe biological limits and designed to provide for sustainable fisheries. The management plan further provides for specific reference points for spawning stock biomass and fishing mortality. Short-term objectives explicitly addressed in EU and coastal state legislation include that TACs are not exceeded, that discard does not take place and that catch of non-target species is minimized, which is demonstrably consistent with achieving the outcomes expressed by MSC Principles 1 and 2. These short-term objectives are well defined and measurable, in the sense that performance against them can be measured through the enforcement bodies' recording and inspection routines (see 3.2.3). Well defined and measurable long-term objectives consistent with achieving the outcomes of MSC Principles 1 are explicit within the fishery's management system, reflected in the management plan's ambition to maintain fishery at a level consistent with defined biological reference points. However, less defined and measurable objectives exist for Principle 2, warranting a partial score on the SG100.		
References		Agreement on the Long-term Management of the Norwegian Spring-spawning (Atlanto-Scandian) Herring Stock, 2007 REGULATION (EU) No 1380/2013 Of The European Parliament And Of The Council of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				N/A

Evaluation table 27 - PI 3.2.2

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	There are some decision-making processes in place 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.	
	Met?	Y	Y	
	Justification	Established decision-making procedures at national level in the coastal states and EU (see PI 3.1.1) ensure that strategies are produced and measures taken to achieve the fishery-specific objectives. The Coastal State Agreement and the management plan shows that decision-making processes are in place, aimed at ensuring measures and strategies to achieve the fishery-specific objectives. Independent scientific advice is sought regularly, and there is a commitment within the coastal states to adhere to the ICES advice provided, through decision-making processes now considered to be well established.		
b	Guide post	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 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.	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.
	Met?	Y	Y	N

	<b>Justification</b>	<p>According to our interviews during site visits, as well as other communication with the clients, the established decision-making procedures at national level respond to serious and other important issues identified in research, monitoring and consultation. This is ensured through the arenas for regular consultation between governmental agencies and user groups, such as the POs, as well as more ad hoc consultations. Representatives of user groups interviewed for this assessment claim that the relevant government agencies are open to input from them, and that their response is timely and that the ensuing policies take adequate account of their advice. From the authorities' point of view, these consultations contribute to enhanced quality of decision-making and also to the legitimacy of the regulations.</p> <p>At the international level, the management system also responds to issues raised on the basis of knowledge from science, review and evaluation. ICES advice is based on data on catches and stock status, and management systems respond to issues raised by the Pelagic Advisory Council. However, the assessment team is not convinced that all issues are taken into account. For instance, relevant research is not always recognized and responded to in a timely and adaptive way by the coastal states.</p>		
<b>c</b>	<b>Guide post</b>		Decision-making processes use the precautionary approach and are based on best available information.	
	<b>Met?</b>		Y	
	<b>Justification</b>	Decision-making procedures are based on relevant ICES assessments and the management plan that has been assessed by ICES and confirmed to be consistent with the precautionary approach. In May 2013, ICES revised some of the reference points in the management plan and recommended others to remain unchanged, following a request by NEAFC to evaluate the reference points.		
<b>d</b>	<b>Guide post</b>	Some information on fishery performance and management action is generally available on request to stakeholders.	Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on fishery performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	Information on fishery performance is available from ICES and NEAFC. Control agencies provide information on fishing activities and compliance; information on landings from the fishery is available to stakeholders almost in real time. Management authorities provide explanations in feedback to the Pelagic Advisory Council, along with minutes of meetings being available. However, formal reporting on all these matters are not available to all interested stakeholders so SG100 is not met.		

<b>e</b>	<b>Guide post</b>	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 for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>The management authority is not subject to continuing court challenges. There is ample evidence at both national and international level that management authorities work proactively to avoid legal disputes, instead seeking consultations with stakeholders. As an example, when ITQs were introduced in Sweden, authorities prepared the ground for the reform by thorough consultation with user groups in order to reduce the risk of legal disputes after the reform was implemented. Regulatory and enforcement authorities offer advice to the fishing fleet on how to avoid infringements, on request and on their own initiative. For example, inspectors from the Norwegian Coast Guard work in a dedicated manner to communicate with fishers on the ground, keeping them updated on changes in regulations and explaining the rationale of the rules in an attempt to increase their legitimacy. In 2012, Norwegian enforcement authorities were given the authority to issue administrative penalties for minor infringements, thus referring only the most serious cases to prosecution by the police and possible transfer to the court system.</p> <p>At the international level, coastal states have chosen negotiations with the Faroese instead of taking the issue to an international court, such as the International Court of Justice or the International Tribunal for the Law of the Sea.</p>		
<b>References</b>		<p>Agreed Record of Conclusions of Fisheries Consultations on the Management of the Norwegian Spring-spawning (Atlanto-Scandian) Herring Stock in the North-East Atlantic for 2014, 2014</p> <p>Agreement on the Long-term Management of the Norwegian Spring-spawning (Atlanto-Scandian) Herring Stock, 2007</p> <p>ICES advice 9.3.3.2 May 2013, NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock, 2013</p>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>



Evaluation table 28 - PI 3.2.3

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Monitoring, control and surveillance mechanisms exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.	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.	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.
	Met?	Y	Y	Y

	<b>Justification</b>	<p>The fishery primarily takes place in the Norwegian Economic Zone, under the jurisdiction of Norwegian enforcement authorities, and most fish is landed in Norwegian ports. The Norwegian Directorate of Fisheries keeps track of how much fish is taken of the respective national quotas, based on reports from the fishing fleet. Electronic catch logs, or more specifically Electronic Reporting Systems (ERS), are now in place with all countries involved in the fishery, including in NEAFC waters. This implies that real-time data are forwarded to the Directorate of Fisheries, with the possibility to make corrections of data submitted each day within 12 hours into the next day. Norway has agreements in place with the EU, Russia and Iceland about exchange of ERS data, and is working actively to reach agreement on similar arrangements with the Faroe Islands and Greenland.</p> <p>The self-reported catch data can be checked at sales operations through the sales organizations, which have monopoly on first-hand sale of fish in Norway. They are required to record all landings of fish in Norway and also have their own inspectors who carry out physical controls of landings. For instance, the Fishermen's Sales Organization for Pelagic Fish has five inspectors scattered along the Norwegian coastline. The Directorate has seven regional offices along the coast, staffed with inspectors who carry out independent physical control of the fish at the point of landing, including total volume, species and fish size. The landed volumes are then compared to the volumes reported to the Directorate through the ERS system.</p> <p>The Norwegian Coast Guard carries out inspections at sea, where the accuracy of reported data are checked. It is administratively part of the Norwegian Navy, but performs tasks on behalf of several ministries, including the Ministry of Trade, Industry and Fisheries. Its most important field of work, in practice, is fisheries inspections. Coast Guard inspectors board fishing vessels and control the catch (e.g. catch composition and fish size) and fishing gear (e.g. mesh size) on deck and the volume of fish in the holds. Using the established conversion factors for the relevant fish product, the inspectors calculate the volume of the fish in round weight and compare this with the catches reported to the Directorate through the logbooks.</p> <p>In addition, national enforcement authorities perform control with the fishery in the EU zone and with landings in their respective ports. The various member state control agencies involved are coordinated by the European Fisheries Control Agency (EFCA). All catches landed in the NEAFC area are reported to the flag states under the port state control regime.</p> <p>Hence there is ample opportunity for enforcement authorities to physically check whether the data provided by fishers through self-reporting are indeed correct. In addition, VMS data enable control of whether area restrictions are observed, among other things.</p>		
<b>b</b>	<b>Guide post</b>	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	<b>Met?</b>	Y	Y	Y

	<b>Justification</b>	<p>The Norwegian enforcement agencies use a graded sanctioning system, with sanctions ranging from oral warnings, written warnings and administrative fines to formal prosecution. If the fishers do not accept the fines issued by the enforcement or prosecution authority, the case goes to court. The decision of a lower-level court can then be appealed to higher-level courts.</p> <p>In the Directorate of Fisheries' inspections of vessels engaged in the fishery for Norwegian spring-spawning herring in 2013 and the first half of 2014, minor infringements were found in 3 % of the inspections. The Norwegian Coast Guard performed 368 inspections of the Atlanto-Scandian herring fishery in 2013; 14 vessels were fined (4 %). As per 29 October, 151 vessels had been inspected in 2014, and no infringements were revealed. The share of infringements relative to the total number of inspections has remained approximately at this level over several years.</p> <p>Although the major part of the fishery takes place in Norwegian waters and most fish is landed in Norwegian ports, the assessment team has also contacted national enforcement bodies in the client states. None report about any particular problems in this fishery.</p> <p>The comprehensive enforcement system combined with the high level of compliance makes it reasonable to assume that the system provides effective deterrence.</p>		
<b>c</b>	<b>Guide post</b>	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.	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.	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.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>As noted under 3.2.3 b) above, inspection statistics indicate that the level of compliance is high. There is a high degree of confidence that this is indeed so, given the many opportunities to cross-check information between the different enforcement authorities, and between countries.</p> <p>Taking together the high compliance level and the comprehensiveness of the enforcement system, it is reasonable to conclude that the system provides for effective deterrence (see 3.2.3 b) above). In addition, there is evidence that other factors contribute to a high level of compliance in the fishery, including the provision of information necessary for the successful management of the fishery (such as catch data). Sociological investigations indicate that the legitimacy of the regulatory system and possibilities for user-group participation generally enhance compliance. As follows from 3.1.2 above, the participants in this fishery are tightly integrated with authorities in the management process, primarily through the POs. Based on interviews during the site visits, the legitimacy of the management system is also high among user groups.</p>		
<b>d</b>	<b>Guide post</b>		There is no evidence of systematic non-compliance.	

	<b>Met?</b>		Y	
	<b>Justification</b>	As demonstrated in 3.2.3 b) and c) above, the level of compliance in this fishery is generally high. According to the Norwegian Directorate of Fisheries, as well as the flag states' enforcement authorities performing control with the vessels involved in this fishery, there is no indication of systematic non-compliance whatsoever.		
<b>References</b>		Council Regulation (EC) No 768/2005 of 26 April 2005 establishing a Community Fisheries Control Agency and amending Regulation EEC No. 2847/93 establishing a control system applicable to the common fisheries policy, 2005 Hønneland, Geir: Making Fishery Agreements Work, Edward Elgar, 2012 Interviews during site visits and email correspondence with national enforcement authorities NEAFC Scheme for Control and Enforcement, 2014		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>

Evaluation table 29 - PI 3.2.4

PI 3.2.4		The fishery has a research plan that addresses the information needs of management		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	Met?	Y	Y	N
	Justification	The ICES stock assessment process shows that an extensive research plan exists with a strategic approach to P1 aspects. ICES also has WG WIDE exploring ecosystem aspects such as changes to migration patterns. Stock distribution patterns are being explored as part of the approach to resolving the quota allocation issue (e.g. see URL below). Further research on P2 does exist at member state level; for example the Pelagic Advisory Council identifies research needs. These mechanisms illustrate that P1 & P2 aspects are addressed in a strategic manner in what equates to a research plan. That plan does provide the management system with timely information in order to achieve P1 & 2 objectives. However, the research plan may not be considered comprehensive with a coherent approach to research as it is delivered via several mechanisms. Further, P3 issues are not covered, and hence SG 100 is not met.		
b	Guide post	Research results are available to interested parties.	Research results are disseminated to all interested parties in a timely fashion.	Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.
	Met?	Y	Y	Y
	Justification	Research plans and results are published on websites, e.g. on the ICES website, as publicly available research reports and as journal articles. They are also actively disseminated to all interested parties, primarily through emailing lists.		
References		<a href="http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/fpo-as-herring/assessment-downloads-1/20130924_Corrective_Action_Plan_HER45.pdf">http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/fpo-as-herring/assessment-downloads-1/20130924_Corrective_Action_Plan_HER45.pdf</a> WG WIDE information and reports available here: <a href="http://www.ices.dk/community/groups/Pages/WG WIDE.aspx">http://www.ices.dk/community/groups/Pages/WG WIDE.aspx</a> Information on research in which the Pelagic Advisory Council participates: <a href="http://www.pelagic-ac.org/scienceprojects">http://www.pelagic-ac.org/scienceprojects</a>		

<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>	<b>N/A</b>

Evaluation table 30 - PI 3.2.5

PI 3.2.5		<p><b>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives</b></p> <p><b>There is effective and timely review of the fishery-specific management system</b></p>		
Scoring Issue		SG 60	SG 80	SG 100
a	Guide post	The fishery has in place mechanisms to evaluate some parts of the management system.	The fishery has in place mechanisms to evaluate key parts of the management system	The fishery has in place mechanisms to evaluate all parts of the management system.
	Met?	Y	Y	N
	Justification	National management systems are reviewed by their respective Auditors General and the European Commission. ICES advice, the Common Fisheries Policy and national management systems are subject to regular evaluation. The fishery's management plan is reviewed by ICES (ICES, 2013b). It is not evident, however, that mechanisms are in place to review <i>all</i> parts of the management system. For instance, the coastal states cooperation itself is not subject to review by means of any established mechanism.		
b	Guide post	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	Y	Y	N

<b>PI 3.2.5</b>		<b>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives</b>  <b>There is effective and timely review of the fishery-specific management system</b>	
	<b>Justification</b>	<p>The Common Fisheries Policy is reviewed internally and externally by independent evaluators and on occasion by the European Court of Auditors, as are national management systems by Auditors General. [In Sweden, for instance, the pelagic management system is currently under review internally by the Swedish Agency for Marine and Water Management and externally by corresponding environmental authorities under the Swedish Government.]</p> <p>The Norwegian management system at large is reviewed by the Parliament upon submission by the Government (through the Ministry of Trade, Industry and Fisheries) of annual reports on the state of affairs in Norwegian fisheries management. At the Regulatory Meetings that take place twice a year management authorities receive feedback on management practices from the industry and other interested stakeholders, including NGOs. The Auditor General conducted comprehensive evaluations of the entire Norwegian system for fisheries management in 2003–2004 and in 2007–2008.</p> <p>ICES advice and the CSA are regularly evaluated internally with occasional external review. In relation to the CSA, the outcome (i.e. the national quotas and landings relative to the TAC) are retrospectively evaluated by ICES. ICES advice is subject to regular external review, e.g. by STECF on behalf of the EU or directly by the coastal states (note that this is not the same as the ICES review of the management plan, which is considered under Principle 1). The management plan is subject to regular external review by ICES, to determine the impact and precautionary nature of the plan. However, regular external review of the coastal states regime does not take place.</p>	
	<b>References</b>	<p>ICES. 2013b. NEAFC request to ICES to evaluate possible modifications of the long-term management arrangement for the Norwegian spring-spawning herring stock - Special request, Advice May 2013. Report of the ICES Advisory Committee 2013. ICES Advice, 2013. Book 9.</p> <p>Interviews during site visits</p>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>N/A</b>



## Appendix 1.2 Conditions

Table 33. Condition 1

Performance Indicator	1.2.2
Score	75
Rationale	<p>SI: 1.2.2 c (60).</p> <p>Conclusion: Available evidence over recent years shows that current management actions (tools in use) used to share the scientifically advised annual TAC cannot be considered appropriate nor effective in achieving the exploitation levels required under the current harvest control rules. As a consequence the fishery does not meet the SG 80 scoring guideposts.</p> <p>SG80: Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p>
Condition	<p>The SG80 requirement for SI c) above must be met.</p> <p>'Available evidence' may be any relevant evidence, provided through ICES or other verifiable means, that shows the implications of all available management actions (e.g. by coastal states and/or agreements with other relevant states in controlling fishing mortality) in achieving exploitation levels consistent with appropriate harvest control rules and the requirements of PI 1.1.1.</p> <p>This condition is closely aligned to Condition 2.</p>
Milestones	<p>Year 1: Communication should be begun or continued with Coastal State representatives to promote delivery of exploitation levels consistent with meeting the requirements of Principle 1. Evidence should also be provided of any other actions or analyses undertaken in relation to prevailing exploitation levels and/or the implications of these for the stock. The client shall provide documented evidence of all related correspondence, analyses, actions, meetings, representations etc.</p> <p>Year 2 and Year 3: It is understood that the condition could be closed at any time during the certification. Year 2 and 3 should therefore provide updated information on the issues set out in Yr 1.</p> <p>Year 4: The SG80 requirements should be met. At the time this is achieved, this PI will be rescored at 80.</p>
Client action plan	See Appendix 6.
Consultation on condition	None

Table 34. Condition 2

Performance Indicator	3.1.1
Score	65
Rationale	There is a mechanism in place for international cooperation in the fishery (the Coastal States Agreement) but it is not apparently completely effective, since it is currently not working properly due to the withdrawal of the Faroes, and as of 2015 a failure of the coastal states in general to agree a TAC. The dispute has now lasted more than a year, with no sign of formal resolution as yet (although the issue has been mitigated by negotiation) – hence it is not clear that the dispute resolution framework is effective.
Condition	The fishery should work with the EU, the Pelagic Advisory Council, other certified or suspended UoCs in the fishery and/or other parties as appropriate to support the resolution of the dispute between the coastal states and to re-establish an effective international cooperation and dispute-resolution mechanism for the fishery.
Milestones	<p>Year 1 – Make contact with other interested parties and lobby the European Commission to initiate negotiations for a mechanism, for cooperation and dispute resolution between the Coastal States which is effective in agreeing an appropriate management mechanism consistent with the management plan. Score 80 if dispute resolved, 65 if not.</p> <p>Year 2 – If the dispute is not resolved, continue to lobby. Demonstrate that discussions have taken place and progress has been made towards agreeing an appropriate cooperation and dispute resolution system within the Coastal States Agreement.</p> <p>If it appears that the coastal states, cannot agree, evaluate options for development of an agreement at the level of the various fleets involved in the fishery to ensure that the TAC is not overshot to an unsustainable level in the future, directly or via the Pelagic AC or other bodies as appropriate. Note: this approach should be subject to harmonisation with other MSC UoCs in the fishery, as appropriate.</p> <p>Score 80 if dispute resolved, 65 if not.</p> <p>Year 3 – Demonstrate that an appropriate system for coastal states cooperation and dispute resolution is agreed. Alternatively, develop a fleet-level management plan to ensure sustainable management in the absence of international agreement, in agreement with other MSC UoCs and CABs. Score 80 if dispute resolved, 65 if not.</p> <p>Year 4 – Demonstrate that the effective coastal states cooperation/dispute resolution system is in place and operational. Alternatively, validate and implement the fleet-level plan, in agreement with other MSC UoCs and CABs. Score 80.</p>
Client action plan	See Appendix 6.
Consultation on	None

condition	
-----------	--

## Appendix 2. Peer Review Reports

### Peer Review 1

#### Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes/No YES	Certification Body Response
<u>Justification:</u> The scoring of P2 and P3 is appropriate and in general sufficient evidence is provided. However, the issue of no agreement between the Coastal States on the TAC share and its implications on the harvest strategy and HCR does not have a simple solution and it is open to discussion. I disagree with the approach taken by the assessment team to score P1 and I would take a more precautionary approach (lowering scores for 1.2.1 and 1.2.2.; see below for more details).		See response to detailed comments below

<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	Yes/No YES	Certification Body Response
<u>Justification:</u> The only condition present is well written and the guidepost well established. However, another condition(s) should be established in line with the no agreement on the TAC share between NEAFC Coastal States.		See response to detailed comments below

If included:

<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes/No Yes	Certification Body Response
<u>Justification:</u> The action plan is well written with three main activities to be undertaken so that the condition is closed in 5 years. Although it is difficult to influence Coastal States negotiations outcomes, the actions proposed are likely to have some impact. Nevertheless the plan lacks concrete actions to be undertaken, ex. letters can be written to influence all parties in the negotiation, while meetings provisional dates can also be specified taking into account that negotiations are starting in June 2015 and a calendar for negotiations and Pelagic ACs meetings are known.		There is a danger in making the plan too specific in as much as it makes it all about activities rather than outcomes. The progress and outcome of these negotiations, at international level, are hard to predict, and the clients will have to adapt their activities accordingly. It is outcomes which are important and against which the fishery will be audited, if it receives certification.

For reports using the Risk-Based Framework please follow [the link](#).

For reports assessing enhanced fisheries please follow [the link](#).

#### General Comments on the Assessment Report (optional)

The major issue with this assessment is related to the harvest strategy and the management of the fishery and the fact that international agreements on the TAC share have not been reached by the NEACF Coastal States, and thus individual countries have set unilateral quotas that inevitably lead to TAC overshoots. A harmonisation meeting on this issue was organized, which clarified the assessment and scoring difficulties and how it should be dealt with in P3. For P1 some discussion was presented but no agreement was reached.

The assessment team has scored P3 accordingly with the agreement made at the harmonisation meeting, but has taken a less precautionary view in P1, which I disagree. In line with what was written in 3.1.1. "If an agreement cannot be reached on the allocation of shares, an annual TAC cannot be set. In that situation sustainable management of the stock, in line with the harvest strategy, becomes entirely dependent on the realized intentions of each participant in the fishery. This has the obvious potential to over-exploit the stock and compromise the harvest strategy", I think the harvest strategy objectives are not being reached and no effective implementation of the TAC is being achieved, and thus SI 1.2.1. and 1.2.2. should be reviewed and rescored (see below for more details).

*MEC response: See detailed comments and response on these two PIs below*

## Performance Indicator Review

Please complete the table below for each Performance Indicator which are listed in the Certification Body's Public Certification Draft Report.

<b>Performance Indicator</b>	<b>Has all the relevant information available been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	<b>Certification Body Response</b>
1.1.1	Yes	Yes	NA	Rationale and scoring is appropriate. I would add sentence that SG100 is not met for SIb also since the stock is decreasing for the last 5 years and that it may be under the target reference for more than 2 years given the assessment uncertainty.	This has been added
1.1.2	Yes	Yes	NA	Rationale and scoring is appropriate	No Comment Required
1.1.3	NA	NA	NA	NA	No Comment Required
1.2.1	No	No		The SI b – the harvest strategy is achieving its objective is subjective. Considering that:	Scoring issue b) SG80 for reference: The harvest strategy may not have been fully tested but evidence exists that it is

Performance Indicator	Has all the relevant information available 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.	Certification Body Response
				<p>21% bias in biomass estimates, that biomass has been reducing for 5 years and may be under the target reference biomass for more than 2 years, and that there is no agreement on TAC sharing so there is no effective implementation of the TAC, this SI should be reviewed and scored less. Otherwise, please state how implementation error (considering significant TAC overshoots) has been accounted for in the management plan evaluation carried out by ICES.</p>	<p>achieving its objectives.</p> <p>The stock status is considered in PI1.1.1, and meets the requirements of SG80 – i.e. that the stock is fluctuating around target levels. Fishing mortality is also estimated by ICES to be at an appropriate level. This presumably constitutes some evidence that the harvest strategy is achieving these objectives.</p> <p>In practice, it is clear that the stock biomass is driven by recruitment more than fishing pressure (see for example Figure 9.3.11.1 in the ICES advice), so there is a limit to what management can do in terms of fine tuning stock biomass to reference points – the stock biomass is declining because there has not been a large year class since the mid-2000s, and this will continue until one enters the fishery (e.g. the large-ish 2013 year class will start to be seen around 2017, according to ICES).</p>

Performance Indicator	Has all the relevant information available 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.	Certification Body Response
					<p>On this basis, it seems more appropriate to consider the performance of the harvest strategy over the medium term rather than the short term, since short-term dynamics are driven largely by recruitment and are therefore largely out of management control. The ICES evaluation of the HCR considers both, and one can see, for example in Figure 9.3.3.2.1 (p6) that under all the options, biomass is predicted to decrease further in the short-term (how much further depends on the extent to which bias in the stock assessment is incorporated) before recovering to above Btrigger when the recent strong-ish year class recruits.</p> <p>In relation to TAC overshoot, the situation up to and including 2013 can be evaluated from ICES advice. Adding up the totals from 2007-2013 gives the following figures: ICES advice : 8364 kt</p>



Performance Indicator	Has all the relevant information available 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.	Certification Body Response
					<p><b>TACs: 8436 kt</b>  <b>ICES estimate of catch: 8461 kt</b></p> <p>In other words, the catch has exceeded the TAC over this period by 0.3% and has exceeded ICES advice by 1.2%. The team concluded that this was not significant.</p> <p>In relation to 2014 specifically, where the coastal states issue arose, the TAC should have been 418.5 kt, and the sum of individual coastal state quotas was 436.9 kt (after negotiations between the EU and the Faroes – see Section 3.3.6 of the main report; NB there was some suspect arithmetic in this section which has been corrected – apologies). This represents an overshoot of 4.2% which the team again considered was not significant in terms of the implementation of the harvest strategy, in that it is likely to be well within the margin of uncertainty in the stock assessment. Clearly, however, the situation</p>

<b>Performance Indicator</b>	<b>Has all the relevant information available been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	<b>Certification Body Response</b>
					<p>is unsatisfactory, but it was agreed at harmonisation to consider this under Principle 3.</p> <p>In relation to the bias in the stock assessment, we would make two points here:</p> <p>1. It is clear that ICES do not really know how to deal with this, and they continue to recommend no change to the reference points and harvest strategy – most likely this is further to a benchmarking in 2015. The outcome of this benchmarking and any changes which ICES recommend to the management plan as a result will be scrutinised very carefully at surveillance audit if the fishery is certified. For now, however, ICES have stuck to their advice that the management plan is precautionary and should be kept as it is.</p> <p>2. Under 'harvest strategy' (1.2.1) we are scoring the general system and how the</p>

Performance Indicator	Has all the relevant information available 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.	Certification Body Response
					<p>elements work together (monitoring → assessment → advice → management decision → implementation). The details of the stock assessment are considered under 1.2.4, where the issue of retrospective bias is discussed.</p> <p>Note for final report: The scoring of this PI was also reviewed with MSC further to MSC TO, but was not changed – see comments in response to MSC TO in Appendix 3.</p>
1.2.2	Yes	No		<p>Implementation error (TAC overshoot) is a key feature of the present management of the fishery and has not been tested by ICES (or at least not specified by the assessment team). This should be clarified or added in SI b.</p> <p>In SI c, if the TAC is overshoot (even if by a low %), then SG 80 cannot be met, as the <i>tools</i> (TAC</p>	<p>Scoring issue b) – as per the analysis above, the team considers that TAC overshoot is not a key uncertainty, but it has been added to the rationale for scoring issue b)</p> <p>Scoring issue c) As per the analysis above, the team considered that this is not a significant source of error in terms of the overall exploitation level.</p>

Performance Indicator	Has all the relevant information available 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.	Certification Body Response
				<i>share) are not effective in achieving the exploitation levels required under the harvest control rules (the total TAC level).</i>	

1.2.3	Yes	Yes	NA	Rationale and scoring is appropriate	No Comment Required
1.2.4	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
2.1.1	No	No	NA	SI c and d – even if stock is known and it is now within safe biological limits it may not be in the future (see the eastern Baltic sea cod stock as an example) so a description of the measures is still applicable.	The team disagrees. This PI is about the current status of the stock, not about what may happen to it in the future. On the basis that the status of the mackerel stock was both well-known and healthy at the time of assessment, SI c and d were met by default. Should there be a change in stock status of mackerel this PI will be rescored at the next surveillance audit, as appropriate.
2.1.2	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
2.1.3	Yes	No	NA	On SI a SG 100 is not met since not all species have accurate and verifiable information, while the consequences of the fishery cannot be determine. Ex: DPPO has 0.09% unidentified or damage species.	Noted; the score and rationale have been amended to reflect this comment.
2.2.1	No	No	NA	SI b and c – even if no main bycatch species are caught now, it may not be in the future so a description of the measures is still applicable.	The team disagrees. As per our response to your comment on PI 2.1.1, this PI is about the current status of bycatch in the fishery, not about what may happen in the future. On the basis that no main bycatch species were identified, SI b and c were met by

					default. Should there be a change in this situation, this PI will be rescored at the next surveillance audit, as appropriate.
2.2.2	Yes	Yes	NA	Rationale and scoring is appropriate.	(Note that the score has been reduced slightly further to comments by peer reviewer 2.)
2.2.3	Yes	No	NA	Scoring is appropriate. However, in SI a SG 100 is not met because there is no bycatch, it is not met because there is no verifiable and accurate catch on all by catch species. Also in SI b if the observer coverage is low then even if there were by catch, it was likely that outcome status would not be estimated with a high degree of certainty. Same for SI c.	Yes, this was implied in the scoring rationale but has now been made more explicit.
2.3.1	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
2.3.2	Yes	No	NA	Rationale and scoring is appropriate. However, in SI a SG100 is not met because there isn't a comprehensive strategy and not because the observer coverage can be extended.	The rationale has been amended.
2.3.3	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required

2.4.1	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
2.4.2	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
2.4.3	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
2.5.1	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
2.5.2	Yes	No	NA	Scoring is appropriate. Why is the North Sea/Easter Channel ecosystem mentioned when the fishing takes place mainly in Norwegian waters? Also SI a and b presents a general description of MFSD and OSPAR but does not refer to the fishery, while SI c and d only refer to the fishery. These SI should be related and should refer to the fishery.	<p><b>North Sea/Eastern Channel ecosystem should say Northeast Atlantic ecosystem. This oversight has been corrected – thank you for spotting.</b></p> <p><b>With regards to the scope of the rationales presented in SI a and b, the partial strategy is defined by the framework given by the overarching CFP, the Marine Strategy Framework Directive (MSFD) and OSPAR (and now some information on the Norwegian national framework has been added, further to comments by peer reviewer 2), as well as the joint long-term management plan between the EU, Norway, Iceland, Faroe Islands and Russia, which itself is specific to the ASH fishery. SI c and d ask about the implementation of this partial strategy in the fishery and whether it is effective or not. This can only be answered in a fishery-specific way. The</b></p>

					team therefore disagrees with the peer reviewer's interpretation that the rationales for these SIs are disjointed. Some clarification has, however, been added.
2.5.3	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
3.1.1	Yes	Yes	Yes	Rationale and scoring is appropriate.	No Comment Required
3.1.2	Yes	Yes	NA	Rationale and scoring is appropriate. Provide national examples for all fisheries under assessment.	Information on national management frameworks for all the relevant countries is now provided in the main report, Section 3.3.7.
3.1.3	Yes	Yes	NA	Rationale and scoring is appropriate. I think "All the coastal states have fisheries..." should be "All the member states have fisheries...", referring to EU MS countries and not the NEAFC states?	No, it's referring to the entities that participate in the coastal states agreement – i.e. the EU, Norway, Iceland, Russia and the Faroes. These are consistently referred to throughout the report as 'the coastal states'.
3.1.4	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
3.2.1	Yes	No	NA	Rationale and scoring is appropriate.	No Comment Required
3.2.2	Yes	Yes	NA	Rationale and scoring is appropriate. Provide national examples for all fisheries under	At the fishery-specific level, management decision-making has been delegated by the various countries to the EU, under the CFP.



				assessment.	
3.2.3	Yes	Yes	NA	Rationale and scoring is appropriate.	No Comment Required
3.2.4	Yes	Yes	NA	Rationale and scoring is appropriate. However, why is the link for the Faroese corrective action plan the only reference given at this PI? Please add references for the research plan.	The research plan is set out in the corrective action plan.
3.2.5	No	Yes	NA	Rationale and scoring is appropriate. Please note that NEAFC just released a performance review and although it is not a review mechanism on itself it should be mentioned. <a href="http://www.neafc.org/node/11708">http://www.neafc.org/node/11708</a> Also, provide national examples for all fisheries under assessment.	NEAFC has no significant role in this fishery aside from providing the forum through which the coastal states make requests to ICES. This is not relevant. Regarding national examples – see comment above; the EU is the relevant level of discussion.

### Any Other Comments

Comments	Certification Body Response
----------	-----------------------------

<p>The report is well written and researched, but there is a lack of information in the scoring tables, particularly for PI 2. Although, to avoid duplication, more succinct information is given in the scoring tables, the information presented is the basis for the score, and giving only references to the main body of the text makes the evaluation difficult to understand and to assess. Also, there are four different fisheries from four different countries. When providing information to justify scoring all the fisheries countries should be mentioned, and not just one as an example.</p> <p>Small remarks: table 15, the catch % by species for SPFPO fishery gives a mackerel fishery (94%) instead of a hearing fishery (5%). I assume there is a mistake in the %?</p> <p>Evaluation table 10 - PI 2.2.1, heading of table refers to PI2.1.1</p>	<p><b>Different CABs have different methods in presenting the information in assessment reports. MEC prefers to put the key information in the main report, whilst providing a more succinct and to the point response in the scoring rationale. The report should be read as a whole and the scoring rationale should not be regarded as a stand-alone assessment (otherwise, what is the point of having the main report?). Where more detailed information is available for the interpretation of the scoring rationale, links to the relevant sections of the main report have been provided. This approach has worked well so far.</b></p> <p><b>The table is correct. A clarification has been added to the descriptive text.</b></p> <p><b>Corrected, thank you.</b></p>
--	---

#### For reports using the Risk-Based Framework:

Performance Indicator	Does the report clearly explain how the process used to determine risk using the RBF led to the	Are the RBF risk scores well-referenced? Yes/No	Justification:  Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response:
-----------------------	---	--	---	------------------------------

	stated outcome? Yes/No			
1.1.1	NA	NA	NA	No Comment Required
2.1.1	NA	NA	NA	No Comment Required
2.2.1	NA	NA	NA	No Comment Required
2.4.1	NA	NA	NA	No Comment Required
2.5.1	NA	NA	NA	No Comment Required

For reports assessing enhanced fisheries:

<i>Does the report clearly evaluate any additional impacts that might arise from enhancement activities?</i>	Yes/No NA	Certification Body Response:
<u>Justification:</u>		No Comment Required

NA	
----	--

## Peer Review 2

### Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	No	Conformity Response	Assessment	Body
<p><u>Justification:</u></p> <p>Although the team's conclusions are consistent with those drawn by previous assessment teams, there seem to be some fundamental (but not major) flaws in the report which undermine its findings.</p> <p>Overall, the impression is that the assessment team has been successful in obtaining some information about some of the UoCs, and for some aspects of the fishery, but not sufficient information for all of the UoCs and all parts of the fishery to support the audit outcome presented in this report.</p> <p>Specific comments in this regard are outlined in the rest of this report, and include:</p> <ul style="list-style-type: none"> <li>• <b>Units of certification</b> – there are several issues here: <ul style="list-style-type: none"> <li>○ <b>Definition &amp; distinction</b> – the distinction between UoCs in the report does not follow the MSC definition of UoCs, and as a result they seem to be incorrectly defined.</li> <li>○ <b>Missing UoC</b> – the “purse seine” UoC(s) are missing from the report; and there is also very little verifiable information presented anywhere about the this fishing method and in particular its effect on non-target fish species.</li> <li>○ <b>Assessment outcome</b> – having identified (incorrectly) 5 separate UoCs at the start of the report, there is no separate analysis of each UoC or distinction between them in the rest of the report.</li> </ul> </li> </ul>		<p><b>We are sorry to hear that the flaws are fundamental but glad that they are not major.</b></p> <p><b>See response to detailed comments below.</b></p> <p><b>In relation to the definition of UoCs, we took advice from MSC, who told us that we have the discretion to define the UoCs as convenient for the assessment and the client. It was convenient to define the various organisations (mainly but not all national) as separate UoCs because they represent different clients, difference sources of information etc.; they were previously certified separately (in some cases) and in the future may prefer to operate separately again.</b></p> <p><b>Purse seine vs. pelagic trawling has not been treated as a separate UoC, and in fact has not been scored as a separate scoring element either. This is because the use of purse seine in this fishery is much less common (some of the DPPO vessels sometimes use it, as do the Swedish vessels, who are, however, only sporadically involved in the fishery). For example, it was only possible to obtain data for four purse seine hauls by three vessels, and all the self-sampling information came from pelagic trawls. Full details of the information available and how it was used is now given in the report. Note: This approach was also taken in the previous assessment of the</b></p>		

- **Adequacy of information** – there is a paucity of information in the report with regard to the following:-
  - **Purse seining** – no substantial or auditable information is presented about purse seining with respect to both its interaction with the target species (i.e. through “slipping”) or to support the analysis of impacts on non-target species.
  - **Retained non-target species** – a major omission from the report are landings records for all of the vessels in all of the UoCs up to the most recent complete year (for the PFA fleet, the report relies on third-party data for part of the fleet that relates to 2011&12). If this is a well-managed and regulated fishery, these data should be readily available and presented in the report.
  - **Discarding of Non-target species** – the only verifiable information about impacts on non-target species is for trawling from 5 observer trips conducted several years ago aboard vessels that don’t seem to be part of any of the UoCs and in just part of the geographic area of the fishery. This information would seem scarcely adequate for an assessment of the just the Dutch and German PFA trawl vessels to which it relates; how this can be extrapolated to apply to the activities of all vessels, including purse-seiners is not at all clear.
  
- **Harvest control tools** – the team seems to have misdirected itself in the scoring of PI1.2.2 at Slc. The

DPPO fishery (DNV 2009), as well as in the assessment of the Norwegian ASH fishery (DNV 2013) – who, although they notionally separately out the assessment of P2 for the two gear types actually provide identical rationales for each.

Purse seine data – see response to detailed comments below.

In relation to landings data: The role of the client organisations varies in each country, and some have automatic access to logbook and landings data (e.g. those with a role in managing quota) while others do not (e.g. those with direct allocation of quota to vessels via ITQ, not mediated by POs). The reviewer will be aware that in cases where the client organisation does not have access to these data, obtaining it from the government can in some cases be very difficult (e.g. in Germany where data protection is such that it is not only administratively complex but also expensive to obtain these data.) The team has taken the view that third-party as well as direct sources of data are acceptable, as long as they can be shown to be robust. In relation to PFA, the part of the fleet not represented in the landings data (French, English and Lithuanian) can be shown not to have targeted ASH in recent years – see ICES advice 2014).

In relation to discards, the fishery is caught in a bind, in as much as it has been evaluated in all six relevant countries to be a ‘low risk’ fishery for bycatch and discards, and is therefore not allocated observers. The team has tried to take a reasonable approach in evaluated data more widely than just direct observer data, since there is, presumably a good reason why the fishery is considered ‘low risk’. More information has been provided in the background section on discards. For the scoring and rationales, see response to detailed comments

<p>information presented in the report and in the most recent ICES advice and working group reports clearly indicates that <math>F</math> is greater than <math>F_{\text{mgt}}</math> for this fishery, and thus the harvest control tools are not delivering the outcome required by the management plan. This SI should be rescored at 60 and an appropriate condition should be generated.</p> <ul style="list-style-type: none"> <li>• <b>Fine words but no outputs</b> - In several parts of the report (particularly with regard to discarded non-target species), the authors assure the reader that there are various information-gathering initiatives and client policies in place, but no evidence is presented to show that any data have emerged from these initiatives. This is a significant concern – the fine words need to be supported by outputs if they are to be relevant to the scoring of PIs 2.1.3, 2.2.3 and so on.</li> <li>• <b>Norwegian management regime</b> – it is stated in the report that most of the fishing activity takes place in Norwegian waters, but very little information is presented about the P1 management regime in Norway. In various parts of the report, inaccurate statements are made about the discard management regime in Norway.</li> </ul> <p>I would respectfully suggest that the team should re-define the UoCs, review the information that has been presented to them by the clients and identify where there are gaps and reflect this in the scoring of the fishery.</p>	<p><b>below.</b></p> <p><b>In relation to harvest control tools - see response to detailed comments below</b></p> <p><b>It is hard to response to a generalised comments about ‘fine words’ in ‘several parts of the report’ so we have confined our review to the specific issues the reviewer mentions. See response to detailed comments on these scores and rationales below.</b></p> <p><b>See response to detailed comments below. Note that in Norwegian waters, it is required to land all species, although there are some limited exemptions (Gullestad et al. 2015) – the reviewer is correct (but out-of-date) in thinking that the discard ban previously applied only to certain commercial species.</b></p> <p><b>See responses above and to detailed comments below.</b></p>
--	--

<b><i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i></b>	<b>No</b>	<b>Conformity Assessment Body Response</b>
<p><u>Justification:</u></p> <p>There is only one condition of certification, relating to PI3.1.1. For this PI, SIa and SIb both scored less than 80.</p> <p>The wording of the condition is not outcome-oriented for each of the SIs that score less than 80. It requires the client fishery to “work with” various parties to “support the resolution” of the dispute and to “re-establish an effective international cooperation mechanism”.</p> <p>It is clear that part of this condition relates to the narrative and metric form of SIa (cooperation), but less clear how it relates to SIb, which requires that there is a mechanism in place for the resolution of legal disputes.</p> <p>It would seem appropriate to revise the condition so that it also addresses the shortcomings of the fishery with respect to SIb more specifically.</p>		<p><b>The wording has been changed accordingly.</b></p>

If included:

<b><i>Do you think the client action plan is sufficient to close the conditions raised?</i></b>	<b>No</b>	<b>Conformity Assessment Body Response</b>
<p><u>Justification:</u></p> <p>The action plan represents all that could be expected of the client fisheries, and is comparable with similar action plans for shared stocks in the North-Eastern Atlantic.</p> <p>The successful implementation of the condition is dependent on parties other than the client fisheries and the CAB. It is not clear that these other “relevant entities” have been consulted about the action plan, nor whether they are likely to support its implementation.</p> <p>If evidence is presented of consultation with, and support from, the relevant entities, then these concerns will be addressed.</p>		<p><b>See response to detailed comments below. It seems to us that obtaining the support from relevant entities that the reviewer asks for in fact forms part of the action plan rather than being a pre-condition to it.</b></p>

For reports using the Risk-Based Framework please follow [the link](#).

For reports assessing enhanced fisheries please follow [the link](#).

### **General Comments on the Assessment Report (optional)**

#### **1. Executive Summary**

No comments are made on this part of the report as it was omitted from the Peer Review Draft.



### 3.1 Scope of certification

It is stated that the fishery under assessment is not subject to a controversial unilateral exemption to an international agreement.

More evidence needs to be provided to demonstrate that this is in fact the case. Some text is set out in section 4.1 of the report which suggests that there is a rationale for suspending the FPO Atlanto-Scandian herring UoC but not EU/Norwegian UoCs prosecuting the same stock. This argument needs to be strengthened both within sections 3.1 and 4.1.

Actually, further to harmonisation meetings between the various CABS involved in the ASH fishery and MSC, this fishery is no longer suspended, but is in re-assessment. This comment therefore no longer applies. A note has been added in the 'scope' section to this effect.

### 3.1 Unit of Certification

There are a couple of items in this section that require attention:-

- **Incorrect definition:** the MSC CR defines a unit of certification as *“The target stock(s) combined with the fishing method/gear and practice (including vessel/s) pursuing that stock.”*; whilst the report states that *“The ‘unit of certification’ (UoC) is the definition of the fishery under assessment (stock/fleet/gear type/management jurisdiction)*. It would be better to use the MSC CR definition, which omits the reference to *“management jurisdiction”*.
- **Incorrect implementation:** applying the MSC CR definition cited above, the report does not adequately or correctly distinguish between different UoCs. For instance:-
  - **UoC2 – DPPO:** this is described as including both pelagic trawl and purse seine fishing methods. This is not possible. Under the MSC definition, there cannot be 2 different fishing methods in one UoC.

This is not true – there can be, as long as they are treated as different scoring elements in the relevant PIs (advise provided by MSC).

- **UoC4 – SPFPO:** comments as for UoC2, *ibid*.
- **Distinction between UoCs:** it is not clear on what basis the UoCs are distinguished from one another under a correct application of the MSC definition. The MSC definition of a UoC is blind to national boundaries (as evidenced by the PFA group which is international); and it is also independent of management (though not independent of fishing practices). Given that the vessels are all prosecuting the same stock, there would seem to be just 2 UoCs under assessment: pelagic trawling and purse seining.

Untrue – UoCs may be defined in various ways so as to best meet the requirements of the fishery and client, according to advice on this point provided by MSC. The UoC definition has not been changed.

It is noted that in Table 6 of the report (section 3.3.5) that the various different client fleets may fish in different areas and at different times of the year. Some of the information presented in Table 6 does not, however, appear in the UoC definitions and other pieces of information do not tally. For example:-

- **Geographical area:** the UoC tables in section 3.1 refer to ICES Sub-areas I, IIa & IIb, V & XIV; Table 6 refers to subsets of these areas for the different UoCs, and all omit areas V & XIV.
- **Fishing Seasons:** none of the UoC definitions in section 3.1 mention seasons; distinctions are made on this basis between the UoCs in Table 6 however.

**Geographical area:** The differences between the UoC tables and Table 6 arise from the fact that the UoC covers all the areas in which the stock is found, while Table 6 gives the areas in which the various fleets have fished over recent years. The reason for the difference is that the fishing strategy of the fleets may change in the future towards other areas, and this will be easier to deal with by future assessment and audit teams if the UoC covers these areas from the start.

**Fishing season:** Fishing season is not an explicit part of the definition of the UoC, so the issue given above does not arise. It is included in Table 6 to help illustrate the migratory pathway of the stock.

If the assessment team considers that there are more than 2 UoCs, then evidence needs to be presented in the report to demonstrate that there are sufficient differences in fishing practices between the UoCs to warrant this.

No, this is not a requirement.

This, in turn, should be reflected in the assessment results and the determination (for instance, it should be made clear that the assessment outcome for UoC1 is only valid for SPSG vessels operating in ICES Division IIa in January & February, and so on).

The reporting of rationales and scoring has been reviewed – see response to detailed comments below.

The importance of this clarity in the report is particularly evident in the scoring of PI2.2.1, 2.2.2 and 2.2.3. For these PIs, the only data available are for PFA freezer-trawler vessels. There are no observer data or information presented in the report for any other UoCs, and it is reported there are no observer records for the KFO, DPPO and SPFPO fleets). At the very least, this should result in a different score being awarded for different UoCs. As it stands, there is no differentiation in the scoring despite clear differences in the information available for the different UoCs described in the report.

See response to detailed comments below

Alternatively the report should simply indicate that there are two UoCs (pelagic trawl and purse seine) prosecuting the fishery year-round in ICES Sub-areas I, IIa & IIb, V & XIV, and then scoring according to the objectively assessed limitations of data for all fleets within these UoCs accordingly (i.e. that there are some data on P2 components available for the trawl fleet and none for the purse-seine fleet).

Pelagic trawl and purse seine could not be separated out because of the limited data available for purse seining (a rarer activity). This is the same approach as has previously been taken. See response to detailed comments below.

### **3.3.7 Description of management framework**

National management frameworks – this section outlines the national frameworks for Scotland, Denmark, Ireland and the Netherlands. It would be very helpful if similar information was provided for Sweden, Lithuania, Germany and France to cover the flag states of all vessels in all of the UoCs.

## **4.1 Harmonised Fishery Assessment**

The team has done an excellent job of providing a succinct report of the findings of previous and current assessments of this stock.

The only comment of not here is that it would be useful to provide a more robust rationale to support the distinction between the FPO UoC that is out of scope because of controversial unilateral exemption, and the EU/Norway UoCs prosecuting the same stock and which are not considered to be out of scope.

Comment added in the 'scope' section as noted above, and this section has been updated to reflect the current situation.

## **5.2 Traceability within the fishery**

### **d) Details of the use of trans-shipment**

The report notes that trans-shipment is prohibited in EU waters. It should also indicate whether trans-shipment is prohibited in the non-EU parts of the fishery, and in particular in the international waters (the “banana hole” outside EU and Norwegian jurisdiction that are included in the UoC definitions (ICES Sub-areas I, IIa & IIb, V & XIV) but omitted subsequently.

They are ‘omitted subsequently’ because none of the UoCs fish there – they are, however, included in the definition of the UoC because they form part of the distribution of the stock (at least during some years). Since none of the vessels concerned fish in that area, it does not seem particularly relevant to consider it in relation to traceability – particularly since trans-shipment is not part of the activity of the fishery in any case, as indicated in this section. If the fishery is certified and the distribution of fishing effort subsequently changes, this will be evaluated during surveillance audits in the normal way.

## **6.2 Summary of scores**

The presentation of this information is not in the format specified in the MSC Full assessment scoring template v1.3, and should ideally be changed.

It provides the same information in the same order – we have just changed the formatting so it looks a little less scruffy than the MSC version.

I hope that these comments are helpful.

We thank you for all your comments.

## Performance Indicator Review

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
1.1.1	Yes	No	NA	<p>The argument that the stock is “fluctuating around” its target reference point is not adequately justified. ICES 2014 advice shows that stock is below MSY B<sub>trigger</sub>, below SSB<sub>mgt</sub> and is considered by ICES to be at “increased risk”. The stock has been in steady decline since 2009 and below MSY B<sub>trigger</sub> since 2013.</p> <p>The stock assessment model for this fishery has consistently predicted trends in stock biomass accurately over the past few years. The currently downward trend seems to be predicted to continue. However ICES also note that historical assessments have overestimated SSB significantly.</p>	<p>As noted in the response to Peer Reviewer 1, the stock biomass is driven largely by recruitment, and there is evidence that the 2013 year class was large-ish (if not record-breaking). Further to the review of the management plan (ICES 2013) various forward projections of stock biomass were done, which predict further decline in the short-term and recovery in the medium term – which given the key role of recruitment variability is the most appropriate timeframe over which to consider stock status and the impact of management.</p> <p>The reviewer was correct that this was not clear in the rationale. More detail has been provided, including the projections. The scoring was not changed.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>It is also significant that ICES consider that <math>MSYB_{trigger}</math> is set too low for this stock (see scoring comments for PI1.1.2 at SIb), which would rather suggest that a precautionary approach to the evaluation of stock status relative to this reference point should be adopted.</p> <p>Either further justification is required to demonstrate that the sustained downward trend is SSB is about to reverse (for instance by reference to more detailed modelling than that presented; or by providing evidence of a strong year class on the cusp of entering the fishery), or the scoring of SIb needs to be re-considered.</p>	<b>Note for final report:</b> The scoring of this PI was reviewed at a harmonisation meeting involving all relevant CABs and MSC on 23 October 2015. The agreed score was 90 as originally given by MEC, but more details have been added to the rationale.
1.1.2	Yes	Yes	NA	The scoring is justified.	

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
1.1.3	NA	NA	NA	This PI wasn't scored, but perhaps it should have been.	See comments under 1.1.1 above
1.2.1	Yes	No	NA	<p>Linked to the comments about PI1.1.1 above and 1.2.2 below, it is hard to agree that there is a "<i>robust and precautionary</i>" harvest strategy in place that is "<i>responsive to the state of the stock</i>" (SIa) when it is clear that there are significant problems with the Coastal States agreement, and that <math>F</math> is higher than <math>F_{\text{mgt}}</math> because the evidence indicates that the harvest strategy is fragile and has not responded to the state of the stock.</p> <p>It is also not clear that the harvest strategy is "<i>achieving its objectives</i>" (SIb) for the same reasons – the stock is below <math>MSYB_{\text{trigger}}</math> and <math>SSB_{\text{MGT}}</math>, and <math>F</math> is above <math>F_{\text{mgt}}</math>.</p>	<p>A harmonisation process for all the fisheries on this stock, described in the report Section 4.1, has agreed that the issue around the coastal states agreement should be dealt with under PI 3.1.1. Note that despite the problems with the coastal states agreement, the TAC overshoots have been trivial (see below).</p> <p>There is a strategy in place, as the rationale makes clear, and it is clearly responsive to the stock, since as the stock declines, increasing reductions in removals are made (see ICES 2013). The stock was considered by the team to be fluctuating around the target as scored in PI 1.1.1 (with consideration given to the appropriate timescale of fluctuations, as required by MSC), so it is meeting the management objectives. The fact that the stock is declining is</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>Either additional information should be presented to justify the scores awarded for SIa and SIb, or these SIs should be scored at the SG60 level.</p>	<p>related to recent low recruitment, as can be seen from the projection of SSB in 2016 at zero F (-2%, vs -9% using agreed MP and -11% taking the MSY approach – i.e. setting <math>F_{MP}=F_{MSY}</math>) (see ICES 2014 advice). In other words, the stock biomass is projected to continue to decline at least up to 2016 even in the absence of fishing, because of recruitment variability - and these figures also show that the existing approach is more conservative than the MSY approach. This makes sense since <math>F_{MP}=0.08</math> is quite a bit lower than <math>F_{MSY}=0.105</math> – i.e. there is a ~ 20% buffer between <math>F_{MP}</math> and <math>F_{MSY}</math>, which compensates for the issues in the stock assessment which have been retrospectively evaluated to have led to an overshoot of the management plan F.</p> <p>As requested, additional information was provided in the rationale. The score was not changed.</p>



Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
					<b>Note for final report: The scoring of this PI was also reviewed with MSC further to MSC TO (see below).</b>
1.2.2	Yes	No	NA	<p>The scoring of SI(c) does not seem to be justified. A score of 60 seems more appropriate for this SI on the basis of the information presented.</p> <p>To explain:-</p> <p>The available evidence is that the weakness of the Coastal States agreement and the harvest control tool (defined in the scoring as the TAC and quotas allocated under the coastal</p>	<p><b>For reference:</b></p> <p><b>SIc SG60:</b> There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.</p> <p><b>SG80:</b> Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p> <p>1. It was agreed in a harmonisation meeting with all the CABs concerned that the issues around the coastal states agreement should be dealt with under P3 – specifically, PI 3.1.1. It is important to note that none of the coastal states disagree with the harvest control rule as set out in the management plan, or the</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>states agreement) in use have resulted in an exploitation levels that exceed those <u>required</u> under the harvest control rules.</p> <p>This situation is clearly evidenced in the scoring rationale which indicates that catches exceeded the management plan TAC in 2013 by 13% and were predicted to be higher than the management plan TAC again in 2014.</p>	<p>TACs that result – it is a question of how the TAC should be divided up between the coastal states which is the issue.</p> <p>2. In relation to TAC overshoot, our calculation as to 2013 from the ICES advice 2014 is that the overshoot was 10.7%. 2014 catches are not yet known, but the sum of individual quotas exceeded the TAC by 4.2%. Taking a longer-term view (as seems appropriate for this stock – see discussion under PI1.1.1 above), the situation up to and including 2013 can be evaluated from ICES advice. Adding up the totals from 2007-2013 gives the following figures: ICES advice : 8364 kt TACs: 8436 kt ICES estimate of catch: 8461 kt</p> <p>In other words, the catch has exceeded the TAC over this period by 0.3% and has exceeded ICES advice by 1.2%. The team concluded that this was not significant.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>It is stated that SG80 is met because "...the TAC is an effective tool to implement the harvest control rule". This is not the SG80 test. The SG80 requirement is that "...the tools in use are appropriate and effective in achieving the exploitation level required under the harvest control rules".</p> <p>The evidence presented shows that the tools in use <u>do not</u> achieve the exploitation levels required under the harvest control rules (<math>F</math> is above <math>F_{\text{mgt}}</math> and <math>SSB</math> is below <math>SSB_{\text{MGT}}</math>). No evidence to the contrary is presented (and nor, on the basis of ICES advice, is such evidence in existence).</p> <p>However, the evidence presented in the report and the scoring</p>	<p>3. In relation to the tools in use (the TAC) being effective in achieving the exploitation levels required under the harvest control rules, the team considered that the reviewer is conflating several issues, i.e.:</p> <p>i) <math>F</math> has been above <math>F_{\text{mp}}</math> because of issues with the stock assessment leading to underestimates of <math>F</math>. This is not an issue with the HCR, and is considered under PI1.2.4.</p> <p>ii) At certain periods in the past, and currently, there have been disagreements between the coastal states on the allocation of the TAC, leading to an overshoot of the management TAC to varying degrees (mainly small). Again, this is not an issue with the HCR and it has been agreed between all the CABs concerned to consider this issue under PI3.1.1.</p> <p>iii) <math>SSB</math> is below the target level. As</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>comments are adequate to justify a score of 60, which simply required that “<i>There is some evidence that tools....are...effective in controlling exploitation.</i>” This is consistent with the view presented in the scoring rationale that the weakness of the harvest control tools have been “<i>...without disastrous effect on the stock status.</i>”</p>	<p>discussed in PI1.1.1, this is a recruitment issue, and projections show i) that SSB will decline to 2016 even in the absence of fishing and ii) that the harvest strategy acts to reduce F and the TAC consistent with declines in SSB, as noted above.</p> <p>In relation to the HCR specifically, the situation is that i) it is set out in a management plan, which also specifies the tool (i.e. the TAC); ii) the TAC is set according to the best estimates of the scientists at the time as to what is should be to comply with the management plan and iii) all parties agree this TAC.</p> <p>This comment has been removed.</p> <p>The team disagrees with this assessment of how this scoring issue</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>It is further noted that the team state at the end of the scoring comments that this SI should be kept under review to “<i>evaluate whether any TAC overshoot is likely to jeopardise the stock status</i>”. Again, this seems mistaken. The aspect of the fishery being tested by this SI is whether the actual exploitation level is consistent with that required under the harvest control rules, and not whether this is likely to affect stock status.</p> <p>Given that the team has clearly identified concerns here that are relevant to the scoring of this SI, it would seem appropriate to review the scoring. It would be appropriate to either present clear evidence that <math>SSB</math> is greater than <math>SSB_{MGT}</math> and that <math>F</math> is less than <math>F_{mgt}</math> (either of which</p>	<p>should be scored, as set out above. In this scoring issue, we are not scoring the stock status relative to the TRP (this was scored in PI1.1.1). The level of <math>F</math> relative to the TRP is relative, but as noted above, the fact that <math>F</math> has been <math>&gt; FMP</math> is not a function of the HCR, it is a function of problems with the stock assessment, and therefore sheds no light on whether the TAC as a tool to implement the HCR is appropriate and effective.</p> <p>Note for final report: The scoring of this PI was reviewed and reduced as a result of the harmonisation meeting held on 23 October 2015. The rationale has been changed to reflect this new agreed outcome, and a new condition has been added.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				would demonstrate that the harvest control rules are effective); or alternatively to re-score this SI at the 60 level and generate an appropriate condition.	
1.2.3	No	No	NA	<p>There is insufficient information presented in report to demonstrate that fishery removals from all parts of all of the UoCs are measured at the level of accuracy and coverage consistent with SIb. (In particular, the only data presented for the PFA fleet are for just part of the fleet and from several years ago).</p> <p>Information for all of the UoCs should be presented in the report to demonstrate that this PI is met.</p>	<p>Presumably the reviewer is referring to the tables in Section 3.5.1 (retained species). The purpose of these data are not to evaluate the total catch by each of the client groups, but rather to evaluate the proportion of different species in the catch, which can be done with partial data as long as it is considered representative.</p> <p>Catch data by country are available for all the countries represented in the UoCs, and have been added to Section 3.3.6 (quotas and landings; new Table 8), as well as those for other relevant countries.</p> <p>Catch information from Greenland is</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>At Slc it is noted that information on stock removals from Greenland are patchy.</p> <p>There is an assertion that “<i>discard rates are small to negligible</i>” but the information presented in the report about discarding is limited, and there does not seem to be any information presented bout levels of slipping of the target species from the purse seine fishery.</p>	<p>patchy, but has been available since 2007 and is included in the above table.</p> <p>In relation to discarding, bear in mind that here we are evaluating the management of the stock rather than the impact of this fishery specifically (as in P2). What is therefore of interest is discarding of ASH across all fisheries, not discarding of all species in this fishery. The information has been compiled by the ICES working group (WGWIDE) which is therefore the best source of information in relation to discards for the scoring of this PI. The review of discard data from WGWIDE 2014 was summarised in the report but this review has been somewhat expanded. The information includes data from both trawl and purse seine fleets (the latter from Norway). Note that the same approach was taken in the re-assessment of the Norwegian ASH fishery (see DNV 2013, page 27).</p>

<b>Performance Indicator</b>	<b>Has all the relevant information available been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	<b>Conformity Assessment Body Response</b>
					It is worth noting that since January 2015, a discard ban has been in place for these vessels, but since at time of writing, no information was available to evaluate how this discard ban has changed patterns of behaviour on board, no assumptions have been made by the team regarding reductions in discarding. Discarding of ASH has been forbidden in the Norwegian EEZ for several years.
1.2.4	Yes	Yes	NA	The scoring is justified.	
2.1.1	No	No	NA	The fundamental problems with the scoring of this PI are that no distinction is made between the pelagic trawl and purse seining UoCs, and that the information presented is patchy (no data are presented for the KFO vessels, and only for German and Dutch	Note that the purse seine element applies to the Danish and Swedish UoCs only, and in practice in recent years only the Danish. Landings data for purse seine specifically was available for four hauls by three vessels, all of which showed 100% herring. This information is now given in the background part of



Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>PFA vessels in 2011 and 2012).</p> <p>To confidently score this PI at SG80 or higher, information needs to be presented that shows the catch for all of the UoCs has been considered and that this information is relatively current.</p> <p>This said, if adequate information can be presented and it is apparent that mackerel are the only “main” retained species, the scoring would be justified.</p>	<p>the report.</p> <p>On this basis, the team considered that it would be more precautionary to assume that the ‘main’ retained species identified for pelagic trawl (mackerel) might also apply to purse seine, hence why the two gears were not separated into different scoring elements. Not that this approach is the same (in practice) as that taken in other ASH assessments (see DNV 2009, 2013).</p> <p>For the PFA vessels, only the Dutch and German members have targeted ASH – as can be seen from the ICES data which records no landings from England, France or Lithuania (noting that the four UK-registered members of PFA are all English – 2 Grimsby and 2 Plymouth, according to MMO). This has been explained. Irish and Swedish vessel target ASH only in a limited way (one or a handful of trips per year – in some years, none). For 2011-13, the KFO</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
					<p>vessels reported no catches of anything other than herring during their ASH trips.</p> <p>The dataset is, therefore, more or less complete, although not all of it (the PFA data) comes from official sources – hence the recommendation.</p> <p>Having said that, the team would make this point: In terms of 2.1.1, the catches need to be evaluated for the purpose of determining which are the 'main retained' species, rather than for scoring specifically, since the status of the species in relation to biologically-based limits, and/or relevant management measures is not linked to a detailed quantitative assessment of catches.</p> <p>The team considered that for this purpose, and given that the vessels are fishing on the same stock, in similar areas and seasons (see Table 6) then it is reasonable to extrapolate, except if</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
					the data indicate that there are a lot of potentially main species or several species close to the 5% cut-off, or vulnerable – which is not the case here. It is not likely, given the similar activities, that there will be major differences in catch composition between the fleets when targeting ASH.
2.1.2	Yes	Yes	NA	The scoring is justified.	
2.1.3	No	No	NA	<p>In line with comments for PI2.1.1 above, there are significant gaps in the landings data presented in this report.</p> <p>Unless additional information is incorporated in the report, the scoring at SG80 for Sla and Sld cannot be justified for all of the UoCs under assessment (notably the KFO fleet and the PFA fleet other than German and Dutch vessels).</p>	<p>As noted above, the PFA data is complete as far as ASH is concerned, although the team would have preferred to use the official data. This has been made clearer. KFO reported no landings of any species other than herring.</p> <p>In relation to purse seine, see comments under 2.1.1 above.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
2.2.1	No	No	NA	<p>The scoring is not supported by verifiable and auditable evidence.</p> <p>The only information presented to support the claim that the fishery is very “clean” is the van Overzee et al 2013 report. This evidence is limited to 5 observer trips aboard Dutch and German PFA freezer-trawler vessels that are not part of the UoC and which were conducted several years ago in just one part of the fishery under assessment.</p> <p>(In support of this observation it is noted that the scoring of PI2.2.3 states that “The only independent source of information on discards in this fishery is the van Overzee et al. (2013) data which represent a</p>	<p>As noted above, this fishery is caught in a bind – it has been evaluated to be ‘low risk’ for discarding, and is therefore no subject to any independent observer coverage, which is allocated on a risk basis.</p> <p>The assessment team has therefore followed the lead of the other assessments on this stock (i.e. DNV 2014, DNV 2009, FCI 2010) in bringing together all the possible sources of information, including those not directly related to this fishery (e.g. ICES reports), in an attempt to evaluate the species and quantities involved in slipping in a reasonable way. (The team notes that in FCI 2010, for example, the fishery scored 95 for discard outcome and 80 for information on this basis; no fishery on this stock yet evaluated under the MSC standard has received a condition for any part of 2.2.)</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>relatively small proportion of the effort by this fishery". It would seem, therefore, that the assessment team were aware of the limitations of the information available, but this is not reflected in the scoring under this PI.)</p> <p>No data are presented for vessels from any of the UoCs of than part of the PFA fleet, and the report states that no observer data exist for the DPPO, SPFPO and KFO vessels. The reader is left to wonder about the situation in the SPSG fleet.</p> <p>The report states in section 3.5.2 that the various companies have self-reporting mechanisms, but no data are presented to provide evidence that the 3se self-reporting schemes are functional.</p>	<p>The reader would only have to read pp46-7 of the main report, where the situation is clearly set out. Recall that SPFPO and KFO participation in this fishery is limited. KFO data has, however, been added.</p> <p>Self-reporting information has been added to the 'discards' section of the main report.</p> <p>As set out above, purse seine is rather rare in this fishery compared to trawling, and hence data are too limited to allow this activity to be separated out as a separate scoring element (the same situation as for other MSC assessments</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>Further to this, no data at all are presented about the purse seine fishery. This is a significant concern, as it would appear that there remains a view among skippers that fish can survive being slipped despite the scientific evidence to the contrary (see §3.5.2, page 39 of the report).</p> <p>Whilst all of the anecdotal information suggests that this is indeed a “clean” fishery, the requirement of this PI at SG80 requires evidence rather than</p>	<p>on this stock).</p> <p>The comment being referred to here relates to pelagic trawls – it is noted in the next sentence that assessment scientists assume 100% mortality of slipped catch. As noted above, we have made no distinction between the two gear types in this regard – there are no special dispensations for purse seine slippage vs trawl slippage.</p> <p>The team believes that the reviewer is being unfair to characterise the mix of (some limited) observer data and information from the scientific literature (including ICES reports) as ‘anecdote’, noting that this approach has been taken in many other MSC-certified fisheries where there are not extensive observer reports available, observers being expensive and observer effort usually carefully allocated according to specific enforcement and/or scientific need.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				anecdote. If the various client fisheries do indeed have the procedures in place for self-reporting, it should be very easy to rectify these omissions. If such information cannot be provided, then the score of 80 is not justified.	Self-reporting data have been provided as discussed above. The score was not changed.
2.2.2	No	No	NA	<p>Given the paucity of information presented in the report from the various UoCs, there is no basis for having an “...<i>objective basis for confidence</i>” (the SG80 requirement at SIb) of to provide “..<i>evidence that the partial strategy is being implemented successfully</i>” (SG80 for SIc).</p> <p>It is noted that the report states in §3.5.2 that the KFO, DPPO and SPFPO fleets have no observer records for them – so the</p>	<p>More information has been added to the rationale, but the reviewer makes a good point. The score for scoring issue c) has been reduced from 100 to 80.</p> <p>More information has been added at scoring issue d. The team agreed that it was not met for all the UoCs, so the score has been reduced.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>assertion that “<i>the absence of bycatch in observer reports</i>” (justification at SId) simply cannot apply to these UoCs.</p> <p>The scoring of this PI seems to be inappropriate for all of the UoCs, given the quality of the information presented in the report.</p>	The score for the PI is therefore reduced from 95 to 85.
2.2.3	No	No	NA	<p>The information presented does not seem to meet the SG80 requirements for all of the UoCs.</p> <p>In particular, it is reported that there are no observer records for the KFO, DPPO and SPFPO fleets, so it is hard to see how a score of more than 80 can be justified for these UoCs.</p> <p>As previously, the scoring seems to be inappropriate for all UoCs based on the information</p>	<p>See comments on observer reports and other information above.</p> <p>The scoring was reviewed. However, given that it has already been decided, based on the available observer information, self-reporting and external information (as presented in the main report and discussed above) that there are no ‘main’ bycatch species, SGs60 and 80 are met by default. The team did not conclude that SG100 was met for any scoring issue.</p>



Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				that seems to have been available to the team based on that presented in the report.	Note that this approach is consistent with the other MSC assessments on this stock, as described above.
2.3.1	No	No	NA	<p>There are various issues in the scoring of this PI.</p> <p>Firstly, it appears that the team has used the OSPAR Commission's list of Threatened or Declining Species as its source for a list of ETP species, which is incorrect. The correct approach would have been to use national legislation and CITES Appendix I.</p> <p>Secondly, it is clear that the effects of the fishery are only "known" for some of the UoCs, and not for all of them.</p> <p>In particular, there is no information presented anywhere</p>	<p>Corrected.</p> <p>See extensive discussion of this issue above – the situation here is the same as for discards.</p> <p>See discussion of this issue above; purse seine and pelagic trawl have been scored together, as has been done in previous assessments.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>in the report from an objective or independent source describing ETP interactions in the purse seine fisheries under assessment.</p> <p>The scoring of this PI should be reviewed so that it re-focuses on the correct species and makes a more objective appraisal of the information available.</p>	The rationale and scoring has been reviewed. The change in source for the species list has made no practical difference to the scoring. The score was not changed.
2.3.2	No	No	NA	<p>A particular omission from the scoring of this PI is the EU legislation which applies to the vessels of all Member States, as well as domestic legislation (such as that in force in the UK) that requires Flag State vessels to adhere to certain management requirements wherever they are within that nation's EEZ.</p> <p>It is stated that there is a lack of</p>	<p>Protected species under EU fisheries legislation is included in the main report new Table 16.</p> <p>The observer information was also mentioned in the rationale, and the self-reporting information has been added.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p><b>“systematic non-compliance in the fishery” to support the scoring of SIc. This is a non-sequitur: compliance with fisheries regulations does not evidence an absence of interactions with ETP species. If this is the full extent of the information available for this SI, then the score of 80 cannot be justified.</b></p> <p><b>A score of 80 is probably justified here, but not by the evidence presented here which has significant omissions.</b></p>	
2.3.3	No	No	NA	At risk of repeating earlier comments, the evidence available is (by the team's own admission) very limited. It does not meet the SG80 requirements for these reasons.	At the risk of repeating earlier responses, the team felt that it is legitimate to rely on information other than direct observer reports from vessels in the UoC, given that the fishery is considered low risk and therefore has little scope for

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>For Sla it is stated that “<i>because of low observer coverage, however, impacts cannot be quantitatively estimated with a high degree of certainty</i>”. While this is no doubt true, SG80 requires a quantitative estimate of impact on ETP species for the fishery. Where is this estimate? The only information available seems to be mortality rates for part of the fishery, and there is no indication that this information is of sufficient accuracy to have allowed it to be raised to the fleet level as required.</p> <p>Again, a significant omission here is any information about the purse seine fishery.</p>	<p>participating in official government observer programmes – the self-report is an attempt to get around this.</p> <p>A ‘high degree of certainty’ is required at SG100, not SG80.</p> <p>Quantitative data from DPPO self-reporting is now provided in Table 21, and the observer data are discussed in detail in Section 3.5.3. Although it is true that the sample size would not permit the data to be raised to the level of the fleet with any legitimacy, it is sufficient, in the team’s view, to allow the inference that interactions with ETP species are rare and not significant at the population level.</p> <p>See comments above.</p> <p>See comments above.</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				Whilst accepting the argument, based on anecdote, that ETP impacts from this fishery are likely to be small, the scoring rationale requires substantial revision to justify the SG80 level of performance for all UoCs. Alternatively a lower score may be appropriate here.	
2.4.1	Yes	Yes	NA	<p>The scoring is justified. I agree that SG100 is only partially met.</p> <p>The EU has recently been looking at systems for monitoring and, in future, managing pelagic habitats (Druon 2014). While there is no reasonable basis for concluding that pelagic habitats (such as oceanic fronts) might be adversely affected by pelagic</p>	The assessment team struggled, but failed, to see the difference, in practice, between scoring 'pelagic habitats' and scoring 'ecosystems'. It is hard to see how the fishery will affect oceanic fronts any more than benthic habitats.

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				trawls, it is a shame not to mention this.	
2.4.2	No	Yes	NA	The scoring is justified..	See above
2.4.3	No	No	NA	<p>It is established in PI2.4.1 that the fishery is highly unlikely to contact, let alone damage benthic habitats. It is therefore not clear why the scoring here only considers benthic habitats; these are clearly irrelevant, and the reasoning is flawed.</p> <p>At SIb it is stated that “...<i>the spatial extent of vulnerable habitat types is known</i>”; if these habitats are not impacted they are not “<i>vulnerable</i>” even if they might be “<i>sensitive</i>” to trawl impacts, should they ever occur.</p> <p>Overall, because benthic habitats are not considered to be impacted by this fishery, they are</p>	The discussion of benthic habitats has been shortened.

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>not relevant to the scoring of this PI. The SG100 requirements of Sla and Slc do not seem to be met by the evidence presented, and the score is not justified.</p> <p>This said, it is clear that because the fishery is only likely to affect pelagic habitats, and because these habitats are by their very nature unlikely to vulnerable to the impacts of the fishery, a score of 80 would seem appropriate for this PI.</p>	
2.5.1	Yes	Yes	NA	The scoring is justified.	
2.5.2	No	No	NA	While the EU MSFD has some relevance to the management of ecosystem impacts of fisheries, it must have rather limited	Information has been provided for Norway. We note that Norway is a party to OSPAR, which is also considered in detail.

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>relevance for managing the ecosystem impacts of a fishery that is conducted mostly in Norwegian waters (i.e. outside the EU).</p> <p>The scoring comments make no mention of Norwegian legislation in place to manage ecosystems and impacts upon them. To justify the score of 80, evidence is required to demonstrate that a similar standard of management exists in Norway to that described for the EU.</p>	
2.5.3	Yes	Yes	NA	The scoring is justified.	
3.1.1	Yes	Yes	NA	The scoring is well-reasoned and justified.	The point about consultation is taken – nevertheless, it is not clear how in practice this is possible or what it will



Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>It is appropriate to generate a condition for this PI.</p> <p>The condition seems to focus on Sla, and does not seem to clearly address the shortcomings identified under SIb.</p> <p>Further to this, the condition states that there has been no consultation on the condition (presumably with “relevant entities”, though this is not clear). Since the delivery of his condition will depend on concerted action by not just the client fishery, but also Government agencies and organisations, the lack of consultation on the condition and any action plan is a significant omission.</p>	<p>achieve. It is obvious that none of the governments from countries whose vessels form part of the UoC are able to commit to 'fixing' the coastal states agreement – which is an EU responsibility although individual fisheries ministers will have some say. Likewise, the EU is already committed in principle to sustainable management of the stock, but will not commit to any particular agreement with the other coastal states – this is part of a process of negotiation.</p> <p>Therefore, the consultation about the condition would simply be to request lobbying to the EU on behalf of an agreement - which forms part of the condition rather than being a pre-requisite.</p> <p>Furthermore, in the absence of agreement, the second element of the condition (a fisheries-level arrangement) kicks in, and it is perfectly possible for</p>

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
					the client organisations to arrange that between themselves (e.g. by not taking part of their quotas) – particularly given that this is a harmonised condition with the Norwegian and Faroese clients.
3.1.2	Yes	Yes	NA	The scoring is justified.	
3.1.3	No	No	NA	<p>A score of 100 cannot be justified for a fishery that is conducted mainly in Norwegian waters when there is no reference to any objectives that guide decision making in Norway.</p> <p>Evidence of Norwegian management policy is required to justify a score of 80 or more.</p>	<p>The team's P3 expert (a Norwegian fisheries management expert) was of the view that the reviewer is putting too much emphasis on the Norwegian management system, which in this fishery is mainly relevant in relation to monitoring, control and surveillance, as well as, of course, as part of the coastal states context. The team could not think of a single practical example where Norwegian objectives specifically underpin decision-making, except as part of the coastal states context, which is discussed</p> <p>Nevertheless, for completeness, some</p>

<b>Performance Indicator</b>	<b>Has all the relevant information available been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	<b>Conformity Assessment Body Response</b>
					information about Norwegian management policy has been added to the rationale. The score was not changed.
3.1.4	No	No	NA	Again, there is no mention of the Norwegian management system, which is a significant omission for this fishery.	? Norway is mentioned in the rationale, which has not been changed.
3.2.1	Yes	Yes	NA	The scoring is justified.	No Comment Required
3.2.2	Yes	Yes	NA	The scoring is justified.	No Comment Required
3.2.3	Yes	Yes	NA	The scoring is justified.	No Comment Required
3.2.4	Yes	Yes	NA	The scoring is justified.  The referencing is incomplete and this should be addressed.	Amended
3.2.5	No	No	NA	It is clear that the EU CFP has been subject to a recent review. No evidence has been presented about recent reviews of the	Added.

Performance Indicator	Has all the relevant information available 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.	Conformity Assessment Body Response
				<p>Norwegian management systems.</p> <p>More importantly, to secure a score of 80 or more here there should be evidence of the review of management systems underpinning the coastal states agreement, which is clearly critical to this fishery. (Note that this is not the same thing as an ICES review of the fishery management plan, which is tested elsewhere).</p>	<p>ICES review of the management plan is not considered here – rather we are considering the review of the ICES framework which is conducted periodically by STECF.</p> <p>Review of the CSA is discussed and further information has been added. The score was not changed.</p>

### Any Other Comments

Comments	Conformity Assessment Body Response
<p>Comments on specific Performance Indicators (PIs) are made in the tables above. Some overall comments that relate to more than one PI are more appropriately made here:-</p> <ul style="list-style-type: none"> <li><i>Units of certification</i> – the definition and use of UoCs in the report is unclear, confusing and muddled. It is not clear why</li> </ul>	<p><b>And also at the start...</b></p> <p><b>The reviewer's interpretation of how UoCs should be defined was not supported by advice from MSC. No change has been made.</b></p>

<p>there should be 5 UoCs, why two of these should contain 2 different fishing methods, and also why the scoring should not reflect differences between the UoCs when these clearly exist.</p> <ul style="list-style-type: none"> <li>• <i>Lack of information about purse seining</i> – the casual reader could be forgiven for forgetting that there is any purse seining taking place. The scoring comments neither distinguish between the fishing methods nor do they advance adequate information for assigning the same scores to purse seining as for pelagic trawling.</li> <li>• <i>Unjustified extrapolations</i> – within P2 in particular there is unjustified reliance on a few observer trips on German and Dutch PFA vessels, the findings of which are extrapolated to cover fleets of vessels for which there is no other independent information.</li> <li>• <i>Reliance on irrelevant information</i> – this is a particular issue for the scoring of the “habitats” PIs. Having established (correctly) under PI 2.4.1 that pelagic trawls don’t impact benthic habitats under normal circumstances, information about benthic habitats and their management becomes irrelevant to the scoring of PIs 2.4.2 and 2.4.3. Benthic habitats are as relevant the scoring of pelagic fisheries as tropical reefs are to temperate fisheries.</li> </ul>	<p><b>No enough information is available to score purse seining separately from pelagic trawling. The team considered that based on the information that is available, it is most likely precautionary to base P2 scores on pelagic trawl information (i.e. that the purse seine element would be expected, a priori and based on the information available) to have better P2 scores. The team notes that this approach has been followed up till now for the other fisheries on this stock that use purse seines (i.e. the first assessments of the Scottish and Danish fisheries and the re-assessment of the Norwegian fishery).</b></p> <p><b>See extensive discussion above</b></p> <p><b>See response to detailed comments above.</b></p>
--	--

For reports using the Risk-Based Framework:

Performance Indicator	Does the report clearly explain	Are the RBF risk scores well-	Justification:	Conformity Assessment Body Response:
-----------------------	---------------------------------	-------------------------------	----------------	--------------------------------------

	how the process used to determine risk using the RBF led to the stated outcome? Yes/No	referenced? Yes/No	Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	
1.1.1	NA	NA	NA	<b>No Comment Required</b>
2.1.1	NA	NA	NA	<b>No Comment Required</b>
2.2.1	NA	NA	NA	<b>No Comment Required</b>
2.4.1	NA	NA	NA	<b>No Comment Required</b>
2.5.1	NA	NA	NA	<b>No Comment Required</b>

For reports assessing enhanced fisheries:

<b>Does the report clearly evaluate any additional impacts that might arise from enhancement activities?</b>	<b>Yes/No NA</b>	<b>Conformity Assessment Body Response:</b>
<u>Justification:</u>  NA		<b>No Comment Required</b>

## Appendix 3. Stakeholder submissions

No written stakeholder submissions were received prior to the publication of the Public Comment Draft Report. Verbal submissions received during the site visit focused on the provision of information and no concerns were raised about the fishery under assessment.

During the PCDR consultation period, no stakeholder submissions were received apart from MSC Technical Oversights (TOs). These and the team responses are discussed below.

Ref	Type	Page	Requirement	Reference	Details	PI	CAB's Response
16380	Guidance	125	CR-CBA4.2.1.2 v1.3	CBA4.2.1.2 For a fishery subject to international cooperation for management of the stock (e.g.: shared, straddling, HMS, high seas non-HMS) this means the existence of: a. National and international laws, arrangements, agreements and policies governing the actions of the authorities and actors involved in managing the fishery, and b. A framework for cooperation with other territories, sub-regional or regional fisheries management organizations or, c. other bilateral/multilateral arrangements, that create the cooperation required to deliver sustainable management under the obligations of UNCLOS Articles 63(2), 64, 118, 119, and	PI 3.1.1: Scoring issue a: The second paragraph text refers to CBA 4.2.1.4 when discussing overarching frameworks for shared stocks. However, it might be more appropriate to reference CBA4.2.1.2 in this context.	3.1.1	Changed

				UNFSA			
16381	Minor	140	CR-27.10.6.1 v.1.3	Rationale shall be presented to support the team's conclusion	PI 3.2.4. Scoring issue a: The first sentence of the rationale contradicts a later part of the rationale. In the first sentence it is mentioned that 'a comprehensive research plan exists' but later it is stated that 'the research plan may not be considered comprehensive.'	3.2.4	First 'comprehensive' changed to 'extensive'
16383	Major	72-74	CR-27.10.6.1 v.1.3	Rationale shall be presented to support the team's conclusion	PI 1.1.1, SG 80, scoring issue B).As has been pointed out by peer-reviewers, the SSB of the stock is currently in decline and has been below Btrigger for the last 2 years (ICES, 2014). The rationale also states that the trend of the stock being below Btrigger is expected to continue for several years. Although the team presents rationale to the effect that simulation studies puts the stock clearly above Btrigger on a projected timescale of 50+ years, in order to meet SG80 there needs to be evidence presented that the stock is at the target reference point or has fluctuated around the TRP for the past few years (CB 2.2.2.1).	1.1.1	This issue was discussed between all CABs with fisheries on this stock at a scoring meeting on October 23 2015. The conclusions of this meeting as summarised by MSC are presented in Annex 3. The score given here is the agreed harmonised score.



					<p>In addition, the Btrigger reference point is actually below the MSY TRP required by the MSC. In order for Btrigger to be considered equivalent to MSY, SSB has to be clearly above Btrigger and this is also further clarified in GCB 2.3.2.4.</p> <p>In terms of F, although it has been at FMSY over the last 2 years, there is a history of fishing mortality being above FMSY for many years. In addition, it is stated that current F is and has been above the Fmp of 0.125 for several years.</p> <p>It is therefore not clear how the current rationale justifies meeting SG 80 scoring issue b and proves that the stock is fluctuating around its target reference point for either B or F.</p>		
16384	Major	83-85	CR-27.10.6.1 v.1.3	Rationale shall be presented to support the team's conclusion	<p>PI 1.2.1 SG 80 Scoring issue A and B As pointed out by both peer-reviewers, it is unclear how the harvest strategy elements work together towards achieving their management objectives (SI A) and there is evidence that it is achieving its objectives (SI B), when: There is currently no agreement on quota allocation</p>	1.2.1	<p>This issue was discussed by MEC with MSC (Robert Lefebure and Dan Hoggarth) on 4 September 2015. In relation to 2.1.1, it was agreed that the question of quota allocation was best dealt with under PI1.2.2 (subject of a subsequent harmonisation meeting on 23</p>

					<p>(thus questioning the efficiency of the TAC, the main instrument of implementing the HCR), fishing mortality is consistently above the management targets and the stock is in decline as outlined in the TO for 1.1.1.</p> <p>In addition, although the TAC overshoot is currently low as outlined in the rationale, what guarantees are there that it will not increase in years to come as long as there is no quota agreement in place? Here it also of note that Greenland as a coastal state is not mentioned in this regard, although they are taking an increasingly larger share of the TAC, outside of any agreement.</p> <p>Further to this, the teams rationale for 1.2.2, which is related to 1.2.1, points to the fact that the current issues faced by the fishery should be dealt with under P3. The attached harmonisation appendix does in fact not state that the issues of quota allocation should exclusively be dealt with under PI 3.1.1. If anything, it states that issues of CS disputes and TAC allocations does not necessarily</p>	<p>October 2015 between all the relevant CABs) and 3.1.1 (as agreed in harmonisation discussions in 2014 and earlier in 2015).</p> <p>In relation to Greenland, it was noted that at time of scoring, Greenland was taking &lt;2% of the catch – within the bounds of error in the stock assessment, and it was agreed that it would be appropriate to deal with the question of Greenland when and if it becomes relevant to the management of the stock.</p> <p>In relation to 1.2.2, the score has been changed to reflect the outcome of the harmonisation meeting of 23 October. No change has been made to the scoring of 1.2.1, as agreed with MSC.</p>
--	--	--	--	--	---	--

					<p>have to be harmonized for P1 between stocks, but in all cases a precautionary approach should be adopted. It is also clear that the issues mentioned above could have consequences for both P1 and P3.</p> <p>Given these points, the current rationale does not justify meeting the SG 80 level for scoring issues a and b.</p>		
16385	Guidance	14	*N/A v.N/A	(blank)	Length of vessel column is missing from PFA UoC description, but is given for all other UoCs. Could be included for consistency reasons.	N/A	Requested client to get PFA vessel lengths and this has been added in the introduction section 3.2.3
16386	Major	131	CR-27.10.6.3 v.1.3	<p>27.10.6 To contribute to the scoring of any PI, the team shall verify that each scoring issue is fully and unambiguously met.</p> <p>27.10.6.3 An exception to 27.10.6.2 is permitted only for those PIs that include only a single scoring issue at each SG level. a. For these PIs it is permitted to 'partially score' issues to obtain intermediate scores. b. A rationale shall be provided, clearly explaining which aspects of the scoring issue are</p>	<p>PI 3.1.4. The rationale presented is ambiguous as to how the scoring issue is partially met at the 90 level. It is stated that "the team has not been provided evidence that incentives are explicitly considered in a regular review of management policies." However, it is not clear why this justification would result in a partial score of 90.</p>	3.1.4	Clarification and a new reference added to show how SG100 is partially met

				met			
16387	Minor	64	CR-27.12.1.3 v.1.3	27.12.1 The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: 27.12.1.3 The opportunity of substitution of certified with non-certified fish prior to or at landing fraudulent claims from within and outside the certified fishery.	The report does not describe the systems in place to segregate c.	N/A	New information on onboard processing and separation systems has been added.

## Appendix 4. Surveillance Frequency

(REQUIRED FOR THE PCR ONLY)

1. The report shall include a rationale for determining the surveillance score.
2. The report shall include a completed fishery surveillance plan table using the results from assessments described in CR 27.22.1

**Table A4: Fishery Surveillance Plan**

Score from CR Table C3	Surveillance Category	Year 1	Year 2	Year 3	Year 4
[e.g. 2 or more]	[e.g. Normal Surveillance]	[e.g. On-site surveillance audit]	[e.g. On-site surveillance audit]	[e.g. On-site surveillance audit]	[e.g. On-site surveillance audit & re-certification site visit]

## Appendix 5. Client Agreement

(REQUIRED FOR PCR)

The report shall include confirmation from the CAB that the Client has accepted the PCR. This may be a statement from the CAB, or a signature or statement from the client.

*(Reference: CR: 27.19.2)*

## Appendix 5.1 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: CR 27.19.1)*

## Appendix 6. Client Action Plan

**DPPO, SPSG, PFA, SPFPO & KFO Atlanto-Scandian purse seine and pelagic trawl herring fishery**

**April 10. 2015**

### **Client Action Plan on re-establishing effective international cooperation for the Atlanto-Scandian purse seine and pelagic trawl herring fishery - (Condition 3.1.1).**

A condition of acceptance for achieving MSC certification for the Atlanto-Scandian purse seine and pelagic trawl herring fishery is that the fishery should work with the EU, other certified or suspended UoCs in the fishery and/or other parties as appropriate to support the resolution of the dispute with the Faroese and to re-establish an effective international cooperation mechanism for the fishery.

The Client group has agreed to formulate an action plan describing new initiatives and the continuation of on-going activities in support of seeking resolution of the dispute with the Faroes and to re-establish an effective international cooperation mechanism for the fishery.

Although no formal agreement has been reached between all Coastal States on the management of the Atlanto-Scandian Herring fishery, it must be acknowledged that parties have made significant progress over the last 6 months and negotiations are set to continue already at the beginning of June 2015.

The parties within the client group strongly believe in the principle of well-managed and sustainable fisheries and have demonstrated their commitment to that by re-entering their respective herring fisheries for assessment against MSC principles and criteria. All members of the client group have worked diligently to address conditions and recommendations placed on their respective fisheries and to date have made excellent progress. It's therefore hugely disappointing and disheartening through no fault of their own to be in a position where a condition of acceptance has been placed on their fisheries.

The parties are however committed to independent fisheries certification and between them have many additional fisheries accredited to MSC standard. Therefore, the parties believe that working jointly on the following plan is a real commitment to resolving the current herring management challenge and return to a framework of a Coastal States Agreement.

This action plan is based on three elements; lobbying, industry liaison and science, as described in detail below.

The client group views the plan as an adaptive process aiming at facilitating sustainable and science based management of the ASH stock.

The plan will be reviewed and revised following the end of the Coastal States quota and sharing negotiations for the following year. For 2016 negotiations are expected to begin in



June 2015 and be finalised by end of November 2015. Should Coastal States not have resolved management issues by the end of the negotiations; the client group will review and revise the action plan taking in to account the condition milestone for the following year: 2, 3, and 4.

For year 1, the client group is committed to engaging in activities targeting lobbying, industry liaison and science, as described in detail below. The client group will document is engagement in these activities and provide evidence of lobby activities targeting the European Commission and other interested parties.

## **Lobbying**

Members of the client group undertake the continuation of lobbying relevant bodies to promote a message based on the necessity of sustainable and well-managed fisheries. Members will remind parties, especially governments, of the consequences of unsustainable fisheries and cite the recent case of mackerel. The group will lobby for a fair and equitable herring sharing arrangement based on stock sustainability, science and historical rights. The client group will request all Coastal States to continue negotiating until a solution to the herring dispute has been found. The client group members will provide factual documented evidence of engagement with the following.

- Member States
- National administrations
- National Governments
- EU Commissioner and Commission Services
- Environmental NGO's

## **Industry liaison**

Members regularly meet representatives from other Coastal States during negotiation consultations.

Members undertake to continue engagement with the fisheries organisations in all Coastal States and continue seeking common ground on issues relating to the management of the herring stock and solutions to current disputes between Coastal States. The client group will provide factual documented evidence of engagement with the following.

- Members will meet representatives from the Faroese Industry and other relevant Coastal States in order to seek joint positions and generate pressure on national administrations and intergovernmental organisations.

## **Science**

Members undertake to continue engagement with the scientific community to ensure that the best possible scientific data is produced to help fully understand the status of the herring stock. In addition, members will fully respect the AS Herring advice emanating from ICES. The client group will provide factual documented evidence of engagement with the following.

- Engage in the ICES process
- Engage in the long term management plan revision
- Members will fully cooperate with the herring commercial stock surveys
- Undertake to provide any additional catch data identified by the scientific community

Yours sincerely,

Esben Sverdrup-Jensen



On behalf of Denmark: DPPO, Scotland: SPSG, The Netherlands, Germany, France, England, Lithuania: PFA, Sweden: SPFPO and Ireland: KFO

**DPPO, SPSG, PFA, SPFPO & KFO Atlanto-Scandian purse seine and pelagic trawl herring fishery**

**November 25. 2015**

**Client Action Plan on securing evidence that indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules for Atlanto-Scandian Herring (Condition: 1.2.2, raised through the MSC harmonisation process with other CABs)**

A condition of acceptance for achieving MSC certification for the Atlanto-Scandian purse seine and pelagic trawl herring fishery is that the client group will work to secure available evidence that indicates that the management tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules for the Atlanto-Scandian Herring fishery.

The Client group has agreed to formulate an action plan describing new initiatives and the continuation of ongoing activities in securing available evidence that indicates that the management tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules for the Atlanto-Scandian Herring fishery.

Although no formal agreement has been reached between all Coastal States on the management of the Atlanto-Scandian Herring fishery, it must be acknowledged that parties have made significant progress over the last year and negotiations are ongoing in November 2015.

The parties within the client group strongly believe in the principle of well-managed and sustainable fisheries and have demonstrated their commitment to that by re-entering their respective herring fisheries for assessment against MSC principles and criteria. All members of the client group have worked diligently to address conditions and recommendations placed on their respective fisheries and to date have made excellent progress. It's therefore hugely disappointing and disheartening through no fault of their own to be in a position where conditions of acceptance have been placed on their fisheries.

The parties are however committed to independent fisheries certification and between them have many additional fisheries accredited to MSC standard. Therefore, the parties believe that working jointly on the following plan is a real commitment to resolving the current herring management challenge and return to a framework of a Coastal States Agreement.

The client group views the plan as an adaptive process aiming at facilitating sustainable and science based management of the ASH stock.

The plan will be reviewed and revised following the end of the Coastal States quota and sharing negotiations for the following year. For 2016 negotiations are expected to be finalised by end of 2015. Should Coastal States not have resolved management issues by the end of the negotiations; the client group will review and revise the action plan. The plan is linked to the Corrective Action Plan submitted in May 2015.

### **Milestones:**

<b>Milestone</b>	<b>year</b>	<b>1:</b>
Make contact with representatives from other Coastal States, EU-Commission, NEAFC and ICES in order to secure information on management, fishing activities and scientific analysis in the respective states and transnational governing bodies. Encourage all parties to seek a joint solution within the framework of a management plan.		

### **Action year 1:**

During negotiations for 2016 TACs and sharing arrangements, arrange meetings with other UoCs in the fishery and European Commission to gather information and evidence. Participate in ICES advice drafting group on widely distributed stocks and the ICES preparatory meetings for the stock benchmark in January 2016. Lobby all parties all parties in seeking a joint solution within the framework of a long term management plan.

<b>Outcome</b>	<b>year</b>	<b>1.</b>
By March 2016, all Coastal States have formally agreed on management and sharing arrangements for 2016 and beyond.		

<b>Milestone</b>	<b>year</b>	<b>2:</b>
If the dispute is not resolved, continue to lobby and gather information. Provide updated information on the management actions of Coastal States, EU-Commission, NEAFC and ICES in order to secure information on management, fishing activities and scientific analysis in the respective states and transnational governing bodies. Demonstrate that discussions have taken place and progress has been made towards agreeing on a long-term management plan encompassing all relevant fishing nations.		

### **Action year 2:**

During negotiations for 2017 TACs and sharing arrangements, arrange meetings with other UoCs in the fishery and European Commission to gather information and evidence. Participate in ICES advice drafting group on widely distributed stocks and the ICES benchmark in January 2016.

Lobby all parties all parties in seeking a joint solution within the framework of a long term management plan.

**Outcome year 2:** By March 2017, all Coastal States have formally agreed on management and sharing arrangements for 2017 and beyond. Alternatively options for an “industry” level management arrangement have been analysed.

**Milestone year 3:**

If the dispute is not resolved, continue to lobby and gather information.

Provide updated information on the management actions of Coastal States, EU-Commission, NEAFC and ICES in order to secure information on management, fishing activities and scientific analysis in the respective states and transnational governing bodies.

Demonstrate that discussions have taken place and progress has been made towards agreeing on a long term management plan encompassing all relevant fishing nations.

**Action year 3:**

If no agreement has been reached, the client group will continue to further develop an industry level management arrangement. The work will be done in agreement with other UoCs and CABs.

Participate in ICES advice drafting group on widely distributed stocks.

**Outcome year 3:**

By March 2018, all Coastal States have formally agreed on management and sharing arrangements for 2018 and beyond. Alternatively the framework for an “industry” level management arrangement has been developed.

**Milestone year 4:**

Demonstrate that the effective coastal states cooperation/dispute resolution system is in place and operational. Alternatively, validate and implement the fleet-level plan, in agreement with other MSC UoCs and CABs.

**Action year 4:**

If no agreement has been reached, the client group together with other UoCs and CABs will implement the industry level management arrangement.

**Outcome year 4:**

By March 2019, all Coastal States have formally agreed on management and sharing arrangements for 2019 and beyond. Alternatively an “industry” level management arrangement has been agreed among UoCs and CABs and implemented.

Yours sincerely

Esben Sverdrup-Jensen



On behalf of Denmark: DPPO, Scotland: SPSP, The Netherlands, Germany, France, England, Lithuania: PFA, Sweden: SPFPO and Ireland: KFO

## Appendix 7. Stakeholders

Organisation	Contact	Email
<b>PFA</b>		
IMARES	Dr. HJL (Henk) Heessen	<a href="mailto:henk.heessen@wur.nl">henk.heessen@wur.nl</a>
Algemene Inspectie Dienst (Nederlandse Voedsel en Warenautoriteit)	Henk Offringa	<a href="mailto:h.r.offringa@minlnv.nl">h.r.offringa@minlnv.nl</a>
Nederlandse Voedsel en Warenautoriteit	Leon Bouts	<a href="mailto:l.a.bouts@minlnv.nl">l.a.bouts@minlnv.nl</a>
Bundenstalt für Landwirtschaft und Ernährung (BLE)		<a href="mailto:ALLGEMEINE.RECHTSANGELEGENHEITEN@ble.de">ALLGEMEINE.RECHTSANGELEGENHEITEN@ble.de</a>
Johan von Thunen Institute	Christoph Stransky, Alexander Kempf	<a href="mailto:christoph.stransky@vti.bund.de">christoph.stransky@vti.bund.de</a> ; <a href="mailto:alexander.kempf@vti.bund.de">alexander.kempf@vti.bund.de</a>
National Federation of Fishermen's Organisations NFFO	Barrie Deas	<a href="mailto:nffo@nffo.org.uk">nffo@nffo.org.uk</a>
DEFRA	Andy Carroll	<a href="mailto:andy.p.carroll@defra.gsi.gov.uk">andy.p.carroll@defra.gsi.gov.uk</a>
Wereld Natuurfonds (WNF)	Reinier Hille Ris Lambers	<a href="mailto:rhillerislammers@wwf.nl">rhillerislammers@wwf.nl</a>
Marine Management Organisation (MMO)	TBC	
<b>SPSG</b>		
Marine Scotland		<a href="mailto:ceu@scotland.gsi.gov.uk">ceu@scotland.gsi.gov.uk</a> ; <a href="mailto:marinescotland@scotland.gsi.gov.uk">marinescotland@scotland.gsi.gov.uk</a>
Marine Scotland Compliance	Cephas Ralph	<a href="mailto:Cephas.Ralph@scotland.gsi.gov.uk">Cephas.Ralph@scotland.gsi.gov.uk</a>
Marine Scotland Science	Nick Bailey	<a href="mailto:n.bailey@marlab.ac.uk">n.bailey@marlab.ac.uk</a>
Fisheries Group - Environment and Rural Affairs Department	Ewen Milligan	<a href="mailto:ewen.milligan@scotland.gsi.gov.uk">ewen.milligan@scotland.gsi.gov.uk</a>
JNCC	Mark Tasker	<a href="mailto:Mark.Tasker@jncc.gov.uk">Mark.Tasker@jncc.gov.uk</a>
Royal Society for the Protection of Birds	Kara Brydson	<a href="mailto:kara.brydson@rspb.org.uk">kara.brydson@rspb.org.uk</a>

Scottish Fisheries Council	Margo Petrie	<a href="mailto:margo.petrie@scotland.gsi.gov.uk">margo.petrie@scotland.gsi.gov.uk</a>
Scottish Fishermen's Federation	Rory Campbell	<a href="mailto:k.coull@sff.co.uk">k.coull@sff.co.uk</a>
Scottish Natural Heritage	Prof. Robert Furness	<a href="mailto:Bob.Furness@glasgow.ac.uk">Bob.Furness@glasgow.ac.uk</a>
Sea Mammal Research Unit	Dr Simon Northridge	<a href="mailto:spn1@st-andrews.ac.uk">spn1@st-andrews.ac.uk</a>
Scottish White Fish Producers Association	Mike Park	<a href="mailto:mikeswfpa@aol.com">mikeswfpa@aol.com</a>
Seafish	Phil MacMullen	<a href="mailto:P_macmullen@seafish.co.uk">P_macmullen@seafish.co.uk</a>
Marine Conservation Society	Dr. Peter Duncan	<a href="mailto:info@mcsuk.org">info@mcsuk.org</a>
WWF Scotland	Mireille Thom	<a href="mailto:MThom@wwfscotland.org.uk">MThom@wwfscotland.org.uk</a>
WWF UK	Giles Bartlett	<a href="mailto:GBartlett@wwf.org.uk">GBartlett@wwf.org.uk</a>
Seafood Scotland	Lesley Cunningham; Jess Sparks	<a href="mailto:lesley@seafoodscotland.org">lesley@seafoodscotland.org</a> ; <a href="mailto:jess@seafoodscotland.org">jess@seafoodscotland.org</a>
<b>DPPO</b>		
Danish Ministry of Food, Agriculture & Fisheries		
Danish Institute for Fisheries Research, Technical University of Denmark, Dept. of Marine Ecology and Aquaculture		<a href="mailto:dtu@dtu.dk">dtu@dtu.dk</a>
DCE - Danish Centre For Environment And Energy		<a href="mailto:dmu@dmu.dk">dmu@dmu.dk</a>
WWF Denmark		<a href="mailto:wwf@wwf.dk">wwf@wwf.dk</a>
Danish Agrifish Agency		
Association of Danish Fish Processing Industries and Exporters		<a href="mailto:dfe@dfedk.dk">dfe@dfedk.dk</a>
NORGES SILDESALGSLAG		<a href="mailto:sildelaget@sildelaget.no">sildelaget@sildelaget.no</a>
3F- United Federation of Danish Workers		<a href="mailto:3f@3f.dk">3f@3f.dk</a>
Danish Fish Tech Group (DFITG)		<a href="mailto:halldor.halldorsson@dk-export.dk">halldor.halldorsson@dk-export.dk</a>
Danish Fishermen's Association		<a href="mailto:mail@dkfisk.dk">mail@dkfisk.dk</a>
The Danish Society of Living Sea (Levende Hav)		<a href="mailto:levendehav@gmail.com">levendehav@gmail.com</a>
The Danish Society for Nature Conservation		<a href="mailto:dn@dn.dk">dn@dn.dk</a>
Oceana	Marta Madina	<a href="mailto:mmadina@oceana.org">mmadina@oceana.org</a>
<b>KFO</b>		

Marine Institute Ireland	Maurice Clarke	<a href="mailto:Maurice.Clarke@Marine.ie">Maurice.Clarke@Marine.ie</a>
Marine Institute Ireland	Ciaran Kelly	<a href="mailto:Ciaran.kelly@marine.ie">Ciaran.kelly@marine.ie</a>
The Department of Agriculture, Food and the Marine	Josephine Kelly	<a href="mailto:josephine.kelly@agriculture.gov.ie">josephine.kelly@agriculture.gov.ie</a>
Irish Sea Fisheries Protection Agency (SFPA)	Seamus Gallagher	<a href="mailto:seamus.gallagher@sfpa.ie">seamus.gallagher@sfpa.ie</a>
Irish Whale and Dolphin Group	Simon Berrow	<a href="mailto:simon.berrow@iwdg.ie">simon.berrow@iwdg.ie</a>
BIM (Irish Sea Fisheries Board)	Ronan Cosgrove	<a href="mailto:cosgrove@bim.ie">cosgrove@bim.ie</a>
BIM (Irish Sea Fisheries Board)	Daragh Browne	<a href="mailto:browne@bim.ie">browne@bim.ie</a>
<b>SFPFO</b>		
WWF Sweden	Charlotta Järnmark	<a href="mailto:charlotta.jarnmark@wwf.se">charlotta.jarnmark@wwf.se</a>
Swedish Fishermen's Association	Henrik Loveby	<a href="mailto:henrik.loveby@yrkesfiskarna.se">henrik.loveby@yrkesfiskarna.se</a>
Swedish University of Agricultural Sciences, Department of Aquatic Resources	Valerio Bartolino	<a href="mailto:valerio.bartolino@slu.se">valerio.bartolino@slu.se</a>
Swedish University of Agricultural Sciences, Department of Aquatic Resources	Daniel Valentinsson	<a href="mailto:daniel.valentinsson@slu.se">daniel.valentinsson@slu.se</a>
The Federation of Swedish Fish Industries and Trade	Yngve Björkman	<a href="mailto:yngve.bjorkman@fiskbranschen.se">yngve.bjorkman@fiskbranschen.se</a>
Swedish Agency for marine and Water Management	Bengt Kåmark	<a href="mailto:bengt.kamark@havochvatten.se">bengt.kamark@havochvatten.se</a>
National Food Administration, Sweden	Pontus Elvingsson	<a href="mailto:pontus.elvingsson@livsmedelsverket.se">pontus.elvingsson@livsmedelsverket.se</a>
Swedish Coastguard		<a href="mailto:registrator@kustbevakningen.se">registrator@kustbevakningen.se</a>
<b>General</b>		
Norwegian Institute of Marine Research	Katja Enberg	<a href="mailto:katja.enberg@imr.no">katja.enberg@imr.no</a>
Norwegian Ministry of Fisheries	TBC	
Norwegian Directorate of Fisheries		<a href="mailto:postmottak@fiskeridir.no">postmottak@fiskeridir.no</a>
Pelagic RAC	Dr. Verena Ohms	<a href="mailto:v.ohms@pelagic-rac.org">v.ohms@pelagic-rac.org</a>
North Sea RAC	Ann Bell	<a href="mailto:ann.bell@aberdeenshire.gov.uk">ann.bell@aberdeenshire.gov.uk</a>
ICES - WGWIDE	Beatriz Roel	<a href="mailto:beatriz.roel@cefas.co.uk">beatriz.roel@cefas.co.uk</a>
EU Directorate General for Maritime Affairs and Fisheries		
Norwegian Ministry of Fisheries and Coastal Affairs		<a href="mailto:postmottak@fkd.dep.no">postmottak@fkd.dep.no</a>

High Seas Conservation & Fisheries Certification WWF Germany International WWF Centre for Marine Conservation	Christian Neumann	<a href="mailto:christian.neumann@wwf.de">christian.neumann@wwf.de</a>
Greenpeace Germany		<a href="mailto:mail@greenpeace.de">mail@greenpeace.de</a>
WWF Norway		<a href="mailto:wwf@wwf.no">wwf@wwf.no</a>
Whale and Dolphin Conservation Society		<a href="mailto:info@wdcs.org">info@wdcs.org</a>
Directoraat-generaal Maritieme zaken en visserij (DG-MARE)	Ms V. RAINERI (Secretary - Fisheries conservation and control Atlantic and outermost regions)	
European Fisheries Control Agency (EFCA)	Patricia Sánchez Abeal	<a href="mailto:patricia.sanchezabeal@efca.europa.eu">patricia.sanchezabeal@efca.europa.eu</a>
Scientific, Technical and Economic Committee for Fisheries (STECF)		<a href="mailto:stecf-secretariat@jrc.ec.europa.eu">stecf-secretariat@jrc.ec.europa.eu</a>
WGWIDE	Katja Enberg	<a href="mailto:katja.enberg@imr.no">katja.enberg@imr.no</a>
Clupea.net		<a href="mailto:clupea@clupea.de">clupea@clupea.de</a>
CEFAS	Chris Darby	<a href="mailto:chris.darby@cefasc.co.uk">chris.darby@cefasc.co.uk</a>
North East Atlantic Fisheries Commission (NEAFC)	Stefán Ásmundsson Secretary	<a href="mailto:stefan@neafc.org">stefan@neafc.org</a>
Seas at Risk	Bjorn Stockhausen	<a href="mailto:bstockhausen@seas-at-risk.org">bstockhausen@seas-at-risk.org</a>
Norwegian Fishermen's Association (Norges Fiskarlag)		<a href="mailto:fiskarlaget@fiskarlaget.no">fiskarlaget@fiskarlaget.no</a>



## Appendix 8. Coastal State Disputes Harmonisation Meeting

1. First harmonisation meeting on pelagic stocks subject to a dispute on quota allocations on 16<sup>th</sup> March 2015.

### Participants:

Andy Hough, John Nichols, Geir Hønneland, Anna Kiseleva, Jo Gascoigne, Rod Cappell, Crick Carleton, Sophie des Clers, Gudrun Gaudian, Carol Leiper, Dan Hoggarth, Robert Lefebure

Invited but could not attend: Mike Pawson, Jim Andrews, Chrissie Sieben, Asgeir Danielsson, Sonia Sanches-Marono

### Key Outcomes:

Overview on harmonisation was provided by DH, clarifying the intent of v1.3, as now expressed in v2.0. A further clarification on harmonisation expectations has been requested and will be provided in due course.

Discussion on how to deal with CS disputes was discussed in general but also in light of mackerel and AS herring.

It was agreed that PI 3.1.1 could be scored consistently across all stocks, as even though the P1 considerations are different, the key issues are very similar and the higher-level policy framework (as scored in P3.1.\*) is 'overlapping' across all stocks. In all cases, the requirement that an organized and effective cooperation with other parties is in place (as required to meet SG 80 for scoring issue a) and the existence of a transparent dispute resolution mechanism, which is effective in dealing with most issues (as required by scoring issue b at SG80), can both not considered to be met in cases where CS disputes result in an overshoot of the TAC and no provisions for the management systems effectiveness in the future can be given.

Participants noted the difficulties in scoring this, since CS quota allocation frameworks are ad-hoc agreements, not legally binding and very rarely have transparent dispute resolute mechanisms in place.

It was agreed that this should not be viewed as an exceptional circumstance, and even though it will be very hard for most coastal states to achieve the milestones of such a condition, it should be evaluated as a normal condition and e.g. failure to meet the milestones would result in another suspension.

It was noted that transparent dispute resolute mechanisms do not have to be legally binding (noting the word OR in scoring issue b for 3.1.1), but they do have to be incorporated in the management system.

The question was also raised on whether all stocks with CS agreements should score <80, for 3.1.1 si B, based on the fact that they are likely not effective should a CS dispute arise. It was concluded that they are effective until proven otherwise, as proven by the outcomes to each specific case.

For P1, it was concluded that outcomes between stocks does not have to be harmonized, since the P1 scoring will be different, but MSC is still looking for a consistency of scoring approaches when the issues are largely the same, as it relates to CS disputes and TAC not being in line with scientific advice.

On this point, it was noted that setting a globally applicable % threshold of allowed TAC overshoot, thus determining when a condition or fail should be triggered for 1.2.1, was not feasible as the situation would be stock dependent (where it is in terms of F and B and what provisions management had built in to deal with TAC overshoot, including levels of uncertainty). Considerations should instead be given to the stock status, recognising that the risk is higher when the stock is going down.

Counter to this, arguments were presented that the Outcome status of the stock was irrelevant in scoring 1.2.1 and it should simply be based on the effectiveness of the current management regime.

It was noted that the SG 60 level for 1.2.1 sets quite a low bar, but nevertheless, the MINSA team pointed to scoring issue b and raised whether it was likely that the strategy would work and even meet SG 60. Given that prior experience in this case dictates that it would likely not work. This precedent might only be true for MINSA and there was some disagreement on whether the same logic should be applied to AS herring (to achieve consistency but not harmonisation).

No conclusion was reached on scoring 1.2.1 and if it should relate to the Outcome status, similar to 1.2.2 and HCRs, but it was determined that in light of uncertainty, scoring should at least be precautionary.

## **Fishery-specific conclusions**

### *Blue whiting*

No points raised on this issue other than what was already discussed in relation to the other fisheries. A condition on 3.1.1 seems likely, given the CS dispute in place here (Unilateral quota taken by Norway) and conclusions for this fishery should be consistent with the other fisheries facing similar situations.

### *AS herring*

Anna Kiseleva, DNV, presented case why the Faroese fishery, FPO, should no longer be suspended due to a unilateral exemption to a unilateral agreement. The case presented revolved around a significant reduction by FPO of their quota, most of the quota is now taken within the EEZ of the Faroe Islands and finally, there is no longer a CS agreement in place

for this stock as of 2015. Therefore, FPO can no longer be unilaterally exempt to an agreement that no longer exists.

All agreed that:

- Current dispute on herring quota allocations is a system failure and all Coastal States should work together to bring total catches in line with ICES advice.
- The suspension of Faroe Islands herring fishery should be lifted as the fishery is meeting the scope requirements and could no longer be considered to be conducted under a controversial unilateral exemption to an international agreement.
- The Faroe Islands herring fishery should be harmonized with all other AS herring fisheries in the MSC program and join in “the Norwegian condition” at their recertification.

## *MINSA*

MINSA are currently suspended and therefore the first step for the MINSA team will have to be to argue the case that enough has changed in the management of this fishery, to warrant a lifting of the current suspension. The deadline for this is April 30<sup>th</sup>. If the terms of the suspension cannot be met by this date, the current intent is that all fisheries will have to withdraw just as per the terms of the original suspension. (*This inserted from the CAB acceptance letter of the revised corrective action plan, July 10<sup>th</sup>, 2014*).

Should the suspension be lifted, the scoring of 3.1.1 was agreed to follow the discussions outlined above and the current P3 expert opinion is that it should meet the SG 60 levels, but not SG 80.

For P1, the team noted that they were still in disagreement on how 1.2.1 should score. Further discussions will have to be had, and MSC are happy to facilitate another call on this should it be needed and provide support in terms of CR interpretations as usual.

## **2. Outcome of harmonisation meeting on scoring P1 for ASH (as well as other issues), 23 October 2015.**

**From:** Robert Lefebure <[robert.lefebure@msc.org](mailto:robert.lefebure@msc.org)>

**Subject:** ASH, MINSA and BW harmonisation call

**Date:** 5 November 2015 15:15:16 GMT

**To:** Jo Gascoigne <[j.gascoigne@orange.fr](mailto:j.gascoigne@orange.fr)>, "[Anna.Kiseleva@dnvgl.com](mailto:Anna.Kiseleva@dnvgl.com)" <[Anna.Kiseleva@dnvgl.com](mailto:Anna.Kiseleva@dnvgl.com)>, Kat Collinson <[kat.collinson@macalister-elliott.com](mailto:kat.collinson@macalister-elliott.com)>, Billy Hynes <[billy.hynes@acoura.com](mailto:billy.hynes@acoura.com)>, "John & Angela Nichols ([nichols@blundeston.org.uk](mailto:nichols@blundeston.org.uk))" <[nichols@blundeston.org.uk](mailto:nichols@blundeston.org.uk)>, "[matthew.d.cieri@gmail.com](mailto:matthew.d.cieri@gmail.com)" <[matthew.d.cieri@gmail.com](mailto:matthew.d.cieri@gmail.com)>, Gavin Fitzgerald <[gavin.fitzgerald@me-cert.com](mailto:gavin.fitzgerald@me-cert.com)>, Sophie Des Clers <[sdesclers@gmail.com](mailto:sdesclers@gmail.com)>, "Andy Hough (Associate) ([andy@houghassociates.co.uk](mailto:andy@houghassociates.co.uk))" <[andy@houghassociates.co.uk](mailto:andy@houghassociates.co.uk)>

**Cc:** Dan Hoggarth <[Dan.Hoggarth@msc.org](mailto:Dan.Hoggarth@msc.org)>

Dear All

Apologies for the delay in sending this update.

Thanks everyone again for your participation on the call the 23rd October. I wanted to send a brief summary of the harmonisation call we had. These are not minutes, but just a summary of the key outcomes for our records.

If there is anything you want to add or amend here, please let me know and I would be happy to incorporate those edits.

The following key outcomes are what I captured as agreed in the meeting, noting that the outcomes for AS herring are dependent on final discussions within the MEC team.

### **1) Scoring of P1, 1.1.1 for AS herring - Involves MEC, DNV and Acoura**

All agreed that AS herring should meet all scoring issues at the SG 80 level for 1.1.1. The latest ICES advice provides confidence that F is now sufficiently low for the SG 80 level to be regarded as met. Also noted was the fact that the herring stock status fluctuates over long time scales dependent largely on recruitment.

### **2) Scoring of P1, 1.2.2 for AS herring – Same CABs as above.**

There was a discrepancy in scores for 1.2.2 between the DNV and MEC teams. The former scored this at 75, thereby triggering a condition. The rationale presented by the DNV team argued that all scoring issues are met, except scoring issue C, where presently there is not enough rationale to satisfy the requirement that there is available evidence to confirm that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. This is based on the fact that since 2013 there has been a lack of agreement within the Coastal States on an equitable share of the ICES advised catch. The situation has further deteriorated for the current fishery in 2015 where there has been no agreement on sharing the advised TAC level between the coastal states. All participating countries have declared their intention to set autonomous quotas. Since 2013 the ad hoc arrangement for sharing the advised TAC, through the Coastal States agreement, has

therefore not functioned. This has resulted in the sums of the declared quotas of participating countries exceeding the advised TAC. This situation is further expected to continue in 2015.

Although further discussions will have to be had within the MEC team, a provisional agreement was here reached that MEC would align with this rationale and score their fishery at 75 as well and adopt the same condition as DNV. It was noted that the individual milestones and client action plans could be different here (as allowed by the standard), but since this is a condition that affects all equally, MEC indicated that they would likely have similar milestones as the DNV fishery

### 3) **Scoring of P3, 3.1.1 for BW and AS herring** - Involves MEC and DNV

DNV raised the question on whether scoring issue b) at the SG 80 level should be considered to be met, which the current MINSA P3 scoring does not (as circulated to participants ahead of meeting). The question revolved around whether the dispute resolution mechanisms in place between CS should be expected to resolve legal disputes, since the CS agreements themselves are not legally binding.

MSC provided the following clarifications around this clause, both in this meeting, but also in previous harmonisation discussions with P3 experts for all these fisheries:

Although the scoring issue text refers to legal disputes, the accompanying clauses to this PI clarify that the term 'legal' should be viewed in the broader sense.

CB4.2.1 The team should focus scoring on whether or not there is an appropriate and effective legal **and/or customary framework** that is capable of delivering sustainable fisheries in accordance with P1 and P 2.

CBA4.2.1.2 For a fishery subject to international cooperation for management of the stock (e.g.: shared, straddling, HMS, high seas non-HMS) this means the existence of:

- a. national and international laws, arrangements, agreements and policies governing the actions of the authorities and actors involved in managing the fishery, and
  - b. a framework for cooperation with other territories, sub-regional or regional fisheries management organizations or,
  - c. other bilateral/multilateral arrangements, that create the cooperation required to deliver sustainable management under the obligations of UNCLOS Articles 63(2), 64, 118, 119, and UNFSA Article 8.

In addition, MSC provided additional interpretation to the guidance clause "*GCB.4.2.4 Issues and disputes involving allocation of quotas and access to marine resources are outside the scope of an assessment against MSC's Principles and Criteria*".

MSC recognizes that this clause seems to contradict the difficulties that these fisheries are now experiencing and it was never the intent of the clause in the first place.

The following suggested amendment to this statement has therefore been given by the MSC: '*Issues and disputes involving allocation of quota and access to marine resources are outside the scope of an assessment against the MSC fisheries standard, **except in cases where it is evident that these disputes are compromising the management of the***

***fishery so that it is no longer able to deliver management outcomes consistent with MSC Principles 1 and 2.'***

By this we mean that an MSC audit should still not encompass, e.g., an evaluation of the fairness of a quota sharing mechanism between states, as long as it is working and does not undermine the sustainability of the fishery. But if it is not working and sustainability is compromised, as in this case, it should be audited, which has here resulted in conditions on both HCRs and 3.1.1.

It was further clarified amongst participants here but also in previous discussions, that an operative word here in both scoring issue a and b, is 'effective'. Meaning that for most of these fisheries, there are perhaps mechanisms in place on both a national and international level that should be able to deal with dispute resolution, but these have not been proven to be effective in these cases. Following on from this, and NS herring was mentioned as an example, this fishery is subject to the same CS agreements, but in this case, they are working and are therefore effective. A harmonized condition would therefore not apply to any other fisheries, unless the situation changes for them so that existing mechanisms are proven to be ineffective.

Recognising these interpretations, DNV agreed that the conditions as drafted for MINSA on 3.1.1. should be adopted by the FPO fisheries.

Further, all CABs agreed that the MINSA condition on P3 should be adopted for all the fisheries mentioned above, i.e. all Mackerel, all AS herring and all Blue whiting.

I hope this captures what we discussed, but please let us know if any questions.  
Best regards and thanks again for all your work on this

Robert