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MSC SUSTAINABLE FISHERIES CERTIFICATION

SPFPO Swedish North Sea Herring Fishery



Final Report

May 2013

Prepared For: **Swedish Pelagic Federation Producers Organisation (SPFPO)**

Prepared By: **Food Certification International Ltd**



Final Report

May 2013

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Contents

Glossary.....	iv
1. Executive Summary.....	6
2. Authorship and Peer Reviewers.....	8
2.1 Assessment Team.....	8
2.1.1 Peer Reviewers.....	9
2.1.2 RBF Training.....	9
3. Description of the Fishery.....	10
3.1 Unit(s) of Certification and scope of certification sought.....	10
3.2 Overview of the fishery.....	11
3.2.1 Fishery Ownership & Organisational Structure.....	11
3.2.2 Target Species.....	12
3.2.3 Fishing Practices.....	13
3.2.4 Administrative Framework.....	15
3.3 Principle One: Target Species Background.....	16
3.3.1 Stock assessment methods and inputs.....	16
3.3.2 Current Stock status and reference points:.....	19
3.3.3 History of fishing and management.....	21
3.4 Principle Two: Ecosystem Background.....	25
3.4.1 Retained bycatch.....	25
3.4.2 Discarded bycatch.....	25
3.4.3 Endangered, threatened or protected species (ETP).....	26
3.4.4 Habitat.....	27
3.4.5 Ecosystem impacts.....	27
3.5 Principle Three: Management System Background.....	29
3.5.1 Governance & Policy.....	29
3.5.2 Management Objectives.....	32
4. Evaluation Procedure.....	34
4.1 Harmonised Fishery Assessment.....	34
4.1.1 Harmonisation Details.....	34
4.2 Previous assessments.....	35
4.2.1 Re-assessment with outstanding conditions.....	35
4.3 Assessment Methodologies.....	36
4.3.1 Assessment Tree.....	36
4.4 Evaluation Processes and Techniques.....	36
4.4.1 Site Visits.....	36
4.4.2 Consultations.....	37
4.4.3 Evaluation Techniques.....	38

5. Traceability	40
5.1 Eligibility Date	40
5.2 Traceability within the Fishery	40
5.2.1 Evaluation of Risk of Vessels Fishing Outside of UoC.....	40
5.2.2 Risk of Substitution of Mixing Certified / Non-Certified Catch	40
5.2.3 At-Sea Processing.....	41
5.2.4 Trans-shipment.....	41
5.3 Eligibility to Enter Further Chains of Custody	41
5.3.1 Eligible points of landing.....	41
5.3.2 Parties eligible to use the fishery certificate.....	41
6. Evaluation Results	42
6.1 Principle Level Scores.....	42
6.2 Summary of Scores	42
6.3 Summary of Conditions.....	43
6.3.1 Recommendations	43
6.4 Determination, Formal Conclusion and Agreement	44
7. References.....	45
Appendix 1. Scoring and Rationale.....	47
Appendix 1a – MSC Principles & Criteria	47
Appendix 1.1 Performance Indicator Scores and Rationale	50
Appendix 1.2 Risk Based Framework (RBF)	115
Appendix 1.3 Conditions.....	116
Condition 1.....	116
Appendix 2. Peer Review Reports	117
Peer Reviewer 1	117
Peer Reviewer 2	134
Appendix 3. Stakeholder submissions	159
Appendix 3.1 Amendments made to the PCDR following stakeholder consultation	159
MSC	159
Appendix 4. Surveillance Frequency	161
Appendix 4.1 Rationale for determining surveillance score.....	161

Glossary

ASCOBANS	(Bonn Convention's) Agreement on the Conservation of Small Cetaceans in the Atlanto-Scandian and Baltic.
ACOM	ICES Advisory Committee
ACFA	ICES Advisory Committee on Fisheries and Aquaculture
B_{pa}	Precautionary reference point for spawning stock biomass
B_{lim}	Limit biomass reference point, below which recruitment is expected to be impaired.
ASCOBANS	(Bonn Convention's) Agreement on the Conservation of Small Cetaceans in the Atlanto-Scandian and Baltic.
CFCA	EU Community Fisheries Control Agency
CFP	EU Common Fisheries Policy
CR	Council Regulation
EC	European Commission
EEZ	Exclusive Economic Zone
EFF	European Fisheries Fund
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing Mortality
F_{lim}	Limit reference point for fishing mortality that is expected to drive the stock to the biomass limit
F_{pa}	Precautionary reference point of fishing mortality expected to maintain the SSB at the precautionary reference point
FAM	MSC's Fisheries Assessment Methodology
FAO	United Nations Food and Agriculture Organisation
GRT	Gross Registered Tonnage
HAWG	ICES Herring Assessment Working Group
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
ITQ	Individual Transferable Quota
IUU	Illegal, unreported and unregulated fishing
LOA	Length Over All
LTMP	Long term Management Plan
MBAL	Minimum Biological Acceptable Levels
MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield

NEAFC	The North East Atlantic Fisheries Commission
NEA	North East Atlantic
NGO	Non-Governmental Organisation
OSPAR	Oslo-Paris Convention (Convention for the Protection of the Marine Environment of the North-East Atlantic)
P1	MSC Principle 1
P2	MSC Principle 2
P3	MSC Principle 3
PI	MSC Performance Indicator
PO	Producer Organisation
RAC	Regional Advisory Council
RSW	Refrigerated Sea Water
SAWG	ICES Stock Assessment Working Group
SI	Scoring Issue (MSC)
SLU	Swedish University of Agricultural Sciences
SONAR	Sound navigation and ranging
SSB	Spawning Stock Biomass
SPFPO	Swedish Pelagic Federation Producers Organisation
STECF	Scientific, Technical and Economic Committee for Fisheries
SwAm	Swedish Agent for Marine and Water Management
TAC	Total Allowable Catch
UoC	Unit of Certification
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System
VPA	Virtual Population Analysis
WWF	World Wide Fund For Nature
WGECO	ICES Working Group on the ecosystem effects of Fishing Activities
WGRED	ICES Working Group on Ecosystem Description
WGWIDE	ICES Working Group on Widely Distributed Stocks
WKPELA	ICES Benchmark Workshop on Pelagic Stocks

1. Executive Summary

- » This report provides details of the MSC assessment process for the **Swedish Pelagic Federation Producers Organisation (SPFPO) North Sea herring fishery**. The assessment covers 2 Units of Certification – namely pelagic trawl and purse seine. The assessment process began in 3 May 2012 and was concluded at a date to be determined with the Target Eligibility Date for this assessment is 15 June, 2013.
- » A comprehensive programme of stakeholder consultations were carried out as part of this assessment, complemented by a full and thorough review of relevant literature and data sources.
- » A rigorous assessment of the wide ranging MSC Principles and Criteria was undertaken by the assessment team and a detailed and fully referenced scoring rationale is provided in the assessment tree provided in **Appendix 1.1** of this report.
- » The assessment team for this fishery assessment comprised of Tristan Southall, who acted as team leader and primary Principle 3 specialist; Andres Uriarte who was primarily responsible for evaluation of Principle 1 and Massimiliano Cardinale who was primarily responsible for evaluation of Principle 2 and Paul Macintyre was responsible for traceability / chain of custody considerations.

Determination

- » On completion of the assessment and scoring process, the assessment team concluded that **the SPFPO North Sea Herring fishery (Pelagic Trawl and Purse Seine UoCs) should be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries.**

Rationale: Client strengths

- » The North Sea herring stock is well managed with a precautionary long term management plan in place, which uses appropriate reference points to manage the exploitation rate in the fishery against clear objectives. The conclusions in relation to stock status are drawn from a sound information base which is used to carry out a robust and regular stock assessment.
- » Pelagic fisheries for herring do not make contact with the seabed – thus reducing any likelihood of negative impact on seabed habitats.
- » Given the shoaling nature of herring, the dense aggregations of herring that occur at the time of fishery and the technologically advanced fish finding equipment, vessels are able to confidently fish on 'good marks', which greatly increase the likelihood of getting clean hauls with no species mixing.
- » The vessels covered in this assessment do not have any on board sorting equipment so highgrading and discarding is not possible – unless the haul is 'slipped' (i.e. the cod end untied before the fish are pumped ashore). Slippage could be triggered by a catch of undersize fish or by the wrong species mix. The report describes a rationale why slippage is thought to be low – a conclusion supported by expert consultation, including evidence from observer coverage.
- » In the past there has been a good level of observer coverage seeking to quantify the level of interaction with endangered, threatened or protected species. This has shown a negligible level of impact, therefore the fishery is now considered low risk.
- » The fisheries management process and infrastructure are appropriate to the fishery and are able to govern the level of fisheries exploitation in an informed and transparent manner,

employing clearly defined decision-making process, which take account of the precautionary principle.

- » There is an excellent level of enforcement and control in this fishery, and a high level of confidence on the part of the authorities in the degree of compliance of the fleet with the fisheries regulations.

Rationale: Client weaknesses

- » Overall, relatively few weaknesses have been identified in the fishery assessment and scores are generally reasonably high and weaknesses identified at the time of the previous certification have largely been addressed.
- » The principle weaknesses identified in the fishery during the current assessment relate to the international management decisions and justification of decisions over the exploitation of the fishery. These weaknesses are not the same as those identified during the original certification. It is recognized that these are beyond the immediate control of the client. None the less, as these weaknesses meant that certain performance indicators in principle 1 were not met at SG 80, the proper application of the MSC methodology requires that these trigger conditions.

Conditions & Recommendations

- » In total, just 1 performance indicator which contributes to the overall assessment score scored less than the unconditional pass mark (SG 80), and therefore triggered a binding condition to be placed on the fishery, which must be addressed in a specified timeframe (within the 5 year lifespan of the certificate). Full explanation of this condition is provided in **Appendix 1.3** of the report, but in brief, the areas covered by the condition is:
 - » It must be demonstrated that there are well defined and effective harvest control rules in place. Although there is an agreed harvest control rule in place, contained within the long term management plan, and this has been the basis for management decision making, there are some parameters of the rule which have not been applied as intended. Specifically a restriction of 15% on inter-annual variation was introduced, but this has not been applied at times of rapidly increasing stock biomass.
 - » In addition, the assessment team made a number of recommendations. As these are not the result of a failure to meet the unconditional pass mark, they are non-binding; however in the opinion of the assessment team, they would make a positive contribution to ongoing efforts to ensure the long term sustainability of the fishery. Details of these recommendations are provided in **Section 6.3.1** of this report.

For interested readers, the report also provides background to the target species and fishery covered by the assessment, the wider impacts of the fishery and the management regime, supported by full details of the assessment team, a full list of references used and details of the stakeholder consultation process.

FCI Ltd confirms that this fishery is within scope.

2. Authorship and Peer Reviewers

2.1 Assessment Team

Assessment team leader: Tristan Southall

Primarily responsible for assessment under Principle 3

Tristan Southall is an experienced fisheries assessor who has worked as both principles 2 and 3 expert on a number of previous MSC assessments, including the Scottish Pelagic assessments for both herring and mackerel. More recently Tristan led the IPSP Mackerel Assessment and has also been involved in the development and trialling of a new MSC assessment methodology, based on risk analysis, for use in data deficient situations.

When not assessing the sustainability of fisheries Tristan specialises in fishing and marine industry consultancy, combining detailed understanding of marine ecosystems with broad experience of fishing and aquaculture industry systems, infrastructure and management. This provides him with an informed position which balances the needs of marine ecosystems, biodiversity and wider environment with the practicalities of the industry operation. Bridging these two important areas enables sustainably-minded consultancy, able to interpret and advise upon the impacts of different management decisions on both marine ecosystems and economics.

Tristan's professional experience also includes the evaluation of fisheries on sub-sea environments, analysis of fishery and fleet performance, and a wide range of fisheries and aquaculture planning and management studies, all of which seek to combine both socio-economic and environmental perspectives. Tristan has recently coordinated EU fisheries training and promotion activities – covering all aspects of sustainable fisheries management and control.

Expert team member: Andres Uriarte

Primarily responsible for assessment under Principle 1

Mr Andrés Uriarte Seminario is senior scientist specialist in the study of pelagic fish resources and their fisheries working at AZTI-Tecnalia Foundation (Marine Research Division) located at the Basque Country (Spain). Since 1987 he has been responsible of the scientific monitoring of pelagic fisheries of the Basque Country and has collaborated in the assessment and international advice for the management of European pelagic Fisheries, as member of the ICES working group on the assessment of mackerel, horse mackerel, sardine and anchovy until 2007, where he had been the stock coordinator for the assessment of anchovy. He has experience in leading different Expert working groups and currently is leading the ICES Working Group on Southern Horse Mackerel, Anchovy and Sardine (WGANSAS). He has also collaborated as expert with the STECF of the EC in the elaboration of advice for the anchovy fishery. During its career he has produced scientific contributions related with the biology of these pelagic species, in particular mackerel, sardine and anchovy and he has participated in several ICES Study groups meetings on ecology and biology of pelagic species (as the SGPRIM, SGSBA, SGRESP etc.). In addition he has been closely involved in the developing of the implementation of the Daily Egg Production Method (DEPM) to the Bay of Biscay anchovy since 1987 and with projects related to the direct monitoring of pelagic fishery resources by surveys, leading between 2008 and 2010 the ICES Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VIII and IX (WGACEGG). IN addition he has participated in several international projects about direct (by surveys) and indirect assessment methods for small pelagics, such as: DEPM application on anchovy (DG XIV Contract No. MA-1-151, 96/ 034, 99/011, 00 / 013), Improvements in direct surveys (DG XIV Contracts MA-2.495 EF, 99/010 (PELASSES), surveys on juveniles-JUVESU- FAIR CT97/ 3374), Implementation of GAMs (99/080), Sardine dynamics and stock structure in the Northeast Atlantic SARDYN (2002-2005 Contract Q5RS-2002-000818), Fisheries independent survey based operational assessment tools FISBOAT 2004-2006 Contract n°50257, Tagging of mackerel (DG XIV Contract No. 96 / 035) and about discards (PEM/93/05), etc.

Expert team member: Massimiliano Cardinale

Primarily responsible for assessment under Principle 2

Dr Cardinale has excellent experience in marine fisheries stock assessment and management, with more than 15 years of professional experience in fisheries ecology and more than 10 years in the field of management of

fisheries at national, regional and global levels. Particularly significant is his 15 years' experience at the Swedish National Board of Fisheries and Swedish University of Agricultural Sciences in charge for the assessment of the most important stocks of the North and Baltic Sea. His activities include modelling, statistical analysis, stock assessment and advice. Also significant is his several years' experience in Asia and in Africa under different SIDA projects. He is currently a nominated member of ACOM (under ICES) and STECF (under DG-MARE at EU commission) committees for fisheries and marine resource management since 2002. He has participated in more than 40 different working groups under ICES and more than 20 under DG MARE. He has been chairman of more than 10 different working groups under ICES and DG MARE umbrella, particularly SGMED, which is responsible since 2008 for stock assessment of Mediterranean stocks. In 2011, he has been invited as reviewer at the STAR panel of the Joint US-Canada Technical Review Panel for the Pacific Hake/Whiting Stock Assessment by the Centre for Independent Expert (CIE). Dr Cardinale has been recently nominated official member of the Editorial Board of the International Journal of Applied Ichthyology and ISRN Oceanography. He has produced more than 70 publications in international journals and more than 50 working reports, presented more than 30 lectures and has more than 100 hours of academic activity in different universities.

Expert advisor: Paul Macintyre

MSC Chain of Custody and Traceability specialist / Lead Auditor

15 years of management experience within the aquaculture and fish processing sectors. 20 years' experience auditing ISO, HACCP, BRC, GlobalGAP, organic and conventional farming operations within the aquaculture production and fish processing sectors and including MSC Chain of Custody since 2005. ISO 9001 Lead Auditor (QMI 1991); Registered Organic Inspector (DEFRA); Diploma in Advanced Food Hygiene (Queen Margaret University Edinburgh); BRC v5 Food Manufacturing Auditor BRC (London and Manchester); GlobalGAP IFA Trainer (GlobalGAP Cologne); RYA Yachtmaster Offshore (RYA Southport); Diploma Photography (Photography Institute)

2.1.1 Peer Reviewers

Peer reviewers used for this report were John Nichols and Stephen Lockwood. A summary CV for each is available in the **Assessment downloads** section of the fishery's entry on the MSC website.

2.1.2 RBF Training

RBF will not be used for this fishery assessment.

3. Description of the Fishery

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

Food Certification International Ltd confirms that the fishery is within scope of the MSC certification sought for the assessment as defined.

Prior to providing a description of the fishery it is important to be clear about the precise extent of potential certification. The MSC Guidelines to Certifiers specify that the unit of certification is **“The fishery or fish stock (biologically distinct unit) combined with the fishing method / gear and practice (= vessel(s) and / or individuals pursuing the fish of that stock)”**.

This clear definition is useful for both clients and assessors to categorically state what was included in the assessment, and what was not. This is also crucial for any repeat assessment visits, or if any additional vessels are wishing to join the certificate at a later date. The unit of certification for the fishery under consideration is as set out below.

The fishery assessed for MSC certification is defined as:

Table 3.1: Unit of Certification

UoC1

Species:	Herring (<i>Clupea harengus</i>)
Stock:	Autumn spawning North Sea herring
Geographical area:	North Sea and Eastern Channel in ICES divisions Iva, IVb, IVc, VIId
Harvest method:	Purse seine w/bunt-end mesh size 32mm
Client Group:	Swedish Pelagic Federation Producers Organisation (SPFPO) vessels fishing for North Sea herring in ICES Divisions Iva, IVb, IVc, VIId using Purse seine gear w/cod-end mesh size 32mm
Other Eligible Fishers:	Swedish registered vessels fishing for North Sea herring in ICES Divisions Iva, IVb, IVc, VIId using Purse seine gear w/cod-end mesh size 32mm that are not currently members of the client group (Swedish Pelagic Federation Producers Organisation (SPFPO)).

UoC2

Species:	Herring (<i>Clupea harengus</i>)
Stock:	Autumn spawning North Sea herring
Geographical area:	North Sea and Eastern Channel in ICES divisions Iva, IVb, IVc, VIId
Harvest method:	Pelagic trawl gear w/cod-end mesh size 32mm
Client Group:	Swedish Pelagic Federation Producers Organisation (SPFPO) vessels fishing for North Sea herring in ICES Divisions Iva, IVb, IVc, VIId using Pelagic trawl gear w/cod-end mesh size 32mm
Other Eligible Fishers:	Swedish registered vessels fishing for North Sea herring in ICES Divisions Iva, IVb, IVc, VIId using Pelagic trawl gear w/cod-end mesh size 32mm that are not currently members of the client group (Swedish Pelagic Federation Producers Organisation (SPFPO)).

Please note that whilst the Unit of Certification details the full extent of what is being assessed, it is the full and complete Public Certification Report that precisely defines the exact nature of certification for this fishery. This Unit of Certification was used as it is compliant with client wishes for assessment coverage and in full conformity with MSC criteria for setting the Unit of Certification.

3.2 Overview of the fishery

3.2.1 Fishery Ownership & Organisational Structure

The client for this fishery is the newly formed **Swedish Pelagic Federation Producers Organisation (SPFPO)**. The constituent members SPFPO include all the member vessels of 2 *previously MSC certified client groups*; namely Astrid Fiske and the Swedish Pelagic Producers Organisation (SPPO).

Astrid Fiske AB is a Swedish fishing company based at Rönnäng, West Goetaland which owns and operates the two refrigerated seawater (RSW) pelagic fishing vessels GG 764 Astrid and GG 64 Astrid Marie (www.astridfiskexport.se). Whilst the vessels operate from Rönnäng in Sweden, they typically land their North Sea maatjes herring catches directly to the processing plant of Werner Larsson Fish Export A/S in Skagen, Denmark. The Astrid Fiske purse seine fishery for North Sea maatjes herring was first certified on the 9th June 2008. The assessment therefore serves as the recertification for this fishery.

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. The SPPO pelagic trawl North Sea herring fishery was first certified on the 20th May 2010.

The new client grouping (SPFPO) merges these 2 client groups and previously certified fisheries. As a result there will be 2 Units of Certification for this assessment. The SPFPO will represent all member vessels in on-going discussions on regulatory changes such as changes to the Fisheries Act and Common Fisheries Policy – including through representation to the Pelagic Regional Advisory Council. Work is conducted on behalf of members in cooperation with the pelagic Committee of the Swedish Fishermen's Federation, whilst at the same time working continuously with other issues affecting the pelagic fisheries.

In October 2012 the MSC accepted the proposal of the combining of 2 previously certified fisheries into a single assessment, noting the rational of:

- » bringing all Swedish registered vessels seeking MSC certification fishing for the North Sea herring stock under a single certificate.
- » Existing cross over between vessels on the previous certificates – for example the Astrid Fiske vessels were covered on the SPPO certificate when using pelagic trawl gear.
- » Increased simplicity of certificate administration and reduced on-going costs and providing a clearer, more streamlined and transparent approach for all interested stakeholders and Chain of Custody clients.

Area Under Evaluation

For Principle 1: The whole North Sea autumn spawning herring fishery in ICES Sub-area IV and Division VIId. For Principles 2 and 3: The Swedish North Sea herring fishery by vessels of the SPFPO purse seine and pelagic trawl fleet occurring in ICES Divisions IVa, IVb of the North Sea (see adjacent figure showing main ICES divisions). For principle 3 the main jurisdiction falls within Sweden, although the majority of management measures are applied at an EU levels, and enforcement controls include both the national jurisdiction of the fishing grounds (in this case typically within UK EEZ) and the port of landing (typically Denmark).



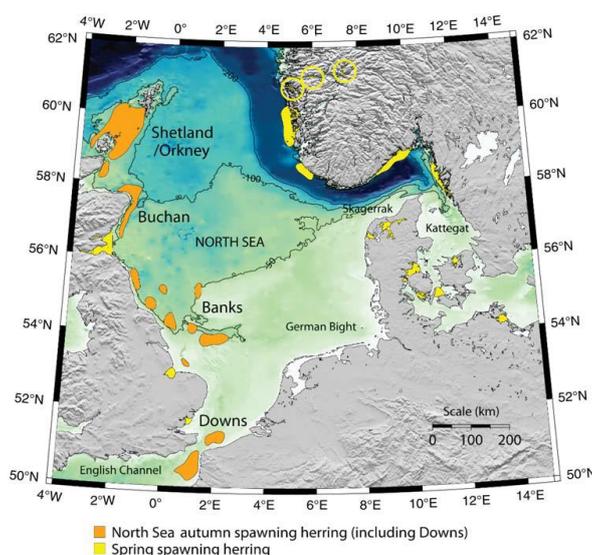
3.2.2 Target Species

The target species for the fishery under certification North Sea herring (*Clupea harengus*). As this report is not intended to provide a scientifically comprehensive description of the species, interested readers should refer to sources referenced in the text that have been useful in compiling the following summary. Herring is a species of the Clupeidae family of pelagic fishes which includes sprats, pilchards and anchovies. The lifespan of the North Sea herring is 17 – 20 years (38 – 39 cm length, with a maximum length around 45 cm). It usually matures between the ages of 2 and 3 years, although this has changed over time (3 – 5 years from 1950 to the 1960s) (Dickey-Collas, 2010).

North Sea herring comprise both spring and autumn spawning groups but the major fisheries are carried out on the offshore autumn spawning fish. The spring spawners are found mainly as small discrete coastal groups in areas such as The Wash and the Thames estuary (Figure 3.1). The North Sea autumn-spawning herring stock is distributed in ICES area IV, Division IIIa and VIId and consists of four major spawning components (Shetland/Orkney, Buchan, Banks, and Downs; Figure 3.1) characterized by different growth rates, migration routes, and recruitment patterns (Dickey-Collas *et al.* 2010). Within these groups, different spawning grounds might be used. Although the different components mix during part of the year, they experience different fishing pressures, because they are separate at other times. Some mixing with other stocks occurs, as in Division IIIa (with western Baltic spring-spawning herring) (WKPELA- ICES. 2012a).

The Atlantic herring is a synchronous determinate batch spawner. Fecundity-at-length for different spawning components has not changed significantly over time. Spawning of the main North Sea herring population begins in the northern part of the North Sea in September and then progresses southwards with time, ceasing in January in the eastern English Channel. Atlantic herring spawn benthic eggs that adhere to the substratum or to each other. In the North Sea, herring use gravel beds that are generally at depths of 20 – 40 m. Their spawning and nursery areas, being near the coasts, are particularly sensitive and vulnerable to anthropogenic influences (Röckmann *et al.*, 2011). The most serious of these is the ever increasing pressure for marine sand and gravel extraction and the development of wind farms. After hatching, larvae drift takes place in an easterly direction, which is in broad agreement with prevailing winds and flows.

Figure 3.1 - Spawning grounds of autumn- and spring-spawning herring in the North Sea and adjacent waters. Circles denote locations of spring-spawning herring in fjords. Although spawning in winter, Downs herring are considered an integral part of the autumn-spawning stock. Depth contours are illustrated for 50, 100, and 200 m



Source: from Dickey-Collas *et al.* 2010

The nursery grounds for the metamorphosed juvenile group fish are mostly in the southern and eastern North Sea (German Bight and Skagerrak). The juveniles appear to remain in these generally mixed waters (and to a lesser degree in other coastal areas) until they are 2 years old. Recruiting to the adult population is probably size and maturity dependent. The herring join the feeding adult population through active migration.

Nash and Dickey-Collas (2005) and Payne *et al.* (2009) demonstrated that events during the overwintering phase of the larvae (before metamorphosis; between the early and late stages: 10–30 mm) determine year-class strength. Recruitment, as measured in stock assessment, is a summation of the survivors of many spawning events across the North Sea. Although many hypotheses on environmental drivers have been proposed, there is as yet no explanation for the events that resulted in the recruitment failures in either the mid-1970s or the 2000s. Variability in advection from the spawning grounds to the nursery grounds (in the Eastern regions of the North sea) has long been thought to be a crucial factor (Munk and Christensen, 1990), but unequivocal support for this hypothesis has not been forthcoming (Dickey-Collas *et al.*, 2009). Excessive removal of juveniles by industrial fisheries is thought to have impaired recruitment during the 1970s (Simmonds, 2007), but this cannot have been a problem during the recent recruitment failure, because fishing mortality on juveniles was much lower.

North Sea herring has recently produced seven poor year-classes in a row (2002–2007), something that had never before been observed when SSB was above the B_{lim} (800 000t). The poor recruitment is attributed to reduced survival during the larval stage (Payne *et al.*, 2009). The productivity of the stock (in terms of recruits-per-spawner and larval survival) in the most recent years remains low. Environmental variability is hypothesized to underlie these changes (for instance NAO -North Atlantic Oscillation- and the AMO -Atlantic Multidecadal Oscillation- were shown to correlate to herring productivity by Gröger *et al.*, - 2010), but a mechanistic understanding remains elusive.

Herring is an important pelagic species in the North Sea and is thus considered to have a significant impact as prey and predator to most other fish stocks in that area (Dickey-Collas *et al.*, 2010). They feed on copepods, krill and small fish, while their natural predators are seals, whales, cod and other larger fish. As plankton feeders they form an important part of the food chain up to the higher trophic levels. Both as juveniles and as adults they are an important source of food for some demersal fish, birds and for sea mammals (see review by Dickey-Collas *et al.*, 2010). Over the past century the top predator, man, has exerted the greatest influence on the abundance and distribution of herring in the North Sea. Spawning-stock biomass has fluctuated from estimated highs of around 4.5 million tonnes in the late 1940s to lows of less than 100 000 tonnes in the late 1970s (Simmonds, 2007).

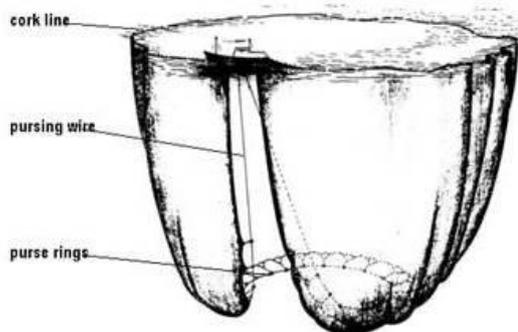
3.2.3 Fishing Practices

The fleet included within the scope of this certification is the Swedish pelagic Refrigerated Seawater (RSW) pelagic fleet – including both those fishing with purse seines (UoC 1) and those fishing with mid water trawl (single and pair) (UoC 2). These are illustrated in figure 3.2 and a list of vessels is provided in table 3.2. Fleet details and current vessel numbers are provided in the table below. All vessels, regardless of UoC 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 both methods of fishing.

UoC 1 – Purse Seine

Purse seine nets are used by some vessels in the client group, in particular for the early season maatjes fishery, harvesting fish in the months of May, June and July. In the maatjes herring fishery the vessels work trips of 1-7 days, returning to port 1-2 days after their first catch of herring.

Figure 3.2 - Schematic showing operation of a pelagic purse seine & a typical Swedish pelagic purse seining vessel



Source: Client (photo) and FAO Gear type factsheet

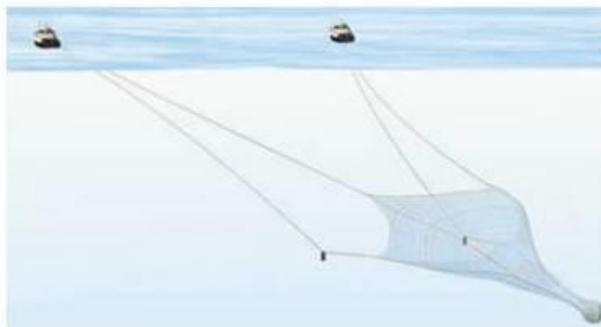
The purse seine technique involves the setting of a large net around a shoal of fish, closing the bottom of the net curtain to form a “purse”, and then drawing in the net to the vessel and so steadily reducing the overall size of the “purse”. The impounded fish continue to swim in the water mass enclosed by the net. At such time as the net is of sufficiently small a size as to be brought to the side of the vessel, a large pump is lowered into the net and fish are pumped aboard and into large tanks containing refrigerated seawater held at a temperature of around 0°C.

This technique is deployed in the North Sea herring fishery within the upper and mid-water column, with little or no interaction with the seabed. This technique is deployed from the sea surface, with the top float line remaining on the surface, and the curtain of the net falling quickly to a depth of some 80m before being pursed. In depths of water more than 80m, it is not possible for the gear to impact the seabed.

UoC 2: Pelagic Trawl

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 (see figure 3.3). The horizontal opening is maintained by either by mid-water pelagic trawl doors or by pair trawling whilst the vertical opening is maintained by a weighted groundline and floats on the headline – although these are not always required – depending on the way the net is rigged.

Figure 3.3 - Schematic showing operation of a mid-water pelagic pair trawl & a typical Swedish pelagic trawl vessel



Source: (L) <http://www.sppo.se/> & (R) Galbraith & Rice 2004

The Swedish vessels in the client group typically fish as pairs, fishing in midwater, including in the surface water and is therefore the gear is not designed to come in contact with the seabed, and any inadvertent contact is extremely rare – and would risk causing expensive damage to the net. The large net (considerably larger than a demersal trawl net) consists of a cone shaped body, ending in a

codend with lateral wings extending forward from the opening. Large mesh in the wings herd the fish before tapering to finer meshes in the square, belly and eventually the cod end.

Larger mesh near the start of the net is designed to herd the target fish into the net whilst maintaining minimum drag, and further down the net mesh sections are designed to facilitate the escape of small fish and also pelagic invertebrates such as jellyfish which have the potential to be impacted by pelagic fisheries.

Table 3.2 - List of member vessels

Vessel Name	Vessel Registration (PLN)	Vessel Engine power (kW)	Vessel gross tonnage	Year Made	Vessel overall length (m)	Vessel overall breadth (m)	Pelagic fishing gear type
ASTRID	GG 764	2760	705	1997	42	10.5	Purse Seine/Trawl
ASTRID MARIE	GG 64	2480	599	2000	37.6	10	Purse Seine/Trawl
GINNETON	GG 203	2700	845	1998	49.9	11	Purse Seine/Trawl
BRISTOL	GG-229	1595	597	2001	44.2	10.1	Trawl
POLAR	GG-505	2400	710	1990	42.4	9.7	Purse Seine/Trawl
VINGASAND	GG-690	1066	236	1967	33.8	7.4	Trawl
CLIPPEPTON	GG-438	2030	764	1998	51.7	10.1	Trawl
CARMONA	GG-330	1600	514	2005	39.8	9	Trawl
RÖN	GG-683	660	211	1968	33.6	6.7	Trawl
VÄSTFJORD	GG-218	1387	422	1967	39.8	7.9	Trawl
VINGASKÄR	GG-500	490	247	1987	24.7	7.1	Trawl
LÖVÖN	GG-778	2000	816	2012	44	11	Trawl
SVANEN	GG-840	578	152	1988	23.9	6.1	Trawl

Source: Client

An up to date vessel list can be obtained by contacting FCI using the following details:

MSC Fisheries Department

Contact Email: fisheries@foodcertint.com

Contact Tel: +44(0)1463 223 039 (FCI main number)

Other Resource Attributes and Constraints

None

3.2.4 Administrative Framework

User Rights (Legal and Customary Framework)

There are no small scale, artisanal or indigenous fisheries affected by this fishery. The Swedish fishing industry has traditionally been open access. Over the years fisheries management and fleet policy have gradually reduced the opportunities for anyone wishing to fish, with restricted licences and restricted quotas now being a pre-requisite before fishing. Access to these has however been non-discriminatory and market economies have influenced the evolving shape of the industry. Although licences and quotas are now expensive, those in possession of licences and quota are most likely to be representatives of families that have fished the same waters for many generations, and have been able to take advantage of the opportunities to remain in the industry.

Aside from this, there are no groups given any special access to the fishery, nor is this needed or being called for.

3.3 Principle One: Target Species Background

Principle 1 of the Marine Stewardship Council standard states that:

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

Principle 1 covers all fishing activity on the entire North Sea herring stock - not just the fishery undergoing certification. However, the fishery under certification would be expected to meet all management requirements, such as providing appropriate data and complying with controls, therefore demonstrably not adding to problems even if the problems will not cause the certification to fail.

In the following section the key factors which are relevant to Principle 1 are outlined. Perhaps the primary source of information on this section are noted below, however a number of other sources are also referenced.

- » ICES. 2012b. Report of the Herring Assessment Working Group for the Area South of 62°N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp.
- » ICES 2012c: Herring in Subarea IV and Divisions IIIa and VIId (North Sea autumn spawners). ICES Advice 2012, Book 6 (Advice May 2012; Section 6.4.16).

3.3.1 Stock assessment methods and inputs

Assessment of the North Sea Autumn Spawning (NSAS) herring stock is carried out yearly by ICES and goes back up to 1947. The assessment method was reviewed in February 2012 (WKPELA – ICES2012a) and is nowadays based on a state–space assessment model (SAM) (www.stockassessment.org), embedded inside the FLR library. This modeling replaces the former assessment carried out by ICES with the ICA model (Statistical Integrated Catch-at-Age model with a separable period and a VPA part) which had been used since the mid-1990s. The listed main features of the SAM model of importance are:

- » SAM is a fully statistical model. All data are treated as observations and missing data are dealt appropriately.
- » SAM offers a fully statistical framework that can be used as the basis for model refinement and decision-making.
- » Uncertainties are generated for all estimated parameters.
- » SAM internally estimates the precision of each data source and uses this estimate to weight them appropriately in the optimized model.
- » SAM is a framework rather than a model– it is highly flexible with low number parameters and can readily be modified to the peculiarities of the given stock.
- » SAM is open source and cross platform software. As a result, customizations of the source-code to deal with issues are feasible

The ICES Herring Assessment Working Group meeting in March 2012 accepted the recommendations of the benchmark workshop on pelagic stocks (ICES, 2012a) for the assessment of North Sea herring in 2012.

WKPELA (ICES2012 a) also reviewed and change some of the inputs for the assessment, as described and explained in the assessment working group report (ICES, 2012b). Amongst the many improvements was the use of the whole time series of data back to 1947 (formerly starting in 1960). Another improvement of note was the integration of fundamental links between the North Sea

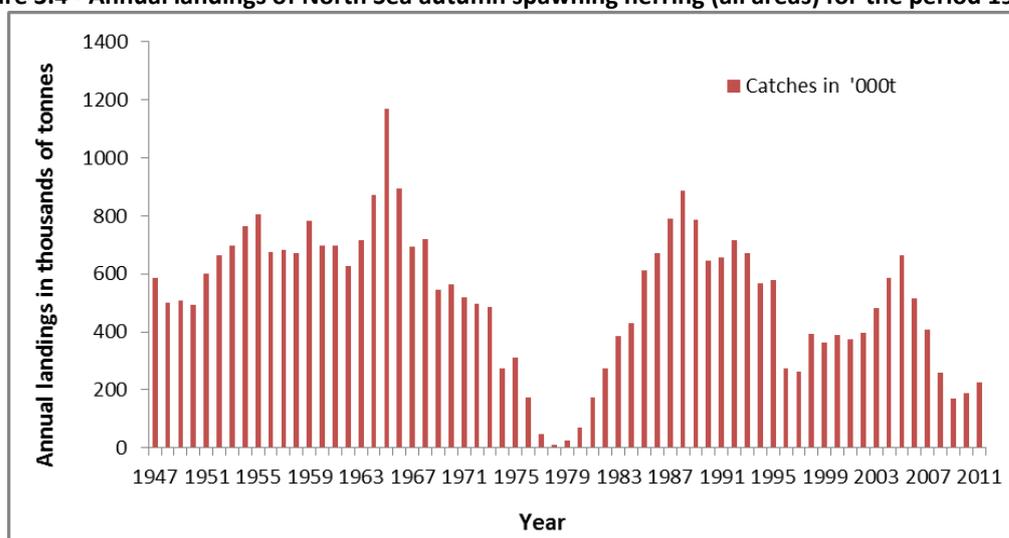
ecosystem and the stock dynamics of the autumn spawning herring. The assessment now includes variable estimates of natural mortality (M) at age derived directly from a multispecies stock assessment model, the SMS model, used in WGSAM (ICES, 2011b).

The Inputs for the assessment are the catches at age and the Fishery independent information obtained from Surveys:

Total Catch and catches at age: The total catch of North Sea autumn spawning herring in all areas for the period 1947 to 2010 is shown in Figure 3.4. To calculate the total catch of North Sea autumn spawners in all areas the ICES Herring Assessment Working Group have to apportion the Western Baltic spring spawners, taken in the North Sea and the North Sea autumn spawners taken in Division IIIa; which suppose small quantities in comparison with the catches of North Sea autumn spawners taken in the North Sea.

Catches at age are available since 1947. In general, roughly 45% of the total catch in numbers taken in the North Sea are 3-ringers (3 years old) or older. The precision of the catches at age was assessed in 2001 and considered to be high (ICES 2012a). The maturity ogive is updated annually from sampling during the acoustic surveys.

Figure 3.4 - Annual landings of North Sea autumn spawning herring (all areas) for the period 1947 to 2011



Data source: ICES, 2012b

The degree of mixing of herring from other stocks in the catches apportioned to the NSAS herring is low (as mentioned above). Procedures to assess the degree of mixing in the catches of the different stocks are based on otoliths analysis (ICES 2010). Misreporting and un-allocation¹ of catches is regarded as a minor issue in the North Sea herring fishery. Furthermore, there are indications that large-scale discarding is not widespread in the directed North Sea herring fishery and that the general level of discarding is believed to be low (HAWG 2012). Discard data have not been consistently available for the whole time-series and are only included in the assessment when reported. There is insufficient quantitative information on slippage² although it is not perceived to affect the estimate of both F and SSB for North Sea herring” (see further details in WKPELA and HAWG2012 reports (ICES 2012a and b).

¹ catches known by the scientists to have happened which are taken into account for the assessment in spite of not having been declared officially to the WG

² Discarding of the entire fishing haul by opening the nets before taking them on board, from which survival of fishes is presumed to be very low; a practice if happening of which very little information is usually obtained.

Fishery independent information from SURVEYS:

The NSAS stock has several survey indices available as inputs for validation and refinement of the assessment. During the benchmark process, an objective selection of survey datasets for inclusion in the stock assessment was performed. The retained ones were:

- » HERAS; The ICES Coordinated acoustic surveys for herring in the North Sea, Skagerrak and Kattegat gives an index of numbers-at-age for 1–9+-ringers, mean weights-at-age in the stock and proportions mature-at-age. This index has been used in assessments of NSAS since 1994 with the time-series data extending back to 1989. Over the years the survey has been extended to cover Division IIIa to include the overlapping western Baltic spring-spawning stock, the whole of VIa (North) and since 2008 the whole Malin Shelf (west of Scotland). By carrying out the coordinated survey at the same time from the Kattegat (entry to the Baltic Sea) to Donegal (Northwest of Ireland), all herring in these areas are covered simultaneously, reducing uncertainty due to area boundaries as well as providing input indices to three distinct stocks. The surveys are coordinated under the ICES Working Group for International Pelagic Surveys (WGIPS) and full technical details of the survey can be found in the latest WGIPS report.
- » The International bottom trawl survey in the first quarter of the year (IBTS-Q1), which covers the whole North Sea, was originally designed and provides an annual Recruitment index of 1-ringer herring in the North Sea (1st quarter). The index includes all 1-ringer herring, also those caught in Division IIIa. Indices are calculated as an area weighted mean over means by ICES statistical rectangle, and are available for year classes 1977 to recent. The Downs herring hatch in winter and thus appears as smaller sized fish in the 1st quarter IBTS, when compared to autumn hatched her-ring. A recruitment index of smaller sized 1-ringers is calculated using the standard procedure, but solely based on abundance estimates of herring <13 cm.
- » IBTS0 recruitment index of 0-ringer in the North Sea (1st quarter): The (IBTS-Q1) survey carries out at night-time additional sampling is using a fine-meshed 2 metre ring net (MIK - Methot (sic) Isaac Kidd- ring net) and from these catches the abundance of large herring larvae is estimated. These serve to calculate an index of autumn spawned herring in the North Sea and used as a proxy for recruitment strength. With regards to uncertainty, winter-hatched downs larvae are excluded before calculating the index.
- » International Herring Larvae Surveys in the North Sea (IHLS): Within the scope of ICES, a continuous research on the distribution and abundance of herring larvae in the North Sea has been undertaken since 1972. The results of these surveys are of value as relative indicators of the herring spawning stock. There are three larval indices available for NSAS: the LAI, the MLAI and the SCAI, but from them WKPELA retained the Spawning component Abundance Index (SCAI): This index was developed as a further approach to handle the problem of missing observations and sampling noise (Payne, 2010). It provides an age aggregated index of spawning biomass and also provides valuable information on the development of the spawning components in the North Sea. It is based on the abundance of early stage larvae (length<10-11mm) The surveys are carried out, over the spawning grounds, in September in the Orkney Shetland, Buchan and central North Sea areas and in December and the following January in the southern North Sea and eastern English Channel.

This is the use made of these indexes (Figure 3.5) in the last NSAS herring assessment (in 2012):

Figure 3.5 - Use of the available tuning indexes from surveys for the assessment of the North Sea Autumn Spawning Herring during 2012 ICES herring assessment working group (ICES 2012) regarding the ages being tuned by the index (with wr meaning winter rings) and the range of years with the surveys being implemented and the range of years used in the assessment.

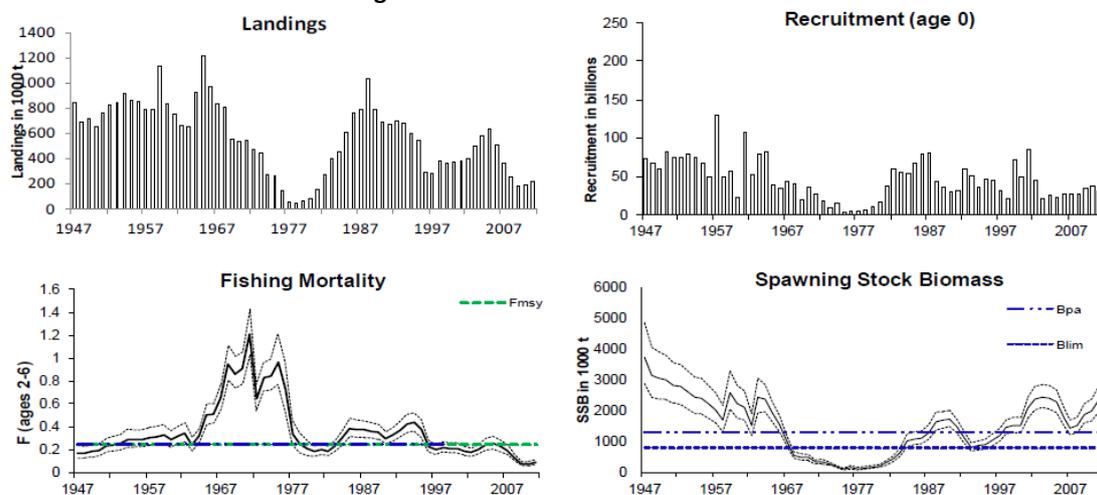
Survey	Age range	Years survey has been running	Years used in assessment
SCAI (Larvae survey)	SSB	1972-2011	1973-2011
IBTS 1 st Quarter (Trawl survey)	1-wr	1971-2012	1984-2012
Acoustic (+trawl)	1wr	1995-2011	1997-2011
	2-9+wr	1984-2011	1989-2011
IBTS0	0wr	1977-2012	1992-2012

(Source: ICES HAWG report 2012.ICES CM 2012/acom:06)

3.3.2 Current Stock status and reference points:

ICES classify the stock as having full reproductive capacity and as being harvested sustainably with fishing mortality below management plan and F_{MSY} targets (Figure 3.6). The Spawning Stock Biomass (SSB) in autumn 2011 was estimated at 2.34 million t, well above the precautionary level (B_{pa} , dotted line in the fourth panel of Figure 3.6). Fishing mortality (F ages 2-6 years old) in 2011 was estimated at F 0.09, below the target F of 0.25. The year classes from 2002 to 2007 are estimated to be among the weakest since the late 1970s. The year classes 2008 and 2009 are estimated to be around the long-term geometric mean; however, ICES considers that the stock is still in a low productivity phase.

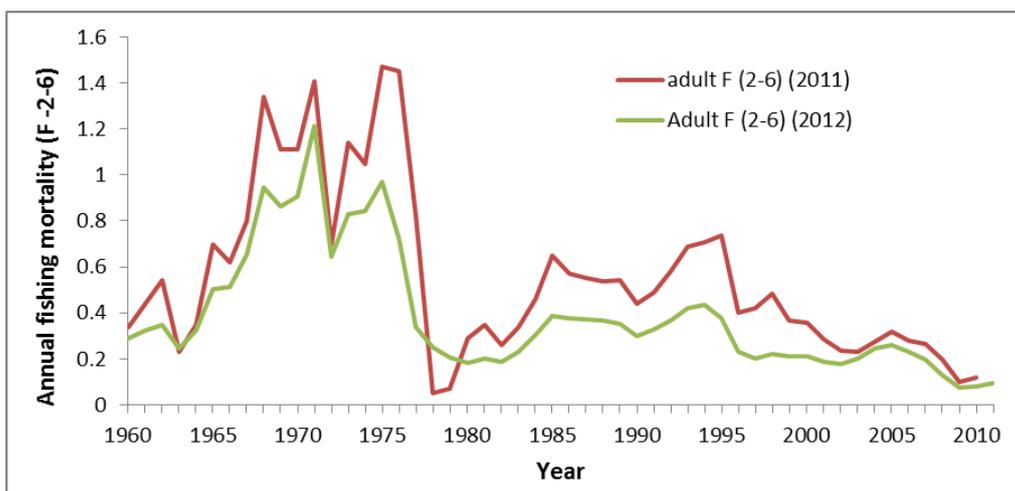
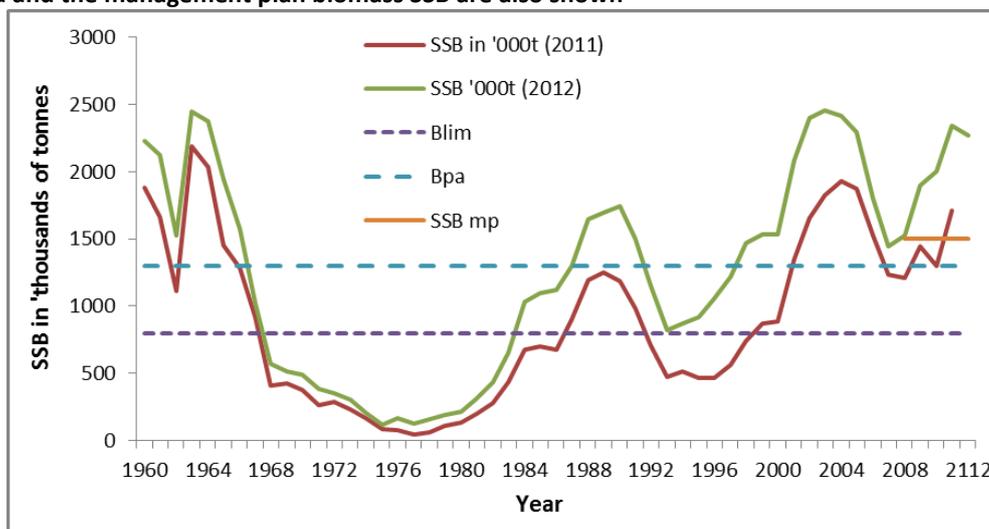
Figure 3.6 - NSAS herring: Summary of stock assessment with 95% confidence intervals, predicted recruitment value is shaded. Bottom right: SSB and F for the time-series used in the assessment.



Source: ICES 2012b

As a result of the new assessment methodology adopted in 2012, there has been a significant change in the perception of spawning stock biomass (SSB) and fishing mortality (F) over the past twenty years. Figure 3.7 shows the difference in the perception of SSB and F from the 2011 assessment compared with the 2012 assessment for the time series dating back to 1960. The 2012 assessment is considered to be an improvement to previous assessments. The absolute values of SSB estimated in the assessment of 2012 changed compared to the estimates of 2011 mainly due to revisions in the estimated selection pattern of the fishery and to the changing pattern of natural mortality (being higher than previously considered).

Figure 3.7 - The annual spawning stock biomass (a) and fishing mortality on adults (F) (ages 2-6 winter rings) (b) over the period 1960 to 2011 as assessed in 2011 (red) and 2012 (green). The biomass reference points Blim, Bpa and the management plan biomass SSB are also shown



Data source: ICES, 2011a, 2012b

The reference points which guide the diagnostic of the stock status are based on the pre-benchmark perception of the stock. The benchmark assessment (ICES, 2012a) revised the perception of the stock (Figure 4) and the current agreed management plan is based on the former perception of the stock. Thus, ICES states that a full revision of the existing management plan is needed.

Current reference points (Figure 3.8) are:

Figure 3.8 - Current Reference points used by management

Approach	Reference	Value	Technical Basis
MSY Approach	MSY $B_{trigger}$	not defined	
	F_{MSY}	0.25	Simulations under different productivity regimes, research between 1996 and 2010.
Precautionary approach	B_{lim}	800 000 t	< 0.8 million t; poor recruitment has been experienced. Defined in 1997/2008.
	B_{pa}	1.3 million t	$B_{trigger}$ in the previous harvest control rule.
	F_{lim}	not defined	
	F_{pa}	$F_{2-6} = 0.25$	Target F_s in the harvest control rule.

Source: ICES 2012b

There is no target biomass reference point. As no $MSY B_{trigger}$ has been identified for this stock, the ICES MSY framework has been applied with FMSY without considering SSB in relation to $MSY B_{trigger}$.

F_{MSY} (=0.25 from ICA assessments) were based on simulations under different productivity regimes (research carried out between 1996 and 2010). But it must be revised after the new assessment method arising from WKPELA (ICES 2012a) because they were based on the pre-benchmark perception of the stock. Nevertheless, such revision does not hamper the assessment of the stock status given by ICES in 2012; Preliminary analysis carried out at WKPELA (ICES 2012a) show that F_{msy} is clearly variable over time and change with changing natural mortality. It is thus not straightforward to choose an appropriate value for this reference point, but in the light of F_{msy} recently being set to 0.25, WKPELA suggests that an increase in F_{msy} to 0.3 might be appropriate considering the somewhat higher values estimated by some of the stock–recruitment relationships, both in the constant and the time-varying reference point estimations. Therefore current F_{msy} might be regarded as precautionary. The ICES Advice in May 2012 for NSAS Herring (ICES 2012C) shows that since 1997 the F is fluctuating around its target reference point or below it in recent years.

Regarding B_{lim} : The 1998 Study Group on Precautionary Approach to Fisheries Management (ICES CM 1998/ACFM:10) set the B_{lim} (800 000 tonnes) at a level below which the recruitment may become impaired. In 2007, WKREF (ICES CM 2007/ACFM:05) and in 2011, WKHERMP (ICES 2011a), agreed that there was still no basis for changing B_{lim} . In 2012, the evaluation of the lower break-point in the WKPELA (ICES 2012a) showed that the currently used 800 000 tonnes does not seem to have changed under the new perception of the stock. This again reassures that ICES advice is correctly referenced to this limit reference point.

Target reference points as established within the ICES FMSY framework although this does not explicitly include empirical consideration of the ecological role of the stock in the ecosystem. Although the high abundance and importance in the North Sea ecosystem (ICES Advice 2012, Book 6) suggest that Herring might be a key low trophic species (in agreement with its inclusion among the groups of species in Box CB1 of the MSC Certification Requirements Annex v1.2); measures of connectance and proportion of consumer biomass suggests that its ecosystem role does not reach the relevance of key low trophic species as defined in the MSC requirements and guidance (MSC Certification Requirements Guidance V1.3; Essington and Pláganyi 2013).

3.3.3 History of fishing and management.

The herring fishery in the North East Atlantic and North Sea has a long tradition, stretching back many centuries. The arrival of the railways in the 19th Century heralded a rapid expansion of herring fishing enabling fishermen and agents to deliver their catches to markets much more quickly and expand into continental markets where herring was seen as a delicacy.

During the course of the 20th century the continued expansion and increasing industrialisation of the fleet eventually led to a decline in stock status in the 1960s and early 70s leading to the eventual collapse and closure of the North Sea herring fishery. Although the stock was able to recover, renewed excessive fishing pressure once again led to the decline of the stock and TACs were halved in 1996, bringing into sharp focus the need for good management and responsible exploitation. Since then the stock has had a generally upward trajectory, and management has been able to more effectively restrict landings to prevent a further collapse.

Today the Swedish pelagic fleet has undergone considerable consolidation and technical developments resulting in a comparatively small fleet (certainly in a historical context) of large, highly specialized, state of the art Refrigerated Sea Water (RSW) fishing vessels.

Routine stock assessment and management started in past century (see catches in Figure 2). The development of the North Sea herring stock in the 20th century presents a clear example of

recruitment overfishing³ resulting in stock collapse (Dickey-Collas et al. 2010). From 2.5×10^6 t in the 1960s, the spawning-stock biomass (SSB) declined to 1×10^5 t by the mid-1970s (ICES, 2012b), whereas the maximum age of fish in the catches decreased from 14 to 5 years old. Adequate management action was taken too late to prevent collapse of the spawning stock, so rebuilding required draconian measures (a 5-year closure of all directed fisheries between 1977 and 1982) that had a lasting effect on the entire industry. The stock has since recovered and SSB has been estimated to have fluctuated between 1 and 2.5×10^6 t during the past 20 years.

North Sea herring is caught for human consumption and as a bycatch in industrial fisheries. In the transfer area in the eastern North Sea and Division IIIa it is caught mixed with western Baltic spring-spawning herring, but the degree of mixing is carefully monitored. The fishery is seasonal, taking place mostly in the late spring and summer in the central and northern North Sea and in the autumn and winter in the southern North Sea. The management and advice is based on four fleets which catch North Sea autumn spawning herring. The fleet definitions are:

- » Fleet A: Directed herring fisheries with purse-seiners and trawlers (32mm minimum mesh size) in the North Sea. By-catches in the Norwegian industrial fishery are included.
- » Fleet B: Herring taken as a by-catch in the small mesh fisheries in the North Sea under EU regulations (mesh size less than 32mm)
- » Fleet C: Directed fisheries in the Skagerrak and Kattegat with purse-seiners and trawlers (32mm minimum mesh size)
- » Fleet D: By-catches of herring caught in the small mesh fisheries (mesh size less than 32mm) in the Skagerrak and Kattegat.

³ Recruitment overfishing occurs when the mature adult (spawning biomass) population is depleted to a level where it no longer has the reproductive capacity to replenish itself—there are not enough adults to produce offspring.

The TAC is also allocated on the basis of the targeted human consumption fisheries and by-catches in the industrial fishery for sprat and the mixed clupeoid fisheries in IIIa. The allocation of TAC also takes into account the predicted proportion of North Sea autumn spawners to be taken in Division IIIa. The allocations are based on annual negotiations and agreements between the EU and Norway, following the agreed Long Term Management Plan (LTMP) (Nov. 2008) Within the EU the agreed TAC is allocated to the participating countries on the basis of an agreed formula linked to historical performance in the fishery.

The collapse of the population and the ban agreed on the direct fisheries triggered a continuous improvement of the Management system. The EU/Norway Management Plan for North Sea autumn spawning herring was first put forward in 1994 and finally adopted in 1997. The ICES WKHERMP REPORT (ICES CM 2011/ACOM:55) states: The key elements in the LTMP set in 1998 “were a fishing mortality set separately for adult and juvenile herring (at 0.25 and 0.12 respectively) and a trigger biomass (1.3 million tonnes) below which the fishing mortalities should be reduced. The target fishing mortalities were decided based on extensive simulations (Patterson et al., 1997) to find the level of sustainable exploitation of adults and juveniles that resulted in a low risk of bringing SSB below 800 000 tonnes, which was the MBAL at the time (Minimum Biological Acceptable Levels). The trigger biomass (1.3 Million tonnes) was decided mainly on political grounds, but it was also thought to give some protection against falling below the MBAL. When the rule was decided the SSB was well below 1.3 million tonnes. The rule did not specify mortalities for that situation, but in practice the TACs set corresponded to an adult F of about 0.2. The industrial fishery on juvenile herring and sprat became heavily regulated and controlled, resulting in a fishing mortality around 0.05, well below the agreed level.” The previous management strategy was based on maintaining SSB above a precautionary level (B_{pa}) set to ensure that at that level there was a low risk of SSB actually being below MBAL (current B_{lim}). These reference points (former MBAL= current B_{lim} and F_{pa} = current F_{msy} for adults) no longer provide guidance to management actions according to the state of the stock. They are now solely used to classify the state of the stock and rate of exploitation according to precautionary limits.

The original plan has been since then amended and improved several times. The current version of the LTMP was agreed by EU and Norway in November 2008. The new management plan also introduced a new biomass

Agreed Management Plan for North Sea herring

According to the EU–Norway agreement (November 2008):

1. Every effort shall be made to maintain a minimum level of Spawning Stock Biomass (SSB) greater than 800,000 tonnes (Blim).
2. Where the SSB is estimated to be above 1.5 million tonnes the Parties agree to set quotas for the directed fishery and for by-catches in other fisheries, reflecting a fishing mortality rate of no more than 0.25 for 2 ringers and older and no more than 0.05 for 0 - 1 ringers.
3. Where the SSB is estimated to be below 1.5 million tonnes but above 800,000 tonnes, the Parties agree to set quotas for the direct fishery and for by-catches in other fisheries, reflecting a fishing mortality rate on 2 ringers and older equal to:

$$0.25 - (0.15 * (1,500,000 - SSB) / 700,000)$$
 for 2 ringers and older, and no more than 0.05 for 0 - 1 ringers
4. Where the SSB is estimated to be below 800,000 tonnes the Parties agree to set quotas for the directed fishery and for bycatches in other fisheries, reflecting a fishing mortality rate of less than 0.1 for 2 ringers and older and of less than 0.04 for 0-1 ringers.
5. Where the rules in paragraphs 2 and 3 would lead to a TAC which deviates by more than 15 % from the TAC of the preceding year the parties shall fix a TAC that is no more than 15 % greater or 15 % less than the TAC of the preceding year.
6. Notwithstanding paragraph 5 the Parties may, where considered appropriate, reduce the TAC by more than 15 % compared to the TAC of the preceding year.
7. Bycatches of herring may only be landed in ports where adequate sampling schemes to effectively monitor the landings have been set up. All catches landed shall be deducted from the respective quotas set, and the fisheries shall be stopped immediately in the event that the quotas are exhausted.
8. The allocation of the TAC for the directed fishery for herring shall be 29 % to Norway and 71 % to the Community. The by catch quota for herring shall be allocated to the Community.
9. A review of this arrangement shall take place no later than 31 December 2011.
10. This arrangement enters into force on 1 January 2009.

trigger point at 1.5 million tonnes. This point, together with the Blim point, serves to provide three potential management scenarios in the management plan dependent on the state of the stock. Each management scenario has different management target fishing mortalities (F_{mp}) for adults (ages 2-6 winter rings) and juveniles (ages 0-1 winter rings) associated with the overall objectives of the harvest rule. One important point in the management plan is the limit on changes in the annual TAC of +/- 15% unless all parties agreed to invoke clause 6 which permits a reduction of >15%.

The agreed Management Plan has been evaluated by ICES, for a large set of uncertainties, and concluded that it is robust and consistent with both the precautionary and MSY approaches. Although an MSY biomass has not been specifically defined, ICES have defined the MSY fishing mortality consistent with the management plan upper trigger biomass of 1.5 million tonnes. The plan implies a low risk of SSB being below B_{lim} even if other reference points may be exceeded occasionally. It is important to note that the management plan has primacy over the ICES MSY framework when providing advice.

Since the reference points were set based on the pre-benchmark perception of the stock, ICES noted (ICES, 2012c) that a full revision of the current management plan was needed. The LTMP was scheduled to be revised by December 2011, for logistical reasons this was not achieved on time. Nevertheless (at the time of this scoring exercise) the review is now underway and it is anticipated to be completed in time for decisions related to 2013 fishery. According to exploratory analysis carried out in WKPELA it is presumed that final F_{msy} will not be below the current value of 0.25 for adults. Therefore current formulation of the Management Plan should be still considered consistent with both the precautionary and MSY approaches.

For the last two years the TACs adopted were above the catches corresponding to the agreed LTMP for this stock. For instance in 2012 adhering strictly to the EU / Norway management plan would have resulted in a TAC for fleet A of 230,000t and 17,900t for fleet B. The eventual agreed TACs were 405,000t for fleet A with a by-catch ceiling (fleet B) of 17,900t. The ring fenced quota for IVc and VIId is 44,550t (11% of the total TAC). The agreed TACs were based on the MSY fishing mortality target of $F_{0.25}$ and represented an increase of 103% over the 2011 TAC. Although this was consistent with the management plan long term target fishing mortality ($F_{mp}=0.25$) when the SSB is above 1.5 million tonnes, it is not consistent with clause 5 of the management plan, which does not permit annual increases of the TAC of >15% over the TAC of the previous year. It is worth noting that catches corresponded quite closely to the adopted TACs for the last three years; although they were consistently overshoot in the past.

3.4 Principle Two: Ecosystem Background

Principle 2 of the Marine Stewardship Council standard states that:

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

The following section of the report highlights some of the key characteristics of the fishery under assessment with regard to its wider impact on the ecosystem.

3.4.1 Retained bycatch

The human consumption fisheries for herring have little bycatch of other fish species. The incidental catch of non-target species in the North Sea pelagic herring fishery is, in general, considered to be low (Borges *et al.*, 2008). Pierce *et al.* (2002) investigated incidental catch from commercial pelagic trawlers. The target species, herring, accounted for 98% by weight of the overall catch with an overall incidental catch of 2.3% made up of mackerel, haddock, horse mackerel and whiting. In a study of the Dutch fleet (Borges *et al.*, 2008), the herring fishery was found to be relatively “clean”. Updates of the time series of Dutch discarding due to sorting again suggest a low rate of discard, less than 5% of the catch (Helmond and Overzee, 2010a).

Highly sophisticated target species fishing procedures (i.e. recognition of the species specific ecosounder marks, selection of areas and periods, continuous communication with other fishing vessels, etc.) are in place on-board of vessels fishing for herring in the North Sea in order to avoid retained species and obtain clean catches of herring. Also, fishing is done in locations where shoals are dense and clearly identifiable, further minimizing the risk of catching species other than herring. Monitoring of the catches of retained species is conducted in sufficient detail during discharging operations, including the use of calibrated scales, to assess the quantity of all retained species in the fishing gears. Catches larger than 50 kg must be reported in the landings statistics. According to both official statistics from the Swedish Agent for Marine and Water Management (SwAM) and catch records from those vessels of the client groups that undertook a bycatch log, there is no retained species during the fishing operations as 100% of the catches are reported as herring.

3.4.2 Discarded bycatch

The indications are that large-scale discarding is not widespread in the directed North Sea herring fishery. A number of direct-observer surveys have been conducted on Scottish, Dutch and Norwegian pelagic trawlers, (Napier *et al.*, 1999; 2002; Borges *et al.*, 2008; van Helmond & Overzee, 2011). The overall discard rate was less than 5% of the landed catch. There is not a general agreement about the amount of slippage compared to discarding by the differing fleets (slippage- fish released from the nets whilst still in the water but still resulting in the mortality of the majority of pelagic fish, discarding- fish dumped back into the sea after having been brought on board). In freezer trawlers discarding can occur through sorting the catch and through emptying of tanks via the processing belts without sorting. For both pursers and trawlers ‘poor’ fish quality was a significant cause of discarding. Another reason is the processing capacity of freezer trawlers when catches are abundant (Helmond and Overzee, 2010b). The strength of year classes influences discarding behaviour, particularly of undersized fish, especially when strong herring year classes occur (ICES 2012). Since the mid-2000s the stronger recruitment of mackerel has probably led to an increase in discarding due to mixed hauls of herring and mackerel. Nevertheless, discard and slippage are considered to have a minor impact on the estimate of both stock size and fishing mortality for the North Sea herring stock (ICES 2012).

It is important to notice that vessels of the client group are not freezer trawlers but Refrigerated Seawater trawlers (RSW) which do not have on board processing capacity and therefore no grading

or sorting of catch takes place on board. The only way to discard would be to pump out tanks and this is illegal and there is no evidence that it occurs. The only other possible source of discard is through slippage but slippage is considered to occur rarely and it has never been reported neither from on board log books of the member vessels nor from Swedish authorities.

3.4.3 Endangered, threatened or protected species (ETP)

Interactions between the directed North Sea herring fishery with rare, protected or charismatic mega fauna species are, in general, considered to be low. No cetacean by-catch was observed in the herring pelagic fishery in the North Sea (ICE 2012). Pierce *et al.* (2002) also reports that no by-catches of marine mammals were observed over 69 studied hauls and considers that the underlying rate for marine mammals in the pelagic fisheries studies (pelagic trawls in IVa and VIa) is no more than 0.05 and may well be considerably lower than this. Consequently, the cetacean by-catch by the pelagic trawl fishery can be regarded as negligible.

The by-catch of seals in directed pelagic herring fishery in the North Sea is reported to be “very rare”; the majority being grey seal *Halichoerus grypus*. The eastern Atlantic population of the grey seal is not considered to be threatened.

Sharks are occasionally caught by pelagic trawlers in the North Sea, although this is rare, and survival rates are apparently high when sharks are released during or after the cod-end have been emptied. Shark species that does not belong to ETP species has never been reported to occur in the pelagic fisheries. The species are unknown, although blue shark *Prionace glauca*, which preys primarily upon schooling fishes such as anchovies, sardines and herring, are known to have been caught by pelagic trawls (ICES 2012). Seabird by-catch in the North Sea is considered to be comparatively rare⁴.

According to EU regulation 812/2004, all vessels larger than 15 m in the pelagic fish should be covered by observers covering at least 5% of the effort aimed to estimate bycatch of ETP species in these fisheries. In October 2006 Sweden implemented an observation scheme in the pelagic trawl fisheries under the EC Regulation 812/2004. The observer program was carried out by the Swedish Board of Fisheries during two years and stopped in 2008. Totally 226 fishing days were observed. Over the two years, in area IVa and b (North Sea) observers were on-board during 5 days with a cover rate of 2.8 % of the total fishing effort. In area III a and b (Skagerrak and Kattegat) 32 fishing days were observed with a cover rate of 5.9 % while in area III d (Baltic) 180 days of fisheries were observed with at total cover rate of 3.9 %. No bycatch of ETP species has been reported from the North Sea herring Swedish fisheries (ICES 2010, 2012) and from the ETP log of those members of the client group that had previously undertaken this exercise. Nowadays the monitoring program has been discontinued due to low risk of encountering of ETP species in the herring pelagic fishery and economic cost-benefit considerations and Swedish sampling effort is now focused on other fisheries.

To estimate the impact of a fishery on the population of ETP species, a comprehensive strategy would require the existence of estimates of population size and by catch of ETP by fisheries. This would allow estimating if the number of small cetaceans captured is greater than 1% of their total population size, a threshold that ASCOBANS consider to be precautionary for ETP species. Quantitative information concerning population size is generally not available for most of the ETP species and fisheries interacting with them in the North East Atlantic, although the estimated that the number of small cetacean captured in the pelagic fisheries for herring in the North Sea is likely to be below the precautionary level.

⁴ ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp.

3.4.4 Habitat

The pelagic domain habitat is rarely impacted by purse seiners and pelagic trawlers activity. The likelihood of purse seiners and pelagic trawlers interacting with the seabed is considered negligible and also actively avoided by the vessels as it might damage the gears. Although purse seiners are more likely to have occasional contact with the seabed, this might happen only in case of muddy or sandy areas, and any such contact would be restricted in space (i.e. the seines has no more than 250m diameter at the surface and operate at slow speed.). Thus, any contact would be light (i.e. as seines have no trawl doors or ground gear) and will not have any serious or irreversible harm on the habitat structure. Contact with hard bottoms is actively avoided by this fishery as it might damage the net and cause large economic losses and the topography of the seabed is clearly visible from on board sonar / echo sounder. Maps of the sensitive seabed communities exist for the North Sea and can be used by the client group to minimize the risk of encountering them during the fishing operations. Skippers control the position of the net in the water column through on-board technology, such as depth sounders, sonar and trawl monitoring systems. All vessels covered by this assessment use trawl-monitoring sensors are required to carry VMS on board according to EU and Swedish legislation.

The distribution of habitat types in the North Sea, with particular attention to the occurrence of vulnerable habitat types, is mapped and information is reported in several dedicated websites (e.g. http://www.awi.de/en/research/research_divisions/geosciences/marine_geochemistry/marine_gis/digital_atlas_of_the_north_sea/ ; OSPAR Maps of Sensitive seabed communities in the Northeast Atlantic. At: www.ngo.grida.no/wwfneap/Projects/MPA.htm). Therefore, maps of the sensitive seabed communities exist for the North Sea and can be used by the client group to lower the risk of encountering them during the fishing operations. All vessels use trawl-monitoring sensors are required to carry VMS on board according to EU and Swedish legislation and allow evaluating the likelihood of interaction of purse seiners and pelagic trawlers with sensitive habitats.

Figure 3.9 shows the reported logbook positions of herring catches from a representative sample of the client group between 2009 and 2011 and the corresponding VMS-tracks from the associated fishing trips. A speed of 3 knots was used to separate the steaming time from the fishing events. The plot shows that the vast majority of the reported logbook positions are all placed in areas with low speed, indicating a high spatial accuracy of the self-reported fishing events.

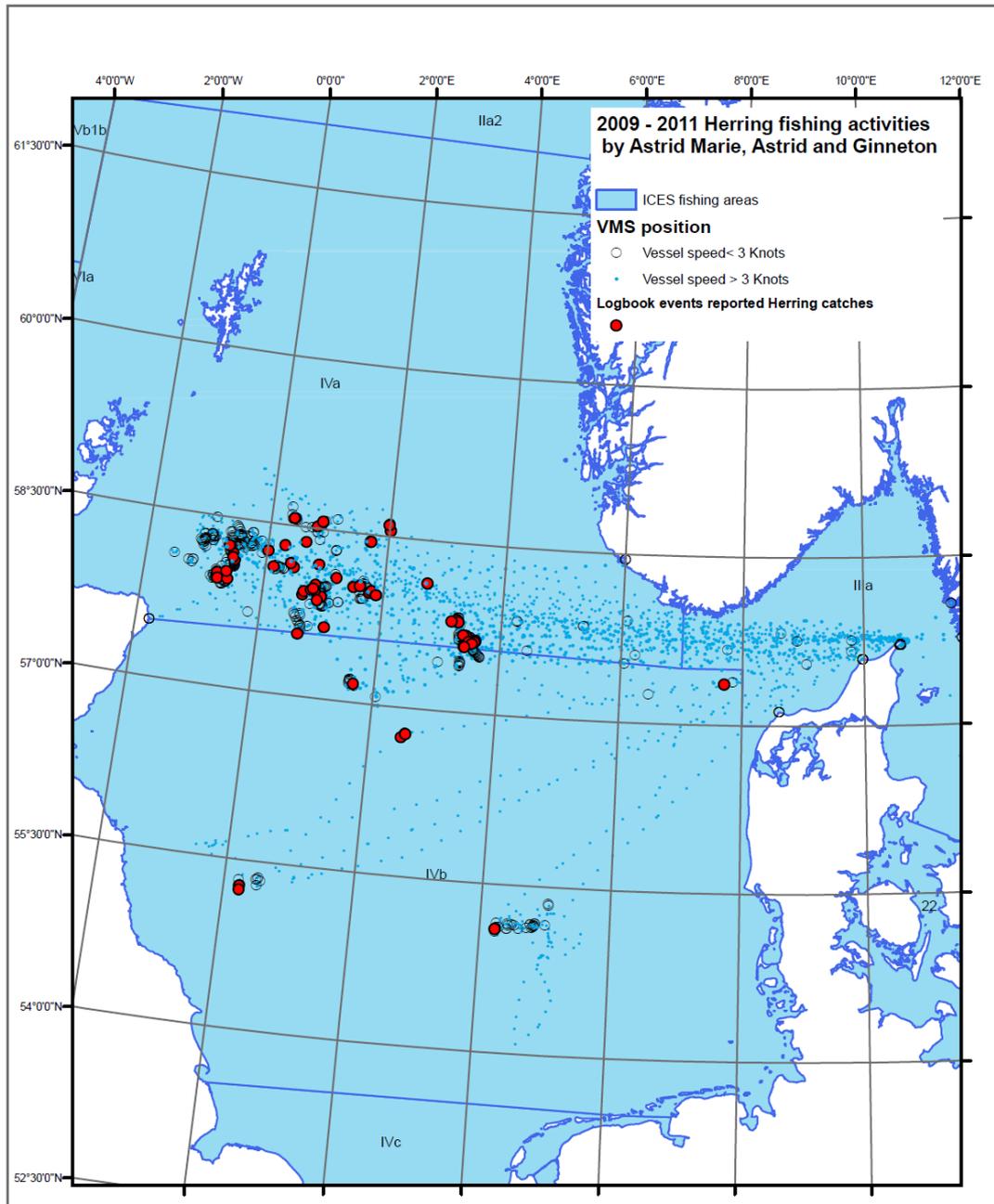
3.4.5 Ecosystem impacts

From an ecosystem perspective, the human consumption herring fisheries have almost no disturbances to the seabed, negligible bycatch of other fish species and ETP species (ICES 2012). The current level of the North Sea herring stock is estimated to be above reference limits. The most likely indirect ecosystem effect is thus caused by the removals of herring from the ecosystem. However, there are no indications of truncated size composition, trophic cascades, genetic disturbances, and decrease of biodiversity caused by this fishery on the herring stock. North Sea herring is successfully managed by an EU-Norway management plan based on the MSY framework. In 2012, ICES classifies the stock as being at full reproductive capacity and as being harvested sustainably, below the current management plan and F_{MSY} targets.

The impact of removal of herring on the ecosystem has been also investigated. For example, the role of herring as a prey species has been investigated using multispecies models, such as multispecies virtual population analysis (Vinther, 2001; Kempf *et al.*, 2006), stochastic multispecies (SMS) model (Lewy and Vinther, 2004), and Ecopath with Ecosim (Mackinson and Daskalov, 2007). The populations of herring constitute some of the highest biomass of forage fish in the North Sea and are thus an integral and important part of the ecosystem, particularly the pelagic components (Mackinson and Daskalov, 2007). As planktivores, they link zooplankton production with higher trophic levels (fish, sea mammals and birds) but also can act as predators on other fish species such

as cod and plaice by their predation on fish eggs (WKPELA 2012, ICES 2012 Fauchald et al. 2011; Segers et al. 2007). Recently, Smith *et al.* (2011), using the EwE model of Mackinson and Dakalov (op. cit.) showed that among the four major prey species in the North sea (Herring, sprat, sandeel and Norway Pout), the level of depletion of Sandeel by fishing can produce larger impacts on other trophic levels than the effects of fishing on herring.

Figure 3.9 - Aggregated VMS position reports of a representative group of member vessels at fishing speeds (0-3 Knots) on trips where North Sea Herring was recorded in the catches between 2009 and 2011.



Data Source: Swedish Agency for Marine and Water Management

3.5 Principle Three: Management System Background

Principle 3 of the Marine Stewardship Council standard states that:

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

In the following section of the report a brief description is made of the key characteristics of the management system in place to ensure the sustainable exploitation of the fishery under assessment.

3.5.1 Governance & Policy

Legal & Customary Framework

Sweden is a Member State of the European Union and its fisheries are therefore subject to the principles and practices of the Common Fisheries Policy (CFP) of the EU. The North Sea Herring fishery is managed through the CFP in accordance with the basic fisheries regulation.

The first EU common measures in the fishing sector date from 1970, when it was agreed that, in principle, EU fishermen should have equal access to Member States' waters. However, in order to ensure that smaller vessels could continue to fish close to their home ports, a coastal band was reserved for local fishermen who have traditionally fished these areas. It was also decided that the EU was best placed to manage fisheries in the waters under their jurisdiction and to defend their interests in international negotiations. The CFP came into being in the form we recognise today in 1983. It was reviewed thoroughly in 2002 and the current basic fisheries regulation (No.2731/2002) was adopted by the Council of Ministers on 20th December 2002. The current policy is again under review, and a revised policy is likely to be enacted in 2013.

The scope of the CFP extends to conservation, management and exploitation of living aquatic resources and aquaculture, as well as processing and marketing of fishery products, covering related activities, both within EU waters and by any member state vessel or national – with due regard to the UN Convention on the Law of the Sea (UNCLOS) and without prejudice to the primary responsibility of the flag State.

The CFP regulation is a 'chapeau' regulation setting out the strategic aims of the CFP and enabling the Council of Ministers, or in certain cases the Commission, to make more detailed Regulations. In total there are in excess of 600 related regulations broadly divided into 4 categories (Structural measures, State Aid, Management of Resources, market organisation). Included within these are regulations dealing with almost all fisheries management related aspects from control requirements, to fleet structure, technical conservation, marketing, annual total allowable catches (TAC) and species management and recovery plans.

Outside the CFP framework other EU legislation dealing with habitats and species protection and is also relevant to fisheries management and to fishermen.

Consultation, Roles & Responsibilities

There are several relevant organisations and bodies which take an active role in the fishery under assessment. Their roles are explicitly defined and well understood, and the interaction between them works effectively.

Industry Representation

There are several tiers of industry representation, which form a crucial role in providing the industry with an effective voice in both management and science. They also play an important role in lobbying at both national and EU level for the interests of fishermen.

The main industry representation role is undertaken by the SPFPO, all the Swedish RSW vessels are members of this body. The SPFPO forms a vital conduit for information, communicating new management measures to the fleet and making managers and scientists aware of changes experienced on the fishing grounds.

The creation of Regional Advisory Councils (RACs) was one of the pillars of the 2002 reform of the Common Fisheries Policy in response to the EU and stakeholders' desire to increase the latter's participation in the CFP process. The RACs are made up of representatives of the fisheries sector and other groups affected by the CFP while scientists are invited to participate in the meetings of the RACs as experts. The Commission and regional and national representatives of Member States may be present at the meetings as observers. The Pelagic RAC has greatly improved effective communication links between industry, managers and scientists.

Scientific Advice

The core backdrop to the management of this fishery is the advice provided by the ICES Advisory Committee (ACOM) which draws on the on-going work of international scientists from relevant research laboratories and institutions on the stock biology and marine science. The main working group responsible for North Sea herring advice is the ICES Herring Assessment Working Group for the Area South of 62° N (HAWG).

The assessment of the working group are reviewed and evaluated by the ICES Advisory Committee which then provides advice on the status of target and non-target stocks to the European Commission.

The Institute of Marine Research is based in Lysekil on the Swedish west coast. The Institute was part of Swedish Board of Fisheries, but since the re-organization referred to above, this have fallen under the Swedish University of Agricultural Science (www.slu.se). The Institute is responsible for advising the authorities and ministries concerned by undertaking stock assessments, advising on sustainable exploitation rates and researching the wider impacts of fishing. Scientists from the Institute are actively engaged in the work of ICES and are significantly represented on the relevant ICES working groups. For example, their scientists are closely involved in the herring stock assessment and egg survey work of ICES. Swedish scientists are key members of the ICES HAWG and have played a lead role in key herring assessment projects.

National Management Bodies

Overall control of fisheries management and policy in Sweden falls under the Ministry of Rural Affairs (www.sweden.gov.se/sb/d/10352). Recent re-organisation means that the Swedish Board of Fisheries has now been replaced by The Swedish Agency for Marine and Water Management (SwAM) - a new government authority, located in Gothenburg that works to achieve flourishing seas, lakes and streams. This includes fisheries administration such as licensing, application and enforcement of regulations, and control at point of landing (www.havochvatten.se).

Finally, the Swedish Board of Agriculture retains control of trade issues in relation to the fisheries sector, including administering the EU fisheries fund (www.jordbruksverket.se).

Control & Enforcement

Responsibility for control and enforcement at sea, including inspection of gear, logbook and fishing areas remains with the Swedish Coast Guard (www.kustbevakningen.se). There is a high degree of enforcement and control in the North Sea herring fishery (in accordance with commission regulation (EC) No 1542/2007 on landing and weighing procedures for herring, mackerel and horse mackerel) meaning almost 100% inspection of landings, regular inspections at sea, and fleet activity is monitored by aerial surveillance and through a satellite mediated VMS (Vessel Monitoring System). Where considered appropriate, more detailed and focused inspections and investigations are

undertaken, combining information already collected with direct observation (off-loading and weighing of all catch) and inspection of further documentation.

At processing plants, all landings must pass into the plant via weighbridges which have been calibrated, sealed and certified. The fish pass via a de-waterer and limited tolerance is allowed for water. In Sweden pelagic landings are typically pumped directly from ships into processing plants alongside the quay. This secure weighing of all pelagics entering processing plants allows inspectors the opportunity to undertake mass-balance exercises (a complete audit of a product from one vessel going into a plant, and product coming out of a plant). This is typically done to each vessel at least once a year, and each plant several times a year.

Such activity forms the backbone of the CFP Monitoring Control and Surveillance (MCS) system, and performance of this system against national and CFP targets, including details of infringements and prosecutions, is reported on an annual basis. These activities are coordinated through the EU Fisheries Control Agency based now based in Vigo, Spain.

The new EU registration of buyers and sellers legislation, although not directly targeted at the pelagic sector, has also contributed to a major cultural shift within the industry, and there is now a sense of confidence that strong systems, checks and balances are now in place to quickly identify and punish any illegal activity. As a result there is a widespread belief that non-compliance is no longer a major problem in the North Sea pelagic industry.

Decision making

The majority of decision making for the North Sea Herring takes place in Brussels, within a typical framework of European Decision making on pressure stocks. At the heart of the European Union legislative / decision-making process is The European Commission; the politically independent, civil service. The Directorate-General for Maritime Affairs and Fisheries (DG Mare), is the administrative department of the Commission with responsibility for fisheries. The Commission is responsible for the preparation of proposals for new laws, which, once adopted by the Commissioners, are sent to The Council of the European Union, where elected national representatives, review the proposals of the commission makes Community laws, after reviewing proposals of the commission, and depending on their nature, after consulting with various committees and The European Parliament.

In drafting legislative proposals DG Mare consults widely, including with, relevant groups, third countries and regional fisheries organizations including advisory committees – notably the Scientific, Technical and Economic Committee on Fisheries (STECF). The opinion of STECF is crucial in the process of setting annual Total Allowable Catches TACs and quotas.

Once enacted the European Commission (DG Mare) then has responsibility for implementation, management and control of community law in Member States and, where appropriate, European legislation is enacted at the national level through relevant primary and secondary legislation.

The annual decision on quota allocations for the forthcoming fishing season provides an indication of the how the European decision-making process works. The ICES working groups with responsibility of stock assessment, submit annual assessments to ICES ACOM, who in turn review and disseminate to the European Commission (DG Mare). The advice will be reviewed by STECF before preparing recommendation for the commissioners. In doing so, every effort is made to consider and assess the implications of decisions in view of pragmatic solutions at stakeholder (Catching Sector) level. This process is facilitated by the RAC structure and ACFA will typically also contribute to this consultation process. The Commissioners then pass recommendations to the Council of the European Union, who take the final decision at the annual December council negotiations.

Although decisions on the setting of overall TAC and the share of that TAC between member states rests with the EU (in accordance with the principle of relative stability), decisions on how national quota allocation is divided among the fleet is taken by the member state (albeit in accordance with

some overarching rules). National decision-making over how the Swedish share of the North Sea Herring TAC is divided therefore rests with The Swedish Agency for Marine and Water Management (SwAM).

3.5.2 Management Objectives

EU level

The EU Sustainable Development Strategy (SDS), adopted in June 2006, has as its objective:

‘improving management and avoiding overexploitation of renewable natural resources such as fisheries,....., and restoring degraded marine ecosystems by 2015 in line with the Johannesburg Plan (2002) including achievement of the Maximum Yield in Fisheries by 2015’.

In June 2008, the Marine Strategy Directive (MSD) was adopted and Member States and the European Parliament have committed themselves to further foster the integration of environmental concerns into other relevant policies, among them the CFP. The Marine Strategy Directive aims to achieve ‘good environmental status’ in the EU marine environment by 2021 at the latest. This is to be achieved through the development, by the Member States, of marine strategies for their territorial waters. The marine strategies are to include implementation measures that should be based on an ecosystem approach, and may include any of a number of approaches set out in an annex to the Directive. These include ‘spatial and temporal distribution controls’, i.e. management measures that influence where and when an activity is to occur; as well as co-ordination measures to ensure that different sectoral measures at different institutional levels are coordinated. In general, the aim is to meet the following targets by 2020:

- » populations of all commercially exploited fish and shellfish must be within Sustainable Biological Limits (SBL), exhibiting an age and size distribution that is indicative of a healthy stock;
- » all elements of the marine food web must occur at normal abundance and diversity and at levels capable of ensuring the long-term abundance of the species.
- » biological diversity must be maintained as well as the quality and occurrence of habitats, and the distribution and abundance of species are to be kept in line with prevailing conditions;
- » sea floor integrity is maintained at a level that ensures the safeguarding of structures and functioning of the ecosystems.

The Commission in 2007 published the details of an EU Integrated Maritime Policy (IMP). One of the five ‘action areas’ for policy development concerns fisheries. The IMP includes both that fisheries management ‘must take more into account the welfare of coastal communities’ and that ‘recovery of fish stocks will be energetically pursued’. Specifically, the Commission will take action to eliminate discards, destructive fishing practices and Illegal, unreported and unregulated fisheries (IUU). The Commission’s Green Paper on reform of the CFP as from 2012 in many aspects takes its outset in the IMP and its environmental pillar, the MSD.

Fishery Specific

Nationally, the objectives of the fishery are very much bound by the stated objectives of both the CFP and the National Strategy Plan. These over-arching objectives will always serve as a guide to fishery specific management decisions. However, there are more fishery specific related objectives, which give a more detailed definition of the policy direction for this particular fishery. For North Sea Herring the language of the Agreed Management Plan between the EU and Norway provides a key

indication of fishery specific objectives – although arguably the focus of this on TAC level and Inter-annual variation is more focused on tools to meet the objectives rather than objectives *per se*. This management plan is currently (2012) under review, with completion anticipated in time for the 2013 fishery.

4. Evaluation Procedure

4.1 Harmonised Fishery Assessment

At the time of writing, 6 MSC assessments had already been completed on this stock (detailed below) and findings presented in published assessment reports. In addition 2 MSC assessments targeting this stock are currently underway (also detailed below).

These formed an important background resource for the assessment team - collating and reporting on available stock and fishery information, as well as highlighting areas of stakeholder and assessment team concerns.

Completed assessments

- »
- » Astrid Fiske North Sea Herring:
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/astrid-fiske-north-sea-herring/astrid-fiske-ns-herring>
- » Danish Pelagic Producers Organisation North Sea herring:
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/DPPO-North-Sea-herring/DPPO-North-Sea-herring>
- » Norway North Sea and Skagerrak herring
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/norway-north-sea-and-skagerrak-herring/norway-north-sea-and-skagerrak-herring>
- » Pelagic Freezer-Trawler Association North Sea herring
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/pfa-north-sea-herring/pfa-north-sea-herring-1>
- » SPSP Ltd. North Sea herring (re-assessment currently in progress)
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/spsg-north-sea-herring>
- » SPPO North Sea herring
<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/sppo-north-sea-herring/sppo-north-sea-and-baltic-herring-and-sprats>
- » Hastings fleet pelagic herring and mackerel:
<http://www.msc.org/track-a-fishery/in-assessment/north-east-atlantic/hastings-fleet-pelagic-herring-and-mackerel/hastings-fleet-pelagic-fishery>

Assessments in progress

- » SPSP Ltd. North Sea Herring (re-assessment)
<http://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/spsg-north-sea-herring/fishery-name>

4.1.1 Harmonisation Details

Harmonisation meeting/s

No harmonisation meeting was carried out during this assessment. In spite of this, close attention was paid to both the scoring and the conditions and recommendations applied to other overlapping

fisheries to ensure a broadly harmonised approach. This does not mean strict adherence to the same scores – it is reasonable for there to be some degree of difference in interpretations or circumstance at the time of different assessments – but it does ensure that overall conclusions are broadly aligned, and importantly that conditions applied to one fleet are equally and fairly applied to other fleets with the same characteristics.

In particular close attention was paid to the scores in the recently rescored Scottish Pelagic Sustainability Group North Sea Herring recertification, in particular in relation to principle 1. Although this recertification was not yet published, the two assessment teams did share key points including discussion of conditions. Consequently the conditions in this assessment – which both apply to P1 – are consistent with those in the Scottish fishery on the same stock. The recommendations are also aligned.

4.2 Previous assessments

Summary of previous assessments of the client operation, conclusions reached and past compliance with specified conditions:

- » The previous assessment of the Astrid Fiske North Sea herring began in April 2007 and the fishery was certified in June 2008. This certificate is valid until 2013, at which point it is intended that this assessment will take over. The original assessment report is available at:

http://www.msc.org/assets/docs/North_sea_herring/NSHerring_PubCertRep.pdf

- » The previous assessment of the SPPO North Sea herring was certified in 2010 and certificate is valid until 2015. However, it is intended that the current assessment will include all SPPO vessels and UoC characteristics, thus enabling the 2 previous certificates to be merged into a single assessment. The original assessment report is available at:

<http://www.msc.org/track-a-fishery/certified/north-east-atlantic/sppo-north-sea-herring/sppo-north-sea-and-baltic-herring-and-sprats>

4.2.1 Re-assessment with outstanding conditions.

Table 4.1 - Summary of Previous Assessment Conditions (SPPO)

Condition	Closed? (Y/N)	Justification
Operation of harvest control rules	On Target	Original condition stated evidence required at each surveillance audit. At the time of recertification, or in this case certificate merging, the fishery is been certified to the point of the 2 nd surveillance. This re-assessment captures the key issues raised in this condition.

Table 4.2 - Summary of Previous Assessment Conditions (Astrid Fiske)

Original Condition (2008)	1 st Surveillance revision (2009) & numbering used in subsequent surveillances	Rationale for 2009 revision	Status at last surveillance
1 Sample catch composition	1 Provide improved catch data	No change – just slight rephrasing. Original intent kept.	Closed Out
2 Record incidences of slippage.	2 Provide information	Slight rephrasing. Original intent kept.	Closed Out
3 research into the	- Combined with	Rationale provided at time of first	N/A

Original Condition (2008)		1 st Surveillance revision (2009) & numbering used in subsequent surveillances		Rationale for 2009 revision	Status at last surveillance
	survival rates of slipped fish		<i>condition 2 above.</i>	surveillance given low risk and low research spending priority. Astrid Fiske demonstrated their willingness and openness to be involved in any such research. Conclusion and revision in line with SPSG herring.	
4	Independent observation fishery	-	<i>Downgraded to a recommendation</i>	Rationale provided at time of first surveillance given low risk and low research spending priority. Astrid Fiske demonstrated and continue to demonstrate their willingness and openness to be involved in observer programmes. Conclusion and revision in line with SPSG herring.	N/A
5	Annual verification fishery makes no contribution to overshoot TAC.	3*	Fishery makes no contribution to overshoot of TAC	Change of number only and slight rephrasing. Original intent kept. Revised number used in subsequent surveillance.	Closed out
6	Support for North Sea herring rebuilding plan	4*	Promote rebuilding of the stock.	Change of number only and slight rephrasing to reflect that management plan now in place, but stocks not yet fully rebuilt. Original intent kept. Revised number used in subsequent surveillance.	Closed Out
7	Support for setting TACs within boundaries of harvest control rule	5*	Support for setting TACs within boundaries of harvest control rule.	Change of number only and slight rephrasing. Original intent kept. Revised number used in subsequent surveillance.	On Target: Condition stated a timeline of 'for the lifetime of the certificate'. This has been 'on target' at every surveillance including the 4th. Effectively closed out for recertification.

4.3 Assessment Methodologies

This fishery was assessed using version 1.2 of the MSC Certification Requirements and version 1.2 of the MSC Full Assessment Reporting Template.

4.3.1 Assessment Tree

The Default Assessment Tree was use for this fishery.

4.4 Evaluation Processes and Techniques

4.4.1 Site Visits

In August, 2012, 3 members of the assessment team, supported by an FCI staff member, undertook a site visit to Göteborg, Sweden. This enabled a scheduled programme of consultations to take place with key stakeholders in the fishery – including skippers, scientists, fishery protection officers, NGOs, fishery managers and technical support staff. Prior notification of this site visit was issued on the MSC website and in IntraFish in order that all relevant stakeholders were aware of the opportunity to meet with the assessment team.

Itinerary of field activities

Day 1 – Monday, 27 August, 2012 - Göteborg, Sweden

- » On day 1, the assessment team visited 2 vessels from the client group specified under the Unit of Certification and met privately with 2 vessel skippers. This was to provide further detail on the fishing methods and practice in use under this fishery assessment and to give the vessel skippers / owners an opportunity to provide any feedback or comments they wished in an open and transparent manner.

Day 2 - Tuesday, 28 August, 2012 - Göteborg, Sweden

- » On day 2, the assessment team met with 4 stakeholders to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

Day 3 - Wednesday, 29 August, 2012 – Island of Rörö, Sweden

- » On day 3, the assessment team visited 2 vessels from the client group specified under the Unit of Certification and met privately with 2 vessel skippers. This was to provide further detail on the fishing methods and practice in use under this fishery assessment and to give the vessel skippers / owners an opportunity to provide any feedback or comments they wished in an open and transparent manner.

4.4.2 Consultations

Stakeholder issues

No written representations were provided to the assessment team. Instead all stakeholder input came through a planned programme of interviews with key stakeholders. A number of meetings with key stakeholders were scheduled by the team to fill in information gaps and to explore and discuss any areas of concern.

Meetings were held as follows:

Table 4.3 - Interview Programme

Name	Position	Organisation
Lotte Worsøe Clausen	Programme leader Technical University of Denmark	National Institute of Aquatic Resources Section of Population and Ecosystem Dynamics
Charlotta Järnmark	Conservation Officer Fisheries and Marine	WWF Sweden
Valerio Bartolino	Researcher (fisheries oceanography and fish population ecology)	Swedish University of Agricultural Sciences Department of Aquatic Resources
Bengt Kamark	Senior Fisheries Policy Advisor	Swedish National Board of Fisheries
Bengt Gunnarsson	Client Group representative	Sveriges Pelagiska Producent Organisation (SPPO)
Borje Johansson	Client Group representative	Astrid Fiske Company
Werner Larsson	Client Group representative	Pelagic Processor
Fredrik Aulstrom	Skipper	Vessel: Tor On
Johannes Claeson	Senior crew	Gineton
Philip Claeson	Senior crew	Gineton

Summary of Information Obtained

All meetings discussed the full range of the MSC standard and asked relevant questions, and requested supporting evidence pertaining to the MSC principles and Criteria. As this was a re-certification some focus also fell on providing an update of evidence previously obtained. There were no controversial points raised by any of the stakeholders interviewed and no stakeholders opposed the re-certification. The team is of the view that matters raised have been adequately debated and addressed as a part of the scoring process for this fishery, and that none of the issues raised, therefore, require separate attention beyond that represented in this report. All evidence received and all viewpoints expressed are reflected in the scoring assessment tree (appendix 1.1).

There were no controversial points raised by any of the stakeholders interviewed and no stakeholders opposed the re-certification.

4.4.3 Evaluation Techniques

Public Consultation

A total of 65 stakeholder individuals and organisations having relevant interest in the assessment were identified and consulted during this assessment. The interest of others not appearing on this list was solicited through the postings on the MSC website, and by advertising in IntraFish. These were felt to be the most appropriate media for making these public announcements as IntraFish has significant readership / uptake in the primary stakeholder locations for this fishery and the processes used on the MSC website for tracking and announcing the various stages of the assessment as it progresses - from Full Announcement through to Certification - form an ideal tool through which to channel stakeholder interest and keep them abreast of the important stages of the assessment as a whole.

Most stakeholders contacted during this exercise either indicated that they had no direct interest in this fishery assessment, or that they had no particular cause for concern with regard to its assessment to the MSC standard.

Process

The MSC is dedicated to promoting “well-managed” and “sustainable” fisheries, and the MSC initiative focuses on identifying such fisheries through means of independent third-party assessments and certification. Once certified, fisheries are awarded the opportunity to utilise an MSC promoted eco-label to gain economic advantages in the marketplace. Through certification and eco-labelling the MSC works to promote and encourage better management of world fisheries, many of which have been suggested to suffer from poor management.

The MSC Principles and Criteria for Sustainable Fisheries form the standard against which the fishery is assessed and are organised in terms of three principles:

- » **MSC Principle 1** - Resource Sustainability
- » **MSC Principle 2** - Ecosystem Sustainability
- » **MSC Principle 3** - Management Systems

A fuller description of the MSC Principles and Criteria and a graphical representation of the assessment tree are presented as **Appendix 1a** to this report.

The MSC Principles and Criteria provide the overall requirements necessary for certification of a sustainably managed fishery. To facilitate assessment of any given fishery against this standard, these Criteria are further split into Sub-criteria. Sub-criteria represent separate areas of important information (e.g. Sub-criterion 1.1.1. requires a sufficient level of information on the target species and stock, 1.1.2 requires information on the effects of the fishery on the stock and so on). These

Sub-criteria, therefore, provide a detailed checklist of factors necessary to meet the MSC Criteria in the same way as the Criteria provide the factors necessary to meet each Principle.

Below each Sub-criterion, individual 'Performance Indicators' (PIs) are identified. It is at this level that the performance of the fishery is measured. Altogether, assessment of this fishery against the MSC standard is achieved through measurement of 31 Performance Indicators. The Principles and their supporting Criteria, Sub-criteria and Performance Indicators that have been used by the assessment team to assess this fishery are incorporated into the scoring sheets (**Appendix 1.1**).

Scoring of the attributes of this fishery against the MSC Principles and Criteria involves the following process:

- » Decision to use the MSC Default Assessment Tree contained within the MSC Certification Requirements (Annex CB)
- » Description of the justification as to why a particular score has been given to each sub-criterion
- » Allocation of a score (out of 100) to each Performance Indicator

In order to make the assessment process as clear and transparent as possible, the Scoring Guideposts are presented in the scoring table and describe the level of performance necessary to achieve **100** (represents the level of performance for a Performance Indicator that would be expected in a theoretically 'perfect' fishery), **80** (defines the unconditional pass mark for a Performance Indicator for that type of fishery), and **60** (defines the minimum, conditional pass mark for each Performance Indicator for that type of fishery). The Assessment Tree and Scoring Guideposts for the SPFPO Swedish North Sea Herring are shown as **Appendix 1.1** to this report.

Scoring outcomes

There are two, coupled, scoring requirements that constitute the Marine Stewardship Council's minimum threshold for a sustainable fishery:

- » The fishery must obtain a score of 80 or more for each of the MSC's three Principles, based on the weighted average score for all Criteria and Sub-criteria under each Principle.
- » The fishery must obtain a score of 60 or more for each Performance Indicator.

A score below 80 at the Principle level or 60 for any individual Performance Indicator would represent a level of performance that causes the fishery to automatically fail the assessment, whereas a score of 80 or above for all three Principles results in a pass.

5. Traceability

5.1 Eligibility Date

The **Target Eligibility Date** for this fishery will be 15 June 2013. This means that any fish caught by the certified fleet following that date will be eligible to enter the chain of custody as certified product if and when certification is ultimately granted. The rationale for this date is that it meets with the client's wishes, for commercial reasons, for the date to be set at the earliest point at which the Certification Requirements allow.

The measures taken by the client to account for risks within the traceability of the fishery – and therefore generating confidence in the use of this date for target eligibility – are detailed in the rest of this section.

5.2 Traceability within the Fishery

Traceability up to the point of first landing has been scrutinised as part of this assessment and the positive results reflect that the systems in place are deemed adequate to ensure fish is caught in a legal manner and is accurately recorded. The report and assessment trees describe these systems in more detail, but briefly traceability can be verified by:

- » no transshipment;
- » a geographically restricted fishery enabling concentrated inspection effort;
- » accurate reporting – log books and sales notes (regularly inspected and cross-checked);
- » verified landings data (including data on other retained species) 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 waters, including routine boarding and inspection, spotter planes, VMS; and electronic logbooks.
- » close cooperation between EU regulatory and enforcement authorities and no immunity from prosecution in other jurisdictions;
- » reporting prior to landing with limited tolerance;
- » a high level of inspection of landings prior to unloading. Officially calibrated weighing systems of landing. Routine inspection of entire factory process.

The above is considered sufficient to ensure fish and fish products invoiced as such by the fishery originate from within the evaluated fishery and no specific risk factors have been identified.

5.2.1 Evaluation of Risk of Vessels Fishing Outside of UoC

There is no elevated risk of vessels fishing outside the UoC. The fishery is spatially restricted and occurs in a restricted season, according to tight controls – not least quota control. Vessels landing other species, or from other areas could not land these as North Sea herring.

5.2.2 Risk of Substitution of Mixing Certified / Non-Certified Catch

There is a low risk of substitution of mixing of certified and non-certified catch. Other herring fisheries such as Atlanto Scandian are also certified. Landing controls are such that the veracity of the stated species and origin of the landed catch can be assured. The Chain of Custody audit and surveillance process will address risks of substitution taking place later in the supply chain.

5.2.3 At-Sea Processing

No at sea processing takes place in this fishery – not even gutting. The extent of the fishery certification is the landing of the fresh, chilled product (RSW on board storage) at ports where registration of landings is carried out and weights registered.

5.2.4 Trans-Shipment

No transshipment takes place in this fishery.

5.3 Eligibility to Enter Further Chains of Custody

Only North Sea Herring caught in the manner defined in the Unit of Certification (**Section 3.1**) under restrictions detailed throughout the body of the final Public Certification Report for this fishery shall be eligible to enter the Chain of Custody. Chain of Custody should commence following the first point of landing, at which point the product shall be eligible to carry the MSC logo (under restrictions imposed by the MSC Chain of Custody standard). There are no restrictions on the fully certified product entering further chains of custody. The SPFPO does not require its own chain of custody certificate.

5.3.1 Eligible points of landing

Although landings are typically into Swedish or Danish ports, vessels covered by this assessment may also land catches from this fishery into registered ports in other EU countries and Norway. All landings made to these ports are subject to the same scrutiny and reporting procedures and there is a well-established mechanism to enable port-of-landing authorities to report the landing to the relevant authorities in a timely fashion.

There are no further restrictions defining port of landing, over and above those stated in national fishing regulations (for example vessels must land to registered ports). There is no requirement for the vessels to land at ports named in this report. There are no specific risk factors after the point of landing which need to be highlighted or that may influence chain of custody assessments.

5.3.2 Parties eligible to use the fishery certificate

Only Swedish registered pelagic RSW trawlers are eligible who are members of the client group and fully compliant with all on board Code of Conduct and reporting systems may to use this certificate.

6. Evaluation Results

6.1 Principle Level Scores

Table 6.1: Final Principle Scores

Principle	Score	
	UoC 1 Purse	UoC 2 Pelagic Trawl
Principle 1 – Target Species	88.8	88.8
Principle 2 - Ecosystem	90.7	90.7
Principle 3 – Management System	86.5	86.5

6.2 Summary of Scores

Principle	Component	PI No.	Performance Indicator (PI)	Score
One	Outcome (status)	1.1.1	Stock status	100
		1.1.2	Reference Points	80
		1.1.3	Stock Rebuilding	NA
	Management	1.2.1	Harvest Strategy	95
		1.2.2	Harvest control rules & tools	75
		1.2.3	Information & monitoring	90
		1.2.4	Assessment of stock status	90

Principle	Component	PI No.	Performance Indicator (PI)	Score	
				Trawl	Purse
Two	Retained Species	2.1.1	Outcome (status)	100	100
		2.1.2	Management	95	95
		2.1.3	Information	100	100
	Bycatch	2.2.1	Outcome (status)	100	100
		2.2.2	Management	80	80
		2.2.3	Information	80	80
	ETP Species	2.3.1	Outcome (status)	95	95
		2.3.2	Management	80	80
		2.3.3	Information	80	80
	Habitats	2.4.1	Outcome (status)	100	100
		2.4.2	Management	95	95
		2.4.3	Information	95	95
	Ecosystem	2.5.1	Outcome (status)	80	80
		2.5.2	Management	80	80
		2.5.3	Information	100	100

Principle	Component	PI No.	Performance Indicator (PI)	Score
Three	Governance & Policy	3.1.1	Legal & customary framework	95
		3.1.2	Consultation, roles & responsibilities	85
		3.1.3	Long term objectives	100
		3.1.4	Incentives for sustainable fishing	80
	Fishery Specific Management System	3.2.1	Fishery specific objectives	80
		3.2.2	Decision making processes	80
		3.2.3	Compliance & enforcement	95
		3.2.4	Research plan	80
		3.2.5	Management performance evaluation	80

6.3 Summary of Conditions

Table 6.2: Summary of Conditions

Condition number	Condition	Performance Indicator
1	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rule	1.2.2

6.3.1 Recommendations

There are 3 recommendations for this fishery. Recommendations are non-binding and are raised even though the relevant scoring indicator has met the unconditional MSC scoring threshold (80). As such they are advisory, but none the less are considered important potential steps toward ongoing commitment to sustainable fisheries. Details of the recommendations for this fishery are outlined below.

Recommendation 1 - Remote Electronic Monitoring (REM)

Historically, unaccounted mortality has been a challenge in pelagic fisheries. Today much of the uncertainty over unaccounted mortality has gone. Enforcement is much tighter, compliance is much improved, and scientific assessments point to a smaller and largely resolved problem of unaccounted mortality. The on board logs that fishermen have introduced to record any exceptional impacts are welcome, and there now exists a system for recording any instances of slippage, or ETP interaction, for example. To date these have shown zero interaction.

At the same time, state funding for research and observer programmes has reduced in recent years, therefore there is now less independent corroboration of fisheries interactions at sea, than there has been in the past, although arguably past research and observations have led the focusing of scarce resources on the (other) fisheries with higher perceived risk of impact. None the less, there remains considerable scope for improving the independent corroboration of the fisheries impact at sea. This has not been the subject of a condition as it is accepted that at current times the rationale and evidence available suggest that potential impacts are likely to be low – in particular in terms of slippage, ETP or habitat interactions. However, some form of independent corroboration, has a number of advantages, such as providing strengthened assurance of minimal impact and detecting any changes in the patterns of interactions.

One form of independent observation which is rapidly becoming more accessible, affordable and tailored to the needs of the fishing industry has been the use of remote electronic monitoring (REM), including CCTV cameras. These are being increasingly adopted in demersal fisheries and part of the

catch quota scheme. Given the state of the art sophistication of UK pelagic fleet, and their pioneering progress in moving toward a position of assured sustainability, REM should be given careful consideration as a best practice tool to provide true assessment of the fishery's minimal impact as well as important information for research. Other EU pelagic fisheries are also currently examining the role and potential of REM, but as yet, none of the EU pelagic fleet has taken the step. The assessment team are therefore of the view that this could be a useful addition to a fishery seeking to demonstrate their on-going sustainability.

Recommendation 2 – Fishery Specific Objectives

In order to find the fishery specific objectives for this fishery, it is necessary to either look at a higher level of national or EU policy, or to look at the agreed terms of the EU-Norway Management Agreement for North Sea herring. As this long term management plan (containing the harvest control rule) is an EU-Norway agreement, it is not translated into an EU regulation, as would be the case for many other EU fisheries. In other fisheries it is in the EU regulation for the long term management plan where the objectives and wider objectives of the fishery are explicitly stated.

Ideally, the foundation for the renewed EU-Norway Agreed Management Plan on North Sea herring, would be presented in the context of the agreed wider objectives (both P1 and P2), perhaps in the introduction to the agreement, before stating through the detail of the harvest control rule, how these objectives will be met. Ideally this stating of the wider fishery specific objectives should be well defined and measurable.

Recommendation 3: To support the inclusion of ecosystem considerations in the definition of Reference Points for the management of NSAS herring.

Target reference points as established within the ICES FMSY framework do not take into account the ecological role of the stock in the ecosystem. However, the high abundance and importance of herring in the North Sea ecosystem suggest that management of this stock should be regarded in the framework of ecosystem approach to fisheries management currently pursued in the EC directives.

The assessment team recommends SPFPO Swedish North Sea herring to support the definition of reference points for herring which more explicitly take into account the ecological role of the stock in the ecosystem, because the relevant role played by the herring in the North Sea as a major component of the pelagic community deserves that ecosystem considerations become gradually taken into account. This recommendation is considered to be aligned with responsive management inspiring MSC principles and with the ecosystem approach to fisheries management currently pursued in the EC directives

6.4 Determination, Formal Conclusion and Agreement

The fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any MSC Criteria.

It is therefore determined that both Units of Certification of the **SPFPO Swedish North Sea Herring Fishery should be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries.**

Following this decision by the assessment team, and review by stakeholders and peer-reviewers, the determination will be presented to FCI's decision making entity that this fishery has passed its assessment and should be certified.

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Appendix 1. Scoring and Rationale

Appendix 1a – MSC Principles & Criteria

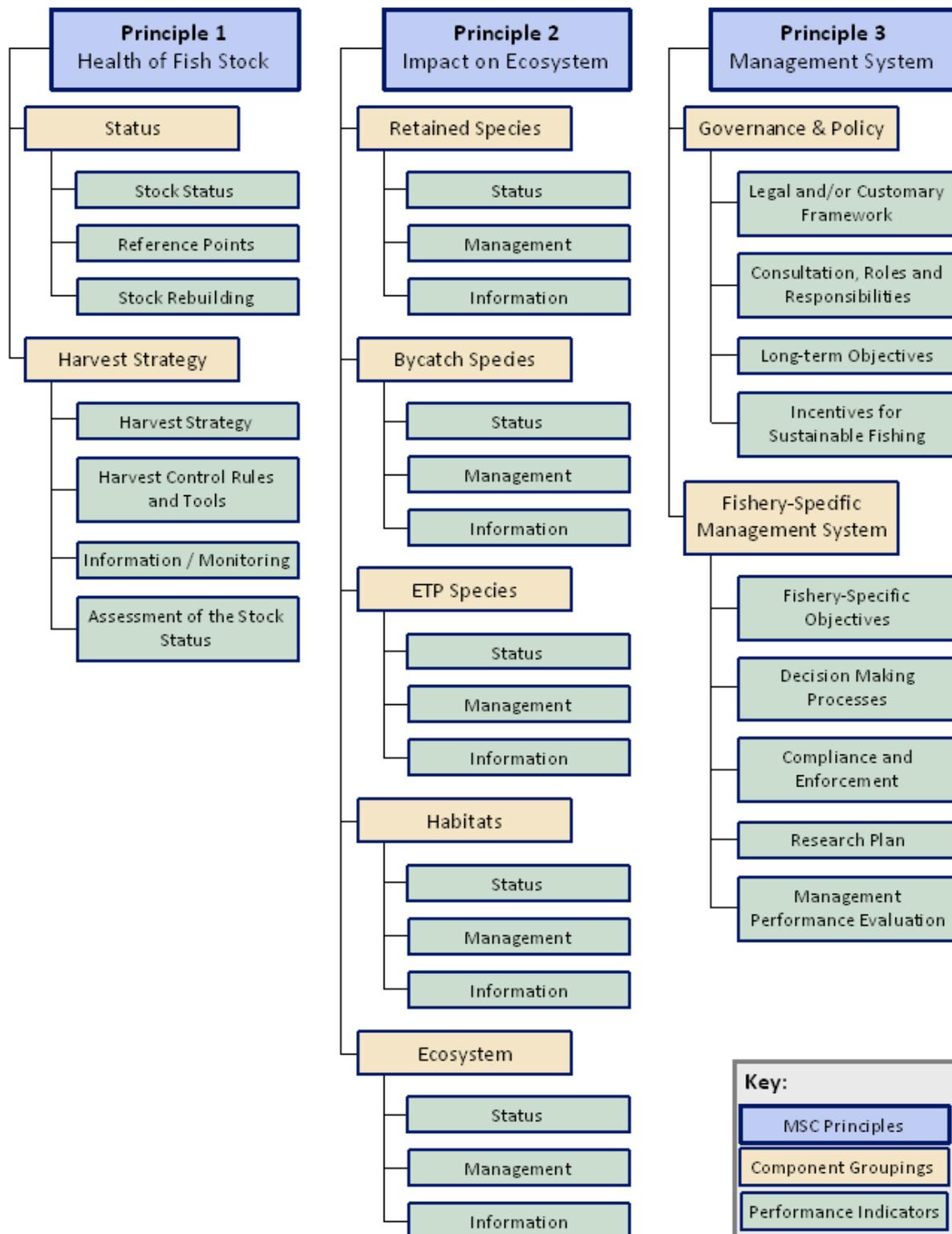


Figure A1 - Graphic of MSC Principles & Criteria

Below is a much-simplified summary of the MSC Principles and Criteria, to be used for over-view purposes only. For a fuller description, including scoring guideposts under each Performance Indicator, reference should be made to the full assessment tree, complete with scores and justification, contained in Appendix 1.1 of this report. Alternately a fuller description of the MSC Principles and Criteria can be obtained from the MSC website (www.msc.org).

Principle 1

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

Intent:

The intent of this Principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short-term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Status

- » The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing.
- » Limit and target reference points are appropriate for the stock (or some measure or surrogate with similar intent or outcome).
- » Where the stock is depleted, there is evidence of stock rebuilding and rebuilding strategies are in place with reasonable expectation that they will succeed.

Harvest strategy / management

- » There is a robust and precautionary harvest strategy in place, which is responsive to the state of the stock and is designed to achieve stock management objectives.
- » There are well defined and effective harvest control rules in place that endeavour to maintain stocks at target levels.
- » Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
- » The stock assessment is appropriate for the stock and for the harvest control rule, takes into account uncertainty, and is evaluating stock status relative to reference points.

Principle 2

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

Intent:

The intent of this Principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

Retained species / Bycatch / ETP species

- » Main species are highly likely to be within biologically based limits or if outside the limits there is a full strategy of demonstrably effective management measures.
- » There is a strategy in place for managing these species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.
- » Information is sufficient to quantitatively estimate outcome status and support a full strategy to manage main retained / bycatch and ETP species.

Habitat & Ecosystem

- » The fishery does not cause serious or irreversible harm to habitat or ecosystem structure and function, considered on a regional or bioregional basis.
- » There is a strategy and measures in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.
- » The nature, distribution and vulnerability of all main habitat types and ecosystem functions in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery and there is reliable information on the spatial extent, timing and location of use of the fishing gear.

Principle 3

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

Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

Governance and policy

- » The management system exists within an appropriate and effective legal and/or customary framework that is capable of delivering sustainable fisheries and observes the legal & customary rights of people and incorporates an appropriate dispute resolution framework.
- » Functions, roles and responsibilities of organisations and individuals involved in the management process are explicitly defined and well understood. The management system includes consultation processes.
- » The management policy has clear long-term objectives, incorporates the precautionary approach and does not operate with subsidies that contribute to unsustainable fishing.

Fishery specific management system

- » Short and long term objectives are explicit within the fishery's management system.
- » Decision-making processes respond to relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.
- » A monitoring, control and surveillance system has been implemented. Sanctions to deal with non-compliance exist and there is no evidence of systematic non-compliance.
- » A research plan provides the management system with reliable and timely information and results are disseminated to all interested parties in a timely fashion.

Appendix 1.1 Performance Indicator Scores and Rationale

Evaluation Table 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	It is likely that the stock is above the point where recruitment would be impaired.
			see SG100
80	a	Y	It is highly likely that the stock is above the point where recruitment would be impaired.
			see SG100
	b	Y	The stock is at or fluctuating around its target reference point.
			see SG100
100	a	Y	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
			ICES Advice in May 2012 for Herring in Subarea IV and Divisions IIIa and VIId (North Sea autumn spawners) classifies the stock as being at full reproductive capacity. This means well above Blim. The assessment carried out by ICES produces probabilistic outputs and regarding the SSB the probability of being to be below Blim is far below 5% (see table 6.4.16.8 of the ICES Advice in May 2012 for Herring in Subarea IV and Divisions IIIa and VIId (North Sea autumn spawners). This results in a high degree of certainty.
	b	Y	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 .
			There is no MSY target biomass reference point, however the current SSB is well above the established precautionary reference point and therefore is considered to have full reproductive capacity
			Fmsy (=0.25) is the main target reference point, which form part of the HCR in the LTMP. Current assessment results in F below Fmsy and therefore ICES classifies the stock as being harvested sustainably, below the current management plan and FMSY targets. IN the context of the probability assessment produced by ICES, since 2008 the Fishing mortality has been below Fmsy with a certainty higher than 95%. This results in a high degree of certainty that the stock is above the point where recruitment would be impaired.
References		» ICES Advice in May 2012 for Herring in Subarea IV and Divisions IIIa and VIId (North Sea autumn spawners) at: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2012/2012/her-47d3.pdf	
Stock Status relative to Reference Points			
	Type of reference point	Value of reference point	Current stock status relative to reference point
Target reference point	FMSY= FMP (FMP= target F in the management)	0.25 (no units)	0.093 [0.074 – 0.118] Median [and 95% confidence intervals]

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
	plan)		
Limit reference point	Blim	800 000 t of Spawning Stock Biomass (SSB)	2 343 134 t of SSB [1 963 435 -2 796 262] Median [and 95% confidence intervals]
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 1.1.2

PI 1.1.2		Limit and target reference points are appropriate for the stock	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.
			see SG80
80	a	Y	Reference points are appropriate for the stock and can be estimated.
			The precautionary reference points for this stock (Blim and Bpa) were adopted in 1998 (ICES CM 1998/ACFM:10), since then and up to 2011, several working groups have supported their validity. The precision of the stock assessment has not changed following the benchmark in WKPELA 2012, and as there is no evidence that the Blim has changed, then the precautionary reference points are assumed to still be valid - (HAWG- ICES CM 2012/ACOM:06 pg. 76). Reference points form the basis of the LTPM: Blim (800000 t) is a minimum threshold biomass and there is a Bmp at 1500000t to start reaction for reduction of F in case the population falls below that Bmp. Reference points were derived by simulations based on Stock recruitment relationships and taking into account any potential impacts on reproductive capacity. Therefore reference points are appropriate for the stock.
	b	Y	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.
			The Blim: The 1998 Study Group on Precautionary Approach to Fisheries Management determined the Blim for North Sea herring adopted by ICES (ICES CM 1998/ACFM:10) at 800 000 tonnes, at a level below which the recruitment may become impaired and was also the formally used MBAL. In 2007, WKREF (ICES CM 2007/ACFM:05) explored limit reference points for North Sea herring and concluded that there is no basis for changing Blim. In 2011, WKHERMP agreed that there was still no basis for changing Blim. A low risk of SSB falling below Blim was therefore the basis of ICES precautionary advice. In 2012, the evaluation of the lower break-point in the WKPELA showed that the currently used 800 000 tonnes does not seem to have changed under the new perception of the stock: WKPELA (ICES 2012) noticed the apparent un-changed breakpoint of declining recruitment with reclining SSB (It is noteworthy that the breakpoint of 800 000 tonnes that is currently used in the management plan does not seem to have changed under the new perception of the assessment as indicated by b in the segmented regression (pg. 132-133).
	c	Y	The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.
			MSY framework for North Sea herring There is no ICES MSY framework biomass trigger point for this stock as the MP is thought to have primacy over the ICES MSY framework when providing advice. In 2010 ACOM agreed with HAWG that Fmsy for NSAS was 0.25. This was supported by WKFRAME2. The analyses carried out by WKPELA 2012 suggested that MSY reference points may vary over time. Further, WKPELA suggested that a minor increase in Fmsy might be appropriate given the increase in SSB resulting from the FLSAM benchmark assessment. An Fmsy around 0.3 was considered. However, associated uncertainty with the WKPELA Fmsy has not yet been estimated. Such estimate is required to determine whether the WKPELA

PI 1.1.2		Limit and target reference points are appropriate for the stock	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>proposed estimate is significantly different from the ACOM agreed Fmsy. Therefore, and until a full evaluation of Fmsy under the current perception of the stock is carried out, Fmsy for NSAS remains = 0.25 (HAWG- ICES CM 2012/ACOM:06 pg. 76).</p> <p>Therefore, by the time being target reference point (Fmsy =0.25) is such that the stock is presumed to be maintained around a level consistent with BMSY. And if Fmsy is changed in the future as result of the new perception of the stock dynamics and status, it is presumed that current Fmsy will be equal or slightly below any revised Fmsy.</p>
	d	NA	<p>Key low trophic level species, the target reference point takes into account the ecological role of the stock.</p> <p>Herring is considered to impact on most other fish stocks either as predator and itself as prey for fish, seabirds and sea mammals in the North Sea area (Dickey-Collas <i>et al.</i>, 2010, Fauchald <i>et al.</i> 2011; Segers <i>et al.</i> 2007). The populations of herring constitute some of the highest biomass of forage fish in the North Sea and are thus an integral and important part of the ecosystem, particularly of the low trophic level pelagic components (Mackinson and Daskalov, 2007WKPELA 2012, ICES 2012 Fauchald <i>et al.</i> 2011).</p> <p>Despite the relevant role of herring in the North sea, and that Herring is a Clupeidae included in Box CB1 of the MSC Certification requirements, the NSAS Herring has not been considered as a Key LTL species because it does not match some of the additional requirements listed in Box.CB2 of the certification requirements, as explained below:</p> <p>a- According to Essington and Pláganyi, 2013 the connectance level between this herring population and others the ecosystem would be around 3.5%. This is lower than the required 4% threshold level defined in the MSC certification requirements.</p> <p>b- According to the assessment made by Essington and Pláganyi (2013) the % of energy passing through this species to both higher and lower trophic layers consumer biomass was 0.47%. This is below the required 5% threshold level.</p> <p>c- There other pelagics and/or forage fishes like Sandeels, Sprat and Norway Pout which also play a relevant role as food supply for other trophic layers (Fauchald <i>et al.</i> 2011; Kempf <i>et al.</i> 2006; Mackinson and Daskalov 2007) and recently, it has been shown that Sandeel may play the most relevant role in terms of potential impacts on other trophic levels compared to herring (Smith <i>et al.</i> 2011). Therefore herring is not the key component in a 'wasp wasited' ecosystem.</p> <p>Therefore it seems that none of the criteria in CB2 are met by the NSAS herring, so it cannot be flagged a Key LTL species in the North sea; as such it will not be scored against scoring issue d.</p> <p>The team do however note that the target reference points as established within the ICES FMSY framework do not take explicit account of the ecological role of the stock in the ecosystem For this reason a recommendation has been added.</p>
100	b	N	<p>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.</p> <p>Scored at SG 80</p>

PI 1.1.2		Limit and target reference points are appropriate for the stock	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	N	<p>The target reference point is such that the stock is maintained at a level consistent with B_{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.</p> <p>Scored at SG 80</p>
References		»	Dickey-Collas, M., Nash, R. D. M., Brunel, T., Damme, C. J. G. van, 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: 1–12.
		»	Essington, T. and Pláganyi, É., E. (2013) Model and data adequacy for the Marine Stewardship Council key low trophic level species designation and criteria. January 2013. MSC Science Series. In Print.
		»	Fauchald P, Skov H, Skern-Mauritzen M, Johns D, Tveraa T (2011) Wasp-Waist Interactions in the North Sea Ecosystem. PLoS ONE 6(7): e22729. doi:10.1371/journal.pone.0022729
		»	ICES 1998. Study Group on Precautionary Approach to Fisheries Management. ICES CM 1998/ACFM:10.
		»	ICES. 2012a. Report of the Herring Assessment Working Group for the Area South of 62°N, 13–22 March 2012. ICES CM 2012/ACOM:06. 835 pp.
		»	ICES. 2012b. Report of the Benchmark Workshop on Pelagic Stocks (WKPELA 2012), 13–17 February 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:47. 572 pp.
		»	Kempf A, Floeter J. and Temming A., Decadal changes in the North Sea food web between 1981-1991 – implications for fish stock assessment. Can. J. Fish. Aquat. Sci. 63: 2586-2602.
		»	Mackinson, S. and Daskalov, G., 2007. An ecosystem model of the North Sea to support an ecosystem approach to fisheries management: description and parameterisation. Sci. Ser. Tech Rep., Cefas Lowestoft, 142 (195pp).
»	Segers, F. H. I. D, Dickey-Collas, M., and Rijnsdorp, A. D. 2007. Prey selection by North Sea herring (<i>Clupea harengus</i>), with special reference to fish eggs. ICES Journal of Marine Science, 64: 60–68.		
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 1.1.3

PI 1.1.3		Where the stock is depleted, there is evidence of stock rebuilding	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	NA	Where stocks are depleted rebuilding strategies which have a reasonable expectation of success are in place.
	b	NA	A rebuilding timeframe is specified for the depleted stock that is the shorter of 30 years or 3 times its generation time. For cases where 3 generations is less than 5 years, the rebuilding timeframe is up to 5 years.
	c	NA	Monitoring is in place to determine whether they are effective in rebuilding the stock within a specified timeframe.
80	a	NA	Where stocks are depleted rebuilding strategies are in place.
	b	NA	A rebuilding timeframe is specified for the depleted stock that is the shorter of 20 years or 2 times its generation time . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.
	c	NA	There is evidence that they are rebuilding stocks, or it is highly likely based on simulation modeling or previous performance that they will be able to rebuild the stock within a specified timeframe.
100	a	NA	Where stocks are depleted, strategies are demonstrated to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the specified timeframe .
	b	NA	The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the depleted stock.
References			
OVERALL PERFORMANCE INDICATOR SCORE:			NA
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.2.1

PI 1.2.1		There is a robust and precautionary harvest strategy in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.
			see SG100
	b	Y	The harvest strategy is likely to work based on prior experience or plausible argument.
			see SG80
	c	Y	Monitoring is in place that is expected to determine whether the harvest strategy is working.
			Yes a continuous monitoring system is in place through a set of direct surveying of the resource and the monitoring and control of catches and fleet activities, which through the assessment process allow assessing the performance of the harvest strategy. The following surveys are currently been carried out for the monitoring of the herring population in the north sea: HERAS; The ICES Coordinated acoustic surveys for herring in the North Sea, Skagerrak and Kattegat; The International bottom trawl survey in the first quarter of the year (IBTS-Q1), reporting a Recruitment index of 1year old fishes; IBTS0 recruitment index of the 0 group in the North Sea (1st quarter); and the International Herring Larvae Surveys in the North Sea (IHLS). Sweden contributes to the estimates of catch composition (by sizes and ages) as expected according to their level of catches and the EU directive for the collection of fisheries data.
80	a	Y	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.
			see SG100
	b	Y	The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives.
			The harvest strategy has been partially tested at ICES level, though more complete testing is still being carried out. For instance the Harvest Control Rule had been tested for many uncertainties (Recruitment regimes, selection pattern or even small implementation errors) in the past, however the natural mortality had been assumed to be a constant vector across ages in time, until the benchmark in 2012. The HCR was not either shown to be robust under varying starting conditions in population size, etc. In addition the implementation errors have been far higher than the ones which had been tested before 2011. It is not until the end of 2011 that the actual deviations in the implementation of the approved HCR of the Management Plan were tested by ICES (ICES CM 2011/ACOM:62). Therefore the actually implemented Harvest strategy had not been properly tested "for robustness and uncertainty appropriate to the scale and intensity of the fishery" before being implemented. Furthermore, the ways some elements were being considered (as natural mortality or the assessment within the simulations tool) prevented assuming that the testing process constituted a full Management strategy evaluation (as required to achieve the scoring of 100). Nevertheless, the harvest strategy seems since its implementation in 1998 that in practice has been achieving its objectives.

PI 1.2.1		There is a robust and precautionary harvest strategy in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
100	a	Y	<p>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.</p> <p>The harvest strategy is responsive to the state of the stock and was designed to achieve stock management objectives reflected in the target and limit reference points for the North Sea herring population.</p> <p>All the three elements of the Harvest strategy were set and designed specifically for Herring to allow a proper management of the fishery in the North sea. The ICES WKHERMP REPORT 2011 (ICES CM 2011/ACOM:55) summarises the development of the harvest control rule since 1998, with the successive improvements. The information based monitoring system based on surveys and sampling of catches has been in place since the late seventies or early eighties based mostly on surveys directly designed to assess herring. And the assessment of this fishery has been carried out for many years (since the seventies) by ICES assessing going back up to 1947.</p>
	b	N	<p>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.</p> <p>See SG80.</p>
	d	Y	<p>The harvest strategy is periodically reviewed and improved as necessary.</p> <p>The harvest strategy has been periodically reviewed and improved as necessary. Although the LTMP was scheduled to be revised by December 2011, for logistical reasons was not achieved that on time. Nevertheless (at the time of this scoring exercise) the review is now underway and it is anticipated to be completed in time for decisions related to 2013 fishery.</p>
References			<ul style="list-style-type: none"> » ICES. 2011a. Report of the Workshop on the evaluation of the long-term management plan for North Sea herring (WKHERMP). ICES CM 2011/ACOM:55. 35pp. » ICES. 2011b. Report of the Workshop on Herring Interim Advice on the Management Plan, 24 October 2011, ICES Headquarters, Copenhagen, Denmark. ICES CM 2011/ACOM:62. 35 pp.
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 1.2.2

PI 1.2.2		There are well defined and effective harvest control rules in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.
			See SG 80
	c	Y	<p>There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.</p> <p>Although TAC has been shown to be an appropriate tool for achieving exploitation levels required by the HCR over the last 3 years (prior to this there has been a consistent overshoot of TAC -see report). For the last two years the TACs adopted were above the catches corresponding to the strict application of the HCR, specifically because clause 5 has not been applied (the 15% max of inter-annual variation). It was considered this as indicative of the harvest control rule not been strictly applied, therefore does not meet SG80 and the condition is triggered.</p> <p>CONDITION 2: Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p>
80	a	Y	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.
			The HCR makes use of clearly defined Bmp and Blim, so that the fishing exploitation rate is reduced as biomass limit reference point is approached (see the Agreed EU Norway MP for this NS herring).
	b	Y	<p>The selection of the harvest control rules takes into account the main uncertainties.</p> <p>The evaluation presented in ICES 2011 of the proposed harvest control rules incorporated the natural and stock assessment variability as observed over the recent years, and showed that the HR is robust against this variability. However, the rules have not been evaluated against exceptional variations in biology which are beyond the variation observed in history (nor for natural mortality), nor have the rules been tested for robustness under varying starting conditions in population size. These analyses, therefore, can be viewed as appropriate given the uncertainty in the current population size. However, they do not provide a full Management Strategy Evaluation.</p>
c	N	<p>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>See SG60</p>	
100	b	N	The design of the harvest control rules takes into account a wide range of uncertainties.
			See SG80
	c	N	<p>Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.</p> <p>See SG80</p>

PI 1.2.2		There are well defined and effective harvest control rules in place	
SG	Issue	Met? (Y/N)	Justification/Rationale
References		»	ICES. 2011. Report of the Workshop on Herring Interim Advice on the Management Plan, 24 October 2011, ICES Headquarters, Copenhagen, Denmark. ICES CM 2011/ACOM:62. 35 pp.
OVERALL PERFORMANCE INDICATOR SCORE:			75
CONDITION NUMBER (if relevant):			1

Evaluation Table: PI 1.2.3

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.
			See SG100
	b	Y	Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.
			See SG80
80	a	Y	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
			See SG100
	b	Y	Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule , and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.
			<p>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. The catch data and sampling levels for length and age, composition, maturity etc. is made by EU member states according to the Council Regulation (EC) No 199/2008 establishing a Community framework for the collection, management and use of data in the fisheries sector. Catches at age are available since 1947; the whole series of catches at age are currently used in the assessment. The precision of the international market sampling for North Sea herring and its influence on the assessment was carried out in 2001 for the period 1991 to 1998 (ICES 2001). And the conclusion was that the fishery is well sampled. On the other hand the direct monitoring system based on surveys is well established as well with a total of four survey indexes being annually produced for their use in the assessment and to support the timely provision of management advice (see details of the surveys in section 3.3.1 of the main text above) through ICES. Finally it should be mentioned that assessment of the natural mortality is achieved through the ICES Working Group on Multispecies Assessment Methods (WGSAM ICES 2011).</p> <p>However, ICES is concerned about the lack of information on unallocated removals in all herring fisheries, effort should be made to maintain observer coverage across fleets that catch a substantial proportion of pelagic fish and to report on these issues. There are also concerns on the Migration pattern Baltic herring stock and its likely mixing with NS Herring in some particular areas (Iva east). Nevertheless, there are well established procedures to assess the degree of mixing in the catches of the different stocks based on otoliths analysis (ICES 2012). It is not known to what extent discarding and slippage occurs in herring fisheries, and further work is required.</p> <p>Recommendation is raised to reflect need for independent verification on unallocated removals (slippage, discards).</p>

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	Y	There is good information on all other fishery removals from the stock. Catches of herring in other fisheries not directly targeting at North sea herring are yearly reported to EU and ICES and these are used in the annual assessment of the stock.
100	a	Y	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available. There are comprehensive relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy. For example monitoring of evolution of stock components (Payne 2010), stock productivity, fleet composition, stock abundance (Dickey-Collas <i>et al.</i> 2010 and ICES 2012). Furthermore, there is plenty of information on the environmental monitoring of the north sea, biological condition of herring (nor directly used in the HR) and interaction of species and multispecies models for the north sea (Mackinson and Daskalov, 2007, ICES 2011), as to justify scoring 100 this SI.
	b	N	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty. See SG80
References			<ul style="list-style-type: none"> » Dickey-Collas, M, Nash, R.D.M., Brunel, T., Damme, C.J.G. van, 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. 2010a. What can we learn from the stock collapse and recovery of North Sea herring? A review. ICES Journal of Marine Science, 67: 1875–1886. » ICES (2001). The Precision of International Market Sampling for North Sea Herring and its Influence on Assessment. ICES CM 2001/P:21. 22 pp. » ICES. 2011. Report of the Working Group on Multispecies Assessment Methods (WGSAM). ICES CM 2011/SSGSUE:10. » ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp. » ICES Advice 2012, Book 6 » ICES. 2012. Report of the Benchmark Workshop on Pelagic Stocks (WKPELA 2012), 13–17 February 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:47. 572 pp. » Mackinson, S. and Daskalov, G., 2007. An ecosystem model of the North Sea to support an ecosystem approach to fisheries management: description and parameterisation. Sci. Ser. Tech Rep., Cefas Lowestoft, 142: 195pp » Payne, M. R. 2010. Mind the gaps: a state-space model for analysing the dynamics of North Sea herring spawning components. – ICES Journal of Marine Science, 67: 1939–1947.

PI 1.2.3		Relevant information is collected to support the harvest strategy	
SG	Issue	Met? (Y/N)	Justification/Rationale
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 1.2.4

PI 1.2.4		There is an adequate assessment of the stock status	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	b	Y	The assessment estimates stock status relative to reference points.
			See SG100
	c	Y	The assessment identifies major sources of uncertainty.
			See SG100
80	a	Y	The assessment is appropriate for the stock and for the harvest control rule.
			See SG100
	c	Y	The assessment takes uncertainty into account.
			See SG100
	e	Y	The assessment of stock status is subject to peer review.
The assessment method has been internally reviewed by ices during the benchmarking of this North Sea herring stock (WKPELA) with the inputs of 3 external experts. IN addition, as part of the management system the assessment produced yearly by ICES is reviewed subsequently by STECF before reaching managers. However the assessment method has not been externally peer reviewed and it is no published yet. Therefore this does not achieve score 100.			
100	a	Y	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.
			Current assessment (SAM) includes major relevant information on the biology of the species and the features of the fisheries, and the directing surveying information on north sea herring (ICES 2012).
	c	Y	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
			The SAM assessment takes duly into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	d	N	The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
			The assessment method has been internally reviewed by ices during the benchmarking of this North Sea herring stock (WKPELA) and several alternative settings and assessment approaches were rigorously tested. In the WK a relatively minor retrospective pattern has been detected, that sits within the estimated confidence intervals. Despite its low magnitude the pattern leads to systematically underestimate of SSB and overestimate of F in the assessment year. Therefore the robustness of the new assessment is unclear and more years may be required to fully evaluate it, therefore this scoring guidepost cannot be met.
	e	N	The assessment has been internally and externally peer reviewed.
			See SG80
References			ICES. 2012. Report of the Benchmark Workshop on Pelagic Stocks (WKPELA 2012), 13–17 February 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:47. 572 pp.
OVERALL PERFORMANCE INDICATOR SCORE:			90
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Main retained species are likely to be within biologically based limits (if not, go to scoring issue d below).
			See text in SG 100.
	c	Y	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.
			See text in SG 80.
	d	Y	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.
			NA
80	a	Y	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).
			See text in SG 100.
	c	Y	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.
			According to both official statistics from the Swedish Agent for Marine and Water Management (SwAM) and catch records from the members of the client group covered by the previous Astrid Fiske certificate, there is no main retained species during the fishing operations as 100% of the catches are reported as herring.
100	a	Y	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
			In general, the incidental catch of non-target species in the North Sea pelagic herring fishery is considered to be low (Borges <i>et al.</i> , 2008). A study by Pierce <i>et al.</i> (2002) investigated incidental catch from commercial UK pelagic trawlers over the period January to August 2001. The target species, herring, accounted for 98% by weight of the overall catch with an overall incidental catch of 2.3% made up of mackerel, haddock, horse mackerel and whiting. Reported catches of Swedish Pelagic vessels targeting herring in the North Sea are made 100% of herring. The catches information from the member vessels targeting herring in the North Sea are considered accurate according to the Swedish National Programme for collection of fisheries data 2011-2013 (EU DCF).
	b	Y	Target reference points are defined for retained species.
			NA
References			<ul style="list-style-type: none"> » http://www.havochvatten.se/en/start.html; » Borges L, van Keeken O.A. van Helmond, A.T.M., Couperus, B., Dickey-Collas, M. Swedish National Programme for collection of fisheries data 2011 – 2013 in accordance with Council Regulation (EC) No 199/2008; Commission Regulation (EC) 665/2008; Commission Decision 2010/93/EC. » 2008. What do pelagic freezer-trawlers discard? ICES J. Mar. Sci., 65: 605–611.;

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
		»	Pierce, G.J., Dyson, J. Kelly, E., Eggleton, J., Whomersley, P., Young, I.A.G., Santos, M.B, Wang, J., and Spencer, N.J. 2002. Results of a short study on by-catches and discards in pelagic fisheries in Scotland (UK). Aquat. Living. Resour. 15: 327-334.
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine			100
OVERALL PERFORMANCE INDICATOR SCORE: pelagic trawlers			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	NA	<p>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.</p> <p>See SG 100.</p>
	b	NA	<p>The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).</p> <p>See SG 80.</p>
80	a	Y	<p>There is a partial strategy in place, if necessary that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits or to ensure the fishery does not hinder their recovery and rebuilding.</p> <p>See SG 100.</p>
	b	Y	<p>There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.</p> <p>No direct observations (i.e. independent observers or onboard cameras) have been made onboard of the member vessels to verify with high confidence that the strategy in place is efficient to avoid the capture of main retained species when targeting North Sea herring in the North Sea.</p> <p>However there is objective basis for confidence given the national landings reporting and cross checking procedures which provide verification of the exception low levels of retained bycatch in these fisheries.</p>
	c	Y	<p>There is some evidence that the partial strategy is being implemented successfully.</p> <p>See SG 100.</p>
100	a	Y	<p>There is a strategy in place for managing retained species.</p> <p>Highly sophisticated target species fishing procedures (i.e. recognition of the species specific echo sounder marks, selection of areas and periods, continuous communication with other fishing vessels, etc.) are in place onboard of Swedish pelagic vessels in order to avoid retained species and obtain clean catches of herring. According to both official statistics from the Swedish Agent for Marine and Water Management (SwAM) and catch records from the member vessels, there is no retained species during the fishing operations as 100% of the catches are reported as herring in the fishery.</p>
	b	N	<p>Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.</p> <p>See SG 80.</p>
	c	Y	<p>There is clear evidence that the strategy is being implemented successfully.</p> <p>Considering that, according to official Swedish statistics, 100% of the catches of the client group is reported as herring, the strategy is considered to have been implemented successfully.</p> <p>According to anecdotal information from SLU observers, the catches of retained species in the Swedish pelagic RSW fleet targeting herring are practically nil. Thus, this métier has been excluded from the list of fisheries to be covered by onboard</p>

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
			observers within the Swedish National Programme for collection of fisheries data 2011-2013 (EU DCF).
	d	Y	<p>There is some evidence that the strategy is achieving its overall objective.</p> <p>According to both official statistics from the Swedish Agent for Marine and Water Management (SwAM) and vessel catch records, there is no retained species during the fishing operations as 100% of the catches are reported as herring. Moreover, highly sophisticated target species fishing procedures (i.e. recognition of the species specific echo sounder marks, selection of areas and periods, continuous communication with other fishing vessels, etc.) are in place onboard of member vessels in order to avoid retained species and obtain clean catches of herring. ICES routinely estimates catches from 'other fisheries' in any stock assessments. This fishery is not identified as being a significant cause of incidental mortality of any other stock in the North sea.</p>
References			<p>» http://www.havochvatten.se/en/start.html;</p> <p>» Borges L, van Keeken O.A. van Helmond, A.T.M., Couperus, B., Dickey-Collas, M. Swedish National Programme for collection of fisheries data 2011 – 2013 in accordance with Council Regulation (EC) No 199/2008; Commission Regulation (EC) 665/2008; Commission Decision 2010/93/EC.</p>
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine			95
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			95
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Qualitative information is available on the amount of main retained species taken by the fishery.
			See text in SG 100.
	b	Y	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.
			See text in SG 100.
	c	Y	Information is adequate to support measures to manage main retained species.
			See text in SG 80.
80	a	Y	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.
			See text in SG 100.
	b	Y	Information is sufficient to estimate outcome status with respect to biologically based limits.
			See text in SG 100.
	c	Y	Information is adequate to support a partial strategy to manage main retained species.
			Highly sophisticated target species fishing procedures (i.e. recognition of the species specific echo sounder marks, selection of areas and periods with high density of herring, continuous communication with other fishing vessels with regard to the location of the herring shoals, species mix and size composition of herring shoals, etc.) are in place onboard of member vessels in order to avoid retained species and obtain clean catches of herring. These practical procedures aid vessels in avoiding shoals which contain high ratios of mixed species. Also, fishing is done in locations where shoals are dense and clearly identifiable as herring, further minimizing the risk of catching species other than herring. Such information enables the strategy to effective to obtain clean catches of herring. Also, factory declarations of species mix confirm that catches from both the pelagic trawl and the purse seine North Sea fishery are made 100% of herring.
d	Y	Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)	
		See text in SG 100.	
100	a	Y	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
			The catches information from the Swedish Pelagic vessels targeting herring in the North Sea are considered accurate according to the Swedish National Programme for collection of fisheries data 2011-2013 (EU DCF). Yearly verifications with direct observations (i.e. independent observers or onboard cameras) are not considered necessary for this métier due to the fact that the risk of obtaining catches other than herring in this fishery is considered negligible by Swedish authorities. Also, system of cross checking of landing declarations and sales notes, combined with tighter enforcement in pelagic fisheries has increased the accuracy of all landings information.

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species	
SG	Issue	Met? (Y/N)	Justification/Rationale
	b	Y	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
			Although direct onboard observations of the catches are lacking, the outcome status of the retained species would be always estimate with a high degree of certainty as the hypothetical quantity will be too low to affect their assessment.
	c	Y	Information is adequate to support a comprehensive strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective. Catches of retained species in the Swedish pelagic fisheries are routinely recorded and reported with a high degree of accuracy to EU and ICES working groups and used by ICES in the annual stock assessment of the stocks.
	d	Y	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
			Monitoring of the catches of retained species is conducted in sufficient detail during discharging operations, including the use of calibrated scales, to assess the quantity of all retained species in the fishing gears. It is conceivable that bycatch of mackerel, haddock, horse mackerel and whiting might occur in the fishery. However, if the catches are larger than 50 kg, they would have been reported in the landings statistics. The assessment team therefore concludes that the retention of any other species is an exceptionally rare event and negligible in its impact and it does not need to be considered, and thus the fishery meets SG 100.
References			<ul style="list-style-type: none"> » ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62n (HAWG), 13– 22 March 2012, ICES Headquarters, Copenhagen, Denmark. ICES CM 2012/ACOM:06; » Swedish National Programme for collection of fisheries data 2011 – 2013 in accordance with Council Regulation (EC) No 199/2008; Commission Regulation (EC) 665/2008; Commission Decision 2010/93/EC.
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine			100
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).
			See text in SG 100.
	b	Y	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.
			See text in SG 80.
	c	Y	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.
			NA
80	a	Y	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).
			See text in SG 100.
	b	Y	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.
			Bycatch of other species than herring in the Swedish Pelagic fishery, is an exceptionally rare event and negligible in its impact (see rationale given in 2.1.1-2.1.3). The available indications are that large-scale discarding is not widespread in the directed North Sea herring fishery. A number of direct-observer surveys have been conducted on Scottish, Dutch and Norwegian pelagic trawlers, (Napier et al, 1999; 2002; Borges et al., 2008; van Helmond & Overzee, 2011). The overall discard rate was in general less than 5% of the landed catch although it is likely that there are different discard rates between the specific fishing types.
			The most likely form of discarding in the fishery under assessment would be slippage. However, there are no indications, neither from on-board recording carried out by the previously certified Astrid Fiske member vessels nor from Swedish Authorities that it occurs in the Swedish pelagic fisheries for herring.
100	a	Y	There is a high degree of certainty that bycatch species are within biologically based limits.
			The assessment team concludes that the bycatch and discarding of any other species in the 2 assessed UoCs is an exceptionally rare event and negligible in its impact and thus it does not need to be considered. Therefore, the fishery meets SG 100. The assessment team also noticed that members of the client group (notably those covered by the former Astrid Fiske certificate) continuously provided official invitation to the former National Board of Fisheries and the today Swedish University of Agricultural Sciences (SLU) authorities that observers are very welcome on board their vessels. However, SLU has chosen to not send observers on board of any of the pelagic vessels as the amount and frequency of catching bycatch species is considered to be very low (Maria Hansson, Swedish coordinator of the Data Collection Programme, <i>pers. comm.</i>). Nonetheless, the assessment team recommended that the fishery search for an independent observer

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	
SG	Issue	Met? (Y/N)	Justification/Rationale
			programme to verify the information on the by-catch of non-target species. This might be also achieved, for example, by the use of CCTV.
References			<ul style="list-style-type: none"> » Borges L, van Keeken O.A. van Helmond, A.T.M., Couperus, B., Dickey-Collas, M. 2008. What do pelagic freezer-trawlers discard? ICES J. mar Sci., 65: 605–611. » ICES. 2011. Report of the ICES Advisory Committee, 2011. ICES Advice, 2011. Books 1 - 11. 1685 pp. Book 6, chapter 6.4.16. » ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp. » Napier, I.R., Newton, A.W. and Toreson, R. 1999. Investigation of the Extent and Nature of Discarding from Herring and Mackerel Fisheries in ICES Sub-Areas IVa and VIa. Final Report. EU Study Contract Report 96/082. North Atlantic Fisheries College, Shetland Islands, UK. June 1999. » Napier, I.R., Robb, A. and Holst, J. 2002. Investigation of Pelagic Discarding. Final Report. EU Study Contract Report 99/071. North Atlantic Fisheries College and the FRS Marine Laboratory. August 2002. » Van Helmond, A.T.M. and van Overzee, H.M.J. 2011. Estimates of discarded herring by Dutch flagged vessels 2003-2010. Working Document to ICES HAWG 2011.
OVERALL PERFORMANCE INDICATOR SCORE: Purse seines			100
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.2.2

PI 2.2.2		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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place, if necessary, which are expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.
			See text in SG 80.
	b	Y	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).
			See text in SG 80.
80	a	Y	There is a partial strategy in place, if necessary, for managing bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.
			Highly sophisticated target species fishing procedures (i.e. recognition of the species specific echo sounder marks, selection of areas and periods with high density of herring, continuous communication with other fishing vessels with regard to the location of the herring shoals, species mix and size composition of herring shoals, etc.) are in place onboard of Swedish pelagic RSW vessels in order to avoid bycatch species and obtain clean catches of herring. These practical procedures aid vessels in avoiding shoals which contain high ratios of mixed species. Also, fishing is done in locations where shoals are dense and clearly identifiable, further minimizing the risk of catching species other than herring. As the reported catches are composed 100% by herring, this fishery does not affect the status and recovery of bycatch species.
			There are also several other legislative mechanisms aimed to minimise the risk of discards that are part of the strategy in place. Vessels are not allowed to pump fish out of the hold. No on board sorting or grading occurs so there is no opportunity for high grading. All tanks are checked to ensure that there is no piping to allow underwater discharging.
	b	Y	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or the species involved.
			Although there is some objective basis for confidence that slippage is minimal (past observer reports, on board reporting, fishers own testimony, scientific assessment, enforcement) there is a lack of independent verification on the amount of bycatch species caught across several North Sea herring fleets, including both the Swedish pelagic trawl and purse seine fleet. This would preclude the fishery to obtain a SG 100.
	c	Y	There is some evidence that the partial strategy is being implemented successfully.
The client group has a code of conduct system for recording events of slippage, discards and interactions with ETP species. However, there is a lack of independent verification of events of slippage, discards and interactions with ETP species. This would preclude the fishery to obtain a SG 100. Recommendation: The assessment team considers that an independent verification would be necessary to achieve SG 100. This might be also achieved, for example, by the use of CCTV.			
100	a	N	There is a strategy in place for managing and minimising bycatch.
			See text in SG 80.

PI 2.2.2		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	
SG	Issue	Met? (Y/N)	Justification/Rationale
	b	N	<p>Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.</p> <p>See text in SG 80.</p>
	c	N	<p>There is clear evidence that the strategy is being implemented successfully.</p> <p>See text in SG 80.</p>
	d	N	<p>There is some evidence that the strategy is achieving its objective.</p> <p>NA</p>
References			<p>» ICES. 2011. Report of the ICES Advisory Committee, 2011. ICES Advice, 2011. Books 1 - 11. 1685 pp. Book 6, chapter 6.4.16.</p> <p>» ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06, 835 pp.</p>
OVERALL PERFORMANCE INDICATOR SCORE: Purse seines			80
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.2.3

PI 2.2.3		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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Qualitative information is available on the main bycatch species affected by the fishery.
			See text in SG80
	b	Y	Information is adequate to broadly understand outcome status with respect to biologically based limits
			See text in SG80
	c	Y	Information is adequate to support measures to manage bycatch.
			See text in SG80
80	a	Y	Qualitative information and some quantitative information are available on the amount of main bycatch species affected by the fishery.
			Members of the client group of vessels have a code of conduct system for recording events of slippage, discards and interactions with ETP species. To date this has shown zero discarding / slippage. The most likely form of discarding in the fishery would be slippage. However, there are no indications, neither from vessel records nor from Swedish Authorities that it occurs in the Swedish pelagic fisheries for herring. Recommendation: The assessment team considers that an independent verification of the level of bycatch and slippage would be necessary to achieve SG 100. This might be also achieved, for example, by the use of CCTV.
	b	Y	Information is sufficient to estimate outcome status with respect to biologically based limits.
			The bycatch of other species and slippage are considered to be rare events and it has negligible impact on the assessment of these stocks. Thus, it does not affect the quality of the estimation of the status of these stocks. Those stocks (i.e. mackerel, blue whiting, and horse mackerel) which in theory could interact with the herring and in theory be caught in the net with the potential to be discarded are all yearly assessed by ICES using both fishery dependent and fishery independent (i.e. surveys) information. However, the lack of a regular independent verification of the level of bycatch precludes both UoCs from achieving SG 100. This might be also achieved, for example, by the use of CCTV or having observers on board.
	c	Y	Information is adequate to support a partial strategy to manage main bycatch species.
			The bycatch of other species and slippage are considered to be rare events and it has negligible impact on the assessment of these stocks. Thus, it does not affect the quality of the estimation of the status of these stocks. However, the lack of a regular independent verification of the level of bycatch precludes the fishery from achieving SG 100. This might be also achieved, for example, by the use of CCTV or having observers on board. The assessment team also notices that have on several occasions invited the former National Board of Fisheries and the today Swedish University of Agricultural Sciences (SLU) authorities that observers are very welcome on board of any of the member vessels. However, SLU has chosen to not send observers on board of any of the pelagic vessels as the amount and frequency of catching bycatch species is considered to be very low (Maria Hansson, Swedish coordinator of the Data Collection Programme, <i>pers. comm.</i>). The assessment team

PI 2.2.3		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	
SG	Issue	Met? (Y/N)	Justification/Rationale
			considers that this issue might be solved by the use of CCTV.
	d	Y	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). Yearly data of catches are collected by Swedish authorities, thus any increase of the amount of by catch species from current level (i.e. assumed to be currently very close to 0) would be recorded. Own records of vessels and enforcement controls would also indicate whether an increase in slippage is taking place.
100	a	N	Accurate and verifiable information is available on the amount of all bycatch and the consequences for the status of affected populations. See SG 80.
	b	N	Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty . See SG 80.
	c	N	Information is adequate to support a comprehensive strategy to manage bycatch, and evaluate with a high degree of certainty whether a strategy is achieving its objective . See SG 80.
	d	N	Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species. See SG 80.
References			» ICES. 2011. Report of the ICES Advisory Committee, 2011. ICES Advice, 2011. Books 1 - 11. 1685 pp. Book 6, chapter 6.4.16. » ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp.
OVERALL PERFORMANCE INDICATOR SCORE: Purse seines			80
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawls			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.
			See SG 100.
	b	Y	Known direct effects are unlikely to create unacceptable impacts to ETP species.
			See SG 100.
80	a	Y	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.
			See SG 100.
	b	Y	Direct effects are highly unlikely to create unacceptable impacts to ETP species.
			See SG 100.
	c	Y	Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.
			The assessment team considers that indirect effects are thought to be unlikely to create unacceptable impacts on ETP species. The main focus at the EU level has been on direct effects, while indirect effects are less well known. Considering that the herring stock has fluctuated over B_{pa} in the last years, indirect effects linked to a very low level of herring biomass in the ecosystem are thought to be unlikely to create unacceptable impacts. Also, there are on-board waste management procedures in place that would minimise the indirect effect of waste on ETP species.
100	a	Y	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.
			According to EU regulation 812/2004, all vessels larger than 15 m in the pelagic fish should be covered by observers covering at least 5% of the effort aimed to estimate bycatch of ETP species in these fisheries. In October 2006 Sweden implemented an observation scheme in the pelagic trawl fisheries under the EC Regulation 812/2004. The observer program was carried out by the Swedish Board of Fisheries during two years and stopped in 2008. Totally 226 fishing days were observed. Over the two years, in area IVa and b (North Sea) observers were onboard during 5 days with a cover rate of 2.8 % of the total fishing effort. In area III a and b (Skagerrak and Kattegat) 32 fishing days were observed with a cover rate of 5.9 % while in area III d (Baltic) 180 days of fisheries were observed with at total cover rate of 3.9 %. No bycatch of ETP species has been reported from the North Sea herring Swedish fisheries (ICES 2010, 2012) and from on board records. Nowadays the monitoring program has been discontinued due to low risk of encountering of ETP species in the herring pelagic fishery and economic cost-benefit considerations and Swedish sampling effort is now focused on other fisheries. Thus, interactions between North Sea herring fishery with ETP species is generally considered to be low. Cetacean bycatch has been investigated and shown to be negligible while the bycatch of seals, the majority is grey seals, is considered as rare

		<p>event and also the eastern Atlantic population of the grey seal is not considered to be threatened. Sharks are occasionally caught although this is rare and its survival rates after discarding are apparently high according to ICES HAWG. Also, seabird bycatch in the North Sea herring fisheries is considered rare.</p> <p>Sweden has fulfilled the minimum requirements for dedicated monitoring programs of ETP species as per 812/2004. Thus, it is highly likely that the fishery is within limits of national and international requirements for protection of ETP species. Purse seines have not been identified as a high risk gear for ETP according to EU 812/2004 and the assessment team considers that it is less likely that purse seiners has a larger impact on ETP species than pelagic trawlers. The main treat for ETP species in the North Sea are commercial and recreational gillnets, wreck nets, trammel or tangle nets and bottom trawls, which are also the fisheries known to bycatch Harbour Porpoise (see Ascobans Conservation plan for harbor porpoise in the North Sea for a review). No interactions with Harbour Porpoise were recorded in the North Sea herring pelagic fisheries. A conclusion of the Swedish program was that the observation program was targeting the wrong fisheries in the wrong area (Sara Königson, SLU, personal communication).</p> <p>Also, no bycatch of ETP species has been reported from the North Sea herring Swedish fisheries (ICES 2010, 2012) and from records of kept by those members of the fleet covered by the previous Astrid Fiske certificate. The level of effort coverage for pelagic trawls is sufficient to state that 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. Although the main sampling period in this fisheries was between 2006 and 2008 under the 812/2004, these data has shown no interactions with ETP species and therefore Swedish sampling effort is now focused on other fisheries for which earlier sampling showed to be of higher risk.</p>	
	b	Y	<p>There is a high degree of confidence that there are no significant detrimental direct effects of the fishery on ETP species.</p> <p>Although the main sampling period in this fisheries was between 2006 and 2008 under the 812/2004, these data has shown no interactions with ETP species (ICES 2010, 2012) and therefore Swedish sampling effort is now focused on other fisheries. Considering the low level of bycatch of ETP species in the North Sea herring pelagic fisheries and Swedish pelagic fisheries, including those covered by this assessment, known direct effects are highly unlikely to create unacceptable impacts to ETP species. Thus, There is a high degree of confidence that there are no significant detrimental direct effects of the fishery on ETP species.</p>
	c	N	<p>There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.</p> <p>See SG80.</p>
	References		<ul style="list-style-type: none"> » COUNCIL REGULATION (EC) No 812/2004 – on laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98. » ICES. 2011. Report of the ICES Advisory Committee, 2011. ICES Advice, 2011. Books 1 - 11. 1685 pp. Book 6, chapter 6.4.16. » ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp. » ICES. 2010. Report of the Study Group on Bycatch of Protected Species (SGBYC), 1–4 February 2010, Copenhagen, Denmark. ICES CM 2010/ACOM:25. 123 pp.

	» ICES. 2012. Report of the Working Group on Bycatch of Protected Species (WGBYC 2012), Copenhagen, Denmark. ICES CM 2011/ACOM:28. 67 pp.
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	95
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers	95
CONDITION NUMBER (if relevant):	NA

Evaluation Table: PI 2.3.2

PI 2.3.2		The fishery has in place precautionary management strategies designed to:	
		<ul style="list-style-type: none"> • Meet national and international requirements; • Ensure the fishery does not pose a risk of serious harm to ETP species; • Ensure the fishery does not hinder recovery of ETP species; and • Minimise mortality of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place that minimise mortality, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.
			See text SG80
	b	Y	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).
			See text SG80.
80	a	Y	There is a strategy in place for managing the fishery’s impact on ETP species, including measures to minimise mortality that is designed to be highly likely to achieve national and international requirements for the protection of ETP species.
			Several strategies are in place at EU level for managing the fishery’s impact on ETP species. These are the Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, which includes a specific requirement to safeguard the habitats of annex listed species. Sweden has fulfilled its obligations under this and there are a number of Marine SACs aimed at safeguarding ETP populations; Council Directive 79/409/EC on the Conservation of Wild Birds; Council Regulation (EC) No. 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy; Council Regulation No. 812/2004, which oblige Member States to use acoustic deterrent devices or ADDs (notably pingers) in fisheries that are considered at risk of interaction with ETP species, in order to minimize the risk of ETP species to be caught. Interactions between North Sea herring fishery with ETP species are considered to be a rare event. Thus, given the scale of impact is shown to be low, the strategy in place is considered appropriate. On board of vessels of the client group dedicated forms for recording interactions with ETP species are used. No ETP species has been reported until now. However, although members of the client group welcome the presence of ETP observers onboard, the lack of observers on board since 2008 (the program has been discontinued due to low risk of encountering of ETP species in the fishery and economic cost-benefit considerations), precluded the fishery from achieving SG 100.
	b	Y	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 results from both national monitoring and from dedicated on board reporting forms for recording interactions with ETP species has shown no interactions with ETP species. Key ETP species which could theoretically most likely to interact with pelagic fisheries are not showing population decline in the area where this fisheries operate (e.g. harbour porpoise and common dolphins).

PI 2.3.2		<p>The fishery has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> • Meet national and international requirements; • Ensure the fishery does not pose a risk of serious harm to ETP species; • Ensure the fishery does not hinder recovery of ETP species; and • Minimise mortality of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	Y	<p>There is evidence that the strategy is being implemented successfully.</p> <p>Sweden reported an observed fishing effort above the levels required under the EU 812/2004 regulation. ICES has also stated that EU 812/2004 “succeeded in providing a much more comprehensive picture of cetacean bycatch in European fisheries”, which has allowed Member States to streamline the need for research and protection of cetaceans and improved the implementation of the Regulation. Assessors have seen evidence of the ETP reporting log in use in the wheel house of previously certified vessels. Sweden has met its obligations under the habitats regulation to designate marine natural sites for certain ETP species. However, although client vessels have continuously welcomed ETP observers onboard, this has not happened since 2008 (the program has been discontinued due to low risk of encountering of ETP species in the fishery and economic cost-benefit considerations), so precluding the fishery from achieving SG 100.</p>
100	a	N	<p>There is a comprehensive strategy in place for managing the fishery’s impact on ETP species, including measures to minimise mortality that is designed to achieve above national and international requirements for the protection of ETP species.</p> <p>See SG 80.</p>
	b	N	<p>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.</p> <p>See SG 80.</p>
	c	N	<p>There is clear evidence that the strategy is being implemented successfully.</p> <p>See SG 80.</p>
	d	N	<p>There is evidence that the strategy is achieving its objective.</p> <p>See SG 80.</p>
References		<ul style="list-style-type: none"> » Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora; » Council Directive 79/409/EC on the Conservation of Wild Birds; » Council Regulation (EC) No. 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy; » Council Regulation No. 812/2004 – to implement observer schemes; » ICES. 2010. Report of the Study Group on Bycatch of Protected Species (SGBYC), 1–4 February 2010, Copenhagen, Denmark. ICES CM 2010/ACOM:25. 123 pp. » ICES. 2012. Report of the Working Group on Bycatch of Protected Species (WGBYC 2012), Copenhagen, Denmark. ICES CM 2011/ACOM:28. 67 pp. 	

PI 2.3.2		The fishery has in place precautionary management strategies designed to: <ul style="list-style-type: none"> • Meet national and international requirements; • Ensure the fishery does not pose a risk of serious harm to ETP species; • Ensure the fishery does not hinder recovery of ETP species; and • Minimise mortality of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
OVERALL PERFORMANCE INDICATOR SCORE: Purse seines			80
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.3.3

PI 2.3.3		<p>Relevant information is collected to support the management of fishery impacts on ETP species including:</p> <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.
			See SG 80.
	b	Y	Information is adequate to broadly understand the impact of the fishery on ETP species.
			See SG 80.
	c	Y	Information is adequate to support measures to manage the impacts on ETP species.
			See SG 80.
80	a	Y	Sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.
			The EU report Brussels, 21.9.2011, COM(2011) 578 final concludes that: “There has been insufficient sampling in the right fisheries or areas to enabling sound management decisions to be made with respect to cetacean bycatch. Of the Member States that actually did report to the Commission most reported low or no bycatch in EU waters but scientific evidence from at-sea observer schemes or from post-mortem analysis of stranded animals continues to indicate significant interactions between fisheries and cetaceans. Information on cetacean populations is fragmented and population status remains unclear so the actual impact of fishing on populations is poorly understood. Absolute estimates that might be useful to inform management actions exist only for a few species in the North Sea, the Baltic Sea and parts of the NE Atlantic.” However, survey of the different métiers shown that pelagic fisheries are classified to have the lowest impact on ETP species among fisheries in the North Sea, the most problematic being gillnet fisheries and bottom trawl fisheries. Specifically, several surveys have shown that the risk of interaction of the Swedish pelagic fisheries with ETP species is negligible (0 event recorded up to 2006 when observers were on board of vessels fishing for herring in the North Sea) and thus the impact on ETP population is also considered negligible. However, although members of the client group have invited ETP observers onboard, the lack of observers on board since 2008 (the program has been discontinued due to low risk of encountering of ETP species in the fishery and economic cost-benefit considerations), precluded the fishery from achieving SG 100. Beside, absolute estimates of population size of the ETP species would be necessary to estimate the impact of any fisheries on them.
	b	Y	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.
			Considering that no interaction with ETP species has been reported in the Swedish pelagic fisheries and in the client group, the impact on ETP species is considered negligible. Beside, absolute estimates of population size of the ETP species would be necessary to estimate the impact of any fisheries on them. Unfortunately, information on cetacean populations is still fragmented and population status

PI 2.3.3		<p>Relevant information is collected to support the management of fishery impacts on ETP species including:</p> <ul style="list-style-type: none"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
			remains unclear so the actual impact of fishing on populations is poorly understood, although it is estimated that that pelagic fisheries are classified to have the lowest impact on ETP species among fisheries in the North Sea. Absolute estimates that might be useful to inform management actions exist only for a few species in the North Sea, the Baltic Sea and parts of the NE Atlantic.
	c	Y	<p>Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.</p> <p>To estimate the impact of a fishery on the population of ETP species, a full strategy would require the existence of estimates of population size and by catch of ETP by fisheries. This would allow estimating if the number of small cetaceans captured is greater than 1% of their total population size, a threshold that ASCOBANS consider to be precautionary for ETP species. Such information, although uncertain for some fisheries and ETP species, has shown that the number of small cetaceans captured in the pelagic fisheries for herring in the North Sea is likely to be less than the 1% threshold indicated by ASCOBANS.</p> <p>The client group has not shown any interaction with ETP species and thus the impact on ETP species is considered negligible. However, the lack of observers on board since 2008 (the program has been discontinued due to low risk of encountering of ETP species in the fishery and economic cost-benefit considerations), precluded the fishery achieving SG 100.</p>
100	a	N	<p>Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.</p> <p>See SG 80.</p>
	b	N	<p>Accurate and verifiable information is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.</p> <p>See SG 80.</p>
	c	N	<p>Information is adequate to support a comprehensive strategy to manage impacts, minimise mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.</p> <p>See SG 80.</p>
References			<p>» EU report Brussels, 21.9.2011, COM(2011) 578 final;</p> <p>» ICES. 2010. Report of the Study Group on Bycatch of Protected Species (SGBYC), 1–4 February 2010, Copenhagen, Denmark. ICES CM 2010/ACOM:25. 123 pp.</p> <p>» ICES. 2012. Report of the Working Group on Bycatch of Protected Species (WGBYC 2012), Copenhagen, Denmark. ICES CM 2011/ACOM:28. 67 pp.</p>

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"> • Information for the development of the management strategy; • Information to assess the effectiveness of the management strategy; and • Information to determine the outcome status of ETP species. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
OVERALL PERFORMANCE INDICATOR SCORE: Purse seines			80
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawls			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
			See SG 100.
80	a	Y	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
			See SG 100.
100	a	Y	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.
			<p>The pelagic domain habitat is rarely impacted by purse seiners and pelagic trawlers activity. The likelihood of purse seiners and pelagic trawlers interacting with the seabed is considered negligible and also actively avoided by the vessels as it might damage the gears. Although purse seiners are more likely to have occasional contact with the seabed, this might happen only in case of muddy or sandy areas, and any such contact would be restricted in space (i.e. the seines has no more than 250m diameter at the surface). Thus, any contact would be light (i.e. no trawl doors or ground gear) and will not have any serious or irreversible harm on the habitat structure. Contact with hard bottoms is actively avoided by this fishery. Maps of the sensitive seabed communities exist for the North Sea and can be used by SPFPO to lower the risk of encountering them during the fishing operations.</p> <p>Skippers control the position of the net in the water column through on-board technology, such as depth sounders, sonar and trawl monitoring systems. All vessels in the client group use trawl-monitoring sensors are required to carry VMS on board according to EU and Swedish legislation. The reported logbook positions of herring catches from a representative sample of client vessels between 2009 and 2011 and the corresponding VMS-tracks from the associated fishing trips (Figure 3.9 in the chapter report) indicate a high spatial accuracy of the self-reported fishing events. However, the assessment team highlights the fact that within the remit of this pelagic fishery, the benthos is not an issue.</p>
References		» OSPAR Maps of Sensitive seabed communities in the Northeast Atlantic. At: www.ngo.grida.no/wwfneap/Projects/MPA.htm	
OVERALL PERFORMANCE INDICATOR SCORE: Purse seiners			100
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.
			See SG 100.
	b	Y	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).
			See SG 100.
80	a	Y	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.
			See SG 100.
	b	Y	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.
			Although there is no direct testing of the likelihood of the impact of pelagic gears on the seabed, there is ample evidences from the daily operations of the fisheries and the design of the gear that interactions with the bottom is highly unlikely. Therefore, the onboard strategy to avoid bottom contacts is considered to be effective. However, the lack of observers on board precluded the fishery achieving SG 100.
			There is some evidence that the partial strategy is being implemented successfully.
	c	Y	See SG100.
100	a	Y	There is a strategy in place for managing the impact of the fishery on habitat types.
			Fishing for herring in the North Sea takes place in mid-water, above the seabed. Contact with the seabed is actively avoided by this fishery as it causes damage to the gears and risks large economic losses. Sophisticated technology such as sonar, sea charts, cameras, echo sounder on the gear, etc. is in place onboard vessels in order to control the performances of the net and the distance of the gear to the bottom. For example, scanning sonar discloses seabed topography and contours up to 1.5 miles ahead of the vessel. All vessels use trawl monitoring sensors attached to the net, and monitors on the bridge display data on the height and spread of the net opening, depth of footrope of the net, and clearance between footrope and seabed. Also, as part of the strategy, vulnerable seabed habitats are explicitly protected by Swedish and EU legislation. The reported logbook positions of herring catches from a sample group of client vessels between 2009 and 2011 and the corresponding VMS-tracks from the associated fishing trips (Figure 3.9) in the chapter report) indicate a high spatial accuracy of the self-reported fishing events. However, the assessment team highlights the fact that within the remit of this pelagic fishery, the benthos is not an issue.
	b	N	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
			See SG80.

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	Y	There is clear evidence that that strategy is being implemented successfully.
			It is generally agreed that the strategy (see text under 100a score) used by the pelagic fisheries to avoid contact with the seabed is highly efficient to prevent this. There are no records or anecdotal information that shown events of accidental bottom contact during fishing operation or in any other vessel fishing for North Sea herring with purse seines or pelagic trawls in the North Sea.
	d	Y	There is some evidence that the strategy is achieving its objective.
			The reported logbook positions of herring catches from a representative group of client vessels between 2009 and 2011 and the corresponding VMS-tracks from the associated fishing trips (Figure 3.9) in the chapter report) indicate a high spatial accuracy of the self-reported fishing events. VMS plots clearly indicate that the vessels mainly fish in the central part of the North Sea and far from the coast, implying that the fishery does not pose a risk of serious or irreversible harm to habitat types and thus the strategy is efficient to achieve these objectives. Moreover, the assessment team highlights the fact that within the remit of this pelagic fishery, the benthos is not considered a concern.
References			
OVERALL PERFORMANCE INDICATOR SCORE: Purse seiners			95
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			95
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There is basic understanding of the types and distribution of main habitats in the area of the fishery.
			See SG 100.
	b	Y	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.
			See SG 100.
80	a	Y	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.
			See SG 100.
	b	Y	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.
			See SG 100.
	c	Y	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).
			There is no regular monitoring of the bottom habitat distributions in the North Sea. Available information is collected during dedicated but sporadic projects (see OSPAR website). However, the information is sufficient to detect any increase in risk to habitat but not for detecting changes of the habitat distribution over time.
100	a	Y	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
			The distribution of habitat types in the North Sea, with particular attention to the occurrence of vulnerable habitat types, is mapped and information is reported through a dedicated websites.
	b	Y	The physical impacts of the gear on the habitat types have been quantified fully.
			The assessment team considers that the pelagic fisheries have no physical impact on the pelagic environment and a negligible one on the seabed. Moreover, information exists and continue to be collected to allow monitoring the locations where the vessels fish (i.e. VMS data, catches and fishing effort), and the habitats over which they operate to be accurately mapped.
	c	N	Changes in habitat distributions over time are measured.
			See SG 80.
References			» http://www.searchmesh.net; » http://www.awi.de/en/research/research_divisions/geosciences/marine_geochemistry/marine_gis/digital_atlas_of_the_north_sea/ » OSPAR Maps of Sensitive seabed communities in the Northeast Atlantic. At: www.ngo.grida.no/wwfneap/Projects/MPA.htm .

OVERALL PERFORMANCE INDICATOR SCORE: Purse seiners	95
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers	95
CONDITION NUMBER (if relevant):	NA

Evaluation Table: 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	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	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.
			See SG 100.
80	a	Y	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.
			Herring is an important prey species in the North Sea ecosystem and also one of the dominant planctivorous fish. Moreover, existing information shows that herring provides an important link between trophic levels. According to ICES, the human consumption herring fisheries have almost no disturbances to the seabed, negligible bycatch of other fish species and ETP species (see justifications in earlier P2 performance indicators). The current level of the North Sea herring stock is estimated to be above reference limits. The most likely indirect ecosystem effect is caused by the removals of herring from the ecosystem. There are no indications of truncated size composition, trophic cascades, genetic disturbances, and decrease of biodiversity caused by this fishery on the herring stock. There are no indications that the current fishery removals pose an undesirable risk to herring predator and prey populations. However, the role of herring in the ecosystem and the consequences of the herring fisheries on the ecosystem have not been empirically modeled.
100	a	N	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.
			See SG 80.
References			<ul style="list-style-type: none"> » ICES. 2011. Report of the ICES Advisory Committee, 2011. ICES Advice, 2011. Books 1 - 11. 1685 pp. Book 6, chapter 6.4.16. » ICES. 2012. Report of the Working Group on the Ecosystem Effects of Fishing Activities (WGECO), 11–18 April 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:26. 192 pp. » ICES. 2012. Report of the Working Group on Bycatch of Protected Species (WGBYC 2012), Copenhagen, Denmark. ICES CM 2011/ACOM:28. 67 pp. » ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp.
OVERALL PERFORMANCE INDICATOR SCORE: Purse seiners			80
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	There are measures in place, if necessary.
			See SG 80.
	b	Y	The measures take into account potential impacts of the fishery on key elements of the ecosystem.
			See SG 80.
	c	Y	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).
			See SG 80.
80	a	Y	There is a partial strategy in place, if necessary.
			Several strategies are in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function. Herring is managed by an EU-Norway Management plan (EC 1300/2008), EC 812/2004 dictates the data and measures necessary for minimizing bycatch of ETP, 92/43/EEC and 79/409/EC aim to the conservation of Natural Habitats and of Wild Fauna and Flora and wild birds and 2009/C68 E/05 set guidelines for the reduction in unwanted by-catches and elimination of discards in European fisheries;
			The Marine Strategy Framework Directive (2008/58/EC) set the general principles for monitoring and establishing actions to achieve Good Environmental Status in the marine environment. The Common Fisheries Policy also aims to minimize the impact of fishing activities on marine ecosystems and towards a progressive implementation of an ecosystem approach to fisheries management (Article 2 of the EC 2371/2002).
	b	Y	Large pelagic vessels are bound by the requirements of the IMO/MARPOL convention, which aims to prevent pollution from ships.
			ICES have dedicated working groups (i.e. WGECO) for collecting and analyzing available information of the impact of the fisheries on the ecosystem.
			However, a comprehensive and integrated strategy that includes all different part of the ecosystem when managing the herring fisheries has not been implemented. This prevents the fishery from meeting SG 100.
c	Y	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.	
		The main indirect effect on the ecosystem is given by the removals of herring. As North Sea herring is successfully managed by an EU-Norway management plan based on the MSY framework and the stock is well above B_{MSY} , the partial strategy in place is considered to successfully utilize available information and it is expected to restrain impacts of the fishery on the ecosystem.	
		The partial strategy is considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	
			The main indirect effect of the fishery on the ecosystem is due to the removals of herring. North Sea herring is successfully managed by an EU-Norway management plan based on the MSY framework. In 2012, ICES classifies the stock as being at full reproductive capacity and as being harvested sustainably, below the current

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	
SG	Issue	Met? (Y/N)	Justification/Rationale
			management plan and F_{MSY} targets. Thus, the partial strategy in place is considered likely to work, based on plausible arguments.
	d	Y	<p>There is some evidence that the measures comprising the partial strategy are being implemented successfully.</p> <p>Since the last reform of the Common Fisheries Policy in 2002, there has been a wide increase of the use of management plans to manage exploited fish stocks, which are nowadays based on the MSY framework. As herring is managed by an EU-Norway management plan, and currently exploited sustainably according to the MSY framework, the partial strategy in place is considered to be implemented successfully.</p>
100	a	N	<p>There is a strategy that consists of a plan, in place.</p> <p>See SG 80.</p>
	b	N	<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> <p>See SG 80.</p>
	c	N	<p>The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved.</p> <p>See SG 80.</p>
	d	N	<p>There is evidence that the measures are being implemented successfully.</p> <p>See SG 80.</p>
References			<ul style="list-style-type: none"> » Marine Strategy Framework Directive 2008/58/EC; » EC 2371/2002; » ICES. 2012. Report of the ICES Advisory Committee, 2012. ICES Advice, 2012. Books 1 - 11. 1685 pp. Book 6, chapter 6.4.16; » ICES. 2012. Report of the Working Group on the Ecosystem Effects of Fishing Activities (WGECO), 11–18 April 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:26. 192 pp.; » Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora; » Council Directive 79/409/EC on the Conservation of Wild Birds; » Council Resolution 2009/C68 E/05, on Reduction in unwanted by-catches and elimination of discards in European fisheries » Council Regulation (EC) No. 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy; » Council Regulation No. 812/2004 – to implement observer schemes;

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	
SG	Issue	Met? (Y/N)	Justification/Rationale
OVERALL PERFORMANCE INDICATOR SCORE: Purse seiners			80
OVERALL PERFORMANCE INDICATOR SCORE: pelagic trawlers			80
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 2.5.3

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Information is adequate to identify the key elements of the ecosystem (e.g., trophic structure and function, community composition, productivity pattern and biodiversity).
			See SG 80.
	b	Y	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, and have not been investigated in detail .
			See SG 100.
80	a	Y	Information is adequate to broadly understand the key elements of the ecosystem.
			ICES routinely monitor the different elements of the ecosystem and collate information from surveys and fisheries. This activity was previously coordinated by WGRED, which has been dissolved and substituted by WGECO. Interactions between fish species are modeled in the ICES Multispecies Working Group and, for example, estimates of predation mortality are used in the assessment of several species, including since 2012 also North Sea herring.
	b	Y	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail .
			See SG 100.
	c	Y	The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known .
			See SG 100.
	d	Y	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.
			See SG 100.
	e	Y	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).
			See SG 100.
100	b	Y	Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated .
			As previously stated, the main interaction between the fishery and the different parts of the ecosystem is through the direct removal of herring. The high scores for the P2 criteria (outcome status PI) indicate why this has not identified as main interaction. The impact of removal of herring on the ecosystem has been investigated. For example, the role of herring as a prey species has been investigated using multispecies models, such as multispecies virtual population analysis (Vinther, 2001; Kempf et al., 2006), stochastic multispecies (SMS) model (Lewy and Vinther, 2004), and Ecopath with Ecosim (Mackinson and Daskalov, 2007).

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	Y	The impacts of the fishery on target, Bycatch and ETP species are identified and the main functions of these Components in the ecosystem are understood .
			According to ICES, the human consumption herring fishery has negligible bycatch of other fish species and ETP species (see justifications in earlier P2 performance indicators). Thus, the impact of the fishery is through the direct removal of herring. The current level of the North Sea herring stock is estimated to be within MSY reference limits, the stock biomass is much higher than the MSY reference level and the fisheries is current managed according to MSY. There are numerous studies on herring and its function in the ecosystem (see Dickey-Collas et al., 2010 and references therein for a comprehensive review).
	d	Y	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.
			Due to the known low level of interaction between this fishery and other components of the ecosystem (i.e., target, bycatch, retained, ETP species and habitats) the existing level of information is sufficient for any consequences for the ecosystem to be inferred. As the main consequence is the removal of herring, available information is sufficient to infer the impact of the fisheries on the ecosystem through the role of herring (i.e. through multispecies modeling in the ICES Multispecies Working Group).
	e	Y	Information is sufficient to support the development of strategies to manage ecosystem impacts.
			Information is available to model the role and the impact of the fisheries on ecosystem (e.g. Ecopath with Ecosim; Mackinson and Daskalov, 2007). Any shortcoming on ecosystem management is not a result of the lack of information but the fact that management is carried out at the single species level and there are still difficulties of incorporating the available information into ecosystem based management.
References			<ul style="list-style-type: none"> » ICES. 2012. Report of the Working Group on the Ecosystem Effects of Fishing Activities (WGECO), 11–18 April 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:26. 192 pp. » ICES, 2008c. Report of the Working Group for Regional Ecosystem Description (WGRED), 25–29 February 2008, ICES, Copenhagen, Denmark. ICES CM 2008/ACOM:47. 203 pp.; » ICES.2011. Report of the Working Group on Multispecies Assessment Methods (WGSAM), 10–14 October 2011, Woods Hole, USA. ICES CM 2011/SSGSUE:10. 229 pp. » ICES. 2012. Report of the Herring Assessment Working Group for the Area South of 62 N (HAWG), 13 - 22 March 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:06. 835 pp. » Vinther, M. 2001. Ad hoc multispecies VPA tuning applied for the Baltic and North Sea fish stocks. ICES Journal of Marine Science, 58: 311–320. » Kempf, A., Floeter, J., and Temming, A. 2006. Decadal changes in the North Sea food web between 1981 and 1991—implications for fish stock assessment. Canadian Journal of Fisheries and Aquatic Sciences, 63: 2586–2602.

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<ul style="list-style-type: none"> » Lewy, P., and Vinther, M. 2004. A stochastic age-length-structured multispecies model applied to North Sea stocks. ICES Document CM 2004/FF: 20. 33 pp. » Mackinson, S., and Daskalov, G. 2007. An ecosystem model of the North Sea to support an ecosystem approach to fisheries management: description and parameterisation. Science Series Technical Report, Cefas Lowestoft, 142. 196 pp. » Dickey-Collas et al., 2010. Lessons learned from stock collapse and recovery of North Sea herring: a review. ICES Journal of Marine Science, 67: 1875–1886.
OVERALL PERFORMANCE INDICATOR SCORE: Purse seines			100
OVERALL PERFORMANCE INDICATOR SCORE: Pelagic trawlers			100
CONDITION NUMBER (if relevant):			NA

Evaluation Table: PI 3.1.1

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2.
			At level of international law, the Sweden has ratified the United Nations Convention on the Law of the Sea (UNCLOS) convention. The principle legislative instrument for fisheries management in the EU is the Common Fisheries Policy, which aims at achieving sustainable fisheries management across the EU. This clearly aims to achieve both P1 (stock management) and P2 (wider ecosystem impacts). For example, the regulation states
			The scope of the CFP extends to conservation, management and exploitation of living aquatic resources bearing in mindUNCLOS. The objective of the CPF should therefore be to provide for sustainable exploitation of living aquatic resources in the context of sustainable development, taking account of the environmental, economic and social aspects in a balanced manner.
			Underneath the umbrella of the EU CFP, there are many binding regulations covering all aspects of fisheries, which are amended and updated as required. For example, some of the key recent pieces of legislation include the regulations on IUU and on control & enforcement.
			Swedish national legislation implements all aspects of the reformed EU Common Fisheries Policy. (2371/2002) and establishes licensing, MCS and penalty procedures and as such aims at achieving sustainable fisheries in accordance to MSC P1 and P2.
			» The Fisheries law (Fiskelag) SFS 1993:787 on rights to fisheries, including fisheries within Sweden’s sea territory and Sweden’s economic zone, and;
			» The law concerning EC Regulations on the CFP (Lag om EG:s förordningar om dengemensamma fiskeripolitiken) SFS 1994:1709.
	b	Y	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.
			Scored at SG 80
	c	Y	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability of the fishery.
			Scored at SG 100
	d	Y	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
			Scored at SG 100

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it:	
		<ul style="list-style-type: none"> • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
80	b	Y	The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery.
			The main mechanism for the resolution of legal disputes is the Swedish judicial system. Fishermen or industry representatives can appeal to the full judicial process.
	c	Y	The management system or fishery is attempting to comply in a timely fashion within binding judicial decisions arising from any legal challenges.
			Scored at SG 100
	d	Y	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.
			Scored at SG 100
100	b	N	The management system incorporates or subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective .
			Scored at SG 80
	c	Y	The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges.
			There are a number of mechanisms in EU and Swedish fisheries management which act proactively to avoid legal disputes, and these are much improved in recent years. Following the review of the CFP in 2002, much increased emphasis was placed on stakeholder engagement in the management process as a means of proactively avoiding disputes. Stakeholder consultation through Regional Advisory Councils (RAC) is now an integral part of the functioning of this system. For the fishery under assessment the Pelagic RAC plays an important role in bringing parties together (industry – across all sectors, science, NGO) early on in the management process, thereby reducing the likelihood of management measures which trigger dispute. More generally in Sweden, there is an effective engagement between industry and regulators / enforcement officers, and helps to ensure good understanding of changing regulations.
	d	Y	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
			The EU CFP sets out a formal commitment to the legal and customary rights of people dependent on fishing, through a commitment to relative stability (meaning Member States are consistently allocated the same proportion of particular stocks):

PI 3.1.1		<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> • Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; • Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and • Incorporates an appropriate dispute resolution framework. 	
SG	Issue	Met? (Y/N)	Justification/Rationale
			<p>“In view of the precarious economic state of the fishing industry and the dependence of certain coastal communities on fishing, it is necessary to ensure relative stability of fishing activities by the allocation of fishing opportunities among the Member States, based upon a predictable share of the stocks for each Member State.”</p> <p>How the allocation is divided within member states is then laid out at national level in the National Strategy Plan (in accordance with EC no 1198/2006). The Swedish National Strategic Plan for the European Fisheries Fund (2007 -2013) explicitly considers fishing communities and includes a number of socio-economic objectives, which can be achieved whilst remaining consistent with P1 & 2 (stock management & ecosystem) objectives.</p> <p>The Swedish management system also includes special quota provisions for coastal vessels less than 12 m with a regional quota for Baltic Sea vessels and a quota for the Gulf of Bothnia. Additionally, the management system includes Territorial use rights in fisheries (TURF), and in particular when used in public fisheries these have been piloted as co-management approaches to safeguard the interests of small scale coastal fishermen.</p>
References			<ul style="list-style-type: none"> » EC 2002. Council Regulation No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy. Official Journal of the European Union L 358, 59-80. » http://www.pelagic-rac.org/ » Popescu, I. (2010.) Fisheries in Sweden. European Parliament Directorate General for Internal Policies. Policy Department B: Structural and Cohesion Policies.
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			n/a

Evaluation Table: PI 3.1.2

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .
			Scored at SG 80
	b	Y	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.
			Scored at SG 80
80	a	Y	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.
			Section 3.5 of this assessment report provides a description of the key roles and responsibility in the fishery management process. Briefly, these include: <ul style="list-style-type: none"> » Management / administration: EU DG Mare, The Swedish Agency for Marine and Water Management (SwAM). » Scientific Advice: ICES, EU's STECF & ACOM, Swedish University of Agricultural Sciences Sveriges lantbruksuniversitet (SLU) » Control & Enforcement: EU Community Fisheries Control Agency (CFCA), The Swedish Agency for Marine and Water Management (SwAM) & the Swedish Coast Guard (www.kustbevakningen.se). » Industry Representation: Producer Organisations. » Industry / NGO / Scientific liaison: Pelagic RAC <p>In each of the cases highlighted above there is clear and transparent explanation provided (most simply found on their respective websites) on the roles and responsibilities – both for those with statutory and non-statutory roles. Offshore pelagic fisheries do tend to generate less interest from an NGO / environmental perspective. As a result some of the roles / responsibilities in relation to potential environmental interaction and how any perceived impacts would be managed may be slightly less clear. In addition, the recent re-organisation of the fisheries administration may have led to some confusion in roles and responsibilities, and the delay in making all relevant information on-line (www.havochvatten.se) has not helped. Although minor, these have contributed to this scoring issue being scored at SG 80 rather than 100.</p>
	b	Y	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.
			Examples consultative systems are evident at EU level, the work of the Pelagic RAC. The RAC is a formalised industry consultation process which has contributed much in recent years to the development of multi-annual plans for a number of fisheries, and there is clear evidence of the work of the RAC being used by the EU. These meetings are regular and provide an effective conduit for local knowledge into the management system.

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties	
SG	Issue	Met? (Y/N)	Justification/Rationale
	c	Y	The consultation process provides opportunity for all interested and affected parties to be involved. Scored at SG 100
100	a	N	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. Scored at SG 80
	b	N	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used . Scored at SG 80
	c	Y	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement. A good recent example of the consultation process has been on the reform of the common fisheries policy (which itself closely mirrors the consultation process that preceded the drafting of the reformed CFP in 2002). The 2009 Green paper on the reform of the CFP expressly states that its purpose is “to trigger and encourage public debate and to elicit views on the future CFP. The Commission invites all interested parties to comment on the questions set out in this Green Paper”. Clear guidelines were provided on how, where and when to respond. The Swedish Government and Swedish fishing industry and other interested parties have actively taken up the opportunity to respond, as have the Pelagic RAC. Contributions to this consultation process can be viewed at: http://ec.europa.eu/fisheries/reform/consultation/received/index_en.htm
References			» http://www.pelagic-rac.org/ » Popescu, I. (2010.) Fisheries in Sweden. European Parliament Directorate General for Internal Policies. Policy Department B: Structural and Cohesion Policies.
OVERALL PERFORMANCE INDICATOR SCORE:			85
CONDITION NUMBER (if relevant):			

Evaluation Table: 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	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy
			Scored at SG 100
80	a	Y	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy.
			Scored at SG 100
100	a	Y	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy.
			<p>At the governance and policy level, clear over-arching long term objectives are set out in the EU common fisheries policy. The reform of the CFP in 2002 heralded the explicit adoption of “<i>a precautionary approach to protect and conserve living aquatic resources, and to minimise the impact of fishing activities on marine eco-systems, and to contribute to efficient fishing activities within an economically viable and competitive fisheries industry, providing a fair standard of living for those who depend on fishing activities</i>”. These long term objectives are clear and explicitly defined and entirely consistent with MSC P&Cs.</p> <p>The 2002 reform of the CFP also embraced a more long-term approach to fisheries management, involving the establishment of multi-annual recovery plans for stocks outside safe biological limits and of multi-annual management plans for other stocks. It aimed to progressively implement an eco-system-based approach to fisheries management.</p> <p>Article 15 of Council Regulation EC 1198/2006 on the European Fisheries Fund, <u>requires</u> that all member states:</p> <p>“Shall adopt, following appropriate consultation..... a national strategic plan covering the fisheries sector (which)sets out the priorities, objectives, the estimated public financial resources (in accordance with the CFP)for:</p> <ul style="list-style-type: none"> » (a) adjustment of fishing effort / capacity with regard to the evolution of fisheries resources, promotion of environmentally-friendly fishing methods and sustainable development of fishing activities; » (e) the sustainable development of fisheries areas, » (g) preserving human resources in the fisheries sector, through upgrading professional skills, securing sustainable employment and enhancing the position and role of women; » (h) protection and enhancement of the aquatic environment related to the fisheries sector”. <p>The Swedish Government has complied with the requirements of the above regulation in ‘The National Strategic Plan for the European Fisheries Fund (2007 -2013)’. This clearly sets out national long term objectives such as promoting sustainable fishing and the precautionary approach, including a clear</p>

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
			<p>commitment to long term social objectives, to support the sustainable development of the sector and the resources on which it depends.</p> <p>Additionally the Swedish Government has also published environmental objectives and routinely evaluates the performance of these against indicators. This includes specific consideration of marine objectives, including fisheries under the heading "A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos"</p>
References			<ul style="list-style-type: none"> » EC 2002. Council Regulation No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy. Official Journal of the European Union L 358, 59-80. » COUNCIL REGULATION (EC) No 1198/2006. On the European Fisheries Fund » Swedish Environmental Objectives Council (2008). Sweden's environmental objectives: no time to lose. ISBN 978-91-620-1266-3. ISSN 1654-4641
OVERALL PERFORMANCE INDICATOR SCORE:			100
CONDITION NUMBER (if relevant):			

Evaluation Table: 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	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
60	a	Y	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.
			Scored at SG 80
80	a	Y	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.
			<p>Since the 2002 revision of the CFP, subsidies that contribute to unsustainable fishing have stopped. There is no support to increase capacity, or to compensate for low catches.</p> <p>There are some minor forms of subsidy which could be identified for this fishery, however, in the opinion of the assessment team these do not contribute to unsustainable fishing and are consistent with MSC principles 1 and 2. These are:</p> <ul style="list-style-type: none"> » The industry does not pay directly for management or science (although this is funded through taxation) which could be construed as effective subsidy. » A preferential tax system is applied to diesel across all EU primary production sectors, which could be considered a subsidy relative to other economic sectors, but this is difficult to argue for fisheries as a whole as European countries apply a far higher level of taxation on fuel than any other economic block in the world (with the exception of Japan). » The EC's structural funding mechanisms to the fishery sector –the European Fisheries Fund (EFF) – provides targeted financial support to the sector, but funding restrictions have been significantly tightened (focus on improvements in safety and environmental impact). » No detrimental subsidies, which contribute to unsustainable fishing practices have been identified for this fishery. At national level, the management system provides economic and social incentives for sustainable fishing. These include: » Significant penalties exist for overshoot of member quota share, including immediate criminal proceedings. Such penalties act as an economic and social incentive for compliance. » International responsible fishing schemes demonstrate positive environmental awareness and sustainable activity that provides economic incentive via produce certification and market share security. <p>The 2002 Reform of the CFP did not explicitly consider incentives, focusing instead on the priorities of fleet capacity, stakeholder engagement, improved enforcement, removal of subsidies and long term planning. By contrast the most recent review of the CFP does address the question of incentives much more explicitly in particular in the form of 'transferable fishing concessions' explicitly stating that these incentivise operators to increase their concessions. Themes in the latest reform proposals also include increased industry responsibility and even self-management – again motivated by the need to incentives fishermen</p>

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing	
SG	Issue	Met? (Y/P/N)	Justification/Rationale
			<p>to become involved in the stewardship of their resource.</p> <p>Article 29 of the proposed new CFP regulation states: “When allocating transferable fishing concessions a Member State may provide incentives to fishing vessels deploying selective fishing gear that eliminates unwanted by-catch”.</p> <p>However, overall, within the context of the EU CFP it is concluded that explicit consideration of incentives is not yet included in regular review although the assessors do conclude that the management system provides for incentives and seeks to ensure that negative incentives do not arise.</p> <p>An Individual Transferable Quota (ITQ) system for the pelagic sector was introduced on 1 November 2009. The system is aiming at capacity reduction, fleet modernisation and increased profitability in the pelagic segment. The ITQ system includes that each transfer must be approved by the government and that individual quota ownership is limited to maximum 10% of the total Swedish quota. The SBF decides on an annual basis how much of the Swedish national quotas will be ITQs and how much will be non-transferable. This gives skippers and owners greater discretion as to how they organise the harvesting of available quota. In addition, skippers know their annual allocation of quota in advance of fishing. This means that fishing operations can be carefully planned and timed best for both to maximise market value, and fish at times of best fishing efficiency. Minor overshoots of quota can be accommodated within the tradable quota system to ensure that quota is fully used, but that there is reduced likelihood of slippage if an individual exceeds quota on a given haul.</p>
100	a	N	<p>The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure they not contribute to unsustainable fishing practices.</p> <p>Scored at SG80</p>
References			<ul style="list-style-type: none"> » Common Fisheries Policy EC (2371/2002) » European Fisheries Fund (EC) No 1198/2006 » COM(2011) 417. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions; Reform of the Common Fisheries Policy. » COM (2011) 425 final. Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the Common Fisheries Policy. » Popescu, I. (2010.) Fisheries in Sweden. European Parliament Directorate General for Internal Policies. Policy Department B: Structural and Cohesion Policies.
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			

Evaluation Table: 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	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Objectives , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system.
			Scored at SG80
80	a	Y	Short and long-term objectives , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
			<p>There is no fishery specific EU regulation setting out the short and long term objectives for this fishery. Instead management is based upon the EU-Norway agreement of November 2008. This agreement clearly states the management parameters in terms of reference points. More generally, by way of introduction the agreement states that it is intended to be "<i>consistent with a precautionary approach and designed to ensure a rational exploitation pattern and provide for stable and long term yields</i>". More recently, ICES have concluded that this is consistent with both the precautionary and MSY approach. Long term objectives are reflected in the fact that the agreement is a long term management plan, with a constraint on inter-annual variation in TAC. The short term objectives are reflected in a clear rule to set catch limits designed to exploit the fishery at MSY.</p> <p>There is however a lack of well-defined P2 objectives, such as reflecting the role of herring in the ecosystem or minimizing the fisheries impacts on other components of the ecosystem. However, in practice management does include a consideration of P2 impacts, such as impacts on bycatch or ETP and these are clearly highlighted in annual ICES advice which shapes management decisions. Furthermore, higher level regulations do contain relevant ecosystem objectives, such as those contained in the CFP regulation and these serve as binding objectives for all relevant EU fisheries including this one.</p> <p>There is no evidence that the recent request to ICES to re-evaluate the management plan has highlighted the need for any particular ecosystem objectives – other than to maximize long term yield for the target stock. Clearly at this time when there is likely to be a revision of the harvest control rule there is a clear opportunity to agree and state more explicitly the stated intent of management in terms of wider ecosystem interactions – ideally even exploring how this may be well defined or measurable.</p> <p>A recommendation has been raised in relation to this PI.</p>
100	a	N	Well defined and measurable short and long-term objectives , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
			Scored at SG 80
References			<ul style="list-style-type: none"> » Latest ICES advice – specifically EU – Norway agreement » Request to ICES to evaluate management plan
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			

Evaluation Table: 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			
SG	Issue	Met? (Y/N)	Justification/Rationale		
60	a	Y	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.		
			Scored at SG 80		
	b	Y	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.		
			Scored at SG 80		
80	a	Y	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.		
			The existence of the binding management plan helps to ensure that outcomes of decisions from firstly the EU-Norway negotiations and secondly the EU Council are both predictable and understandable – removing much of the doubt that was often characteristic of decisions prior to the adoption of a management plan. The fishing industry is extremely well informed about this decision-making process.		
	b	Y	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.		
			The EU –Norway management plan is informed by science and evaluated by science before adoption. During revision of the plan, EU and Norwegian scientists and industry play a key role in highlighting serious issues for conclusion or consideration. For example, where monitoring (and to a certain extent science) identified a known risk in relation to illegal landings from pelagic fisheries, the management authority (EU) responded accordingly by increasing the binding stipulation for weighting and inspection requirements. In particular the industry play a key part in contributing to management proposals, and it is clear from resulting management decisions, that the proposals of industry – where merited and supported by precautionary science – have been given serious consideration by management decision makers. In particular the role of the pelagic RAC is crucial in enabling the industry to effectively engage with management in a positive and proactive way. Representatives of this fishery play a key role in the pelagic RAC and in shaping management proposals that are put to the EU, which decision makers in turn respond to appropriately.		
			c	Y	Decision-making processes use the precautionary approach and are based on best available information.
					The long term management plan for the fishery explicitly states that management of the fishery will apply the precautionary approach. ICES has also evaluated the management plan as precautionary, indeed this was seen as important pre-requisite of adoption of the plan. The latest proposal for a reformed regulation for the CFP also explicitly states that “The CFP shall implement the precautionary and ecosystem approaches to fisheries management”.

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives	
SG	Issue	Met? (Y/N)	Justification/Rationale
	d	Y	<p>Explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p> <p>Generally speaking explanations are provided for management decisions, and it is possible to see the trail of evidence leading up to a decision. With a long term management plan in place and functioning properly, there is no need for management explanation of annual catch limits, as it is simply an interpretation of the scientific advice against the management plan. The annual scientific advice also highlights different scenarios in event of different management decisions. It is also possible to see the trail or correspondence between the pelagic RAC and ICES on the revision of the harvest control rule, to understand the reasons and rationale for changes. Furthermore, some of the minutes of meetings which have begun the process of management plan revision, including both industry, science and regulators are available on-line (albeit not always very easy to find).</p> <p>That said, there are some aspects of the outcomes of the negotiations which are less transparent. For example, as the 15% HCR limit on inter-annual TAC variation has come under increased pressure, in response to the rapidly increasing SSB, managers / negotiators have taken a decision to set TACs above the strict interpretation of the HCR, although still within the MSY approach. In spite of this deviation from the HCR there is a lack of explanation over exactly how or why the final TAC determination has been reached. Some sources suggest the final figure was simply the midpoint between the EU position and the Norwegian position. This is not ideal, although reasons for the deviation may be inferred from other sources. Looking ahead, it is expected that with the revision of the long term management plan, such deviation from the HCR should become rare, so the need for explanations of TAC setting will be removed.</p>
100	b	N	<p>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.</p> <p>Scored at SG 80</p>
	d	N	<p>Formal reporting to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p> <p>Scored at SG 80</p>
References			
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			

Evaluation Table: PI 3.2.3

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with			
SG	Issue	Met? (Y/N)	Justification/Rationale		
60	a	Y	Monitoring, control and surveillance mechanisms exist are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.		
			Scored at SG 100		
	b	Y	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.		
			Scored at SG 100		
	c	Y	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.		
			Scored at SG 80		
80	a	Y	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.		
			Scored at SG 100		
	b	Y	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.		
			Scored at SG 100		
	c	Y	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.		
			Some evidence of good compliance comes in the form of verification from The Swedish Agency for Marine and Water Management that the fleet under assessment has a good compliance record. There is no contrary evidence in the form of sanctions. Overall the level of compliance in the north sea herring fishery is much improved. The ICES herring assessment working group no longer raises the issue of over quota landings or unaccounted mortality, as was the case in recent years.		
			d	Y	There is no evidence of systematic non-compliance.
			There is no evidence of systematic non-compliance. This has been confirmed by The Swedish Agency for Marine and Water Management.		
100	a	Y	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.		
			The system of monitoring, control and surveillance in place for the Swedish RSW fishery is comprehensive providing tight control of quota uptake, through inspections at sea, on landing and via spotter planes. All vessels covered by this assessment have tamper proof VMS, are only able to land at designated ports, must give prior notification of landing, are subject to strict landings tolerance margins of 10%. In addition, all fish buyers / processors are registered and subject to inspection. There are strict pelagic weighing requirements, sales record requirements and other traceability requirements. Commission Regulation 1542/2007 has led to a substantial tightening in the control requirements for landings of herring. Although this has now lapsed, the measures contained in the new EU Control regulations (1224/2009) continue the requirement for similar rigor.		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
SG	Issue	Met? (Y/N)	Justification/Rationale
			Recent regulatory changes, such as the advent of e-log books only further strengthen the enforcement system and add confidence of its efficacy. This comprehensive system is mirrored across the EU member states where North sea herring is landed, and indeed in Norway. The level of cooperation between member state enforcement agencies has greatly improved in recent years, meaning that a Swedish Pelagic vessel fishing Swedish quota in UK waters and landing into Denmark, is subject to as effective and integrated an enforcement system as would be the case if it was fishing in Swedish waters and landing into Sweden.
	b	Y	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence. Much has changed in enforcement and control of European pelagic fisheries, and in particular North Sea Pelagic fisheries in the last decade or so. Large scale IUU catches were discovered in the middle of the last decade – in particular in Scotland and Ireland, and this led to tighter controls and specific EU regulations focusing on pelagic catches. This has greatly improved the record of compliance and the ICES assessment no longer highlights a large unaccounted mortality (associated with illegal landings). At no time has the Swedish fishery been shown to have engaged in large scale IUU of pelagic fisheries and consequently there has been no requirement to 'pay back' nation quota, as some member states are still required to do. This suggests that the level of enforcement in the past may even have provided effective deterrence, and since systems have tightened further in the last 5 years, the system can now certainly be described as providing effective deterrence.
	c	N	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. Scored at SG 80
References			
OVERALL PERFORMANCE INDICATOR SCORE:			95
CONDITION NUMBER (if relevant):			n/a

Evaluation Table: PI 3.2.4

PI 3.2.4		The fishery has a research plan that addresses the information needs of management	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.
			Scored at SG 80
	b	Y	Research results are available to interested parties.
			Scored at SG 80
80	a	Y	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
			ICES strategically establish study groups based on information requirements identified by national delegates, including through industrial representations. Members of various ICES Working Groups focused on such elements as climate change, plankton, multi-species fisheries (ecosystem), etc. All review research, identify research requirements and undertake appropriate work. There is good communication between Working Groups (via ACOM), and between researchers through their specialist interests. The Key working group in relation to this fishery is the Herring Assessment Working Group (HAWG). Research / investigation are undertaken in relation to specific requirements, which generally come from the recommendations of the Stock Assessment Working Group. Members of the ICES community keep abreast of developments within the scientific community of relevance to the fishery under consideration. This ICES community is wider than Europe and includes relevant research elsewhere. Research contracts are left to other organisations, including Universities, (e.g. through the EC) to supplement scientific understanding relevant to the fishery and related ecosystem. Scientists from the Swedish University of Agricultural Science (www.slu.se) are integral players in this research community, contributing significant resources and expertise to relevant research. All protocols for data collection and analysis of fisheries data to support fishery management decision-making are clearly laid out in Annex 5 of the HAWG working group report and this provides a clear guide and plan for routine on-going targeted fisheries research. Where specific need arises, HAWG will also highlight recommendations for research (e.g. recently for work on the recruitment index), and there is evidence that this is followed up on by research institutions – Swedish University of Agricultural Science (www.slu.se).
	b	Y	Research results are disseminated to all interested parties in a timely fashion.
			These ICES working groups provide reliable and timely information of research results which is disseminated to all interested parties in a timely fashion and is widely and publicly available (for example via the ICES website). ICES also publish the peer reviewed periodical journal, the ICES Journal of Marine Science, which is another way for disseminating research findings. In addition, the findings of Swedish University of Agricultural Science (www.slu.se) work are widely published – where possible in peer review format.

100	a	N	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	Scored at SG 80		
	b	N	Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available .
	Scored at SG 80		
References			
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			n/a

Evaluation Table: PI 3.2.5

PI 3.2.5		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives	
		There is effective and timely review of the fishery-specific management system	
SG	Issue	Met? (Y/N)	Justification/Rationale
60	a	Y	The fishery has in place mechanisms to evaluate some parts of the management system.
			Scored at SG 80
	b	Y	The fishery-specific management system is subject to occasional internal review.
			Scored at SG 80
80	a	Y	<p>The fishery has in place mechanisms to evaluate key parts of the management system</p> <p>There is a comprehensive system of routine monitoring of information relevant for management decision-making and stock assessment purposes. The monitoring programme in place principally focuses on landings from the fishery, i.e. quota uptake. Due to the systems described in 3.2.3 this monitoring forms an accurate reflection of actual fishing mortality. Additional monitoring is also in place to provide sufficient information to support stock assessment purposes (for example length / weight monitoring).</p> <p>High quality, well-documented procedures exist to reduce harvest in light of monitoring results. These can be quickly implemented (near real-time recording of catch levels and quota uptake – and annual review of stock status). The CFP system allows the Commission to make a proposal to the Council for an immediate (in-year) reduction in quota.</p> <p>Additionally there is a well-established system to of management evaluations. For example, there have been a number of directly relevant evaluations of the management system. These include:</p> <ul style="list-style-type: none"> » Review of the CFP (2002 & 2008 -) » Annual Report on Fishing Fleet Capacity – » The ICES Working Groups (referred to in 3.2.4) also effectively serve as routine evaluations of management performance, by comparing fishery performance to pre-determined targets. » Vigo EU EFCA – Joint Deployment Plans – these very much act as a monitoring and evaluation tool, albeit the focus is on sharing best practice and capacity building for enforcement among member states. Although it is understood that the CFCA do review the performance of national control and enforcement agencies, the result of these evaluations are not public. The CFCA themselves undergo independent external evaluation <p>Management proposals arising from the pelagic RAC receive thorough review prior to being put forward for consideration by the EU, prior to adoption. In addition, EU would likely only implement management proposals if these were first evaluated as precautionary by ICES and members of the STECF.</p> <p>The Agreed EU-Norway management plan clearly stated at its adoption, when it was to be reviewed. During 2012 the EU-Norway North Sea herring management agreement is indeed under review, in line with the original intent. The new agreement will also clearly stipulate the date that its performance is due for review.</p>

			In addition the Swedish Environmental Objectives Council routinely evaluates the performance of a number of key indicators of Sweden’s environmental objectives, this includes fisheries.
	b	Y	The fishery-specific management system is subject to regular internal and occasional external review. The majority of the evaluations undertaken are ‘internal’ either within ICES or the EC. However, ICES work brings together a wide range of national scientists, in so doing so builds external perspectives into the assessments. Additionally this work is periodically externally reviewed. One way in which this is done is by inviting visiting scientists (from outside of the Europe) to attend benchmarking evaluation exercises.
100	a	N	The fishery has in place mechanisms to evaluate all parts of the management system. Scored at SG 80
	b	N	The fishery-specific management system is subject to regular internal and external review . Scored at SG 80
	References		<ul style="list-style-type: none"> » Group Blomeyer & Snaz SL and Evalutility Ltd (2011). Community Fisheries Control Agency; Five year independent external evaluation report. » http://cfca.europa.eu/pages/docs/basic%20docs/5%20year%20independent%20external%20evaluation%20of%20EFCA.pdf » Swedish Environmental Objectives Council (2008). Sweden’s environmental objectives: no time to lose. ISBN 978-91-620-1266-3. ISSN 1654-4641
OVERALL PERFORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):			n/a

Appendix 1.2 Risk Based Framework (RBF)

RBF was not used for this fishery.

Appendix 1.3 Conditions

There is 1 condition for this fishery.

Condition 1

Performance Indicator	1.2.2 Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rule
Score	75
Rationale	<p>A well-defined harvest control rule is in place. However, it has proved to be not entirely consistent with the harvest strategy and can be considered to be still under development.</p> <p>There is recent evidence of the TAC being set above the level of the inter-annual variation constraint within the harvest control rule. Consequently the final decision of TAC has not been a strict interpretation of the HCR. Although the HCR is broadly working to maintain the stock size consistent with the harvest strategy, as demonstrated by the fact that the stock is well within the target region, these ad hoc adjustments prevent this scoring issue being met at this time.</p>
Condition	The agreed HCR should be used as the basis for annual TAC decisions. Any deviations from the HCR should be avoided, but where present, should be fully justified. Any continuous deviations from any element of the agreed HCR would be expected to trigger a timely re-evaluation of the HCR to enable it to be fully complied with in future TAC decisions.
Milestones	<p>1st Surveillance Audit: A report should be reviewing the management plan and indicating appropriate adjustments for achieving management objectives.</p> <p>2nd Surveillance Audit: There should be evidence that a new management plan has been established and is being applied.</p> <p>3rd Surveillance Audit: The new management plan should still be in place and should be applied. It should be possible to compare the TAC from the management plan with that which was agreed and the actual catch of the previous year.</p> <p>4th Surveillance Audit: The new management plan should still be in place and should be applied. It should be possible to compare the TAC from the management plan with that which was agreed and the actual catch of the previous year.</p>
Client action plan	From the SPFPO side we will point to the fact that, as a private sector applicant, there are clear limits to what a single fishery client on an issue that will be determined at an international management level, however within that context, SPFPO will raise this issue with relevant authorities.
Consultation on condition	This specific issue has been discussed with both the head of the ICES Herring Assessment Working Group and also the Swedish representative from SLU in the ICES Herring Assessment Working Group.

Appendix 2. Peer Review Reports

Peer Reviewer 1

Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes	Certification Body Response
<p><u>Justification:</u></p> <p>This is a well written and well-structured report with all the relevant evidence and references provided. The report is easy to follow in relation to the scoring of each of the three Principles. I have only minor comments on the scoring issues and no significant differences of opinion on the scoring.</p> <p>With the two conditions in place coupled with some assurances that the client will address the recommendations of the report the conclusion that the fishery should be certified against the MSC Principles and Criteria for a sustainable fishery is a reasonable one.</p>		<p><u>No comment required. Note that following stakeholder comments, there is now only 1 condition.</u></p>

<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	Yes	Certification Body Response
<p><u>Justification:</u></p> <p>The team has rightly identified the major weaknesses and has correctly addressed these in the two Conditions raised.</p> <p>For Condition 1, related to the ecosystem role of herring, the potential actions and influence of the SPFPO are limited. However they are involved in the Herring Assessment Working Group and the Pelagic RAC and it is through their influence within these organizations that they can help to ensure that due consideration is given to the ecosystem role of herring in the proposed review of the management plan.</p> <p>Condition 2 is also related to the proposed revision of the long term management plan and the comments above regarding the input of SPFPO are equally applicable.</p>		<p><u>No comment required</u></p> <p><u>Following stakeholder comment, the fishery is no longer classified as 'key' low trophic, therefore Condition 1 has been muted into a recommendation.</u></p>

If included:

<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes/No	Certification Body Response
<p><u>Justification:</u></p> <p>Not included</p>		

General Comments on the Assessment Report (optional)

All essential points are covered either in the comments on scoring or in the brief 'any other comments' at the end. No further comment required here.

Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
1.1.1	Yes	Yes	N/A	The high degree of certainty generating the 100 score is fully supported with median, upper and lower confidence intervals.	No comment required
1.1.2	Yes	Yes	This issue needs to be addressed by ICES and hopefully this condition will raise the profile of the problem when the issue of reference points is re-visited in the near future.	The team are right to highlight the fact that the ecosystem role of this LTL species is not adequately taken into account in the assessment and management of the stock and in particular the establishment of reference points	As recent information has made the team to consider NS herring as non Key LTL species, the points raised by the reviewer, even though correct, have been translated into a recommendation.
1.1.3	N/A	N/A	N/A		
1.2.1	Yes	No	N/A	Should not be referring to PI 1.2.2 under 80b. I am not going to disagree with the score of 95 but still feel that there is ample evidence in the report to show that the	It is true that the Harvest strategy has been regularly evaluated and modified and as a result is achieving its objectives. However the Evaluation panel, considering that the Harvest

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
				strategy has been regularly evaluated and modified and as a result is achieving its objectives	strategy comprises monitoring, assessment, HCR and management actions, noticed that the Harvest strategy had not been fully tested in the past against some uncertainties in the assessment as regarding biological parameters (like natural mortality which was revised during the Benchmarking in ICES)
1.2.2	Yes	Yes	<p>Yes</p> <p>The client must be seen to be fully supporting the full implementation of the HCR through its influential involvement with the Pelagic RAC.</p> <p>In the meantime they might consider that a case could be made for a timely</p>	Overshooting of the TAC and in particular the failure on the part of management to invoke clause 5 of the long term management plan fully justifies the score of 75 and the imposition of a condition. Clause 5 has always been a 'bone of contention' within the industry when the stock is in a good condition not least because of the existence of clause 6 which is invoked when the stock falls below the specified level.	No comment required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
			revision of the LTMP with a modification of Clause 6 to permit both <> 15% changes to the annual TAC		
1.2.3	Yes	Yes	N/A	Evidence fully supports the score of 90 and the failure to fully achieve the second element of SG100. North Sea autumn spawning herring are a complex management unit and inevitably there will be areas such as those identified by the team which generate uncertainties which are difficult to monitor manage and understand.	No comment required
1.2.4	Yes	No	N/A	In spite of the rigorous process of change to a new assesement model in 2012 I would be more cautious at this stage and allocate a score of of 85 rather than 95. The new perception of both SSB and F has changed quite considerably and until the new model has been used for two or three	From the benchmarking report (WKKPELA2012 (ICES CM 2012/ACOM:47) It should be clear that the new model produce outputs of the states of the population and fishery in a probabilstic way and hence PI1.2.4c should be scored 100. More debatable is whether the new assessment model is robust enough. In the bechmarking

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>years I feel that scoring issues 100 c,d and e cannot at present be fully justified.</p>	<p>alternative hypothesis about natural and fishing mortality patterns and periods were duly taken into account, as well as to a rigorous process of input selection (and tuning settings), therefore alternative hypothesis and assessment approaches were well tested. The point raised by the reviewer seem to be more related to stability of the assessment as new years and inputs would be added. The retrospective pattern explored at WKPELA revealed that "The model shows a relatively minor retrospective pattern that sits within the estimated confidence intervals (Figure 5.6.4.37). Revisions associated with the addition of new data-points to the time-series are generally minor (again within the confidence intervals) and do not indicate a significant retrospective bias." It is true however that despite its low magnitude the pattern lead to systematically underestimate of the SSB and overestimate of F in the last year of the assessment. The reference to (ICES CM 2012/ACOM:47) was added to this PI. And as result of this cross discussion the Expert group agreed in reducing the overall scoring and concluded that the SG 100 score was not achieved for the scoring issue d. The following</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
					text has therefore been added and overall principle level scores changed.: "... and several alternative settings and assessment approaches were rigorously tested. In the WK a relatively minor retrospective pattern has been detected, that sits within the estimated confidence intervals. Despite its low magnitude the pattern leads to systematically underestimate of SSB and overestimate of F in the assessment year. Therefore the robustness of the new assessment is unclear and more years may be required to fully evaluate it, therefore this scoring guidepost cannot be met".
2.1.1	Yes	Yes	N/A	All the evidence presented, which includes independent observer data, suggests that there are no formally defined main retained species in this fishery, ie non comprising greater than 5% of the total catch. The value of the retained species is not sufficiently high to warrant their definition as a main retained species. This applies to both the Purse seine and pelagic trawl fisheries.	No comment required.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
2.1.2	Yes	Yes	N/A	The main strategy is to avoid mixed catches and target only herring. Via the use of sophisticated technology and skippers experience. There is good evidence from the landings and observer trips that the strategy is successful. The rationale for a score of 95 is acceptable. This applies to both the Purse seine and pelagic trawl fisheries.	No comment required.
2.1.3	Yea	Yes	N/A	The low impact of this fishery on other main retained species appears to be on mackerel, horse mackerel, haddock and whiting. Reliable assessments of the status of the stocks of these species are avialble which provides ample infromation to evaluate any risk that this fishery might pose. The team have made a correct evaluation of the low risk in this context. And scored this PI accordingly. This applies to both the Purse seine and pelagic trawl fisheries.	No comment required.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
2.2.1	Yes	Yes	N/A	<p>There is indeed strong evidence that this is a relatively clean fishery with minimal catch of bycatch species. The team have supported this with a comprehensive list of references.</p> <p>The rationale applies to both the Purse seine and pelagic trawl fisheries.</p>	No Comment required
2.2.2	Yes	Yes	N/A	<p>Once again the species targeted nature of both the purse and pelagic trawl fisheries ensures that the bycatch is generally low. This is the basic strategy and the team have provided ample evidence that this is basically successful. However as with all bulk pelagic fisheries of this nature there is always the potential and possibility that under some circumstances slippage and / or discarding may occur. The team are rightly concerned that this issue is not well addressed in this type of fishery and as a result have reduced the score to 80. This applies to both the Purse seine and pelagic trawl fisheries.</p>	No comment required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
				It is an issue which has rightly lead to a recommendation.	
2.2.3	Yes	Yes	N/A	For same reasons as 2.2.2 above this has been coirectly scored at 80. This applies to both the Purse seine and pelagic trawl fisheries.	No comment required
2.3.1	Yes	Yes	N/A	<p>There is a well argued and evidenced case @100a that there is a high degree of certainty (P80%) that the effects of the fishery are within national and international requirments for the the protection of ETP species. The same arguments suport the scoring of 100b. It may be reasonable to conclude that the potential indirect effects of the fishery are not sufficiently well known (and are less well studied) to support a positive mark for 100c although the guidance only requires a certainty at the 80% level!</p> <p>This applies to both the Purse seine and pelagic trawl fisheries.</p>	No comment required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
2.3.2	Yes	Yes	N/A	<p>The team have rightly erred on the side of caution in scoring this PI. Quite clearly from the report, and the references to a raft of directives provided, there are clear management strategies in place that appear to work well. However there is no ongoing programme of monitoring and observer trips to support the higher level requirements at SG100.</p> <p>This applies to both the Purse seine and pelagic trawl fisheries.</p> <p>This minor problem has rightly been incorporated into a well worded recommendation (1)</p>	No comment required
2.3.3	Yes	Yes	N/A	<p>Comments at 2.3.2 above apply equally well to this PI.</p>	No comment required
2.4.1	Yes	Yes	N/A	<p>The report and scoring comments rightly indicate that there is no evidence of any serious effects of either this purse seine or</p>	No comment required.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
				pelagic trawl fishery on habitat structure or function. Contact with the seabed is actively avoided in this type of pelagic fishery	
2.4.2	Yes	Yes	N/A	All aspects of this PI centre around the strategy to avoid damage to the seabed. Quite clearly the strategy is to avoid any contact at all with a strong economic incentive (potential gear damage) to succeed. The report and scoring comments adequately detail the measures in place to ensure the success of the strategy and also provide reasonable evidence that it is working.	No comment required
2.4.3	Yes	Yes	N/A	The team reasonably conclude that there are no impacts from either of these fisheries on the pelagic ecosystem. They have provided evidence in the report and references that there is sufficient information on the distribution of benthic	No comment required.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
				habitat types and the area of operation of the fishery for any risk to that habitat to be detected and quantified.	
2.5.1	?	?		The comments at 80a support a Y for this single scoring issue. The comment regarding the lack of empirical modelling of the consequences of herring fisheries on the ecosystem do confirm that neither fishery meets the requirements, in terms of hard evidence, of SG 100.	Y/P/N column corrected. Score unchanged at 80.
2.5.2	Yes	Yes	N/A	The team have focussed on all the relevant issues in terms of the raft of strategies in place in relation to ecosystem structure and function. They range from various ecosystem and habitat directives to the overall long term management plan for NS herring. These strategies are all underpinned by the EU common fisheries policy and are seen to be effective at the SG 80 level.	No comment required.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
2.5.3	Yes	Yes	N/A	The report, scoring comments and the appropriate references provide excellent support for the score of 100 for this PI.	No comment required.
3.1.1	Yes	No	N/A	Having read the justification at SG 80b regarding a transparent mechanism for the resolution of legal disputes I cannot understand why the fishery does not achieve SG 100b. This is not adequately explained. The remainder of the evidence presented in support of the remaining SGs is acceptable.	There are some issues in relation to legal mechanisms and an overall score of 95 seems reasonable. For example, as this is not fisheries specific, at this point of the assessment tree, difficulties in resolution of legal disputes in other fisheries within the management jurisdiction could also apply. The team were of the view that the mechanisms were adequate and adequately transparent but that 'testing' was less clear to conclude.
3.1.2	Yes	Yes	N/A	Score and scoring comments are OK; no further comment required	No comment required
3.1.3	Yes	Yes	N/A	Comprehensive evidence provided in support of the 100 score	No comment Required.
3.1.4	Yes	Yes	N/A	The team have provided a comprehensive and honest analysis of the situation regarding incentives, or lack of them, for	No comment required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
				sustainable fishing. With only the single scoring issue at SG 100 they are right to conclude that a score of 80 is appropriate in the absence explicit consideration and regular review of the policies.	
3.2.1	Yes	Yes	N/A	These are reasonable comments in relation to SG80 which are well supported in the report itself. The team are right to highlight issues in relation to Principle 2 objectives. There is a lack of any firm evidence that these issues will be given due consideration in the proposed ICES re-evaluation of the long term management plan. As a consequence a Recommendation has been raised to highlight the problem.	No comment required
3.2.2	Yes	Yes	N/A	Bearing in mind the current state of the stock and the improvements in the management of the fishery over recent years one would expect this PI to be scoring 100. In particular the way that the Pelagic RAC has improved communication	No comment required

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>across the relevant disciplines involved and the improved transparency in decision making. However there are issues, in particular with strict adherence to the management plan now that the stock status has improved. I suspect that the Pelagic RAC are not entirely guiltless in this respect. The team are right in highlighting the problem by allocating a score of 80</p>	
3.2.3	Yes	Yes	N/A	<p>There is no doubt that this is an area which has seen an appropriate response to major problems in the past. In terms of monitoring control, surveillance and enforcement this fishery is now amongst the best in European waters. I would not argue with the reduced score at 95 but personally I am be sure, at the 80% level that fishers comply with the management system and do supply all the relevant information</p>	<p>A score of 95 for monitoring control and surveillance is excellent – much higher than most fisheries in the MSC program. It is not an indication of problems. No conditions or recommendations are raised.</p> <p>The assessment team are of the view that an overall score of 95 reflects the fact that the MCS system is strong. The PI which is not met relates to the provision of additional information of importance to the effective management of the fishery. For example this might include voluntary</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
					information or providing voluntary access to the boats. Whilst this occurs to some extent, the team were of the view that this did not fully meet the intent of the SG100.
3.2.4	No	No	N/A	This issue of a formal research plan is always a difficult one. It is just not the way fisheries research and management works within the ICES umbrella. Perceived problem areas are anticipated and investigated within relevant working groups and solutions sought and recommended. Excellent examples of the system in operation in relation to North Sea herring are the response to the long period of poor recruitments, long term changes in weight at age and maturity at age and the extensive investigations carried out in relation to these issues. ICES is also very good at quickly disseminating the results of its research. A score of 80 here is harsh and a closer examination of the facts in relation to herring research fully justifies a score of 100.	The reviewer rightly notes that the issue of a formal research plan is a difficult one in MSC assessments of ICES fisheries. The assessment team have experience of asking a wide range of member state representatives on ICES working groups about this specific performance indicator. As the reviewer notes, although, the national / ICES research in this area is exemplary, the MSC methodology requires a written <i>fishery specific</i> research plan. The awarded score of 80 reflects that the current situation is 'good practice' which does not require either a condition or a recommendation. In short the system works to support management and the teams scoring seems to be a reasonable compromise between the constraints of the methodology and the practicalities of the real world. This scoring is also in line with many other MSC certified fisheries which fall under the ICES umbrella.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
3.2.5	Yes	Yes	N/A	A reasonable rationale in support of the score of 80. The definition of a regular external review in this context is always difficult and the team have erred on the side of caution in this respect.	No comment required.

Any Other Comments

Comments	Certification Body Response
<p>Clearly both the text of the report and the scoring comments would benefit from proof reading to eliminate the obvious errors. Figure numbering also need to be carefully checked (figure2). In the scoring comments there are missing Ys and Ns which need to be addressed.</p> <p>I am not unhappy with the approach of the team in the way they have organized their specific comments at each SG by referring them up to the next level where appropriate. However in my experience, and my interpretation of the MSC guidance, a simple comment at each level is required e.g. at each SG 60 issue even if all the SG 80's are achieved. As I said I have no problems with the team's pragmatic approach but I anticipate that the MSC may have.</p>	<p>Further proof read has been done. Y/P/N column checked and letters inserted where missing.</p> <p>We understand that the scoring template will soon change following response from the CABs about this scoring table and in particular the problem of having to repeat justifications at each scoring guidepost. The assessment team is of the view that given the current template it is clearest to write the justification against the scoring issue that is met – rather than repeating it at all lower guidepost levels.</p>

Peer Reviewer 2

Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes	Certification Body Response
<p><u>Justification:</u></p> <p>On balance, I am satisfied that the final conclusions are correct and that the fishery should be certified. Nevertheless, the selection, collation and presentation of information leaves much to be desired. Some aspects of the report are too superficial without reference to either appropriate ICES and OSPAR working groups (principally with respect to P2) or the primary literature. Too often this results in assertions and conclusions when scoring PIs for which insufficient information has been presented to the reader. These shortcomings may result in challenge from stakeholders who are less familiar with the fishery or the science but still wish to be convinced that certification is merited.</p>		Points addressed at specific points later in the review.

<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	Yes/No	Certification Body Response
<p><u>Justification:</u></p> <p>Condition 1 is justified from a purely scientific perspective but I am far from convinced that even if the condition is met in full it will make a significant difference to the effective management of this fishery or the long-term stability of the stock. On specific details: "Show evidence that scientific authority (ICES) has considered this issue ---" is an expectation beyond the competence of the client. The client can be expected to show evidence that they have canvassed for such action to be taken but they are in no position to require ICES to consider the issue. ICES might judge it to be a scientific waste of their time and simply ignore it. The condition needs rewording to ensure that it is possible for the client to meet all aspects.</p> <p>Condition 2 is justified, not least as a means to get closer adherence to what purports to be an international agreement on how to manage the fishery. Nevertheless, as above, it is essential that the terms of the condition and the milestones by which compliance will be judged are couched in terms that are realistic for the client. It is beyond the client's competence to ensure that the current management regime is reviewed and modified; all they can do is to lobby for such action to be taken. The client should be asked to provide documentary evidence that that is what they have done rather than expect them to "provide evidence that a new management plan has been established and is being applied".</p>		<p>As NSAS has finally not been categorized as KEY LTL species, Condition 1 has been muted into a recommendation, this leaves out the caveats raised by the reviewer on the competence of the client to achieve the condition 1.</p> <p>More generally, it should be noted that conditions are set according to CR 1.2 (C29 27.11 pg. 161).</p>

If included:

<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes/No	Certification Body Response
<p><u>Justification:</u></p> <p>Condition 1 Whilst the condition is expressed in terms beyond the client's competence, the action plan is expressed more circumspectly and recognizes that they can only lobby, canvass and exert influence. This is all perfectly reasonable and appropriate.</p> <p>Condition 2 It is beyond the client's competence "to establish a revised management plan for North Sea herring within the first year of certification". Similarly it is beyond the client's competence "to provide evidence within two years that a new management plan has been adopted and implemented" without that is what the competent authorities want. See relevant comments above; they must provide documentary evidence that they are working with others lobbying for these objectives.</p>		<p>Both conditions are required by the MSC methodology which requires a change in outcome scores and both conditions are worded according to that required outcome. Whilst it is true that the client has no direct control over the outcome it should be noted that it is not an MSC methodology requirement that a condition be within the client's competence. In past years a different approach to conditions was often followed which simply required a fishery client to show evidence of lobbying for any change outside of their control, but the new certification requirements have clarified this. The conditions are set according to CR 1.2 (C29 27.11 pg. 161) and any rephrasing of the condition to only require action within the client's competence would be contrary to the methodology.</p>

General Comments on the Assessment Report (optional)

For anyone who has an understanding of the subject and knowledge of the fishery, species, ecology, assessment and management, the information presented is adequate to support the overall scores and conclusions reached. Nevertheless, there are shortcomings of what might reasonably be expected by the interested reader who does not already have detailed knowledge of the subject or this fishery in particular. The text report, which is the place where all the key information should be presented, reviewed and discussed, is not as detailed as it should be and is poorly structured. The authors have chosen to present information in the order that topics appear in the scoring sheet. While this has an element of logic, it results in a lack of scientific rigor in what follows. It would help the reader if the order took the line of a coherent story: what, when, where and how of the fishery; who, what, when and where of the science and data gathering; how the data are applied to the assessment, estimating stock status and formulating scientific advice; ecosystem considerations, including retained, bycatch, ETP and habitats; management and compliance – including enforcement by coastal states. If this approach was followed and all the relevant information and a more comprehensive selection of appropriate (primary) references were included in the text, the score-sheet comments could be both clearer and more succinct than is currently the case, particularly under P3.

FCI comment: The approach taken by FCI over many years is to shift as much technical justification into scoring assessment trees. This enables the rationale for scores to be clearly communicated and limits the need to constantly refer between the chapters and the scoring sheets. This also eases the process of harmonisation for other assessment teams. For this reason, references are deliberately concentrated into the scoring assessment tree. The addition of an executive summary has also helped to provide a simplified summary for non-technical readers.

This is a certification report, not a scientific review. In particular, it is misleading to the reader to imply we provide a technical review of the science. What we do is check such reviews take place for example, and that problems that are identified do not undermine the fishery management to the degree that it does not meet the standard. Furthermore, a technical review would not only be

incomplete, it would unnecessarily increase costs of the certification, but could not lead to any change in substantive outcome for the fishery.

While we accept that our approach is far from perfect, we do not agree that the approach suggested by the reviewer would improve the clarity of the text or why scores have been allocated. Our view is quite the opposite, that the scoring tables should be enhanced so an interested reader should be able to identify and check key issues with respect to the certification requirements rather than have to refer to the main text all the time in understanding why particular scores should be allocated (particularly as a reviewer suggests re-arranging the main text). We also believe that this is particularly true in the case of North Sea herring and many ICES fisheries which have many excellent reviews, reports and other materials, which are much better than we could hope to produce in the available time.

Page	Comment
11	Harvest method – purse seines do not have a “cod end”; should it be ‘bunt’? Amended
12	Figure showing ICES divisions has no caption and is not referred to in text. Amended
13	“Fecundity is down-regulated via atresia ----.” Reference required Sentence removed.
	Figure 3.1 is not referred to in text. It is - twice.
15	Figure 3.2 is not referred to in text. Amended
	“---the nozzle of a large pump is lowered into the net ---”. No, the pump itself is lowered into the net. Amended
	“---the vertical opening is maintained by chain on the ground line--- ”. I very much doubt it. The figure shows that the vertical opening is maintained by large clump weights attached to the lower bridle. Amended
	What length is the ‘leg’ attached to the bridle from which the clump hangs? Sometimes they are long enough to ensure that if they touch (and interact with) the seabed the trawl will rise and avoid damage. This information was not obtained and has not been indicated as a critical factor in scoring.
	Figure 3.3 is not referred to in text. Amended.
16	“Larger mesh near the start of the net is designed to facilitate the escape of escape of small fish--- ”. Larger mesh near the start of the net is designed to facilitate herding the target fish into the net whilst maintaining minimum drag. The big Icelandic pelagic trawl has headline meshes big enough for a jumbo jet or blue whale to pass through, let alone small fish or jellyfish. Mesh selection and escapement takes place in the rear of the square and sleeve, which is also where square-mesh and escape panels are (sometimes) fitted. Amended.
	Table 3.2 is not referred to in text. Amended
	Do any of the SPFPO vessels have (cetacean) escape or square-mesh panels fitted? Not specifically for cetaceans.

Page	Comment
18	The reference www.stockassessment.org is invalid; it is a user–password protected URL. Whilst it is acknowledged that the SAM model is still poorly documented, there is guest access facility at the webpage which would enable interested readers with the relevant technical expertise to explore in more detail.
	“--- missing data are handled gracefully--- ”. What exactly does ‘gracefully’ mean in this context? As it stands, it is meaningless. Amended.
	“SAM is open source and cross platform software--- ”. Not according the web address given it isn’t (see above). This is incorrect. Once registered, the model is open source and can be customized.
19	There is no Figure 2 (nor any reference to a Figure 1); should this be Fig 3.4? Amended
	Explain the meaning of “3 ringers”; not all readers will be familiar with the term. Amended: clarification in brackets has been added saying “(3 years old)”.
	Similarly, “un-allocation of catches” and “slippage. Amended: Page foot notes were added for un-allocation of catches saying “catches known by the scientists to have happened which are taken into account for the assessment in spite of not having been declared officially to the WG” and for slippage saying “Discarding of the entire fishing haul by opening the nets before taking them on board, from which survival of fishes is presumed to be very low; a practice if happening of which very little information is usually obtained.”
	“tuning indices” is pure fisheries jargon that is meaningless to anyone outside the magic circle; replace it with a plain English expression that actually tells the reader what these indices are used for – validation and refinement of the assessment. Amended: Now the sentence says: “The NSAS stock has several survey indices available as inputs for validation and refinement of the assessment”.
20	Where are the “Malin Shelf” and “Donegal”? A follower of MSC assessments who lives in the South Pacific cannot be expected to know the minor geography of the NE Atlantic as well as someone living in N Europe Amended: A clarification was introduced. Now the sentence says “... the whole Malin Shelf (west of Scotland). By carrying out the coordinated survey at the same time from the Kattegat (entry to the Baltic Sea) to Donegal (Northwest of Ireland).”
	Define MIK = Methot (sic) Isaac Kidd. Amended to provide clarification.
	“abundance of large herring larvae (0-ringers) “. Larvae are not 0-ringers, they are larvae. Surely, 0-ringers are spring-spawned herring in the year that they are spawned or autumn-spawned herring in the year that they hatch or complete post-larval development. Amended. For clarification the reference to 0-ringer is removed, as it was considered unnecessary.
21	There is no reference to Figure 3.6 in the text. Amended. The reference is now inserted at the beginning of the first sentence of section 3.3.2.
	Throughout section 3.3.2 (if not more generally) assumes that all readers are practicing fishery scientists by presenting no more than a précis of ICES conclusions. This is a false assumption; the text should lead the interested but otherwise uninformed reader through the findings, pointing out the key features in the times series of landings, recruitment (with causes and significance), fishing mortality and spawning stock biomass. Whilst the assessment team does not share this view, a review of the section has been undertaken and some minor changes have been made including explanation of some acronyms.

Page	Comment
22	There is no explanation given for the changes illustrated in the figures; this is unacceptable. Whilst the assessment team does not share this view (the last sentence above the figures explained the reason of the differences), we have rephrased it again in order to let it clearer.
23	The structure of this report is clumsy. It follows the structure of the scoring tables whereas the text report should present a coherent (and comprehensible) story. Logically, such a story not only starts with an account of the species biology, but also the history of its exploitation and the science undertaken into the species and stock. Then, and only then, once all these foundation blocks are in place, can the reader understand the assessment and the relevance of key features that appear over time. The report follows a set template and also follows the example of many, many previous MSC assessments.
	“From $.2 \times 10^6$ t in the ---”. Should this read 1.6×10^6 ? Amended: The sentence now says “From 2.5×10^6 t in the 1960s, the spawning-stock biomass (SSB) declined to 1×10^5 t by the mid-1970s (ICES, 2012b),”
	Can you reasonably expect all interested readers to understand what is meant by recruitment overfishing? Why not simply say that fish were being removed faster than recruitment could replace the fish taken. Amended: A foot note was added explaining the concept to the readers saying “Recruitment overfishing occurs when the mature adult (spawning biomass) population is depleted to a level where it no longer has the reproductive capacity to replenish itself—there are not enough adults to produce offspring”.
25	“it is not consistent with clause 5 of the management plan ---”. Strictly speaking this may be true, but what if the previous year’s TAC had been based on the revised SSB (c. +600 kt); would the current TAC still have broken the 15% rule or been within it? This needs to be clarified as it has important implications for the scoring of this (and other similar) fisheries. The example provided by the reviewer is an exception to the rule. This rationale is not provided by management, and those stakeholders that this was discussed with shared the view presented in the assessment report that the Harvest Control Rules was not being strictly complied with at the time. No change has been made.
26	There appears to be a discrepancy between this assessment and that for the Scottish Pelagic Sustainability Group Assessment (SPSG). Using basically the same reference data, the SPSG assessment concluded that mackerel bycatch was sufficiently great (5–15%) to qualify as a main retained species. As the Scottish and Swedish fleets are fishing the same stocks in the same areas at the same times, the composition of their catches should be much the same. This discrepancy requires clarification. FCI comment: We understand that part of the discrepancy with the Scottish report is due to how the landings database has been interrogated; in short, what question was asked to the authorities to support the scoring of retained species. In this instance the assessors requested information from the national landings database by asking “what is the species mix of other retained species in the targeted North Sea herring fishery” (i.e. the question was phased to the specifics of the UoC). The resulting figure therefore accurately reflects the fishing performance of the certified vessels when fishing herring. We understand that the question asked in the Scottish assessment was what species are landed whenever herring is landed. This means that the figure would be biased by any small quantities of herring bycatch recorded in another fishery.
27	“only way to discard would be to pump out tanks and this is illegal--- ”. It is also illegal to drive faster than the speed limit but it happens; the ‘crime’ is to be caught doing it! No change made – the statement is correct. Issues of compliance are addressed under P3.

Page	Comment
	<p>“slippage is considered to occur rarely and it has never been reported neither from on board log books of the member vessels nor from Swedish authorities.”</p> <p>How would the Swedish authorities know whether or not slipping occurred when the fishery takes place in waters under UK jurisdiction and surveillance? Were the coastal state’s enforcement agencies consulted? From observers, when observers were on board in the past (up to 2006) no slippage was reported. Additionally, the Scottish authorities were consulted on the recent SPSG north Sea herring assessment and this assessment concurs on the issue of slippage, and proposes a similar recommendation. As a result, the highlighted section has not been amended.</p>
	<p>“--survival rates are apparently high when sharks are released during or after the cod-end have been emptied--”.</p> <p>I very much doubt that this is true for (Swedish) pelagic trawlers. Like purse seiners, they pump the herring from the cod end into the RSW tanks. This being the case, they would not necessarily see a shark before it entered the tank and passage through the pump would cause fatal injury, if not kill it outright. As noted previously, there is no report of by catch of sharks in this fishery. Although there is no data on survival rates of sharks in purse seine fisheries, there are analogous studies from other fisheries – including demersal trawl showing some post capture survival of elasmobranchs. According to fishermen, when the net is crowded before pumping anything large – if caught –would be visible and the bag is monitored while pumping. The key point however is that shark bycatch has not been identified as an issue in this fishery after an appropriate level of observer time, to identify the level of risk.</p>
	<p>“Seabird by-catch in the North Sea is considered to be comparatively rare.”</p> <p>Probably true but it needs to be supported by a reference – ICES seabirds working group. Reference to relevant ICES WG document added as footnote.</p>
	<p>EU regulation 812/2004: if the Swedes mounted observer programmes and concluded that they are not cost effective, one assumes that they have documentary evidence to support this. This evidence should be cited here. As no a single incidence of by catch was reported during the required observer work, the regulation therefore allows the level of observation to be reduced, and focused on higher risk fisheries. A zero incidence of bycatch explains why continuation of the program would be an unjustified and not cost effective exercise.</p>
	<p>“Quantitative information concerning population size is generally not available for most of the ETP species--”</p> <p>But conclusions can be supported by inference from the results that are presented, analysed and discussed in the appropriate ICES (e.g. marine mammal WG; REGNS report) and OSPAR working groups Other sections of the report and scoring do make reference to these working groups etc., however it is true to conclude that in many cases these are still qualitative – certainly when compared to the quantitative analysis of many commercial fish populations.</p>
	<p>“The pelagic domain habitat is not impacted by purse seiners and pelagic trawlers activity.”</p> <p>Replace ‘not’ with ‘rarely’. See comments above with respect to pelagic trawl clumps. This has been amended to rarely, including in the scoring text for P2.4.</p>
28	<p>“Figure 3.7 shows the reported logbook positions of herring catches--”</p> <p>Fig 3.9 (sic) shows this – but it should actually be Fig 3.8. Amended</p>
	<p>“there are no indications of truncated size composition, trophic cascades, genetic disturbances, and decrease of biodiversity caused by this fishery on the herring stock--”</p>

Page	Comment
	Not now, not when the stock collapsed in the late 60s, not ever. Consequently, the interpretation of the 'low trophic level' sensitivity analysis seems unduly proscriptive and the score of <80 seems unduly harsh. See earlier P1 comments. The definition of low trophic is not determined by this assessment team but by the MSC standard.
	"The impact of removal of herring on the ecosystem has been also investigated." And? Don't just tell us that this has been looked at; tell us what conclusions were reached (see comment above). This is detailed under principle 1. See later comments in the scoring of P2.5.
46	References: although the text does include appropriate references, there are still notable omissions. E.g. There are no references supporting assertions with respect to the status of marine mammals, seabirds or other ETP species. This despite the interaction of pelagic fisheries with these groups being subject to review by, inter alia, ICES and OSPAR working groups. These references are provided in the scoring assessment tree.
	It should also be mentioned that ICES ACOM endorses all the working groups' deliberations and provides the formal management advice. The clear distinction between WGs and ACOM has not been made clear in the text and appropriate citation of ACOM is missing from most (all?) of scoring for PI 1 and PI 2.1 and 2.2. ACOM is referred to more clearly in the chapter relating to P3.
	Many of the ICES references given are in incomplete format and not once has the corresponding ICES website been given, which is highly desirable, if not a specific requirement. References and links have been checked.

Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
1.1.1	Y	Y	NA	Complete agreement; adequate summary of rationale in text report.	No comment required
1.1.2	N	Y	If the condition can be met it will undoubtedly raise the scoring to the SG80 level but it is far from obvious that it will improve the performance of what is already a well-assessed stock and well-managed fishery	<p>The text report told us that there has been herring-related ecosystem modelling and analysis but no results or conclusions were presented. The corresponding references do not appear here, although they must be relevant.</p> <p>Such evidence as appears in the text report and the references cited in support of the view presented do not appear to take any account of past experience. When the NS herring collapsed in the late 60s, early 70s did it result in ecological armageddon? Not at all. Over the same period there was a vast upsurge in the quantity of sprat (TAC >600 kt) plus the gadoid outburst. Could it be that ICES recognises that there is sufficient elasticity in the ecosystem that</p>	The reviewer comments were generally correct, but as Herring is perceived to have a major impact on most other fish stocks either as predator and itself as prey for fish, seabirds and sea mammals in the North Sea area (Dickey-Collas et al., 2010, Fauchald et al. 2011; ICES-WKPELA 2012, ICES 2012 Mackinson and Daskalov, 2007; Segers et al. 2007) the team originally concluded that herring was a Key LTL species in the region. However, a later comment from MSC about recent quantitative evaluations of the role of herring in the North Sea (see below) has led the team to not consider herring as a Key LTL species. Following the reviewer suggestions, we have inserted the omitted references Mackinson and Daskalov, 2007 and the one suggested by the reviewers (Fauchald et al. 2011) in the corresponding reference section of PI 1.1.2. (the others have not been added). In addition we have added the reference of Smith et al 2011 and that of Essington and Plaganyi (2013) which finally led the team to change the qualification of herring to non

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				<p>providing the SSB is kept above Blim the herring fishery per se will not cause eco-meltdown. On balance, I find the assessment team's scoring and condition unduly proscriptive. At the very least, there should be mention of Mackinson (http://www.seaaroundus.org/report/impactmodels/NorthSea.pdf), Fauchald et al (http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0022729) and possibly Segers et al (http://icesjms.oxfordjournals.org/content/64/1/60.full).</p>	<p>Key LTL species.</p>
1.1.3	N	Y	NA	<p>The reason why 100b is a 'N' should appear in 100b, not 80b. By appearing where it does, this PI falls short of 80, whereas the evidence and argument support the score given.</p>	<p>For clarity the assessors have chosen to address all comments against a single scoring guidepost. The Y/P/N column makes it clear why a particular issue is not met.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
1.2.1	N	N	NA	<p>Here we are told (PI 60c) that a “continuous monitoring system is in place” but we were given limited information in the text and none here. The assessment is based on an age-based analytical method but we have not been told who collects these data, how they are collated or, indeed, whether Sweden contributes such data.</p> <p>PI 80b: Delete “According to the scoring of 80 of the Harvest control rule Table: PI 1.2.2, --- does not reach the score of 100.” Even if it were true, it appears in the wrong box. Added to which PI 1.2.2 deals with application, not evaluation. All the evidence available in ICES docs and presented here supports the contention that the HCR has been fully evaluated. Furthermore “evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels” – despite the fact that the TACs have</p>	<p>In section 3.3.1 a full description of independent surveys used as input for the assessment was provided, that is why they were not inserted in the scoring appendix. But at request of the reviewer the list of surveys is included now in the scoring appendix and it is mentioned that Sweden contributes to the estimates of catch composition as expected according to the EU directive for the collection of fisheries data.</p> <p>Regarding the comment on 80b it has to be admitted that the HCrule had been tested for many uncertainties (Recruitment regimes, selection pattern or even small implementation errors) in the past, however the natural mortality seems to have not been paid maior attention until the benchmark in 2012. The HCR was not either shown to be robust under varying starting conditions in population size, etc. In addition the implementation errors have been far higher than the ones which had been tested before 2011. It is not until the end of 2011 that the actual deviations in the implementation of the aproved HCR of the Management Plan were tested by ICES (ICES CM 2011/ACOM:62). Therefore the actually implemented Harvest strategy had not been properly tested “for robustness and</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>been set higher than those defined by the plan.</p> <p>Another instance where there should be a reference to ACOM, which is responsible for evaluation and endorsement of such plans. (Has ACOM expressed concern with respect to the 'high' TAC?)</p>	<p>uncertainty appropriate to the scale and intensity of the fishery" before being implemented. Furthermore, the ways some elements were being considered (as natural mortality or the assessment within the simulations tool) prevented assuming that the testing process constituted a full Management strategy evaluation (as required to achieve the scoring of 100) (see also the conclusion of the ICES CM 2011/ACOM:62).</p> <p>ACOM seems not to have mentioned warning for the high TAC set in 2012, but that is irrelevant to the point raised here about the testing of the Harvest strategy. In reply to the comments of the reviewer, clarifications have been added to section the Evaluation Table: PI 1.2.1</p>
1.2.2	N	N	Yes – insofar as the information has been presented and the PI interpreted. If one recognises that the recent history of the	<p>See general comment earlier.</p> <p>Was the TAC more than 15% higher than it should have been relative to the revised (increased) SSB, or only the pre-revised SSB? If the former, then the condition might be appropriate. If, however, the 'excess' is only with respect to the earlier</p>	<p>Assuming the HCR would not change under the new assessment outputs for the Population, and according to the 2012 ICES estimates of Spawning biomass levels in 2011 and 2012 by applying an F=0.25 for SSB above Btrigger (above 1,5 million t) then TACs in 2012 would have probably been higher than the approved level and varying less than 15% compared to the former year 2011. However when decision was taken, the new levels of biomass had</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
			fishery management has all been positive with substantial increase in SSB, one might reasonably ask whether or not the condition will make a ha'penn'orth of difference	(lower) SSB the condition is not justified. On balance, the conclusions reached are unduly proscriptive and a recommendation might be more appropriate than a condition. Yet again, the negative comments under 80b should not appear here but under 100b. No reference to ACOM.	not been derived, and hence the breaking of the rule adopted by managers was decided in the absence of any supportive biological evidence. Hence the condition imposed which requires coherence between the adopted and applied Harvest control Rule is correct. So no modification has been made to the text.
1.2.3	N	N		Surely, 'unallocated' catches within the ICES lexicon are IUU landings; discards are always described as discards – with or without slipping. Monitoring catches is more than just tonnage, it includes age, length, weight, sex ratios, maturity etc but no description of where or these data are collected or analysed is given despite them being the fundamental	Certainly more information had been given in the general section of the report (section 3.3.1). However in response to the reviewers comments, further corroborative info was added to the PI scoring section. Multispecies models for the North Sea firmly contributed to setting of the patterns of natural mortality in time (WGSAM, ICES 2011b) something which had been already mentioned at the beginning of the section 3.3.1 (after the presentation of the

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>building blocks of this stock assessment.</p> <p>Multi-species models are mentioned here but there is not one citation given that such things exist or have been applied to NS herring.</p> <p>Overall, the score is appropriate.</p>	<p>assessment model), but a sentence has been added in the scoring PI section.</p> <p>No change has been made to the scoring.</p>
1.2.4	Y	Y	NA	<p>The negative comments should be deleted from 80e and put in 100e – or the overall score reduced to 75.</p> <p>At the very least, the benchmarking workshop reference should appear here.</p>	Amended: the quotation has been added, But no sentence has been removed
2.1.1	N	N	NA	<p>80c: There is a significant inconsistency with what is claimed for this fishery and the 5 – 15% mackerel that is reported for the Scottish Pelagic Sustainability Group vessels. As they fish the same area at the same</p>	The comment is irrelevant, the evidence presented indicates that there no retained by catch in this herring fisheries so there is no substantial effect on any other species. Moreover, it is very difficult to speculate about which species is caught when we do not have any indication that a species is indeed

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>time this discrepancy must be resolved.</p> <p>100a: This is wholly inadequate. None of these retained species are identified or discussed in the text report and no information is presented on stock status or evidence that they are above biologically safe levels. Do we know this to be the case for whiting? ICES makes no claim to know that status of the NS whiting stock (ACOM whiting, 2012).</p> <p>At best, the score can be no more than 90.</p>	<p>caught in sufficient numbers to require reporting. We understand that part of the discrepancy with the Scottish report is due to how the landings database has been interrogated, in short what question was asked to the authorities to support the scoring of retained. In this instance the assessors requested information from the national landings database by asking what is the species mix of other retained species in the targeted North Sea herring fishery (i.e the question was phased to the specifics of the UoC). The resulting figure therefore accurately reflects the fishing performance of the certified vessels when fishing herring. We understand that the question asked in the Scottish assessment was what species are landed whenever herring is landed. This means that the figure would be biased by any herring bycatch in another fishery. In the view of the assessment team, the score should remain at 100.</p>
2.1.2	N	Y	NA	<p>The evidence presented here supports the rationale and conclusion but as it is at variance with the directly comparable Scottish fishery it appears that not all the available information has been</p>	<p>Slipping is not considered under retained. Retained landings are reflected in e-logs. Information on retained landings comes from the members state of the vessel. Liaison between enforcement authorities is considered under principle 3. It is acknowledged that in pelagic fisheries the indication of retained</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
				included in this assessment. The NS herring fishery takes place primarily within the UK sector with these vessels fishing within Scottish jurisdiction. Marine Scotland (Compliance) and the Scottish Fishery Protection Service are the people more likely to know about slipping by Swedish vessels that the Swedish authorities. Have these agencies been consulted; what evidence or information did they provide?	catches is as accurate whether landed in Sweden or Scotland.
2.1.3	Y	Y	NA	Subject to the caveats and concerns expressed above, this is acceptable.	No comment required
2.2.1	N	N	NA	If discarding is 'very rare' or 'less than 5%', there clearly is some discarding (slipping). Even if species composition is derived from other fleets they are all directly comparable), these data should be presented openly and discussed with respect to the quantities caught and the current	Discard is null or so low that is under the level of detection. Thus, they have no measurable effect on the stock status of any species. This is in line with the findings of other recent NS herring assessments.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
				stock status. As it is, the reder is simply expected to take unsubstantiated assertions on trust.	
2.2.2	N	N	NA	The assessment and scoring of this PI seem to be far more realistic that the somewhat rosy conclusion reached for 2.1.2, which has much in common with this PI. Nevertheless, we still need to know which species are involved.	The comment is irrelevant, there is no by catch in this herring fisheries so there is any substantial effect on any other species.
2.2.3	N	N	NA	The NS herring fishery takes place primarily within the UK sector with these vessels fishing within Scottish jurisdiction. Marine Scotland (Compliance) and the Scottish Fishery Protection Service are the people more likely to know about slipping by Swedish vessels that the Swedish authorities. Have these agencies been consulted; what evidence or information did they provide?	The SPSG NS herring re-assessment team were consulted. They in turn met with the Scottish authorities. This did not provide any evidence of slippage. The scoring of slippage (and the decision not to place a condition – but instead place a recommendation pointing to the need for further independent verification) is in line with the SPSG report.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
2.3.1	N	Y	NA	Apart from the absence of reference to the work and conclusions of the appropriate ICES and OSPAR working groups on seabirds and marine mammals, the assessment and score is acceptable.	The ICES by catch WG is the most appropriate here as it deals specifically with the quantification of the amount of by catch level in different type of fisheries – regardless of whether bird or ETP.
2.3.2	N	Y	NA	Apart from the absence of reference to the work and conclusions of the appropriate ICES and OSPAR working groups on seabirds and marine mammals, the assessment and score is acceptable. It is a moot point whether or not legislation per se constitutes a strategy.	As above.
2.3.3	Y	Y	NA	Agreed – but it would have been better to put much of this detailed text in the main report and just summarise it here.	No comment required. The approach of this assessment team is to summarise in the report and be specific in the scoring assessment tree. This ensures that the reasons for scores given are clear and fully justified, making harmonisation easier. It also helps to keep the report short and readable.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
2.4.1	Y	Y	NA	Agreed in principle but as purse seines can and do reach and scrape the seabed in shallow (coastal) areas a more realistic score might be 95 or 90 just to acknowledge that the gear is less than perfect.	A key consideration here is what are the operational practices employed with the net. If they use it properly, as it is, there is no bottom contact. This is supported by the information gathered and presented. The reviewer suggests a minor amendment to scoring but does not indicate with scoring issue, or element of scoring is not met. Furthermore the reviewer agrees with the overall conclusion of a high scoring pass for this PI without need for condition or recommendation. The assessment team do not therefore see the requirement to rescore.
2.4.2	Y	Y	NA	"It is generally agreed that the strategy---" is not 'clear evidence'. 100c should be a 'N' with concomitant reduction in score.	Clear evidence is provided by previous on-board observers which confirms that the net does not touch the bottom. Furthermore the MSC guidance very clearly indicates that where a status score is scored at 100 due to lack of impact or interaction, there requirement for management should be seen in the context of what is appropriate given the potential risk.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
2.4.3	N	Y	NA	<p>“--but sporadic projects (see OSPAR website)--”. No, the authors should tell the reader (in the text report) what is to be found on the OSPAR website, summarise the conclusions from the work and provide the reader with the specific web address.</p>	The reader is free to consult the website of OSPAR as indicated....
2.5.1	N	Y	NA	<p>“---consequences of the herring fisheries on the ecosystem have not been empirically modelled.” Is this strictly true? See references cited earlier and any of those listed when ‘system modelling herring fishries’ is put into Google. Furthermore, under PI 2.5.3 100b it says that these aspects “have been investigated using multispecies models”.</p> <p>Certainly, the reference list on this topic should be more comprehensive than it is.</p> <p>I would suggest that the events of the late 60s and early 70s when the NS herring stock collapsed provide clear</p>	<p>Whilst the assessmsnet team share some of the views expressed by the reviewer, this performce indicator is contrained by the fact that there is only a single scoring issue. Whilst partial scoring is of course possible, this must be fully supported and based on a clear rationale – for example where different elements of the score would meet either the 80 or the 100 scoring guidepost. The assessment team are not of the view that the ecosystem condierations of the fishery meet the intent of the 100 standard - not least given the condition raised in principle 1 and the EU / ICES current efforts to define and incorporate more ecosystem based approaches to management. The score awarded here is in line with other MSC certified North Sea pelagic fisheries. For this reason the score has not been changed.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>“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.”</p> <p>A higher score can be justified.</p>	
2.5.2	N	N	NA	<p>There was no mention of WGEKO in the text report, which is a significant omission. If it is to be cited here, key aspects of its work and conclusions should be described in the text report.</p> <p>The negative observation in 80a should be moved to 100a, otherwise 80a becomes a ‘N’ with concomitant implications for scores and conditions.</p> <p>The suite of ‘Ns’ for PI 100 seem at variance with the proposition that there is a strategy and plan (Marine Framework Directive, CFP and NS herring HCR) for which there is evidence that they are working. Specifically they provide safeguards to avoid another 1960’s type collapse –</p>	<p>WGEKO is referred to in the report and can be referred to, top provide useful ecosystem overviews. The references provide are adequate to suport the scoring.</p> <p>See earlier comments in relation to the reviewers preference for stating negative comments in the scoring guidepost above the one scored.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>for which there is no evidence of irreversible harm.</p> <p>Overall, inadequate review of primary literature or discussion in main text report.</p> <p>With more comprehensive literature review, the score could justifiably be higher.</p>	
2.5.3	N	N	NA	<p>At last there is reference to some primary literature but references linking herring with seabird and cetacean populations have been totally ignored yet these are at the very heart of this topic with respect to ETP.</p> <p>The score of 100 may be right but the case is not made.</p>	<p>The rationale used here is that given the low impact of this fisheries to habitats, ETP species or other fish species, its impact on the ecosystem is primarily influenced by the removal of herring. The references indicate that there are models, several studies and a relevant amount of information on herring and its role in the ecosystem. The impact is not explicitly modelled in assessment and management but maintaining herring biomass over Btrigger seems a reasonable way to limit any impact. The key question is to understand if the fisheries pose risks (and how much) for the target species, for other species and for the ecosystem functions. All information we have available currently indicate that this kind of fisheries poses low risks in general.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
3.1.1	Y	N	NA	It is far from clear why the comment at 80b could not be moved to 100b in support of a score of 100. If there is a shortcoming in the Swedish enforcement and legal system it must be identified and specified.	See response to reviewer A.
3.1.2	Y	Y	NA	Agreed	No comment required
3.1.3	Y	Y	NA	Agreed	No comment required
3.1.4	Y	Y	NA	Why is funding the science a subsidy to the industry? Surely the role of the scientists is to safeguard a public good rather than support the fishermen per se. That apart – agreed.	No comment required. The report says that “this could be construed as effective subsidy”.
3.2.1	Y	N	NA	PI 80a “There is no fishery specific EU regulation setting out the short and long term objectives for this fishery” but this is just one of many fisheries that are covered by the (flawed) CFP	Neither the CFP nor the marine strategy directive framework are “fishery specific”. The herring long term management plan is not an EU multi-annual plan (it is an agreement at coastal states level), therefore there is no fishery specific piece of EU

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>for which the declared long-term objectives to manage all fisheries consistent with the principle of MSY (by 2015?). Thus, there are both short and long-term objectives for this fishery. Also, the CFP also explicitly states that "The CFP shall implement the precautionary and ecosystem approaches to fisheries management". Similarly, the Marine Strategy Framework Directive sets the long-term objectives with respect to the ecosystem.</p> <p>Negative comments should be deleted and moved to PI 100 – or the score reduced to <80.</p>	<p>legislation outlining wider objectives. http://ec.europa.eu/fisheries/cfp/fishing_rules/multi_annual_plans/index_en.htm</p>
3.2.2	Y	N	NA	<p>Negative comments should be deleted from PI 80 and moved to PI 100 – or the score reduced to <80. Otherwise, agreed.</p>	<p>For clarity the assessors have chosen to address all comments against a single scoring guidepost. The Y/P/N column makes it clear why a particular issue is not met.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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
3.2.3	N	N	NA	<p>There has been no mention here or, more importantly, in the text report of at-sea inspections and enforcement by coastal state authorities.</p> <p>If PI 100c is a No, there must be some evidence of (significant) non-compliance: what is it; where is it; where are the data?</p>	<p>At sea inspections are less common in pelagic fisheries than in demersal fisheries. This is due to the difficulties of getting an accurate estimate of the amount of fish on board when at sea. Instead the emphasis has been on robust and comprehensive enforcement of landings.</p> <p>The PI which is not met relates to the provision of additional information of importance to the effective management of the fishery. For example this might include voluntary information or providing voluntary access to the boats. Whilst this occurs to some extent, the team were of the view that this did not fully meet the intent of the SG100.</p>
3.2.4	N	N	NA	<p>PI 100: does the Swedish ministry of fisheries have a strategic plan? Does the fisheries laboratory at Lysekil not have to present annual or five-year plans to the ministry to justify its funding. The CFP embodies a strategic plan. The ICES Council and Bureau certainly prepare and agrees a strategic plan for coordinating European marine research needs for fisheries to meet the needs of</p>	<p>Scoring above 80 requires a fisheries specific research plan. The scoring of dissemination at SG100 is only possible if there is a fisheries specific research plan. See also response to review A.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Do 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>providing scientific advice to the fishery commissions. In what way does Sweden fall short that it can score no higher than 80? We need to know.</p> <p>We also need to know in what way this assessment falls short of the criteria for scoring 100 with respect to publication and dissemination of information?</p>	
3.2.5	N	N	NA	As above, neither here nor in the text are we informed as to the manner in which Sweden fall short of meeting PI 100 criteria.	This is not simply about Sweden. It is about the fishery specific management. A score of 80 equates to an unconditional pass of the MSC standard.

Appendix 3. Stakeholder submissions

a. Written submissions from stakeholders received during consultation opportunities on the announcement of full assessment, proposed assessment team membership, proposed peer reviewers, proposal on the use or modification of the default assessment tree and use of the RBF.

None.

b. All written and a detailed summary of verbal submissions received during site visits pertaining to issues of concern material to the outcome of the assessment regarding the specific assessment.

None.

c. Explicit responses from the assessment team to submissions described in a. and b. above.

None.

Appendix 3.1 Amendments made to the PCDR following stakeholder consultation

MSC

Ref.	Type of Finding	Page	Requirement	Reference	Details	PI
1	Major	Annex CB, pg. C60	CB2.3.14	Teams shall determine whether a species is to be considered a key LTL species based on its status at the time of assessment. The determination shall be reviewed at each surveillance audit	<p>The method by which NS herring is designated as a Key low trophic level (LTL) species in this report is inconsistent with the MSC requirements. Specifically, the justifications in how that conclusion is reached are not explicit enough to the 3 ecosystem criteria defined under CB 2.3.14. This states that a species shall be designated as a KEY-LTL species if it is listed in Box CB1 and it meets one or more of the sub-criteria in Box CB2. Although NS herring is indeed listed in Box CB1 you have not specifically stated whether or not this stock specifically meets the 3 criteria in Box CB2, i.e. the stock holds a key role in the ecosystem, defined by;</p> <ul style="list-style-type: none"> a) degree of trophic connectivity b) volume of energy passing through this species to higher trophic levels c) its role in forming an integral part of a wasp-waisted system. <p>Only in cases where it can be shown that a stock does not meet any of these criteria, should that stock be designated as Key-LTL.</p> <p>In cases where a stock is designated as KEY-LTL, it must be scored according to CB2.3.17 to CB 2.3.21 as the basis to the default scoring issue a at the SG 60 level. Specifically, to meet the SG 60 level, it needs to be</p>	

Ref.	Type of Finding	Page	Requirement	Reference	Details	PI
					<p>proven that the default KEY-LTL TRP is set substantially above the TRP determined according to CB 2.3.3. Therefore, if a stock is considered key, it needs to be justified that the TRP already takes into account the ecological role of the stock.</p> <p>It is therefore critical that PI 1.1.2 is re-evaluated using the ecosystem criteria described in BOX CB2. As guidance in this matter, the team is invited to review the paper by Essington and Plagayani, 2012, which is referred to in the MSC Guidance, v1.3. The analysis in this paper suggests that NS herring would not be designated as KEY-LTL, based on the information available.</p>	
<p>FCI Response: The report has been updated and based on the paper of Essington and Pláganyi (version January 2013) herring is not considered a key LTL species in the North sea. The original condition 1 has been accordingly removed and replaced by a recommendation to SPFPO Swedish North Sea herring to support the definition of reference points for herring which take into account the ecological role of the stock in the ecosystem, because the team believes that the issues raised should still be gradually addressed, aligned with the general principle of responsive management inspiring MSC principles.</p> <p>Changes to duly take into account the recent information giving support to the new consideration of the herring as non key LTL were made in sections 3.3.2 and 3.4.5 in addition to the justification when scoring PI 1.1,2 scoring issue d.</p>						

Appendix 4. Surveillance Frequency

Table A4.1: Fishery Surveillance Plan

Score from CR Table C3	Surveillance Category	Year 1	Year 2	Year 3	Year 4
2	Normal surveillance	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit

Appendix 4.1 Rationale for determining surveillance score

This fishery assessment makes use of the default assessment tree (0), has between 1 and 5 conditions (1), and has principle level scores above 85 (0). The first of the 2 conditions relates to reference points, this is considered an outcome PI, therefore it cannot be concluded that conditions are not on outcome PIs (1). Overall therefore the score is 2 – meaning that a normal level of surveillance is required.