



MSC FISHERY ASSESSMENT REPORT

Public Certification Report for:

The Danish Pelagic Producers Organisation

North Sea Herring Fishery

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The objective of this project has been to approve Danish Pelagic Producers Organization for MSC-Fishery certification for autumn spawning herring from North Sea and Eastern Channel, caught by purse seine and pelagic trawl.

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Key words:

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ABBREVIATIONS

ACFA	Advisory Committee on Fisheries and Aquaculture
CFM	Advisory Committee on Fishery Management
ACOM	Advisory Committee
B_{lim}	Limit Biomass
B_{msy}	Maximum Sustainable Yield Biomass
B_{pa}	Precautionary Biomass
CFP	Common Fisheries Policy
CR	Council Regulation
DNV	Det Norske Veritas
DPPO	The Danish Pelagic Producers Organization
DTU	The Danish Technical University
EC	European Community
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing mortality
FAM	Fisheries Assessment Methodology
FD	Fisheries Directorate
HAWG	Herring Assessment Working Group
HC	Harvest Control Rule

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ICES	International Council for the Exploration of the Sea
IFM	Innovative Fisheries Management
ITQ	Individual Transferable Quota
MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
NGO	Non-Governmental Organisation
NSS	Norges Sildesalgslag
NS	North Sea
NSRAC	North Sea Regional Advisory Council
PI	Performance Indicator
RAC	Regional Advisory Council
RSW	Refrigerated Sea Water
SG	Scoring guidepost
SSB	Spawning Stock Biomass
SWOT	Strengths, weaknesses, opportunities and threats
TAC	Total Allowable Catch
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System
WKHMP	Workshop on Herring Management Plans
WWF	World Wildlife Fund

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1 INTRODUCTION

This report sets out the results of the assessment of the Danish Pelagic Producers Organisation (DPPO) **North Sea Herring Fisheries** against the Marine Stewardship Council Principles and Criteria for Sustainable Fishing.

2 FISHERY PROPOSED FOR 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) pursuing the fish of that stock) and management framework."

The fishery is not conducted under any controversial unilateral exemptions to any international agreements. The fishery does not use destructive fishing practices such as poisons or dynamite, these are illegal within the management country.

The fishery proposed for certification is therefore defined as:

Species:	Herring (<i>Clupea harengus</i>)
Stock:	Autumn spawning stock in the North Sea and Eastern Channel
Geographical area:	ICES divisions IV a, b, c, and VII d.
Management:	The fishery is managed by EC and Norway on the basis of a joint management plan. The quota under which the Danish Pelagic Producers Organisations fishery is conducted is managed by Denmark. .
Harvest method:	Purse seine and pelagic trawl.
Client:	Danish Pelagic Producers Organization

3 REPORT STRUCTURE AND ASSESSMENT PROCESS

The aim of this assessment is to determine the degree of compliance of the fishery with the Marine Stewardship Council (MSC) Principles and Criteria for Sustainable Fishing, as set out in Section 7.

This report sets out:

- the background to the fishery under assessment
- the qualifications and experience of the team undertaking the assessment
- the standard used (MSC Principles and Criteria)
- stakeholder consultation carried out. Stakeholders include all those parties with an interest in the management of the fishery and include fishers, management bodies, scientists and Non-Governmental Organisations (NGO's)
- the methodology used to assess (score) the fishery against the MSC Standard.



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The scoring table sets out the default Scoring Indicators adopted by the assessment team and Scoring Guidelines which aid the team in allocating scores to the fishery. The comments in this table sets out the position of the fishery in relation to these Scoring Indicators.

The intention of section 4 of the report is to provide the reader with background information to interpret the scoring comments in context.

Finally, as a result of the scoring, the Certification Recommendation of the assessment team is presented, together with any conditions attached to certification.

In draft form, this report is subject to critical review by appropriate, independent, scientists (peer review) and public scrutiny on the MSC website. The comments of the Peer Reviewers and stakeholders are appended to the final report.

The report, containing the recommendation of the assessment team, peer review comments and any further stakeholder comments is then considered by the DNV Governing Board (a panel of experts independent of the assessment team). The Governing Board then makes the final certification determination on behalf of Det Norske Veritas (DNV).

It should be noted that, in response to comments by peer reviewers, stakeholders and the DNV Governing Board, some points of clarification may be added to the final report.

4 THE FISHERY MANAGEMENT OPERATION

4.1 DPPO

Danish Pelagic Producers Organisation (DPPO) in Denmark was established in 1984 as an organisation for purse-seiners. In 2001 it was opened for membership to trawlers. At present (November 2008), the organisation has 8 members, of which 3 are trawlers, and 5 combined trawlers and purse-seiners.

The association is governed by the General Assembly consisting of all the members. The management is undertaken by The Board of Directors (7 members) who are elected by the General Assembly. The day to day administration is carried out by the General Manager, Mr. Christian Olesen from DPPO's headquarters in Hirtshals, Denmark.

A map over the relevant ICES (International Council for the Exploration of the Sea) fishing areas for DPPO members in the North-East Atlantic is given in figure 1. Three stocks of herring are targeted by DPPO members;

- North Sea Herring (ICES Divisions IV a, b, c and VII d)
- Skagerrak/Kattegat Herring (ICES Division IIIa)
- Norwegian Spring Spawn Herring/Atlanto-Scandian Herring (ICES Divisions IIa and IIb).

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In addition to herring DPPO catches the following species (per 2008):

- Mackerel (ICES Divisions IIa, IIIa, and sub-areas IV, V, VI, VII, VIII)
- Blue Whiting (ICES sub-areas II, III, IV, V, VI, VII, XII, XIV)
- Sandeel (ICES sub-areas III, IV)
- Horse mackerel (ICES sub-areas III, IV, V, VI, VII, VIII)
- Sprat (ICES sub-area IV)
- Capelin (ICES sub-area XIV).

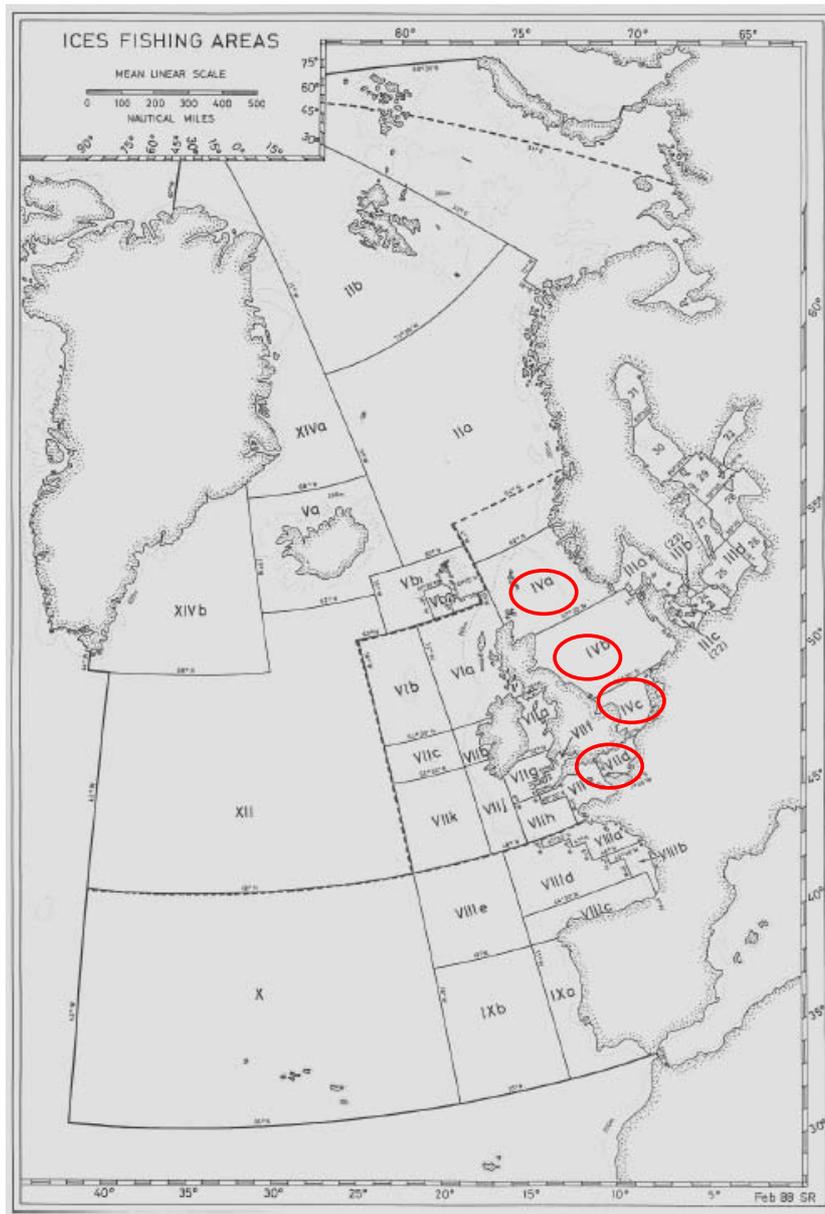


Figure 1: North Sea Herring ICES fishing areas for Danish Pelagic Producers Organisation: IV a, b + C and VII d (marked with red circles).

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Figure 2 shows the total quota for herring (from all stocks) for DPPO in 2006 and 2007, together with the reported catches for the same two years. The catches of herring in 2008 by members of DPPO totaled 74.163 tons. Of this volume 34.183 tons were caught in the North Sea - areas 4A or 4B. There were no catches in VIc or VIId.

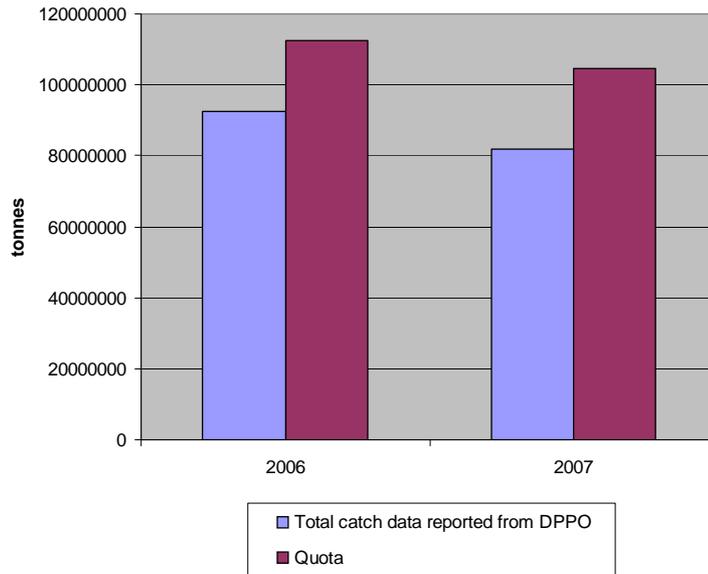


Figure 2: Reported catches of herring (from all stocks) by DPPO in 2006/2007, compared with corresponding quotas. The numbers are gathered from DPPO and the Danish Directorate of Fisheries in August 2008.

The North Sea herring fisheries activities of the DPPO vessels are regulated by the EC in accordance with the joint EC-Norway Fisheries Agreement, the EC CFP, and supporting EC and Danish regulations. Each year, the size of the TAC is set in agreement between the EC and Norway. The Community share is allocated among the Member States in accordance with the principles of “relative stability” The Danish quota is allocated to national fishing vessels, including the DPPO vessels, within an ITQ system The present legal fishing rights are set by the EC Council Regulation (EC) No 40/2008 of 16 January 2008 setting, for 2008, the fishing opportunities and associated conditions for certain fish stocks and groups of fish stocks, applicable in Community waters and, for Community vessels, in waters where catch limitations are required, and the Danish regulation on fishing for 2008: “Bekendtgørelse nr. 1543 af 19. december 2007”.

4.2 Ecosystem characteristics

The North Sea - a part of the Atlantic Ocean - is bordered by Norway and Denmark, Scotland and England, and in the south-east by Germany, the Netherlands, Belgium and France. It is more than 600 miles long and 350 miles wide. The North Sea averages about 100 m deep, with a maximum depth of 700 m. The substrates are dominated by sands in the southern and coastal regions, and by fine mud in deeper and more central parts.

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Circulation in the North Sea is classically presented as an anticlockwise gyre driven mainly by wind forcing (R9). However, empirical observations as well as modelling results indicate that the pattern may be reversed temporarily as a result of wind forcing, or split into two separate gyres in the north and south. The main inflow is of relatively warm (at least during winter) and more saline North Atlantic water along the shelf break into the Norwegian Trench and also around Shetland and the Orkney Islands. Changes in zooplankton and fish distributions have been linked to the strength of these inflows (for examples see R26 and R27).

The temperature of surface waters is largely controlled by local solar heating and atmospheric heat exchange, while temperature in the deeper waters of the northern North Sea is influenced largely by the inflow of Atlantic water. Both 2003 and 2004 were unusually warm years, particularly in August and September. At the end of 2006 and the beginning of 2007, after a very warm summer and mild autumn weather, the temperatures in the North Sea were extremely high, from about 2 to nearly 4 degrees above normal. Surface salinity has also risen in recent years. Near-bottom salinity in the north-western North Sea has been above average the last three years, but last year it dropped from the record high readings observed in 2005 (R28).

Primary productivity of phytoplankton is dominated by diatoms and dinoflagellates. (R8). Up to the 1970's primary production classically followed a spring/autumn bloom pattern. Since the 1970's this separation has become increasingly blurred and primary production has been continuous over much of the year. This longer and less bipolar productivity has led to a much greater primary production in recent years, associated with a reduction in diatom production and an increase in dinoflagellates.

Zooplankton production is dominated by copepods and euphausiids, both important food items for many key commercial stocks. Data sources show that the abundance of copepods (particularly *Calanus finmarchicus*) has declined from 1946 to 2006 (R25).

When it comes to the descriptions of the spatial distribution of the invertebrates, they show that the diversity of infauna and epifauna is lower in the southern North Sea than in the central and northern North Sea. Bottom temperature, sediment type, and trawling intensity have been identified as the main environmental variables affecting community structure (R9).

Estimates of the total biomass of North Sea fish in the 1980's were in the order of 12 million tonnes (R29). Throughout the year, the pelagic component is dominated by herring. Mackerel and horse mackerel are mainly present in the summer and autumn when they enter the area from the south and the northwest. Dominating gadoid species are cod, haddock, whiting and saithe, whereas the main flatfish species are common dab, plaice, long rough dab, lemon sole and sole. The major forage fish species are sandeels, Norway pout and sprat, but juvenile herring and gadoids also represent an important part of the forage stock. However, large annual variations in species composition occur as a consequence of natural fluctuations in recruitment success of the individual species. Species richness in the North Sea is highest around the edges and lowest in the central North Sea. The edge areas are frequently invaded by species from adjacent areas that are atypical to the North Sea.

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About 2.5 million pairs of seabirds breed around the coasts of the North Sea, belonging to some 28 species (R9). While most species breed in dense colonies along the coast, they make very different use of the marine ecosystem. During the breeding season, some species depend on local feeding conditions, whereas others may cover several hundreds of kilometres during their foraging trips. Outside the breeding season, some species stay quite close to their breeding grounds whereas others migrate across the North Sea or elsewhere, even as far as the Antarctic. Feeding habits also diverge.

On a shorter time-scale, 12 out of the 28 seabird species show an increasing trend during the last decade and four a decreasing trend, while four appear to be stable and for another four the situation is unknown. (R9).

Many cetacean and pinniped species have been observed within the North Sea, but most of these must be considered vagrants and only a few constitute resident representatives of the North Sea ecosystem. The dominating species are minke whales, harbour porpoises and dolphins, in addition to grey seals. The main concern about interactions with human activities is the by-catch in fishing operations and effects of contaminants. Specifically, the large by-catch of harbour porpoise in gill net fisheries has led to management measures (R9).

4.3 The North Sea Herring stock

4.3.1 The biology of the North Sea herring stock

4.3.1.1 Distribution and stock structure

Atlantic herring (*Clupea harengus*) is a pelagic species widely distributed throughout the North- East Atlantic north of the Bay of Biscay and is found all over in the North Sea.

North Sea herring spawn in coastal waters in areas where the substrate consist of gravel and small stones. The eggs are attached to the substrate and hatch after about three weeks depending on temperature. The requirement for a gravel substrate means that the spawning grounds are relatively small and well defined. The main spawning grounds are as shown in Fig. 3 in the western North Sea and eastern Channel. However, spawning grounds are found in all North Sea coastal areas where the specific requirements for the gravel substrate are full field.

The main spawning begins in the north western North Sea in July and progresses steadily southwards through September and November in the central and south- western North Sea and in January and February in the eastern English Channel. Spawning on the small spawning grounds in the eastern North Sea takes place in spring.

Based on the spawning season herring stocks are often classified as spring, summer, autumn or winter spawners.

The herring larvae are planktonic. The planktonic stage lasts for up to several months and metamorphoses takes place in early spring. As larvae, the herring passively drift

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with the current, ending up in the main nursery areas in coastal waters on both side of the North Sea and Skagerrak and Kattegat (Figure 3).

Based on the distributions of the spawning grounds, larvae drift, nursery areas and migration of the adults, three main stock units have been defined:

- Buchan herring. Spawn July to September in the Orkney Shetland area and off the Scottish east coast. Nursery areas are along the east coast of Scotland and the Skagerrak and Kattegat.
- Banks herring. Spawn August to September, off English east coast. Historically spawning also took place on the western edge of the Dogger Bank. Nursery areas are off the English east coast and Danish west coast.
- Downs herring. Spawn December to February in the southern North Sea and Eastern Channel. Nursery areas are off the English east coast, Dutch coast, Danish west coast and in the German Bight.

In addition to the three main stock units a number of small spring spawning units exist, spawning in coastal area in the eastern North Sea. Nursery areas are off the Danish west coast and in the Norwegian fjords.

The stock complexity of herring in the North Sea is further complicated by the appearance in the north-eastern North Sea of herring belonging to herring populations spawning in the spring in the western Baltic, Skagerrak and Kattegat. Herring from these populations migrate into the North Sea in summer and autumn.

Although the three main North Sea herring stocks include summer, autumn and winter spawners they are often named autumn spawners to distinguish them from the spring spawning stocks.

At certain times of the year, individuals from the three main stock units and from the local spring spawning units as well as spring spawners from the western Baltic, Skagerrak and Kattegat may mix and be caught together. In the North Sea adults from all stocks mix in summer and autumn in the north-eastern North Sea. In Skagerrak and Kattegat juvenile North Sea autumn spawners mix with local spring spawners and spring spawners from the western Baltic.

Although it is possible to classify an individual to stock unit with reasonable certainty it is in practise not possible to allocate catches to the three main stock unit and North Sea autumn spawners are assessed and managed as one stock. The spring spawning stocks from the Skagerrak, Kattegat and western Baltic are assessed as a separate stock.

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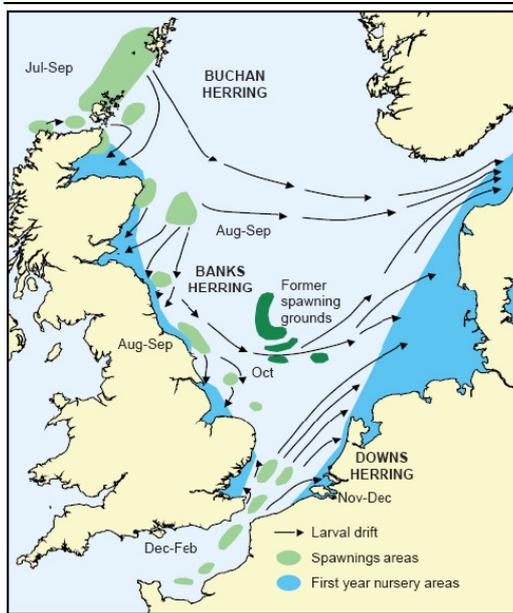


Figure 3. Schematic illustration of North Sea herring spawning areas and larvae drift.

4.3.1.2 Lifecycle

In most fish stock assessments 1st January is used as a nominal birth date and the age of a fish is counted from the year where it was spawned. However, because of the long spawning period (August to February) for North Sea herring, individuals belonging to the same cohort (year class) would be given different age if age was based on spawning time.

Herring age is normally based on growth rings in the otolith. The growth rings used for aging is first laid down after the herring has metamorphosed from larvae to juvenile. Larvae from all three main stock units metamorphose to the juvenile stage in early spring and, when using the otolith for aging, herring which metamorphose in the same year will be given the same age. The age of North Sea herring is therefore counted from the year when metamorphosing from larvae to juvenile occurs and expressed in number of winter rings observed in the otolith. 0 - group herring therefore means herring in the year they metamorphose. This also means that for autumn spawners with the age 0 were spawned in the previous year.

During the spawning period shoals of herring gather on the spawning grounds. Spawning is synchronised and the individuals in a shoal spawn more or less simultaneously. The eggs sink to the bottom. The female releases its eggs in a single batch. The number of eggs a female produces (fecundity) varies pending on size and stock from 10,000 to 140,000 (R30).

The eggs hatch depending on temperature after approximately three weeks. The larvae are 5 to 6 mm in size. The larvae drift with the currents as illustrated in fig. 3. They feed on plankton and do not metamorphose to the juvenile stage until early spring. This

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means that larvae from the Buchan stock unit spend up to eight months in the larvae stage, while Downs herring have a larvae stage of a few months.

The juvenile stage lasts in general two to three years, depending on growth conditions. Juvenile herring are found in coastal areas of the North Sea, Skagerrak and Kattegat.

Herring is a central component in the North Sea ecosystem both as predator and as prey. Herring feeds mainly on zooplankton (copepods, mysids, euphausiids, fish egg and larvae) and juvenile fish. Herring is an important prey for most predator species including cod, saithe, whiting, mackerel, sea birds and marine mammals. However, it has not been possible to demonstrate that historical changes to the herring stock including the stock collapse in the 1970ies have adversely or permanently affected the ecosystem.

4.3.2 The fishery

4.3.2.1 Catches and landings

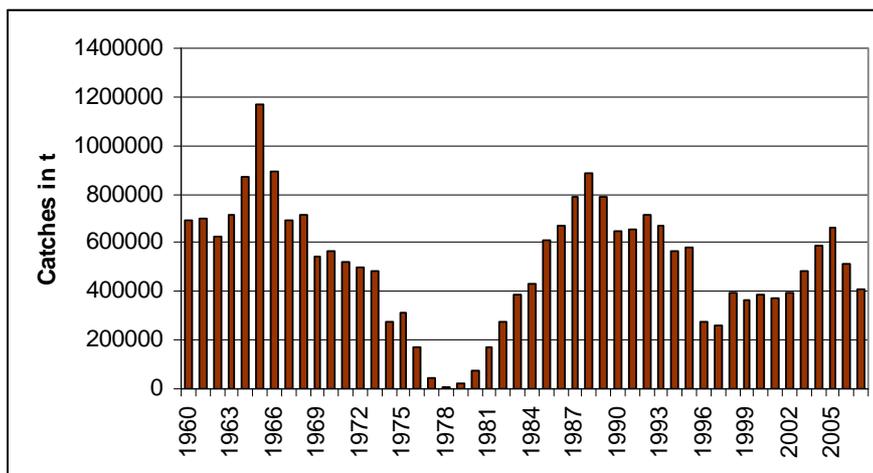


Fig. 4. Total international catches of North Sea herring stock in ICES Divisions IIIa, IV and VIIId estimated by ICES (R10).

The herring fishery in the North Sea has a long history going back many centuries and has in all years been one of the most important fisheries in the area. The North Sea herring is exploited by trawlers and purse-seiners from Denmark, France, Germany, Netherlands, Norway, Sweden, Russia and UK (R31).

The fishing areas for the North Sea herring stock include the North Sea, the Skagerrak and Kattegat, the eastern Channel and most southern part of the Norwegian Sea.

The total international catches from 1960 to 2007 as estimated by ICES are shown in Fig. 4. Landings were, until mid 1960's, around 650,000 t per year. Fishing mortality on the herring began to increase in the 1960's and landings reached a peak of more than 1 million t in 1965. In the following year the stock declined rapidly and the fishery

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collapsed in 1976. The decline in the stock and in the landings lead to a moratorium on directed herring fishing in the North Sea from 1977 to 1981.

The stock recovered following the closure of the fishery and landings again reached levels above 600,000 t by mid 1980's. However, fishing mortality increased to unsustainable levels and the stock showed a rapid decline in early 1990's. Management actions were taken in 1996 to address the over-exploitation of the stock and landings have since then fluctuated between 400,000 and 660,000 t.

The development in fishing mortalities on juveniles and adults are shown in figure 5. The mortality on juveniles is mainly due to by-catches of herring in industrial fisheries for sprat and sandeel. The juvenile mortality was relatively high from late 1960ies until 1996 and reflects that by-catches of herring in the industrial fisheries were almost unregulated. The management action taken in 1996 included the introduction of a by-catch monitoring system, enforcement of the rules on by-catch percentages and a sealing on the total by-catch. The measures introduced resulted in a substantial reduction in juvenile fishing mortality.

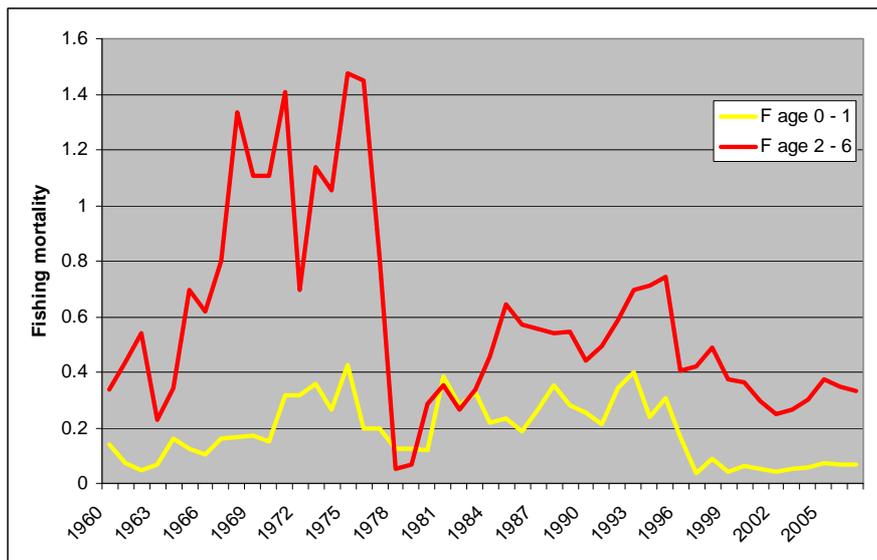


Fig. 5. Fishing mortality on North Sea herring juveniles (age 0 and 1) and adults (age 2 - 6) estimated by ICES (R10).

Four main fisheries exploit the stock:

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

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The DPPO herring fishery in the North Sea is conducted under fleet A. In addition DPPO vessels also exploit the North Sea herring stock when fishing in the Skagerrak under fleet C and when fishing for sandeel and sprat under fleet B. The catches by DPPO vessels are described in chapter 4.

At present, the fishery of the target stock is managed by five separate TACs in three different management areas (Skagerrak and Kattegat, Northern and Central North Sea, and Southern North Sea and Eastern Channel) through joint negotiations by EU and Norway. For both the North Sea and the Skagerrak and Kattegat two separate TAC's are set, one for each of the four fleets.

Catches reported by ICES are obtained from national laboratories of nations exploiting herring in the North Sea. The figures are based on official reported landings, but for some nations catch estimates have been corrected for unallocated and misreported catch. Discard data are incomplete.

Quantitative information on discard and slipping is rare and the estimate provided by ICES is an underestimate. For 2007 the figure on discard and slipping included in ICES assessment was 93 t. covering only one fleet. The discards of herring in the Dutch fleet are estimated to be around 6000 t. per year. This estimate can not be allocated to fishing area and is not included in ICES assessment.

Although data on discard is poor and the estimate used in ICES assessment is an underestimate, the indications are that large-scale discarding is not widespread in the directed North Sea herring fishery. A number of surveys on pelagic trawlers and pursers have been conducted indicating discard rates in the order of 5 % (R31, R32).

The catch for the North Sea and the Eastern Channel estimated by ICES including available estimates of discards and the agreed TAC in recent years are shown in Table 1. The catches estimated by ICES exceed the TAC agreed by EU and Norway.

	2005	2006	2007
Catches estimated by ICES	639000	511000	388000
Agreed TAC	585000	498000	373000

Table 1. Herring catches in t from the North Sea and Eastern Channel estimated by ICES and the TAC in t agreed by EU and Norway.

The geographical distribution of herring catches in 2007 is shown in figure 5. The DPPO vessels are mainly taking their North Sea quotas of herring in the north western part of the North Sea.

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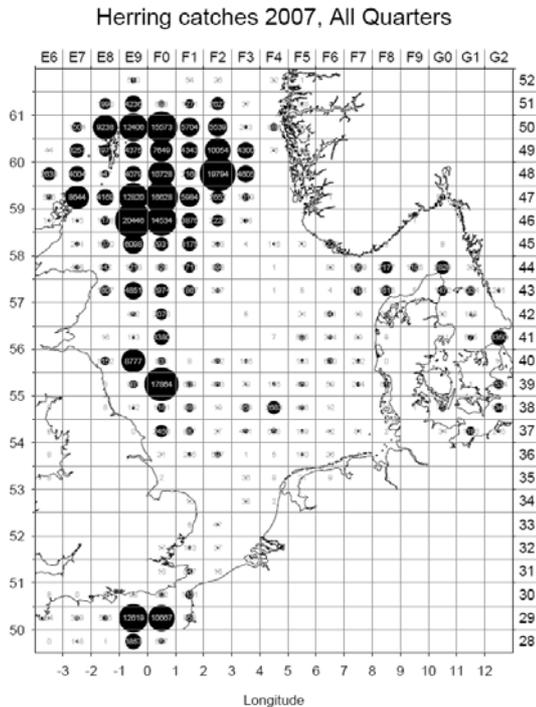


Fig. 6. Geographical distribution of total international herring catches in Eastern Channel, North Sea, Skagerrak and Kattegat in 2007. Source ICES HAWG 2008 (R31).

4.3.2.2 DPPO's North Sea herring fishery

The DPPO comprises 8 fishing vessels of which 3 are trawlers and 5 are combined trawlers and purse-seiners. The list of the DPPO vessels is described in enclosure 3.

All DPPO vessels are well maintained and up-to date as regards fish finding equipment, fishing gear, facilities for catch handling and storage, and crew safety and welfare.

The herring trawls are mid-water or pelagic trawls. The trawl is towed by the fishing vessel at an appropriate level below the surface to catch the herring shoals. The depth is controlled by a combination of trawling speed and wire length. When the trawl is hauled the trawl is brought to the side of the vessel and the catch is pumped onboard into RSW tanks containing refrigerated seawater.

The pelagic trawls used are not designed to fish on the sea bed and any contact with the bottom involves risk of damage to the trawl. The skippers therefore operate the trawl so that there is no contact with the sea bed. As a result, there is no or very little impact on sea bed habitats when fishing with herring trawls.

The purse seine technique involves the setting of a large net around a shoal of fish, closing the bottom of the net to form a "purse", and then drawing in the net to the vessel. At the time when the "purse" is sufficiently small in size to be brought to the side of the vessel, the catch is pumped onboard and kept in RSW tanks as described above.

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As it is the case with the pelagic trawl the purse seine has no contact with the bottom.

Table 2 shows the total landing of North Sea herring by DPPO vessels from 2003 -2007. The amounts are compared with the total Danish quota and the global TAC for the A fleet for North Sea Herring.

The size of the North Sea Herring quota allocated to DPPO vessels in 2008 is 26 195 tonnes, in comparison to 47 282 tonnes for the year 2007. DPPO's members own about 70 percent of the pelagic quota in Denmark (70, 4 % for the year 2008) in the form of ITQs.

Target stock of herring:	Catches:				
	2003	2004	2005	2006	2007
Herring North Sea:					
DPPO Member quotas	27 830	39 372	58 339	56 505	47 282
Danish quota	64 026	78 722	95 312	77 436	51 000
Global TAC	400 000	460 000	535 000	455 000	341 000

Table 2: Historical fishing levels of North Sea herring for DPPO the recent 5 years, in comparison to the total Danish quota and the Global TAC (Total Allowable Catch). All amounts are given in tonnes (The numbers are gathered from the Danish Pelagic Producers Organisation, April 2008).

The information on discards and slipping of herring by DPPO vessels is very limited and insufficient to provide a reliable estimate. The fishing operation whether using trawl or purse-seine is conducted in the same areas and same manner as the other pelagic fleets fishing for North Sea herring. It is therefore likely that discards and slipping by DPPO vessels are comparable to discards and slipping observed in other fleets fishing North Sea herring (see section 4.3.2.1).

The fishing operation itself as well as the design and layout of the deck and handling equipment make it almost impossible to discard part of the catch. The fish are pumped directly from the net to the RSW tanks and there is no sorting equipment set up that allows for sorting/grading the catch before it goes in the tanks.

The only possibility for discarding is to pump fish from the RSW tanks back to the sea. There is an economical incentive for avoiding discard and information from observer schemes indicate that it occurs very seldom.

This means that in practise the entire catch is landed and sorting of by-catches (retained species) takes place at the processing factory. Retained species are reported to appropriate authority, in Denmark the Danish Fisheries Directorate. According to the Danish Fisheries Directorate the total landings by DPPO vessels were 42,586 t in the North Sea herring fishery in 2007. Herring constituted 41,790 t or 98,1 %. The main retained species were blue whiting (1.6 %), Norway pout (0.14 %), sprat (0.06 %), mackerel (0.03 %), whiting (0.01 %), saithe (less than 0.01%) and other species (0.06 %).

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Slipping may, however, occur when the by-catch of other fish species or undersized herring are high. Slipping is not illegal and there is no systematic recording of it. According to DPPO members slipping is rarely used and all pelagic skippers, the assessment team spoke to, underlined that they are keen to avoid slipping and that an important element in the search for fish is the avoidance of undesired catches.

4.4 Stock assessment

Herring Assessment Working Group for the Area South of 62°N assesses the state of the North Sea herring stock annually. The following description of the assessment of the North Sea herring stock is mainly based on the 2008 report of the Working Group (R 31).

4.4.1 Assessment unit

As described in chapter 4.3 the North Sea herring stock comprises mainly of autumn and winter spawning stocks, with the Buchan, Banks and Downs herring as the three main units. The different stock components mix both as juvenile and adult and it is in practice not possible to allocate catches to stock. The annual assessment conducted by ICES herring assessment Working Group therefore covers autumn and winter spawning herring in the eastern Channel, the North Sea, the Skagerrak and the Kattegat.

4.4.2 Data source

There are four main data sources for North Sea herring are:

- commercial landings,
- acoustic surveys,
- trawl surveys, and
- larvae surveys.

4.4.2.1 Commercial landings

The data from the commercial fishery consists of weight of landings by country, fleet, area and month. The commercial landings used by ICES in the assessment are obtained from national laboratories of nations exploiting herring in the North Sea. Some laboratories are “correcting” the officially reported landings for assumed misreporting by areas. For example, some landings of herring officially reported as been taken in the Skagerrak, is considered, by the ICES herring assessment Working Group, to be misreported by fishing area and in reality being caught in the North Sea. These assumed misreported landings are included in the assessment of the North Sea herring stock. There may therefore be significant differences in the officially reported landings and the landing data used in the assessment.

The catch data used by ICES in the stock assessment include estimates of discards and misreported or unallocated catches. Information on discard is rare and the estimate used by ICES does not give a true picture of discards and slipping but is an underestimate. For 2007 the figure on discard and slipping included in ICES assessment was 93 t.

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covering only one fleet. The discards of herring in the Dutch fleet are estimated to be around 6000 t. per year. The estimate can not be allocated to fishing area and is not included in ICES assessment.

Although data on discards is poor and the estimate used in ICES assessment is an underestimate, the indications are that large-scale discarding is not widespread in the directed North Sea herring fishery. A number of surveys on pelagic trawlers and pursers have been conducted indicating discard rates in the order of 5 % (R31, R32).

Biological information (numbers, weight, catch at age and relative age composition) on the catch are obtained by sampling of commercial landings. The sampling also provides the proportion of spring spawning herring in the catches in the Eastern North Sea, the Skagerrak and the Kattegat. The sampling covered about 86 % of all commercial landings in 2007.

More important than a sufficient overall sampling level is an appropriate spread of sampling effort over the different metiers (each combination of fleet/nation/area and quarter). Of 100 different reported metiers, only 30 were sampled in 2007. The recommended sampling level of more than 1 sample per 1 000 t catch has been met only for 17 metiers. For age readings only 16 metiers appear to have been sampled in accordance with recommended sampling level.

On the other hand, some of the metiers not sampled yielded very little catch. In 55 metiers the catch was below 1000 t. The total catch in these metiers accounted for only 3 % of the reported landings. Of the remaining 45 metiers, 25 were sampled and 12 of them fulfil the recommended level of more than 1 sample per 1 000 t catch. Also 12 metiers have more than 25 age readings per 1 000 t catch and 9 metiers fulfil both criteria.

Although ICES recommends that all metiers with substantial catch should be sampled the available data was considered sufficient to conduct a reliable assessment.

4.4.2.2 Acoustic surveys

The acoustic surveys are carried out from late June through July in the northern and central North Sea, the Skagerrak and the Kattegat. The output is a relative index of abundance by age and maturity classes. The index has been used in assessments since 1994 with the time series data extending back to 1989. The survey covers the northern North Sea, the Skagerrak and the Kattegat.

4.4.2.3 Trawl surveys

The international bottom trawl surveys (IBTS) started out in 1966 with the objective of obtaining annual recruitment indices for the North Sea herring stock. It has been carried out every year since, and is providing abundance indices not only for herring but for a large number of species. The surveys cover the whole of the North Sea, the Skagerrak and the Kattegat and are carried out in the first and third quarters of the year. The surveys provide indices of abundance by age 1 to 5.

During the bottom trawl surveys, sampling with Isaccs-Kidd Midwater trawl provides an abundance index of late stage herring larvae. The index appears to be a good indicator of herring recruitment and is used routinely in the annual assessment.

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4.4.2.4 Larvae surveys

Surveys of larval herring have been carried out in the North Sea since 1872. The survey provides an estimate of larval production which again is considered to reflect the size of the spawning stock of herring. The larvae estimate is therefore used as an index of spawning stock size in the assessment. The larvae estimate does also provide information on relative state of the three main spawning components.

4.4.2.5 Other relevant data

The North Sea autumn and winter spawning herring mix with spring spawning herring in the north eastern North Sea, Skagerrak and Kattegat and the problem in the assessment of the North Sea herring has been the allocation of herring catches to stock in areas and periods with mixed catches. The introduction of otolith microstructure analyses in 1996 (R33) enables an accurate and precise split between autumn, winter and spring spawners. The method is used routinely to allocate landings to stock.

4.4.3 Assessment method

From 1972 to 1995 the assessment of the North Sea herring was done by means of a Virtual Population Analysis (VPA) tuned with the data series of larvae abundance estimates, acoustic abundance indices and abundance indices from bottom trawl surveys. The VPA estimates of stock size were uncertain due mainly to different signals on stock development in the acoustic abundance indices on one hand and the larvae and trawl abundance estimates on the other hands.

The introduction of the integrated catch analysis method (ICA) as the assessment tool in 1995 lead to a statistical more sound analysis of the data and provided an improved estimate of uncertainty in the assessment. The ICA is considered to be a robust stock assessment model suitable for the assessment of the North Sea herring stock (R10, R34).

The integrated catch at age analysis is conducted using the catch at age data, the acoustic survey indices, the abundance indices from the trawl surveys, the larvae indices from the trawl surveys and the data from the larvae surveys. Analysis show that the young herring are best estimated with larvae indices and the indices from the trawl surveys. The older herring are best evaluated through the acoustic survey and the spawning stock biomass estimated through the results from the larvae surveys.

Uncertainties relating to data have been reduced gradually. The enhancement of the monitoring system on by-catches of herring in small meshed industrial fisheries in 1996 resulted in more reliable data on catches of juveniles. The use of otolith microstructure analyses has provided a more precise allocation of catches to stock. Improved international cooperation on control of landings including consistent weighing procedures have reduced the underreporting of landings.

Retrospective evaluations of fishing mortality, spawning stock biomass and recruitment suggest that the assessment is providing a consistent unbiased evaluation of all three parameters in recent years.

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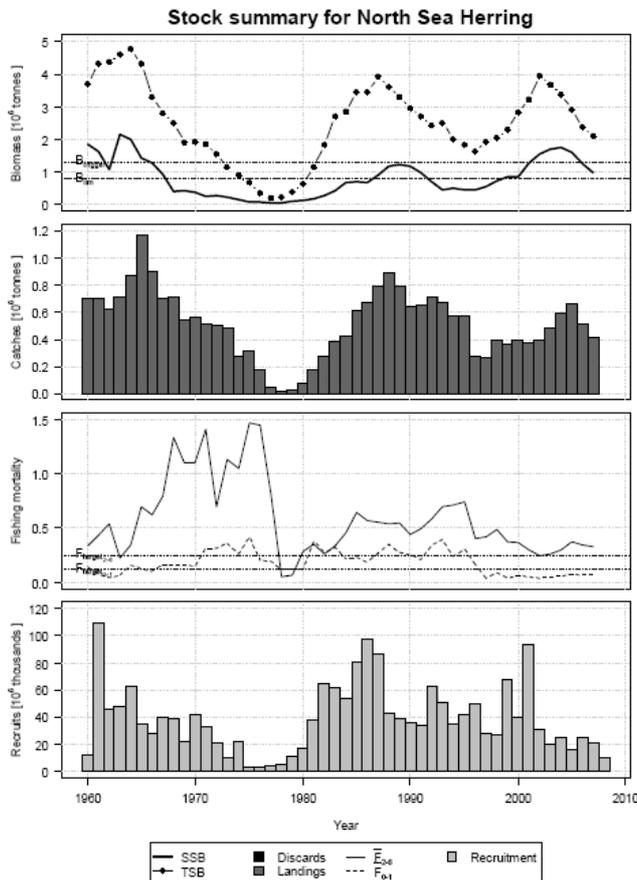
ICES considers the assessment to give a reliable estimate of the state of the stock and to be of sufficient quality to form the basis for providing short term catch forecast and advice on fishing possibilities for the coming year.

Based on the assessment of the state of the stock ICES provides catch forecast by fishery under a number of management options consistent with the harvest control rule agreed by the EC and Norway. However, ICES in its advice on catch levels for 2009 refrained from using the harvest control rule in force because simulations indicated that the rule under the present recruitment scenario no longer could be considered consistent with the precautionary approach. Instead ICES recommended a revised harvest control rule and provided the catch advice in accordance with the revised rule (see section 4.4.5).

4.4.4 Stock Status

The 2008 assessment presented by ICES (R10) shows that recruitment has since 2002 been very low and the fishing mortality on the adults has been above the target. The low recruitment and the relative high fishing mortality have resulted in a declining spawning stock biomass in recent years. SSB in autumn 2007 was estimated at 0.98 million t, and is expected to remain below B_{pa} (1.3 million t) in 2008. Based on this assessment, ICES classifies the stock as being at risk of having reduced reproductive capacity and at risk of being harvested unsustainably.

A summary of the stock status is given in figure 7.



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Figure 7: Stock summary of autumn spawners in Subarea IV, Divisions VIII & IIIa. Total fishing yield, fishing mortality (expressed as averages over ages 2-6 (dots) and 0-1 (line)), recruitment at age 0 and SSB (Spawning Stock Biomass). Information is gathered from ICES Advice 2008, Book 6, Section 6.4.18.

4.4.5 Management advice

The management advice by ICES is provided in accordance with the management plan agreed by the EC and Norway. The management plan for the North Sea herring fisheries was agreed in 1997 and last amended in 2008. The objective is to maintain the spawning stock biomass (SSB) at levels greater than 800 000 t (Blim). The plan includes a harvest control rule for setting the TACs. According to the harvest control rule the TACs shall be based on a target fishing mortality for adult herring of 0.25 and for juveniles of no more than 0.05. If the SSB falls below 1.5 million t, the fishing mortalities shall be reduced proportionally.

The precautionary biomass limit reference point Blim (800 000 tonnes) was adopted by ICES in 1998 and reflects a stock size below which the recruitment may become impaired (R35 and R36). In 2007 ICES explored limit reference points for North Sea herring and concluded that there was no basis for changing Blim (R37). A low risk of SSB falling below Blim is therefore the basis of ICES precautionary advice.

The target and trigger points used in the management plan were recommended by ICES in 1998 as the precautionary reference points Bpa and Fpa (R35 and R36). This means that the precautionary reference points were taken from the already existing management plan. In the management plan, the target fishing mortalities (Fpa) were intended as targets and not as bounds. The trigger biomass point in the rule (originally 1.3 million t but revised in 2008 to 1.5 million t) which was adopted by ICES as the Bpa was derived largely as a compromise, allowing higher exploitation at higher biomass but reflecting an ambition to maintain the stock at a high level, by reducing the fishing mortality at an early stage of decline. ICES investigated the trigger and suggested that 1.3 million tonnes was appropriate and any reduction would increase the risk of the management rule resulting in SSBs below 800 000 tonnes.

In ICES' interpretation of the precautionary approach (R38), the objective is to ensure that the SSB is above the range where recruitment may be impaired or the stock dynamics is unknown and the reference points are defined in accordance with this objective. The central reference is therefore the Blim which reflects the stock size below which the recruitment may become impaired. The Bpa takes assessment uncertainty into account and is defined so that if SSB is estimated at Bpa, the probability that it in reality is below Blim shall be less than 5%. The Flim is the fishing mortality that corresponds to Blim in a deterministic equilibrium. The Fpa is related to Flim the same way as Bpa is related to Blim.

In ICES advisory practice, Fpa has been the basis for the TAC advice unless the SSB has been below Bpa, where a reduction in F has been advised. Furthermore, Fpa and Bpa are currently used to classify the state of stock and rate of exploitation relative to precautionary limits.

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ICES will accept that a harvest control rule is in accordance with the precautionary approach as long as it implies a low risk to being below Blim, even if other reference points may be exceeded occasionally. When a rule is regarded as precautionary, ICES gives its advice according to the rule. If the rule is followed, then ICES classifies exploitation as precautionary. Within this framework, other precautionary reference points generally will be redundant. However, the precautionary reference points may also be used to classify the stock with respect to precautionary limits, which may lead to a conflicting classification. This discrepancy is still unresolved.

For North Sea herring in the present situation, with a reduced recruitment, the SSB may be expected to be below 1.3 million tonnes most of the time. The management plan will reduce fishing mortality accordingly. ICES considers that the parameters of the management plan should take primacy over the management against precautionary reference points Fpa or Bpa.

The revised harvest control rule adopted by EC and Norway in December 2008 is based on advice from ICES (R39). ICES in 2008 evaluated a number of harvest control rules including the one agreed by EC and Norway and concluded that the agreed harvest control rule would reduce the risk to below 5% of SSB falling below Blim while the current low recruitment continues. The team therefore considers that the management plan agreed by EC and Norway meet the precautionary approach to management.

4.5 Assessment of ecosystem interactions

4.5.1 Retained species and bycatch

The impact of the DPPO fishery on other species is very limited. Data from the Danish Fisheries Directorate shows that the total landings by DPPO vessels were 42,586 t in the North Sea herring fishery in 2007. Herring constituted 41,790 t or 98,1 %. The main retained species were blue whiting (1.6 %), Norway pout (0.14 %), sprat (0.06 %), mackerel (0.03 %), whiting (0.01 %), saithe (less than 0.01%) and other species (0.06 %).

4.5.2 Endangered, threatened and protected species (ETP)

The interaction between the North Sea herring fisheries and ETP species are considered to be very limited. Observer surveys conducted by the National Institute of Aquatic Resources at the Technical University of Denmark to monitor the bycatches of marine mammals in Danish pelagic fisheries have until date not observed any bycatch of marine mammals. Skippers on DPPO vessels reported that no ETP bycatches have been observed when fishing for North Sea herring.

4.5.3 Habitat and ecosystem impacts.

As described in section 4.3.2.2 there is no or very little physical contact between the pelagic trawls and purse-seines operated by the DPPO vessels and the sea bed and therefore the impact of the North Sea herring fishery on the habitat is negligible.

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Many studies show that herring is a central component in the North Sea ecosystem (R40). It is one of the main predators on zooplankton and itself serves as a prey for predator fish, marine mammals and sea birds. The main impact of the herring fishery on the ecosystem is therefore believed to be the indirect effect of the removal of the target species.

The North Sea herring stock was in late 1970's and mid 1990's at low levels well below Blim. It has, however, not been possible to demonstrate any measurable impact on the ecosystem of the low herring productivity and stock size in these periods and the stock recovered rapidly when proper management actions were taken. There is therefore no evidence that the herring fishery significantly affects the structure, productivity, function or diversity of the North Sea ecosystem.

The management of the herring fisheries aim at maintaining the spawning stock at levels above the point where recruitment is likely to be impaired and the SSB has, since 1999, been above the Blim of 0.8 million t.

4.6 Fishery Management with the unit for certification

4.6.1 Management objectives

There are well-defined and measurable short and long term management objectives for the DPPO North Sea herring fisheries which are consistent with MSC Principles. The objectives at DPPO/vessel level are to keep the annual catches of the DPPO vessels at (or below) the levels specified in the individual vessel permits (i.e. the North Sea herring ITQs) and ensure compliance with other permit terms that are relevant to the North Sea herring fisheries. The DPPO Code of Conduct also includes (in the paragraphs 1, 3, 5, 6, and 7) objectives that are aiming at achieving the outcomes expressed by the MSC Principles 1 and 2.

At the North Sea herring stock level the management objective agreed by EC and Norway is to maintain the SSB above 0.8 million t. This stock level provides for high productivity and low risk to the stock. Because of the uncertainties linked to the estimation of the SSB the estimated SSB must be well above 0.8 million t to ensure that the management objectives are met.

The harvest control rule agreed by EC and Norway is consistent with the objective of maintaining the stock above 0.8 million t. ICES advises that if the catches are in accordance with the agreed harvest control rule the risk of SSB falling below 0.8 million t. is less than 5% even if the current low recruitment continues.

4.6.2 Management responsibilities and interactions

International level

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At the international level the responsibility for the setting of the annual TACs for North Sea herring in accordance with the above mentioned objective rests with the European Union (the Council of Ministers and the Commission) and the Government of Norway.

The TACs are set in annual negotiations between the two parties and is based on best scientific advice provided by ICES

EU level

Once the TACs are set, the responsibility for managing their relative share of the TACs rests with the two parties. EU has 71% of the fleet A quota, Norway 29%. The TAC for fleet B is allocated to EU.

In the EU, the Community's shares of the two TACs are allocated to member States following fixed allocation keys (in accordance with the "EU relative stability" principle). The responsibility for compliance with the quotas and other terms of the EC-Norway agreement rests with the Member States who have a national North Sea herring quota.

National level

The management responsibility at Member State level includes enforcement of regulations associated with quota up-take through:

- i) the issuance of fishing permits to individual vessels specifying terms and conditions for fishing and quota up-take, and
- ii) the operation of an EU/national system for Monitoring, Control and Surveillance, MCS. (For details of the Danish MCS system see section 4.10.6)

Local/vessel level

The responsibilities of compliance with regulations of the North Sea herring fisheries rests with the individual permit holder (vessel). The formal role of DPPO in fisheries management is to represent the members in stakeholder fora. However, the DPPO, in 2007, adopted a code of conduct "Codex for a Sustainable and Responsible Pelagic Fishery" (Enclosure 2) that is binding for its members. The code which is enforced by peers gives the DPPO a formal right to take action in the case of non-compliance. A system of independent control of compliance with the code is presently under consideration.

4.6.3 Legislation

The management system in place for the DPPO herring fisheries in the North Sea incorporates the following legal instruments:

International level:

Agreement on fisheries between the European Economic Community and the Kingdom of Norway (Official Journal L 226, 29/08/1980 P. 0048 – 0050).

EU-level:

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EU Common Fisheries Policy (Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy) with supporting regulations and action plans

National level:

Danish Fisheries Law (LBK no. 372 of 26 April 2006) with supporting regulations

DPPO level:

DPPO by-laws (adopted in 1984)

DPPO Code of Conduct (Enclosure 1, adopted in June 2007)

The legal basis (all elements) is consistent with and actively caters to sustainable fisheries in accordance with MSC Principles 1 and 2

The legal instruments include transparent mechanisms for the resolution of legal disputes that are appropriate to the context of the DPPO herring fisheries in the North Sea. The EC–Norway Agreement makes reference to UNCLOS as regards resolution of disputes. The mechanisms have proven to be effective.

There are no legal rights on people dependent on fishing for food and livelihood that applies to the DPPO herring fisheries in the North Sea

4.6.4 Consultative process

The North Sea herring fisheries management system, at all levels, includes consultations with stakeholders on important management matters. Consultation fora and areas for consultations relevant to DPPO herring fisheries include:

International level:

- EC-Norway cooperation: There is no formalized stakeholder consultation system in place. However, there is an informal consultation process in place and NGO's are invited to attend meetings as observers.

EU-level

- Pelagic RAC (Council decision on the establishment of Regional Advisory Councils (2004/585/EC) advises the EC on management of the pelagic fisheries). (DPPO is a member)
- Advisory Committee on Fisheries and Aquaculture, ACFA (Council Regulation (EC) n° 657/2000 and Commission Decision n° 2004/864/EC) advises the EC on all aspects of the CFP, including management of pelagic fisheries.

National level:

- The EU Committee (Paragraph 5 in the Danish Fisheries Law) is consulted in all matters related to the CFP and EU fisheries regulations. DPPO has a seat in the Committee
- The Commercial Fisheries Committee (Paragraph 6 in the Danish Fisheries Law) is consulted in all matters related to regulation of Danish commercial fisheries including fleet capacity, gear use and first hand trade in fish. DPPO has a seat in the Committee.



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- The EFF Surveillance Committee (Fisheries Development Committee) decides and gives advice in matters related to the use of EFF structural funds.

In Denmark one has to be a registered stakeholder to participate in the consultation process in the above mentioned fora. However, Danish fishery managers regularly seek informal advice from relevant stakeholders including NGOs, research institutions, local authorities and individuals.

Local level:

- Pelagic Fisheries Association, a sub-division of Danish Fishermen's Association, organises owners, skippers and crewmembers in the Danish pelagic fisheries. The Association do frequent consultations with the DPPO and is represented in the above fora via Danish Fishermen's Association.

4.6.5 National Management – enforcement and control

In Denmark, enforcement of fishing regulations is carried out by the Directorate of Fisheries. The Directorate is responsible for Monitoring, Control, and Surveillance of the operations of all Danish fishing vessels in national and international waters including quota up-take of North Sea herring. The national fisheries inspectors may inspect any fishing vessel operating within the national fisheries jurisdiction (200 miles or to the median lines with adjacent states) as well as all fishing vessels flying the Danish flag and operating in waters outside the national jurisdiction (e.g. EU and international waters). All Danish vessels are required to log their landing, irrespective of landing country. Estimated landings, irrespective of landing country, should be reported to the Danish control authorities before landing. All landing logs are required to be submitted to the Danish control authorities. The satellite vessel monitoring system (VMS) is mandatory for all vessels longer than 15 meters.

All pelagic landings in Denmark, including landings from the North Sea Herring Fishery, have to be weighed at the point of unloading by an independent party. This task is undertaken by the "Akkrediteret Vejer og måler" (Independent Weigher and Measurer). In Denmark copies of all sales notes on fresh fish have to be sent immediately on execution of sales to the Fisheries Directorate by the first hand buyer. The sales notes (which also include information on possible retained fish) are used for official registration of the quota up-take as well as for control of log-books.

4.6.6 Summary of management system for DPPOs North Sea herring fishery

- The catch by DPPO follows the standard quota system, adjusted every year in accordance with the development in the fish stock. The EU-Quotas for North Sea herring are based on the TACs agreed by EC and Norway following the advice from ICES.
- All vessels in DPPO have a vessel monitoring system (VMS) making it possible to undertake on-line satellite monitoring of time, vessel speed and position.

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- An independent 3rd party controls the weight of the landings. All fish catches are recorded by the Fisheries Directorate during the year in a system transparent to the general public through open websites.
- When finalizing the year / quota, DPPO makes a follow-up on quota trade in order to make possible necessary adjustments to avoid overshooting of the vessel quotas as illustrated by e.g. the vessel “Strömegg” 19.12.2007, Chapter 3.3.3 (see section 3.2.5).
- The members of DPPO have, in 2007, adopted a Code of Conduct: “Codex for a Sustainable and Responsible Pelagic Fishery”. The “Codex” contains 13 principles that have been implemented in January-March 2008. Among the major principles are:
 - Annual fishing plans are carefully considered in order to avoid unwanted catches and unnecessary fuel consumption.
 - Aim at minimizing fuel consumption and protect the environment
 - Do not undertake emission of waste oil or throw biological waste over board.
 - Try to completely avoid by-catch of aquatic mammals in the herring and mackerel fisheries.
 - Collaborate openly and willingly with biologists and other researchers to increase knowledge on the fish resources
 - Collaborate continuously and positively with Danish and international authorities responsible for monitoring, control and surveillance.
 - Cater to an attractive and safe working environment onboard the vessels

For each of the principles the Codex provides guidelines/instructions and specifies who is responsible and the documentation required.

The Codex is a voluntary Code of Conduct that all DPPO members have agreed to comply with. A system for external verification is presently being considered.

The full version of the DPPO “Codex for a Sustainable and Responsible Pelagic Fishery” is found in the enclosure 2.

5 BACKGROUND TO THE REPORT

5.1 Authors/Reviewers

The evaluation has been performed by the following:

DNV team:



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Vibeke Bagger (Project Manager DNV Denmark): Cand.Scient Food Science and Technology. Food Market Manager DNV Denmark. Lead Auditor Food Quality in DNV Denmark.

Independent specialists:

Eskild Kirkegård: M. Sc in Marine Biology and Chemistry. Principal Fisheries Advisor at the Technical University of Denmark. National Institute of Aquatic Resources of work: Co-ordinate advice on fisheries management. Member of a number of Working Groups and Committees under the International Council for the Exploration of the Sea (ICES). Member of the Scientific, Technical and Economic Committee for Fisheries (STECF) of the European Commission. Chairman of ICES' Advisory Committee on Fishery Management 1993 – 1995 (ACFM). Member of several research evaluation panels.

Sten Sverdrup-Jensen: M.Sc. in Economics. Senior Researcher and Professor (Adj.) at Innovative Fisheries Management (IFM), an Aalborg University research centre, Denmark. Mr. Sten Sverdrup-Jensen has for more than 25 years as an independent consultant been involved with assessing the management, performance and prospects for the Danish pelagic sector including the fleet, the processing industry and the port infrastructure. During the period 2004-2006 Mr. Sverdrup-Jensen was lead socio-economist on the “Development of Indicators of Environmental Performance of the EU Common Fisheries Policy (INDECO)” Concerted Action (funded by the EU) which used the Danish pelagic fisheries as one of two case studies.

5.2 Previous certification evaluations

During preliminary assessment DNV evaluated the consistency of the North Sea Herring Fishery with the MSC Principles and Criteria and submitted a written report to DPPO. Potential obstacles that may be a barrier to certification were identified and DPPO has been advised on the potential risks.

The following tasks were undertaken by DNV when evaluating these risks and assessing the state of preparedness of the DPPO North Sea Herring fishery for MSC certification:

- Desk Analysis of the North Sea Herring Fishery;
- Field visits;
- Preliminary stakeholder consultations and conflict analysis;
- SWOT-Analysis.

The internal and external factors that are favorable and unfavorable towards obtaining MSC certification are shown in the SWOT-Analysis table in the next section.

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5.2.1 SWOT-Analysis

Table 3: SWOT-analysis from the pre-assessment of DPPO's North Sea Herring fishery.

	Helpful to achieving the MSC certification	Harmful to achieving the MSC certification
Internal origin (attributes of the organization)	Strength Attributes of DPPO that are helpful to achieve sustainability in North Sea Herring Fishery and meet MSC principles: <ul style="list-style-type: none"> - DPPO is a strong, effective, industry-based organisation; - Scope of fishery (The DPPO has 73% of Danish pelagic quota) - Codex of Good Practice to secure sustainability and responsibility in the Danish Pelagic fishery adopted - Strict adherence of members to laws, regulations and requirements; - Transparency to the public - Cooperation with Stakeholders; - Cooperation with fisheries scientists 	Weaknesses Attributes of DPPO that are harmful to achieve sustainability in North Sea Herring Fishery and meet MSC principles: <ul style="list-style-type: none"> - No formalized registration of by-catch. - There is no verification that the Codex of Good Practice is implemented and complied with by the members.

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External origin (attributes of the environment)	Opportunities	Threats
	<p>External conditions that are helpful to achieve sustainability in North Sea Herring Fishery and meet MSC principles</p> <ul style="list-style-type: none"> - Relatively healthy fish population and natural environment; - Fishery managed according to ICES advice, where Herring Assessment Working Group monitors the status of the stock annually; - The TAC is being adjusted annually in accordance with development of the stock; - The precautionary principle, as well as the related biomass and fishing mortality rates for adults and juveniles are firmly embedded in the EU\Norway agreement. - Availability of information\openness; - Low rate of by-catch of non-target species - Low discard rate; - Interactions between NS herring fishery with rare or protected species considered to be exceptional. 	<p>External conditions that are harmful to achieve sustainability in North Sea Herring Fishery and meet MSC principles</p> <ul style="list-style-type: none"> - Possible slipping if the catch is bigger than the holding capacity onboard; - Possible misreporting of the ICES catching areas; - Quota allocation between the countries is based on political negotiations, not strictly on sustainability concerns. - North Sea autumn spawning herring is being managed as a single stock (but consist of discrete Scottish group, Central North Sea group and Downs group). - Absence of data\information on how the climate change can affect herring fishery in North Sea.

5.3 Field Inspections

In connection with the meeting between Danmarks Pelagiske Producentorganisation (The Danish Pelagic Producers Organisation) and Det Norske Veritas conducted on 31 October 2007, it was decided that field visits should be made to the Authorities, a local fishery control including a potential visit on a trawler as well as a visit to the producer organization.

The following field visits were carried out during the pre-assessment:

- Danish Directorate of Fisheries: Visit on the 22 November 2007
- Fiskerikontrollen (Fisheries Control): Visit on the 19 December 2007
- The trawler Strömegg, Hirtshals: Visit on the 19 December 2007
- Danmarks Pelagiske Producentorganisation (The Danish Pelagic Producers Organisation): Visit on the 19 December 2007

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The following field visits were carried out during the assessment:

Name	Affiliation	Date	Key Issues
Christian Olesen	Client - DPPO	Aug 2008	Planning of full assessment
Christian Olesen Anders Illeborg John E Jeppersen Fridi Magnusen Ole Nattestad Lise B. Jorgensen Henning Jensen	Client -DPPO	13.11.08	Fishing industry structures Fishing practices Fishery management Fishery science and management Ecosystem science and management
Mogen Schau\ Mik Jensen	Fisheries Ministry	14.11.08	Fishing industry structures Fishing practices Fishery management
Arne Madsen Soren P. Jensen John Kjersgard Mik Jensen Ulla Wiborg	Fisheries Directorate	14.11.08	Fishery science and management Ecosystem science and management

5.4 Stakeholder consultations

Several stakeholders have been identified and contacted in connection with the assessment of Danish Pelagic Producers Organisation. A full list of all stakeholders is given in enclosure number 1.

Information was also made publicly available at the following stages of the assessment:

Date	Purpose	Media
18.08.2008	Notification of Full assessment	Direct E-mail/letter Notification on MSC website Advertisement in press
18.09.2008	Notification of Assessment Team	Direct E-mail Notification on MSC website
07.09.2008	Consultation on default Scoring Indicators and Guideposts	Direct E-mail Notification on MSC website
23.09.2008	Notification of assessment visit and call for meeting requests	Direct E-mail Notification on MSC website
13 & 14.11.2008	Assessment visit	Meetings
24.10.2008	Notification of Proposed Peer Reviewers	Direct E-mail Notification on MSC website
06.04.2009	Notification of Draft Report	Direct E-mail Notification on MSC website
28.05.2009	Notification of Final Report	Direct E-mail Notification on MSC website

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6 STAKEHOLDER ISSUES

LEVENDE HAV, DENMARK: With regards to the "North Sea Herring Fishery by DPPO "Levende Hav" had the following conclusions:

- A. The fishery on North Sea Herring stock is sustainable
- B. We have no objections against the Codex.

DANISH FISHERY INDUSTRY AND EXPORT ORGANISATION: Professor Jesper Raakjær, chairman of the Pelagic Committee, was pleased to be informed about the intent to certify the DPPO North Sea Herring fisheries and has no objections.

7 EVALUATION PROCEDURE

7.1 Assessment Criteria

The basis for the MSC-certification is the standard denoted as the “MSC Principles and Criteria for Sustainable Fisheries”, organised in three main principles. Principle 1 concentrates on the need to maintain the target stock at a sustainable level; Principle 2 draws attention to maintaining the ecosystem in which the target stock exists, and Principle 3 addresses the requirement for an effective fishery management system in order to fulfil Principles 1 and 2. In addition Principle 3 takes into account national and international regulations. The Principles 1-3, with pertaining criteria, are presented below:

PRINCIPLE NUMBER 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.

*) The sequence in which the Principles and Criteria appear does not represent a ranking of their significance, but is rather intended to provide a logical guide to certifiers when assessing a fishery. The criteria by which the MSC Principles will be implemented will be reviewed and revised as appropriate in light of relevant new information, technologies and additional consultations.

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Criteria:

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

PRINCIPLE NUMBER 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.

Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimises mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

PRINCIPLE NUMBER 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.

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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.

Part A: Management System Criteria

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. Demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process.
3. Be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings.
4. Observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability.
5. Incorporates an appropriate mechanism for the resolution of disputes arising within the system^{**}.
6. Provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing.
7. Act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty.
8. Incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion.
9. Require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted.

^{**}) Outstanding disputes of substantial magnitude involving a significant number of interests will normally disqualify a fishery from certification.

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10. Specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
 - Setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species.
 - Identifying appropriate fishing methods that minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas.
 - Providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames.
 - Mechanisms in place to limit or close fisheries when designated catch limits are reached.
 - Establishing no-take zones where appropriate.

11. Contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

Part B: Operational Criteria

Fishing operation shall:

12. Make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive.

13. Implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas.

14. Not use destructive fishing practices such as fishing with poisons or explosives.

15. Minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.

16. Be conducted in compliance with the fishery management system and all legal and administrative requirements.

17. Assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

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The MSC Principles and Criteria presented above set the requirements for the fishery undergoing certification. MSC’s certification methodology is based on a structured hierarchy of *Sub-criteria* and *Performance indicators*. The overall performance is decided on the basis of the scoring criteria that the fishery gets during assessment. These sub-criteria and performance indicators have been developed by the MSC in the form of a default assessment tree.

When a fishery is evaluated the performance indicators (normally specific statements or questions) are checked out, and each performance indicator has three different “scoring guideposts” that can be defined. MSC characterises these scoring points as follows:

- Perfect practice, representing the level of performance that would be expected in a theoretically ‘perfect’ fishery (100 points).
- Exemplary or best practice (80 points).
- Minimum sustainable practice (60 points).

An overview of the assessment methodology is given in Figure 8. This illustrates how the MSC Principles and Criteria give a basis for sub-criteria and performance indicators, resulting in various scores for the fishery.

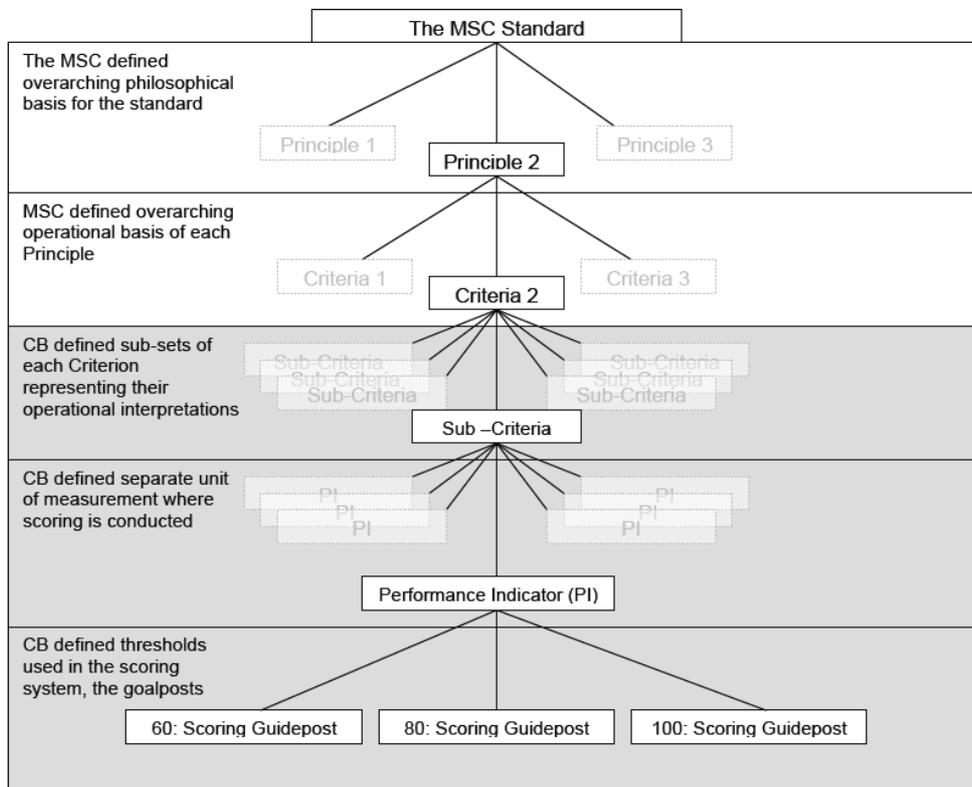


Figure 8: The assessment tree for MSC: A hierarchy



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7.2 Evaluation Techniques

Site visits to the fishery are performed by the certification body (here DNV) and the assessment team and consultations are done with interested stakeholders. The performance indicators and the pertaining scoring systems are evaluated, and it is judged if the fishery meets the requirements for MSC certification.

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

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

Even though a fishery fulfils the criteria for certification, there may still be some important potential risks to future sustainability that are revealed during assessment. These are performance indicators that score less than 80, but more than 60. In order to be granted a MSC fishery certificate the client must agree to do some further improvements regarding these points. The certification body (here DNV) sets a timescale for the fishery to improve the relevant areas, so that the certification process can continue.

Default performance indicators and the scorings allocated in the evaluation are given in enclosure 6.

7.3 Limit of Identification of Landings from the Fishery

Traceability within the fishery

All catches are recorded by the skipper and entered into the vessel logbooks. A copy of the logbook is sent to the Danish control authorities. All pelagic landings in Denmark, including landings from the North Sea Herring Fishery, have to be weighed at the point of unloading by an independent party. This task is undertaken by the "Akkrediteret Vejer og måler" (Independent Weigher and Measurer). In Denmark copies of all sales notes on fresh fish have to be sent immediately on execution of sales to the Fisheries Directorate by the first hand buyer. The sales notes (which also include information on possible retained fish) are used for official registration of the quota up-take as well as for control of log-books. These routines document all movement of fish, from catching to landing, and ensure the traceability of the fishery. DPPO'S North Sea Herring catch is mainly landed in Denmark for auctioning. NS Herring landed in Norway, Germany and Scotland are mainly at the processors.

There are no specific risks to dramatically decrease/increase risk in the fishery.

At-sea processing

There is no at-sea-processing for DPPO vessels. DPPO vessels only land fresh fish. The catch is pumped onboard into RSW tanks containing refrigerated seawater.

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Point of landing

The biggest vessels from DPPO land whole catches to auctioneers in Denmark or to processing plants in Norway, Germany and Scotland. Smaller boats mix batches at port. They only mix batches with vessels from DPPO.

There is no known risk factor after the point of landing that may influence Chain of Custody assessments.

Eligibility to enter Chains of Custody:

Fish is sold through auction or directly to processors. Chain of Custody should commence following sale at first point. Regardless of which sales route is used, all products are recorded as described above. Chain of custody will therefore commence following the sale at point of landing (auction or processing plant).

The target eligibility date for products from the fishery (as and when certified) to bear the MSC label is confirmed as **1st January 2009**.

7.4 Evaluation results

Tables showing the relevant indicators and scoring guideposts for the assessment are found in enclosure 5. Observations, weighting applied and scores are presented together with references to the sources of information.

The performance of The Danish Pelagic Producers Organisation in relation to the MSC Principles 1, 2 and 3 is summarized as follows:

MSC Principle:	Performance of DPPO:
<i>Principle 1: Sustainability and Exploited stock</i>	Score: 88,13 PASS
<i>Principle 2: Maintenance and Ecosystem</i>	Score: 94,00 PASS
<i>Principle 3: Effective Management System</i>	Score: 91,25 PASS

The fishery achieved a score of 80 or more for each of the three MSC Principles, and did not score under 60 for any of the set MSC Criteria. The assessment team has therefore reached the following determination:

It is recommended that The Danish Pelagic Producers Organisation's North Sea Herring fisheries is certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries.

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7.5 Scope of certification

This assessment relates only to the fishery defined in Section 1.1 up to the point of landing as defined in Section 7.3.

Monitoring and control of fishing locations and methods is considered sufficient to ensure fish and fish products invoiced as such by the fishery originate from within the evaluated fishery. Accordingly, the assessment team recommends a fishery certificate.

7.6 Pre-conditions, conditions or recommendations associated with this certification

Pre Conditions: 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. No pre-conditions are therefore required prior to certification being granted.

Conditions: The fishery attained a score of below 80 against 2 Scoring Indicators. The assessment team has therefore set 2 conditions for continuing certification that the client is required to address. The conditions are applied to improve performance to at least the 80 level within the defined period but no longer than the term of the certification.

The conditions are associated with 2 key areas of performance of the fishery. Conditions, associated timescales and relevant scoring indicators are as follows:

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Condition 1:

Performance indicators 1.2.2

There are well defined and effective harvest control rules in place.

SGP 80:

Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.

Assessment findings: The latest assessment from ICES shows that the TAC for the human consumption fishery has been overshoot in recent years resulting in a fishing mortality for adult herring that has been between 20 and 50 % above the fishing mortalities given by the harvest control rule. The harvest control rule is designed to take into account implementation errors and is responsive to the state of the stock. However, action is required to reduce the overshooting of the human consumption TAC.

Action: DPPO should clearly demonstrate that it does not contribute to overshooting of the TAC. DPPO will provide records to demonstrate that the total landings of DPPO member vessels are equal to or lower than the quota allocated to the DPPO vessels (including additional or reduced allocations resulting from quota swaps). Records are to be verified at surveillance audits.

Timescale: Satisfactory evidence of compliance shall be provided at the first surveillance audit. The condition will be on-going within the 5 years of certification and will be verified at subsequent surveillance audits.

Condition 2 :

Performance indicators ref. 3.2.3

Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with.

SGP 80: There is no evidence of systematic non-compliance. **Assessment findings:** There is suspicion of non-compliance, based on VMS data, of misreporting of some North Sea herring catches being reported as Skagerrak herring. DPPO vessels, have in some cases, been fined for non-compliance with regulations and all fines have been paid.

Action:

DPPO will try to remove the grounds for suspicion, by being actively involved with the Directorate in solving this problem. DPPO will maintain a list of all fines given to DPPO vessels related to NSH fisheries. DPPO will also identify and implement measures to eliminate these situations.

Time scale:

Satisfactory evidence of compliance shall be provided at the first surveillance audit.



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7.7 Peer Review

The reports from the peer reviewers are given in enclosure 4.



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7.8 Stakeholder Comments

A. THE DANISH DIRECTORATE OF FISHERIES

Kære Sandhya

Fiskeridirektoratet finder, at det er uklart, hvad der menes med "criminal convictions" (se bl.a. s. 122) og gør opmærksom på, at vi på mødet med DNV gjorde opmærksom på, at der har været overtrædelser i det pågældende fiskeri inden for de seneste 3 år.

Med venlig hilsen

Ulla Wiborg
Fuldmægtig/Fiskerikontoret

Direkte tlf. 72 18 58 75
e-mail ulwj@fd.dk

The Fisheries Directorate finds that it is unclear as to what is meant by "criminal convictions" (ref. page 122 amongst others) and would like to bring to your attention that at the meeting with DNV we brought to your attention that there has been violations in the relevant fisheries within the last 3 years.

The assessment team has taken this into consideration and this is reflected in the changes made to the scoring comments for 3.2.3 and in Condition 2.



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7.9 Objection process

Following the 15 working day period of stakeholder comment on the Final Report, no statements of intent to lodge an objection to the certification of the Danish Pelagic Producers Organisation's North Sea Herring Fisheries have been received.



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8 FORMAL CONCLUSION AGREEMENT

On behalf of Danish Pelagic Producers Organization, I accept all of the conditions associated with certification and agree to action the areas identified requiring management review within the timeframe specified. The terms expressed in the document "DNV Rules and Regulations: MSC Certification" will apply.

Signed: Position: Date:

[Handwritten signature] CEO 13-01-2009

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INFORMATION SOURCES

Information used in the main assessment has been obtained from interviews and correspondence with stakeholders in the fisheries, notably:

- I1. Client (Danish Pelagic Producers Organisation) and member representatives
- I2. Ministry of Fisheries
- I3. Directorate of Fisheries

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ENCLOSURE 1: OVERVIEW OF IDENTIFIED STAKEHOLDERS AND THEIR MAIN INTERESTS IN THE NORTH SEA HERRING FISHERY

Stakeholders	Date of establishment	Geographical Coverage	Main interests in regard to Danish herring fishery	Main tasks in regard to Danish herring fishery	Homepage
Ministry of Food, Agriculture and Fisheries in Denmark (Fødevareministeriet)		Denmark		The Ministry provides a framework for: -development and growth in the food sector -a responsible stewardship of the natural resources	www.fvm.dk
The Danish Directorate of Fisheries	1995	Danish Fishery	- To keep commercial herring fishery balanced, economically healthy and sustainable; - To maintain recreational fishing.	- Give service to the Minister; - help making law proposals and take part in international negotiations; - Regulate Danish fishery - Inspect and control fishing activities - Make primary statistics on fisheries	www.fd.dk
The Pelagic Regional Advisory Council	2005	EU Fishery	- To insure integrated and sustainable management of pelagic fisheries based on the ecosystem approach and the precautionary principle.	- prepare and provide advice on the management of pelagic fish stocks, i.e. blue whiting, herring, mackerel and horse mackerel on behalf of the fisheries sector and other stakeholders.	www.pelagic-rac.org



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Stakeholders	Date of establishment	Geographical Coverage	Main interests in regard to Danish herring fishery	Main tasks in regard to Danish herring fishery	Homepage
WWF	1961	Global Fishery	- To promote sustainability of fisheries	- Promotion of seafood that is certified by the Marine Stewardship Council (MSC).	www.wwf.dk www.panda.org
The Danish Society of Living Sea	1995	Danish Fishery	- preservation of the marine landscape and diversity of species. - fishing trade based on ecological, economical and social sustainability.	- Establishing the Forum for Marine Policy which work out suggestions for activities in the marine landscape from a sustainable point of view; - Introducing to the consumers fish and fishing products caught true to ecological principles	www.levendehav.dk
NSRAC	2004	North Sea (EU) Fishery	- To work towards integrated and sustainable management of fisheries in the wider context of the sustainability of the marine environment.	- Prepare and provide advice on the management of the fisheries of the North Sea on behalf of stakeholders in order to promote the objectives of the Common Fisheries Policy.	www.nsrac.org
ICES	1902	North Atlantic Fishery	- Sustainable use of living marine resources and protection of marine environment.	- coordinate and promote marine research in the North Atlantic - serve as a prime source of advice on the marine ecosystem to governments and international regulatory bodies.	www.ices.dk

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Stakeholders	Date of establishment	Geographical Coverage	Main interests in regard to Danish herring fishery	Main tasks in regard to Danish herring fishery	Homepage
Danish Fishermen's Association	1994	Danish Fishery	- health, safety and welfare of Danish fishermen	- to manage the interests of the fishermen in any place where fishing is on the agenda	www.dkfisk.dk
NSS (Fish Auction / Norges Sildesalgslag)	1927	Norwegian Fishery, North-East Atlantic Fishery	- economic interest in all first-hand sales of pelagic fish in the northeast Atlantic.	- through organised first hand sales to obtain good prices and good terms of payment in respect of the fish species; - take part in product and market development, production distribution or export sales when considered appropriate.	www.sildelaget.no
Association of Danish Fish Processing Industries and Exporters	1975	Danish Fishery	Represents a versatile group of companies trading in fresh, frozen and smoked products as well as tinned goods.	-An association of approximately 100 companies processing and exporting fish. -Engaged in cooperation with the fishing industry organizations, Danish ministries/authorities and the European Union.	www.danishfish.org
3F- United Federation of Danish Workers	2005	Denmark	3F looks after the interests of its members. Fundamental rights such as democracy, equal opportunities and workers' participation are important.	3F works to ensure good conditions in the fields of employment, pay, training, health and safety for Danish workers.	http://forsiden.3f.dk/



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Stakeholders	Date of establishment	Geographical Coverage	Main interests in regard to Danish herring fishery	Main tasks in regard to Danish herring fishery	Homepage
The Danish Society for Nature Conservation (Danmarks Naturfredningsforening)	1911	Denmark	The company's vision is a sustainable society with a rich and diverse nature and a clean and healthy environment.	-Works for green EU policies that protect nature and improve the quality of the environment in Europe and globally. Important issues include nature protection, chemicals, water and waste.	www.dn.dk
The Norwegian Directorate of Fisheries (Fiskeridirskoratet)		Norwegian Fishery	- rational exploitation of fish stocks in the Atlantic and Arctic Oceans	- analyses, statistics and advice; - regulative work and regulation planning development; - implement political decisions; - process applications and appeals; - conduct monitoring and control.	www.fiskeridir.no
Norwegian Fishermen's Association (Norges Fiskarlag)	1926	Norwegian Fishery	An organisation working to safeguard the professional, economical, social and cultural rights for Norwegian fishermen. Close cooperation with local and central authorities.	- to manage the interests of the fishermen in any place where fishing is on the agenda.	www.fiskarlaget.no



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Stakeholders	Date of establishment	Geographical Coverage	Main interests in regard to Danish herring fishery	Main tasks in regard to Danish herring fishery	Homepage
North Sea Women's Network		North Sea	An organisation that unites women from fishing communities around the North Sea to find solutions to common problems within fishing communities.	-Deals with training, education and advice; - facilitates exchange of experience;	www.northsea.org/nsc_womens_network/index.htm
National Institute of Aquatic Resources		Denmark	Performs fisheries research in order to advice authorities, international organisations and the industry.		www.aqua.dtu.dk
National Environmental Research Institute		Denmark		- monitoring of nature and the environment.	www.dmu.dk
The Danish Fishing Equipment Group		Denmark		- Represent leading Danish companies; - function as a link between Danish subcontractors and foreign buyers.	www.dk-fishing-equipment.com

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ENCLOSURE 2: DPPO'S CODEX OF GOOD PRACTICE IN THE DANISH PELAGIC FISHERY

Danmarks Pelagiske Producentorganisation. Maj 2007

Kodeks for et bæredygtigt og ansvarligt pelagisk fiskeri

Om kodekset

Dette kodeks er formuleret af medlemmerne i Danmarks Pelagiske Producentorganisation (DPPO). Kodekset har til formål at opridse god praksis for bæredygtig og ansvarlig adfærd i det danske pelagiske fiskeri.

Det primære fokus er miljømæssig bæredygtighed. Det vil sige en ansvarlig adfærd i forhold til fiskeressourcen og havmiljøet. For at sikre et attraktivt og bæredygtigt erhverv for fremtiden inddrages også hensyn til arbejdsmiljø, sikkerhed og uddannelse for besætningen.

Fartøjernes driftsøkonomi nævnes ikke direkte i kodekset. Det er dog en forudsætning, at fartøjer og virksomheder i det pelagiske fiskeri fortsat skal kunne drives rentabelt. Hensynet til miljøet og besætningen går ofte hånd i hånd med hensynet til driftsøkonomien. I nogle tilfælde må de miljømæssige og sociale hensyn imidlertid afvejes i forhold til økonomiske hensyn.

Kodekset skal ses som et frivilligt tillæg til den gældende lovgivning og regler, og en konkretisering af relevante dele af 'EU-kodeks for god praksis for bæredygtigt og ansvarligt fiskeri. Kodekset gælder medlemmerne af DPPO. Det er frivilligt for medlemmerne af DPPO at følge kodekset, men de har givet hinanden håndslag på, at de i videst muligt omfang vil følge Kodekset. Det skal dog nævnes, at kodeks på mange punkter er en beskrivelse af allerede eksisterende praksis i det pelagiske fiskeri.

Indledning

Den danske pelagiske sektor har de seneste år været igennem en strukturtilpasning gennem en reduktion af antallet af fartøjer. Samtidig er flåden fornyet, så den stort set kun består af nye og moderne fartøjer, der sikrer høj kvalitet, godt arbejdsmiljø og gode arbejdsforhold.

Der er p.t. 12 fartøjer tilknyttet Danmarks Pelagiske Producentorganisation. De råder tilsammen over ca. 70 % af de danske kvoter på sild og makrel, hvilket betød at landingerne fra DPPOs medlemmer i 2006 udgjorde ca. 17,5 % af den samlede værdi af landinger af fisk fra danske fiskere.

Med en moderne og effektiv flåde følger fartøjerne i DPPO nøje såvel de udstukne rammer fra EU som danske reguleringer. Helt grundlæggende fisker det enkelte fartøj kun inden for de tildelte kvoter. Endvidere er fiskeriet underlagt en række tekniske

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reguleringer og kontrolsystemer, eksempelvis satellitovervågning af fiskepositioner, og 3. parts kontrol af vægte, der benyttes ved landing af fangsten. Fartøjerne er desuden underlagt de ret skrappe danske generelle krav til arbejdsmiljø.

De pelagiske fiskere er generelt tilfredse med reguleringer, der sikrer gode arbejdspladser og en langsigtet bæredygtighed for ressourcen. Kodekset skal ses som et supplement til de gældende reguleringer, hvor sektoren kan medvirke yderligere til et bæredygtigt fiskeri ved deres gode og ansvarlige praksis.

Bæredygtighed

1. Vi tilrettelægger fiskeriet grundigt over året og for hver fangstrejse med henblik på at undgå unødigt brændstofforbrug og uønskede fangster.
2. Vi arbejder på at mindske brændstofforbruget og skåne miljøet.
3. Vi arbejder på at undgå uønskede fangster og reducere udsmid.
4. Vi smider ikke uorganisk affald over bord og lukker ikke spildolie ud i havet.
5. Vi arbejder på helt at undgå fangst af havpattedyr i silde- og makrelfiskeriet.

Samarbejde uden for erhvervet

6. Vi samarbejder åbent og gerne med biologer og andre forskere for at sikre viden om ressourcen.
7. Vi samarbejder løbende og positivt med danske og udenlandske kontrolmyndigheder.

Fangstkvalitet

8. Vi højner fangstkvaliteten og skåner miljøet ved at nedkorte slæbetid og længde af fangstrejse.
9. Vi pumper fisken så skånsomt som muligt ned i tanken.
10. Vi køler hurtigt konsumfangster ned til $-1\frac{1}{2}$ °C og industrifangster til $\frac{1}{2}$ °C.
11. Vi sikrer løbende opdateringer af fartøjernes omfattende egenkontrolprogrammer for rengøring, vedligehold og hygiejne på fartøjerne.

Gode forhold om bord

12. Vi skaber gode og sikre arbejdspladser på havet.
13. Vi sørger for løbende uddannelse af besætningen.

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Udbygning og konkretisering af kodekset

1 Bæredygtighed

Kodekstekt: Vi tilrettelægger fiskeriet grundigt over året og for hver fangstrejse med henblik på at undgå unødigt brændstofforbrug og uønskede fangster.

Ansvarlig: Skipper og reder.

Arbejdsinstruktion:

- Detaljer i planlægningen afhænger af det enkelte fartøj, af det valgte fiskemønster, hvilke arter fartøjet har kvoter til mv.
- Tilrettelæggelsen sker ud fra ønsker om et effektivt fiskeri med henblik på at opnå fangster af bedste kvalitet ved minimal indsats af sejl- og fisketid samt forbrugsstoffer.

Fortolkning

- Registrering af
 - Årlig planlægning
 - Eksempler på registrering af brændstofforbrug
 - Bifangst håndtering

2 Bæredygtighed

Kodekstekt: Vi arbejder på at mindske brændstofforbruget og skåne miljøet.

Ansvarlig: Skipper (S) og reder (R).

Arbejdsinstruktion:

- Vi planlægger nøje sejlruterne og fart i forhold til vejr- og strømforhold (S).
- Vi tilpasser motorstørrelse til fartøj ved nybygninger (R).
- Vi er med til at udvikle fangstredskaber for at sikre et effektivt fiskeri og dermed så lavt forbrug af brændstof som muligt (S).

Dokumentation: Indføres som en ny overordnet målsætning på forsiden i egenkontrol-protokollen.

Fortolkning Dialog om metode til dette.

3 Bæredygtighed

Kodekstekt: Vi arbejder for at undgå uønskede fangster og reducere udsmid.

Definition: Uønskede fangster kan enten være forkert størrelse eller forkert blanding af arter.

Ansvarlig: Skipper (S) og reder (R).

Arbejdsinstruktion:

- Vi er med til at udvikle søgeredskaber, der øger muligheden for bestemmelse fiskens art og størrelse, før fiskeriet påbegyndes (S).
- Vi flytter os øjeblikkeligt fra områder med små fisk eller anden uønsket fangst (S).
- Vi udveksler erfaringer med vores kolleger – danske såvel som udenlandske fiskere - om positioner, størrelse og kvalitet på de enkelte fangstpladser (S).
- Vi anvender de bedste elektroniske søgeredskaber (R).
- Vi giver om muligt fisk videre til kolleger, hvis vores kapacitet eller kvote

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er opbrugt (S).

Fortolkning	Registrering af <ul style="list-style-type: none"> • Bifangst håndtering • Kendskab til regler
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4 Bæredygtighed

Kodekstekt: Vi smider ikke uorganisk affald over bord og lukker ikke spildolie ud i havet.

Ansvarlig: Skipper (S) og maskinmester (M).

Arbejdsinstruktion:

- Vi følger de lovpligtige regler om registrering og håndtering af affald og olie (M).
- Vi har forberedt et affaldssorteringsprogram (S).

Dokumentation: Oliejournal, affaldsjournal.

Referencer: Bekendtgørelse nr. 428 af 7. september 1983 om anvendelse af oliejournal, Regel 9 i Bilag V til den internationale konvention om forebyggelse af forurening fra skibe, 1973 og 1979-protokollen til denne konvention (MARPOL 73/78).

Fortolkning	Regler for affaldshåndtering og mandskabet har kendskab til regler. Evt. registrering af <ul style="list-style-type: none"> • Leveret affald i havn
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5 Bæredygtighed

Kodekstekt: Vi arbejder for helt at undgå fangst af havpattedyr i silde- og makrelfiskeriet.

Ansvarlig: Skipper.

Arbejdsinstruktion:

- Vi er positive over for at tage observatører med på fartøjerne for at undersøge omfanget af eventuelle bifangster af havpattedyr.
- Vi noterer en eventuel fangst i egenkontrolskemaet.

Dokumentation: Indføres som et nyt punkt i egenkontrolskemaet. DPPO fiskerne indgår i projekter, blandt andre kan nævnes Projekt 2239, bifangst af hvaler.

Fortolkning	Regler og mandskabet har kendskab til regler. Registrering af: <ul style="list-style-type: none"> • Evt. fangst af havpattedyr
-------------	---

6 Samarbejde udenfor erhvervet

Kodekstekt: Vi samarbejder åbent og gerne med biologer og andre forskere for at sikre viden om ressourcen.

Ansvarlig: Skipper (S) og reder (R).

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- Arbejdsinstruktion:*
- Vi er positive over for at have observatører om bord (S)
 - Vi leverer fangstprøver til forskningen (S)
 - Vi er positive overfor deltagelse i forsøgsfiskeri (R og S)
 - Vi indgår i samarbejde med forskning og forvaltning ved løbende indrapportering af data (S)

Dokumentation: DPPO fiskerne indgår i adskillige danske og internationale forskningsprojekter,

Fortolkning Dialog med reder og skipper. Samt bevis for dialog f.eks. blade, internet eller/og deltagelse i møder.

7 Samarbejde uden for erhvervet

Kodekstekt: Vi samarbejder løbende og positivt med danske og udenlandske kontrolmyndigheder.

Ansvarlig: Skipper.

- Arbejdsinstruktion:*
- Vi følger de lovpligtige indberetninger, registreringer mv.
 - Vi indberetter til Søværnets Operative Kommando, hvis vi iagttager oliespild på havet.

Dokumentation: Logbøger, meldinger, skibsdagbøger, satellitovervågning.

Fortolkning Registrering

- Logbøger
- Skibsdagbøger
- Meldinger

8 Fangstkvalitet

Kodekstekt: Vi højner fangstkvaliteten og skåner miljøet ved at nedkorte slæbetid og længde af fangstrejse.

Definitioner: Slæbetiden er knyttet til fiskeri med trawl. Det er tiden fra fiskeriet starter i det enkelte træk til fisken er i lasten.

Ansvarlig: Skipper.

- Arbejdsinstruktion:*
- Vi udveksler information med andre danske og udenlandske fiskere om positioner, størrelser og kvalitet.
 - Vi bruger de optimale fangstredskaber for et effektivt fiskeri, så fisketiden forkortes.

Dokumentation: Varighed af fangstrejse fremgår af logbogssystemet

Fortolkning Dialog med skipper og registrering af slæbetid og fangstrejse:

- Logbøger
- Skibsdagbøger
- Meldinger

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9 Fangstkvalitet

Kodekstekt: Vi pumper fisken så skånsomt som muligt ned i tanken.

Ansvarlig: Skipper.

Arbejdsinstruktion: • Det varme havvand bruges til at pumpe fisken så skånsomt som muligt om bord på fartøjet. Derefter frasies havvandet, og fisken transporteres i tanke med koldt vand.

Fortolkning Audit af udstyr og dialog med skipper og mandskab om metoder. Registrering af procesparametre som:

- Køling
- Vandforbrug
- Produkttemperatur var lodsning
- Vedligehold
- Evt. andet

10 Fangstkvalitet

Kodekstekt: Vi køler hurtigt konsumfangster ned til $-1\frac{1}{2}$ °C og industrifangster til $\frac{1}{2}$ °C.

Ansvarlig: Skipper.

Arbejdsinstruktion: • Køling af vandet i tankene påbegyndes i rette tid før ombordtagningen, så den hurtige nedkøling sikres, Af hensyn til brændstofforbrug sker dette dog ikke, før det er nødvendigt

Dokumentation: Kølingen fremgår af kølejournal, kølekurver og tankregistreringer i henhold til egenkontrolsystemet.

Fortolkning Audit af udstyr og dialog med skipper og mandskab om metoder. Registrering af procesparametre som:

- Køling
- Vandforbrug
- Produkttemperatur var lodsning
- Vedligehold
- Evt. andet.

11 Fangstkvalitet

Kodekstekt: Vi sikrer løbende opdatering af fartøjernes omfattende egenkontrolprogrammer for rengøring, vedligehold og hygiejne på fartøjerne. .

Ansvarlig: Skipper.

Dokumentation: Egenkontrolsystemet kontrolleres eksternt af Fødevareregionen gennem Fødevareregionen.

Fortolkning Audit af egenkontrolprogrammet. Dialog med skipper og mandskab om metoder. Registrering i henhold til programmet F.eks. :

- Rengøring frekvens og kvalitet
- Beskrivelse af metode og rengøringsmidler

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- Beskrivelse af vedligehold
- Evt. andet.

12 Gode forhold om bord

Kodekstekt: Vi skaber gode og sikre arbejdspladser på havet.

Ansvarlig: Skipper (S) og reder (R).

Arbejdsinstruktion:

- Fartøjet skal være i forskriftsmæssig stand (S).
- Ved udarbejdelse af risikovurdering er der blandt andet udarbejdet retningslinier for brug af hjelme og andet sikkerhedsudstyr, sikkerhedsliner i tankene (jf. krav fra Søfartsstyrelsen) (R).
- I industrifiskeri benyttes måleudstyr for at sikre, at besætningen ikke arbejder i tanke med gas (S).
- Der er sikret gode forhold for besætningen, generelt individuelle lukaf'er med bad og toiletter (R).

Fartøjerne lever op til høje danske krav om lavt støjniveau på fartøjet (S).

Dokumentation: Risikovurdering i egenkontrollsystemet.

Fortolkning: Ikke direkte MSC krav. Men kan være del af audit interview

13 Gode forhold om bord

Kodekstekt: Vi sørger for løbende uddannelse af besætningen.

Ansvarlig: Skipper og reder.

Arbejdsinstruktion:

- Hele besætningen har de lovpligtige uddannelser og sønæringsbeviser.
- Besætningen deltager i de lovpligtige uddannelser (sikkerhed, medicin mv.).

Dokumentation: Fremgår af sønæringsbeviserne, der kontrolleres af Søfartsstyrelsen.

Referencer: Bekendtgørelse 832/1999 om kvalifikationskrav til søfarende, fiskere og sønæringsbeviser §§ 4 og 48.

Fortolkning: Audit interview med skipper og mandskab. Registrering af:

- Mandskab og uddannelse
- Deltagelse i uddannelse
- Planlægning af uddannelse – typisk årsplan
- Evaluering af uddannelse behov – typisk mødereferat
- Evt. andet



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ENCLOSURE 3: DPPO VESSEL LIST

Danmarks Pelagiske Producentorganisation

MEDLEMMER

pr. 01.01.2009

Havnekendings- nummer	Navn	Fartøjstype	Kendingslængde	BT
E 349	CATTLEYA	TRAWLER	55,90 m	1337
E 532	ROCKALL	TRAWLER	51,65 m	1461
HG 62	BEINUR	NOTBÅD	50,59 m	1424
HG 264	RUTH	NOTBÅD	55,08 m	1158
HG 265	STRØMFJORD	NOTBÅD	57,70 m	1266
HG 267	STRØMEGG	NOTBÅD	57,16 m	1350
HG 333	ISAFOLD	NOTBÅD	67,32 m	2499
L 349	GITTE HENNING	TRAWLER	67,13 m	2967

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ENCLOSURE 4: PEER REVIEW COMMENTS

Marine Stewardship Council Certification Det Norske Veritas Assessment of the DPPO North Sea Herring Fishery

Peer Review by
Reviewer A

Overall Assessment

Many reports prepared for MSC assessments tend to be overly long with an excess of detail that is not relevant or helpful. This report has strayed too far the other way. The report provides the reader with only a minimalist description of the fishery, the environment, data gathering, assessment and management considerations. It is as if the author, for Principle 1 and 2 at least, has assumed that all readers of the report are not only familiar with ICES fish stock assessment groups and their methods but will know instinctively which reports are relevant and where they can be found. This assumption is ill-founded; it should be assumed that there will be interested parties in non-European countries who are not familiar with the ways of ICES and who need to be led through the assessment in a stepwise and informative manner. To this end, several sections of the text should be expanded and key references given, e.g. relevant ICES working group and ACOM reports – which often provide citations for the primary sources if the reader wants them.

Of greater significance to the recommendation for certification, however, is the apparent conflict between the authors' presentation of the most recent ICES assessment of the North Sea herring stock and what the ICES documents appear to say. It is normally taken that if spawning stock biomass is below B_{lim} , the stock is in the 'red zone' and urgent and significant remedial action is essential. In contrast, if the SSB is assessed as being in greater than B_{pa} , it is seen to be in the 'green zone', particularly if the stock is increasing and recruitment is average–good. Between these two states is the 'orange zone', where stock has not sunk to the level of B_{lim} but is less than B_{pa} and is therefore raising cause for concern. In this respect, B_{pa} is normally taken as a 'trigger level' for remedial management action to prevent the stock falling to B_{lim} , if possible. This is the current tenor of the ICES assessment and advice; the North Sea herring SSB is currently below B_{pa} and the harvest control rule appears to be inadequate, i.e. it is not meeting the criteria of a precautionary approach. Specifically, in 2007, ICES (Advice Book 6, p 24) said: "In order to bring the stock above $B_{pa} = 1.3$ Mt by 2009, there should be no fishing in 2008". In the face of such advice it is difficult to see how the current North Sea herring fishery meets the MSC standards yet the authors of this report offer a rosy interpretation of the fact that the SSB has not (yet) fallen below B_{lim} . Consequent on their interpretation, they suggest that the fishery and HCR meet the precautionary approach to management.

Now it must be acknowledged that there is very little in fishery stock assessment and management that is based on absolutes, and this fishery is no exception. It may be that the authors have good reasons to offer a more optimistic interpretation of the current stock status than is offered by ICES. If they wish to promote this view and ask readers to accept it in preference to the ICES (multi-national, multi-author) assessment, it is imperative that they present their case explicitly and clearly. As it stands, they have failed to convince this

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reader. Specific comments given below may or may not affect the final, overall assessment scores but this does not mitigate the need for significant redrafting of the body of the client report.

Client Report

4.1 DPPO

The legend and labelling to Figure 1 needs to specify what the ‘Quota’ is. Is it the Danish national allocation from the international TAC – in which case we can see that the DPPO catch the lion’s share; or is it the DPPO quota – in which case the DPPO catch has been less than its quota for the past two years and we’d like to know why.

Text added: The catches of herring in 2008 by members of DPPO totalled 74.163 tons. Of this volume 34.183 tons were caught in the North Sea - areas 4A or 4B. There were no catches in Vic or VIII.

Page 8: There appears to be inconsistency in the use of EU and EC that some may find confusing. One normally assumes that EU is the European Union, the political institution to which member states belong, and the EC is the Commission, i.e. the EU bureaucrats. If this is the case, not only is it the EU Common Fisheries Policy (as given) but also the EU–Norway agreement, agreed ‘between the EU and Norway’, even if it is the EC that actually undertakes the negotiations.

Short explanation written explaining the use of acronyms. Correction made to list of abbreviations.

4.2 Ecosystem

Overall, the ecosystem is somewhat minimalist; there is no mention of seabirds or their interactions with fisheries yet the overwhelming majority of them are dependent on pelagic species. Many readers will see this as a significant omission.

Accepted- text included- About 2.5 million pairs of seabirds breed around the coasts of the North Sea, belonging to some 28 species. (R9). While most species breed in dense colonies along the coast, they make very different use of the marine ecosystem. During the breeding season, some species depend on local feeding conditions, whereas others may cover several hundreds of kilometres during their foraging trips. Outside the breeding season, some species stay quite close to their breeding grounds whereas others migrate across the North Sea or elsewhere, even as far as the Antarctic. Feeding habits also diverge.

On a shorter time-scale, 12 out of the 28 seabird species show an increasing trend during the last decade and four a decreasing trend, while four appear to be stable and for another four the situation is unknown. (R9).

In some places the North Sea is not even 15 m but only ankle deep!

Accepted and corrected

I claim no hydrographic expertise but I always understood that it was the Coriolis effect that causes the prevailing cyclonic gyre in the North Sea but that this can be is subject to local and seasonal wind-driven variation in speed and direction.

No changes except ref. to ICES report inserted.

Page 9: “Changes in zooplankton and fish distributions have been linked to the strength of these inflows.” Provide suitable reference *Reference included.*

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Provide reference for changes in temperature regime. *Reference included.*

Provide reference for assertion that fishing is responsible for lower species diversity in southern North Sea. *Reference included.*

Provide reference for maximum fish biomass estimates and patchiness of fish diversity etc. *Reference included.*

“The main concern about interactions with human activities is the by-catch in fishing operations and effects of contaminants.” Provide reference. *Reference included.*

Page 10: “Specifically, the large by-catch of harbour porpoise in gill net fisheries has led to management measures.” Provide reference and, or give a brief summary of what these measures are as some readers may have concerns about pelagic fisheries catching small cetaceans. *Reference included.*

4.3 The North Sea Herring stock

4.3.1 The biology of the North Sea herring stock

4.3.1.1 Distribution and stock structure

Consistency: in one place the text states that “spawning begins in the north western North Sea in August and ---” but a few lines later we read “Buchan herring spawn July to September in the Orkney Shetland area ---”. *Corrected*

Page 11: Figure 3 legend – what is the “Astrid report”? *Removed*

4.3.1.2 Lifecycle

Even though the distribution, stock structure, life cycle etc may be familiar to the author and this reviewer, there may be other readers who are less familiar with it and would appreciate at least one reference where they might read about it in more detail. *Reference included.*

4.3.2 The fishery

4.3.2.1 Catches and landings

The same comment on reference material applies here as to the history of the fishery. *Reference included.*

Page 13

Consistency of style & typos: “At present, the fishery of the target stock is managed by five [*or should it be 5?*] separate TACs in 3 [*or should be three? Space*] different management areas (, Skagerrak and Kattegat, Northern and Central North Sea, and Southern North Sea and Eastern Channel) through joint negotiations by EU and Norway.” *Corrected.*

How does ICES estimate the discard and unallocated catch figures to arrive at the total catch figure it uses for stock assessments? *Text added*

4.3.2.2 DPPO North Sea herring fishery

What action do the DPPO skippers take to ensure that their trawls do not hit the bottom? Do the fish have a diel behaviour pattern – tight on the seabed in daylight, rising at dusk, perhaps – that enables the skipper to ensure fish are only taken in mid water? I think it would be helpful to give readers a little more detail than is offered here.

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Text added: The pelagic trawls used are not designed to fish on the sea bed and any contact with the bottom involves risk of damage to the trawl. The skippers therefore operate the trawl so that there is no contact with the sea bed. As a result, there is no or very little impact on sea bed habitats when fishing with herring trawls.

Page 15: “There is very little information available on discard and slipping in pelagic trawl and pure seine fisheries for North Sea herring. However, *there are indications* that the quantities discarded or slipped by DPPO vessels in the North Sea herring fishery are very limited.” Where are these ‘indications’; they are not shown here? If you are relying on assurances from the DPPO, you should say so. If there is independent evidence, say what it is.

Text added: The information on discards and slipping of herring by DPPO vessels is very limited and insufficient to provide a reliable estimate. The fishing operation whether using trawl or purse-seines is conducted in the same areas and in the same manner as the other pelagic fleets fishing on North Sea herring. It is therefore likely that discards and slipping by DPPO vessels are comparable to discards and slipping observed in other fleets fishing North Sea herring (see section 4.3.2.1).

4.4 Stock assessment

4.4.2 Data source

What is the method by which the discarded and unallocated catches are estimated? Who undertakes the biological sampling, the acoustic surveys, the trawls surveys? How are by-catch data gathered and recorded? Acoustic surveys estimate gross biomass; how do the surveys provide an index of abundance by age?

Text added: The commercial landings used by ICES in the assessment are obtained from national laboratories of nations exploiting herring in the North Sea. Some laboratories are “correcting” the officially reported landings for assumed misreporting by areas. For example are some landings of herring officially reported at been taken in the Skagerrak by the ICES herring assessment Working Group considered to be misreported by fishing area and in reality been caught in the North Sea. These assumed misreported landings are included in the assessment of the North Sea herring stock. There may therefore be significant differences in the officially reported landings and the landings data used in the assessment. Information on discard is rare and the estimate used by ICES does not give a true picture of discards and slipping but is an underestimate. For 2007 the figure on discard and slipping included in ICES assessment was 93 t. covering only one fleet. The discards of herring in the Dutch fleet are estimated to around 6000 t. per year. The estimate can not be allocated to fishing area and is not included in ICES assessment.

Although data on discard is poor and the estimate used in ICES assessment is an underestimate, the indications are that large-scale discarding is not widespread in the directed North Sea herring fishery. A number of surveys on pelagic trawlers and pursers have been conducted indicating discard rates in the order of 5 % (R31, R32).

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Consistency: “During the bottom trawl surveys, sampling with plankton net provides a recruitment index of 0 group fish.

Text corrected to: During the bottom trawl surveys, sampling with Isaccs-Kidd Midwater trawl provides a abundance index of late stage herring larvae. The index appears to be a good indicator of herring recruitment and is used routinely in the annual assessment

“The plankton surveys for herring larvae at spawning grounds provide index for spawning stock size by spawning area.” How does a plankton net provide an index of 0-group recruitment if it’s the gear that is used to sample larvae, i.e. pre-0 group fish?

Text corrected to: Surveys of larval herring have been carried out in the North Sea since 1872. The survey provides an estimate of larval production which again is considered to reflect the size of the spawning stock of herring. The larvae estimate is therefore used as an index of spawning stock size in the assessment. The larvae estimate does also provide information on relative state of the three main spawning components.

4.4.3 Assessment method

“the integrated catch at age model with a separable constraint over a five year period, tuned with the acoustic survey”. This is pure jargon that will mean nothing other than to the assessment methods cognoscenti. How do you ‘tune with an acoustic survey’? Most readers will associate ‘tuning’ with their radio and sports cars or motorbikes. The report should be written in language that the general reader can understand.

Text corrected to: The acoustic surveys are carried out from late June through July in the northern and central North Sea, the Skagerrak and the Kattegat. The output is a relative index of abundance by age and maturity classes. The index has been used in assessments since 1994 with the time series data extending back to 1989. The survey covers the northern North Sea, the Skagerrak and the Kattegat.

There is nothing said about the scale of unreported catches and their potential influence on the assessment. Does the working group simply add a figure and assume it is correct or does it examine this particular uncertainty – any uncertainties for that matter? Is the working group satisfied that the assessment method is robust and reliable or has it tried alternative models for comparison?

Text added: From 1972 to 1995 the assessment of the North Sea herring was done by means of a Virtual Population Analysis (VPA) tuned with the data series of larvae abundance estimates, acoustic abundance indices and abundance indices from bottom trawl surveys. The VPA estimates of stock size were uncertain due mainly to different signals on stock development in the acoustic abundance indices on one hand and the larvae and trawl abundance estimates on the other hands.

The introduction of the integrated catch analysis method (ICA) as the assessment tool in 1995 lead to a statistical more sound analysis of the data and provided an improved estimate of uncertainty in the assessment. The ICA is considered to be a robust stock assessment model suitable for the assessment of the North Sea herring stock (R10, R34).

The integrated catch at age analysis is conducted using the catch at age data, the acoustic survey indices, the abundance indices from the trawl surveys, the larvae indices from the trawl surveys and the data from the larvae surveys. Analysis show that the young herring are best estimated with larvae indices and the indices from the trawl

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surveys. The older herring are best evaluated through the acoustic survey and the spawning stock biomass estimated through the results from the larvae surveys.

Uncertainties relating to data have been reduced gradually. The enhancement of the monitoring system on by-catches of herring in small meshed industrial fisheries in 1996 resulted in more reliable data on catches of juveniles. The use of otolith microstructure analyses has provided a more precise allocation of catches to stock. Improved international cooperation on control of landings including consistent weighing procedures have reduced the underreported of landings.

Retrospective evaluations of fishing mortality, spawning stock biomass and recruitment suggest that the assessment is providing a consistent unbiased evaluation of all three parameters in recent years.

Based on the assessment of the state of the stock ICES provides catch forecast by fishery under a number of management options consistent with the harvest control rule agreed by the EC and Norway. However, ICES in its advice on catch levels for 2009 refrained from using the harvest control rule in force because simulations indicated that the rule under the present recruitment scenario no longer could be considered consistent with the precautionary approach. In stead ICES recommended a revised harvest control rule and provided the catch advice in accordance with the revised rule (see section 4.4.5).

Page 17–18: It would be helpful if Figure 6 legend was on the same page as the figure.
Corrected.

4.4.5 Management advice

The information provided in this paragraph seems unduly optimistic and positive. As shown in Figure 6, the stock is stuck on a downward trend with current spawning stock biomass (SSB) below B_{pa} , where pa stands for *precautionary approach*. To ignore these facts and refer to the stock position relative to B_{lim} (the SSB limit at which recruitment might be expected to suffer) in positive terms is, at best, disingenuous. It would be more pertinent to note that ICES states that the stock is overfished. In 2007 (Advice Book 6, p 24), ICES concluded that “In order to bring the stock above $B_{pa} = 1.3$ million tonnes by 2009, there should be no fishing in 2008”. More recently: “ICES has concluded that the fishing mortality rate resulting from the current rule in the long run (with or without a 15% constraint on change on TAC) is too high and the [*harvest control*] rule is not precautionary under the current recruitment regime [*i.e. succession of poor year classes*]. ICES recommends that the rule be revised. A number of proposed HCRs that would conform to the precautionary approach have been identified” (ICES Advice 2008, Book 6, ACOM 2008). Not only should this MSC assessment’s authors have drawn attention to these key ICES conclusion, they should also have said something about the alternative harvest control rules to which ICES refers.

This whole section (4.4.5) is of fundamental importance to the MSC process but it has not been given the attention to detail that is essential.

Text corrected to: The management advice by ICES is provided in accordance with the management plan agreed by the EC and Norway. The management plan for the North

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Sea herring fisheries was agreed in 1997 and last amended in 2008. The objective is to maintain the spawning stock biomass (SSB) at levels greater than 800 000 t (Blim). The plan includes a harvest control rule for setting the TACs. According to the harvest control rule the TACs shall be based on a target fishing mortality for adult herring of 0.25 and for juveniles of no more than 0.05. If the SSB falls below 1.5 million t, the fishing mortalities shall be reduced proportionally.

The precautionary biomass limit reference point Blim (800 000 tonnes) was adopted by ICES in 1998 and reflects a stock size below which the recruitment may become impaired (R35 and R36). In 2007 ICES explored limit reference points for North Sea herring and concluded that there was no basis for changing Blim (R37). A low risk of SSB falling below Blim is therefore the basis of ICES precautionary advice.

The target and trigger points used in the management plan were recommended by ICES in 1998 as the precautionary reference points Bpa and Fpa (R35 and R36). This means that the precautionary reference points were taken from the already existing management plan. In the management plan, the target fishing mortalities (Fpa) were intended as targets and not as bounds. The trigger biomass point in the rule (originally 1.3 million t but revised in 2008 to 1.5 million t) which was adopted by ICES as the Bpa was derived largely as a compromise, allowing higher exploitation at higher biomass but reflecting an ambition to maintain the stock at a high level, by reducing the fishing mortality at an early stage of decline. ICES investigated the trigger and suggested that 1.3 million tonnes was appropriate and any reduction would increase the risk of the management rule resulting in SSBs below 800 000 tonnes.

In ICES' interpretation of the precautionary approach (R38), the objective is to ensure that the SSB is above the range where recruitment may be impaired or the stock dynamics is unknown and the reference points are defined in accordance with this objective. The central reference is therefore the Blim which reflects the stock size below which the recruitment may become impaired. The Bpa takes assessment uncertainty into account and is defined so that if SSB is estimated at Bpa, the probability that it in reality is below Blim shall be less than 5%. The Flim is the fishing mortality that corresponds to Blim in a deterministic equilibrium. The Fpa is related to Flim the same way as Bpa is related to Blim.

In ICES advisory practice, Fpa has been the basis for the TAC advice unless the SSB has been below Bpa, where a reduction in F has been advised. Furthermore, Fpa and Bpa are currently used to classify the state of stock and rate of exploitation relative to precautionary limits.

ICES will accept that a harvest control rule is in accordance with the precautionary approach as long as it implies a low risk to being below Blim, even if other reference points may be exceeded occasionally. When a rule is regarded as precautionary, ICES gives its advice according to the rule. If the rule is followed, then ICES classifies exploitation as precautionary. Within this framework, other precautionary reference points generally will be redundant. However, the precautionary reference points may also be used to classify the stock with respect to precautionary limits, which may lead to a conflicting classification. This discrepancy is still unresolved.

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For North Sea herring in the present situation, with a reduced recruitment, the SSB may be expected to be below 1.3 million tonnes most of the time. The management plan will reduce fishing mortality accordingly. ICES considers that the parameters of the management plan should take primacy over the management against precautionary reference points F_{pa} or B_{pa} .

The revised harvest control rule adopted by EC and Norway in December 2008 is based on advice from ICES (R39). ICES in 2008 evaluated a number of harvest control rules including the one agreed by EC and Norway and concluded that the agreed harvest control rule would reduce the risk to below 5% of SSB falling below B_{lim} while the current low recruitment continues. The team therefore considers that the management plan agreed by EC and Norway meet the precautionary approach to management.

4.5.3 Habitat and ecosystem impacts

“As described in section 4.3.2.2 there is no physical contact between the pelagic trawls and purse-seines operated by the DPPO vessels and the sea bed and the impact of the North Sea herring fishery on the habitat is negligible.” This may be a fair summary of the situation but it is based on an unqualified assertion at 4.3.2.2 rather than a ‘description’. A suitable description would be helpful.

“Many studies show that herring is a central component in the North Sea ecosystem.” At least one key reference would be helpful. *Reference added*

“However, there is no evidence that the herring fishery affects the structure, productivity, function or diversity of the North Sea ecosystem.” Is this the authors’ conclusion or does it have the support of ICES and, or OsPar? At least one key reference would be helpful. *Reference added*

“since 1999, [SSB has] been well above the B_{lim} of 0.8 million t.” An SSB of 0.98 Mt is hardly ‘well above’ B_{lim} ; in particular, ICES believes the “trigger” level for remedial fishery management action is when the SSB falls below $B_{pa} = 1.3$ Mt, not when it reaches B_{lim} .

Text corrected. The North Sea herring stock was in late 1970’s and mid 1990’s at low levels well below B_{lim} . It has, however, not been possible to demonstrate any measurable impact on the ecosystem of the low herring productivity and stock size in these periods and the stock recovered rapidly when proper management actions were taken. There is therefore no evidence that the herring fishery significantly affects the structure, productivity, function or diversity of the North Sea ecosystem.

It is difficult to reconcile this report’s statement that: “The harvest control rule agreed by EC and Norway is consistent with the objective of maintaining the stock above 0.8 million t. ICES advises that if the catches are in accordance with the agreed harvest control rule the risk of SSB falling below 0.8 million t. is less than 5% even if the current low recruitment continues.” When ICES assessment and management advice for 2008 reads: “ICES concludes that because of the sequence of six poor recruiting year classes, the risk of SSB falling below B_{lim} in the medium term is > 5% and therefore the plan is no longer in agreement with the precautionary approach.”

This text does not exist in the mentioned paragraph (4.5.3)

4.6.2 Management responsibilities and interactions

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4.6.3 Legislation

4.6.4 Consultative process

Each of these sections gives a clear and succinct overview of the management framework governing the North Sea herring fishery and the DPPO.

4.6.5 National Management – enforcement and control

A small paragraph should be added explaining how catches made to non-Danish ports are recorded. An explanation should also appear somewhere as to how the skippers dispose of catch excess to quota (or vessel carrying capacity).

Text added: All Danish vessels are required to log their landing, irrespective of landing country. Estimated landings, irrespective of landing country, should be reported to the Danish control authorities before landing. All landing logs are required to be submitted to the Danish control authorities.

Scoring Comment Table

Principle 1

- 1.1.1 Most people would interpret ‘high productivity’ as implying that the stock is above B_{pa} rather than just above B_{lim} . By this criterion, i.e. reference to B_{pa} , a score of 100 is too high. A score of no more than 80 would be more realistic.

Downscored to 90 and text added: ICES has for the North Sea herring advised that the harvest control rule which later was adopted by the EC and Norway is in accordance with the precautionary approach because it implies a low risk to the SSB being below B_{lim} , even if other reference points may be exceeded occasionally.

No explicit biomass target reference point has been defined for North Sea herring. ICES assessment, however, shows that stock in recent years has been at levels consistent with the management objective of maintaining the SSB above 0.8 million t. Fishing mortality has, however, been above the target fishing mortality defined in the EC – Norway management plan for the adult part of the stock

- 1.1.2 The second paragraph is ambiguous, if not misleading. It states, correctly, that B_{pa} is the ‘trigger’ reference level and then all further comments relate to a biomass of 0.8 Mt – which is the B_{lim} level. Current stock estimates (0.98 Mt) are below B_{pa} (1.3 Mt). If SSB is < B_{pa} it can hardly be said that “these stock levels are consistent with levels that provide for high productivity and low risk to the stock”. If B_{pa} is the ‘trigger level’ for the HCR to take remedial effect, the reference to 0.8 Mt seems inappropriate. Furthermore, to suggest that “these target fishing mortalities have been evaluated by ICES to be consistent with the precautionary approach” also seems misleading when “ICES has concluded that the fishing mortality rate resulting from the current [harvest control] rule --- is too high and the rule is not precautionary under the current recruitment regime. ICES recommends that the rule be revised”. ICES Advice Book 6: 6.4.18. A score of no more than 80 would seem more appropriate.

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Text replaced: The precautionary biomass limit reference point Blim (800 000 tonnes) was adopted by ICES in 1998 and reflects a stock size below which the recruitment may become impaired (R35 and R36). In 2007 ICES explored limit reference points for North Sea herring and concluded that there was no basis for changing Blim (R37). A low risk of SSB falling below Blim is therefore the basis of ICES precautionary advice.

The target and trigger points used in the management plan were recommended by ICES in 1998 as the precautionary reference points Bpa and Fpa (R35 and R36). This means that the precautionary reference points were taken from the already existing management plan. In the management plan, the target fishing mortalities (Fpa) were intended as targets and not as bounds. The trigger biomass point in the rule (originally 1.3 million t but revised in 2008 to 1.5 million t) which was adopted by ICES as the Bpa was derived largely as a compromise, allowing higher exploitation at higher biomass but reflecting an ambition to maintain the stock at a high level, by reducing the fishing mortality at an early stage of decline. ICES investigated the trigger and suggested that 1.3 million tonnes was appropriate and any reduction would increase the risk of the management rule resulting in SSBs below 800 000 tonnes.

In ICES' interpretation of the precautionary approach (R38), the objective is to ensure that the SSB is above the range where recruitment may be impaired or the stock dynamics is unknown and the reference points are defined in accordance with this objective. The central reference is therefore the Blim which reflects the stock size below which the recruitment may become impaired. The Bpa takes assessment uncertainty into account and is defined so that if SSB is estimated at Bpa, the probability that it in reality is below Blim shall be less than 5%. The Flim is the fishing mortality that corresponds to Blim in a deterministic equilibrium. The Fpa is related to Flim the same way as Bpa is related to Blim.

In ICES advisory practice, Fpa has been the basis for the TAC advice unless the SSB has been below Bpa, where a reduction in F has been advised. Furthermore, Fpa and Bpa are currently used to classify the state of stock and rate of exploitation relative to precautionary limits.

ICES, however, accepts that a harvest control rule is in accordance with the precautionary approach as long as it implies a low risk to being below Blim, even if other reference points may be exceeded occasionally. When a rule is regarded as precautionary, ICES gives its advice according to the rule. If the rule is followed, then ICES classifies exploitation as precautionary. Within this framework, other precautionary reference points generally will be redundant. However, the precautionary reference points may also be used to classify the stock with respect to precautionary limits, which may lead to a conflicting classification. This discrepancy is still unresolved.

For North Sea herring in the present situation, with a reduced recruitment, the SSB may be expected to be below 1.3 million tonnes most of the time. The management plan will reduce fishing mortality accordingly. ICES considers that the parameters of the management plan should take primacy over the management against precautionary reference points Fpa or Bpa.

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- 1.1.3 On the contrary, this is highly relevant. We have a stock that is in sustained decline, due to a succession of poor year classes. As a consequence, the SSB has fallen below B_{pa} – the harvest control rule ‘trigger level’ – and is moving towards a depleted state, even if we accept that an SSB that is $> B_{lim}$ is not actually depleted. Nevertheless, in the prevailing circumstances an evaluation of the provisions for stock rebuilding and assess whether or not they seem appropriate and potentially effective.
Text added: Evaluations conducted by ICES (R39) showed that the performance of the harvest rule used by EC and Norway until 2008 was no longer precautionary in the situation of reduced recruitment observed since 2002. A further reduction in recruitment, higher overfishing, or less reliable assessments would all lead to a risk of SSB falling below B_{lim} , which is incompatible with the precautionary approach. Therefore, ICES recommended the harvest rule be revised to ensure that the fishing mortality would be reduced. EC and Norway followed the recommendation and adopted a revised management plan including a harvest control rule advised by ICES. The management plan in place is likely to prevent the stock from falling below B_{lim} .
- 1.2.1 If the ICES view is that “the fishing mortality rate resulting from the current [harvest control] rule --- is too high and the rule is not precautionary” it is difficult to accept the idea that the current HCR is both ‘robust’ or ‘precautionary’. A score of 100 is not realistic.
Down scored to 90 and text added: The observed fishing mortality on the adults has been above the target fishing mortality defined in the management plan and the harvest strategy has not been able to reduce the fishing mortality to target levels.
- 1.2.2 “The harvest control rule has been evaluated by ICES” – true – “to be consistent with the precautionary approach” – not so; see comment in 1.1.2 and 1.2.1 above.
Reference to 1.1.2 included
- Principle 2**
- 2.1.1 Neither the Client Report nor this paragraph explain how the retained
 2.1.2 by-catch species are separated from the target catch to provide
 2.1.3 estimates of the by-catch tonnage. Are the figure quoted here no more than guesses or are they based on substantive data? This needs to be explained.
2.1.1 score changed to 95
2.1.2 no change
2.1.3 score changed to 95 and text added: There is no quantitative information available on the total catch of retained species in the total international herring fishery in the North Sea. However, the catches of retained species in the herring fishery are considered to be negligible.
- 2.2.1 If there is no discarding at sea, is there any recording of non-commercial by-catch at port of landing? Do such records support the skippers’ assertions that they take virtually no by-catch?
Paragraph added to report section 4.3.2.2 – see above
-

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2.5.2	<p>It is a moot point whether or not “the management plan agreed by EU-Norway ensures a sustainable management of the fishery if implemented and fully enforced”. ICES has expressed misgivings about its current status with respect to the precautionary approach and if there is a residual problem of unreported catches (as recognized by the ICES herring working group) it would seem an overstatement to suggest the HCR is ‘fully enforced’. A score no more than 90 but probably 85 would seem more appropriate</p> <p><i>Down scored to 80 and text added: The plan does, however, not address potential indirect impact the removal of herring may have on lower trophic levels of the ecosystem.</i></p>
Principle 3	
3.2.1	<p>There are undoubtedly clearly stated objectives within the agreed HCR but if they fall short of a precautionary approach, as would appear to be the current ICES view, it is difficult to see how a score of 80 can be justified. Under the current circumstances it would seem that the fishery fully meets the 60 criteria but not the 80; a score of 70 might be more appropriate.</p> <p><i>There seems to be disagreement between peer reviewers and therefore no changes have been made.</i></p>
3.2.2	<p>Currently, it would seem that the management process does not meet the criteria for a precautionary approach to management; score 75, perhaps?</p> <p><i>Text added: For North Sea herring in the present situation, with a reduced recruitment, the SSB may be expected to be below 1.3 million tonnes most of the time. The management plan will reduce fishing mortality accordingly. ICES considers that the parameters of the management plan should take primacy over the management against precautionary reference points Fpa or Bpa.</i></p>
3.2.3	<p>If this were an assessment of the international North Sea herring fishery, <i>in toto</i>, a score of 70 would undoubtedly be appropriate. However, as it is an assessment of the DPPO and “there have been no criminal convictions of DPPO vessels for the last three years”, it seem unduly draconian to score less than 80.</p> <p><i>There seems to be disagreement between peer reviewers and therefore score has not been changed. Text added: These indications come from the interviews with the DPPO members and the Fisheries directorate.</i></p>
Condition 1	Agreed.
Condition 2	<p>A condition under this assessment criterion seems a little misplaced although that is no reason to delete the ‘Action’; it could be included as a recommendation.</p> <p><i>See 3.2.3</i></p>
Condition - other	<p>Once the authors have considered the comments above and possibly revised some of their scores, it may be that there are other conditions requiring the DPPO to demonstrate that they are supporting a new, more effective harvest control rule.</p>

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The Danish Pelagic Producers Organisation North Sea Herring Fishery

Peer Review by Reviewer B

General

This is a well laid out, clear and easy to read report and in parts extremely interesting. It is particularly useful to have all the acronyms spelled out and in that context ACOM needs to be added because ICES changed from ACFM to the Advisory Committee on Management in 2008. In places the report lacks some more detail which would serve to better inform those less familiar with the turbulent history and current problems of the management of North Sea autumn spawning herring. That detail is also necessary to support the scoring comments and scores. The scoring comments are in the main sparse and not entirely supportive of the scores. This is particularly so in relation to Principle 1 where many of the current problems with North Sea herring manifest themselves. This is a very critical issue which I will deal with in more detail later.

I appreciate that this is not a scientific paper or report but I do feel that a few more references to data and statements in the text would be appropriate.

The DPPO's code of conduct is, am sure, a useful adjunct to the report and I for one would like to be aware of its contents. However, and without wishing to be rude, it is only a small percentage of the worlds' population who are able to read Danish and I am not one of them. Would it be possible to have this translated into English?

The professional expertise and experience of the assessment team is unquestionable. Collectively they have a broad base of scientific knowledge and experience ideally suited to this assessment. However I do feel that, with one exception, the team does lack the necessary experience of the MSC fisheries assessment and accreditation system. In particular they lack the collective expertise and knowledge of the new assessment tree and the excellent MSC, Fisheries Assessment Methodology, guidance which accompanies it. This is particularly evident in the scoring comments and the scores. Many of the comments are not clearly targeted at the performance indicators and scoring guideposts and as a consequence the scores are not justified in a structured way. Under the new MSC guidance the scoring system is in essence quite simple. For a score of 60 against any performance indicator it has to achieve all elements of the 60 guidepost. Similarly it cannot achieve an 80 score unless all elements of the 80 guidepost are reached. The score for each performance indicator must be justified in this way. My specific comments on the scores will detail where this standard has not been reached and the allocated scores not justified.

The MSC assessment system does not need the addition of the authors SWOT analysis. Everything covered in that analysis should be part of the scoring comments under each performance indicator, the system does not need another level of evaluation.

Report Sections

Section 4.1. The description of the fleet shows numbers of vessels. It would be useful, and present a better overall picture, if the size, fishing capacity and storage methods, ie. Freezer, RSW or fresh, could be added. *Added in enclosure 3.*
In Figure 1 the red circles have missed their target!! *Corrected.*

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Figure 2 should only cover the North Sea and eastern English Channel data. The other areas are not relevant to this assessment. *Text added: The catches of herring in 2008 by members of DPPO totaled 74.163 tons. Of this volume 34.183 tons were caught in the North Sea - areas 4A or 4B. There were no catches in 4C og 7D*

Section 4.2. This is a well written and interesting section of the report. There is a misleading comment about ‘some shallow areas of the North Sea being <15m deep’. This I am sure refers to particular offshore Banks, such as the Dogger and some of the Norfolk Banks, after all in coastal areas, the North Sea is much shallower than 15m!
Text removed.

Regarding the decline in abundance of copepods in the North Sea over the past ten years, you have quoted a reference which is now ten years old. This just needs to be re-recorded unless there is some more recent published evidence for example from the plankton recorder surveys.

Minor change to text including new ref.

Check the spelling of ‘Mink whale’ I think that you will find that it is ‘Minke’. One of those many cases where spell checker, for English words, doesn’t help!

Corrected.

Section 4.3.1.1 This is the section where you should introduce the concept of autumn and spring spawners, perhaps mentioning that the largest herring stock in the world, the Atlanto-Scandian, is a spring spawner. You should also mention here the need to be able to apportion landings from areas where autumn and spring spawners are mixed and the way that it is now done using the otolith microstructure method.

The North Sea autumn spawners found in the Skagerrak and Kattegat are mainly juvenile, in fact it is one of their most important nursery areas.

Following additions have been made: Based on the spawning season herring stocks are often classified as spring, summer, autumn or winter spawners.

Although the three main North Sea herring stocks includes summer, autumn and winter spawners they are often named autumn spawners to distinguish them from the spring spawning stocks.

In the North Sea adults from all stocks mix in summer and autumn in the north eastern North Sea. In Skagerrak and Kattegat juvenile North Sea autumn spawners mix with local spring spawners and spring spawners from the western Baltic.

The spring spawning stocks from the Skagerrak, Kattegat and western Baltic are assessed as a separate stock.

Section 4.3.1.2. In the first paragraph you need to expand this to explain how herring age is determined by microscopic examination of the growth rings on the otolith. You might even mention that it used to be done with the scales. You then need to explain that age is expressed as the number of winter rings coupled with the fact that autumn spawners do not lay down that winter ring in their first winter. It is important then to go on to explain that when you are looking at stock and recruitment relationships ‘0’ winter ring fish in one year came from the SSB in the previous year.

Text modified as: Herring age is normally based on growth rings in the otolith. The growth rings used for aging is first laid down after the herring has metamorphosed from larvae to juvenile. Larvae from all three main stock units metamorphose to the juvenile stage in early spring and when using the otolith for aging herring which metamorphose in the same year will be given the same age. The age of North Sea herring is therefore counted from the year when metamorphosing from larvae to

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juvenile occurs and expressed in number of winter rings observed in the otolith. 0 - group herring therefore means herring in the year they metamorphose. This also means that for autumn spawners with the age 0 were spawned in the previous year.

You should have a reference to fecundity here, this one should be OK:

Burd, A.C. and Howlett, G.J. (1974) Fecundity studies on North Sea herring. J. Cons. Int. Explor. Mer., 35 (2): 107-120. *Reference included.*

Section 4.3.2.1. I would like to see a bit more detail in this section. For an example the lack of any controls on fishing for North Sea herring until TAC's were introduced. Even after their introduction there was little control over the catches of juvenile herring, only the 10% limit on the mixed landings with sprat from the small meshed fisheries, mainly off the Danish coast. The introduction of a by-catch quota, in 1991, was an important turning point for North Sea herring management in that it introduced a definite control on juvenile mortality. Since its introduction the F on juveniles has remained below the target.

You should also mention somewhere in this section the occurrence of the *Ichthyophonus* disease in North Sea herring between 1991 and 1993 because it did affect estimates of natural mortality in the northern areas at the time and was a cause for great concern.

Tekst added: The development in fishing mortalities on juveniles and adults are shown in figure 5. The mortality on juveniles is mainly due to by-catches of herring in industrial fisheries for sprat and sandeel. The juvenile mortality was relative high from late 1960ies until 1996 and reflects that by-catches of herring in the industrial fisheries were almost unregulated. The management action taken in 1996 included the introduction of a by-catch monitoring system, enforcement of the rules on by-catch percentages and a sealing on the total by-catch. The measures introduced resulted in a substantial reduction in juvenile fishing mortality.

Quantitative information on discard and slipping is rare and the estimate provided by ICES is an underestimate. For 2007 the figure on discard and slipping included in ICES assessment was 93 t. covering only one fleet. The discards of herring in the Dutch fleet are estimated to around 6000 t. per year. The estimate can not be allocated to fishing area and is not included in ICES assessment.

Although data on discard is poor and the estimate used in ICES assessment is an underestimate, the indications are that large-scale discarding is not widespread in the directed North Sea herring fishery. A number of surveys on pelagic trawlers and pursers have been conducted indicating discard rates in the order of 5 % (R31, R32).

Section 4.3.2.2. Regarding discarding and slippage you mention that observers say that it seldom occurs. This is at odds with what the assessment WG think. They state that discards information is only available for one fleet (93t in 2007) but this cannot be raised to all fleets. They note that as discarding is likely to occur in all national fisheries, therefore 93t is an underestimate. Estimates of discarding in the Dutch fleet are 6000t per year but as this cannot be split between Division IVa and VIaN the data cannot be used in the assessment. A summary of the results of the Danish observer trips should form a part of this report so that the reader can see when, where and why discarding and slippage of catches has occurred and the quantities involved. I note that this requirement is not a part of any condition of certification

The 2008 WG report also notes that only 'some nations provide information on misreporting and unallocated catches.

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Text added: The pelagic trawls used are not designed to fish on the sea bed and any contact with the bottom involves risk of damage the trawl. The skippers therefore operates the trawl so that there is no contact with the sea bed. As a result, there is no or very little impact on sea bed habitats when fishing with herring trawls.

The information on discards and slipping of herring by DPPO vessels is very limited and insufficient to provide a reliable estimate. The fishing operation whether using trawl or purse-seines is conducted in the same areas and same manner as the other pelagic fleets fishing on North Sea herring. It is therefore likely that discards and slipping by DPPO vessels are comparable to discards and slipping observed in other fleets fishing North Sea herring (see section 4.3.2.1).

This means that in practise the entire catch is landed and sorting of by-catches (retained species) takes place at the processing factory. Retained species are reported to appropriate authority, in Denmark the Danish Fishery Directorate. According to the Danish Fisheries Directorate the total landings by DPPO vessels were 42,586 t in the North Sea herring fishery in 2007. Herring constituted 41,790 t or 98,1 %. The main retained species were blue whiting (1.6 %), Norway pout (0.14 %), sprat (0.06 %), mackerel (0.03 %), whiting (0.01 %), saithe (less than 0.01%) and other species (0.06 %).

Section 4.4.2. You state that biological sampling covers 80% of all commercial landings and by inference suggest that this is OK. The 2008 WG report states that ‘for the North Sea autumn spawners only 86% of the landings were covered by sampling compared with 79% in 2006’. The available data on length and weight composition of the landings decreased by 16% in 2007’. Of greater concern to the assessment Working Group was the spread of landings sampling across the different fleets or ‘metiers’. Of the one hundred metiers identified only thirty were sampled in 2007 and the EU target of one biological sample per 1,000t landed was only fully met in seventeen of those thirty metiers. However it was recognised that some of those metiers had total landings of under 1000t. The EU target of >25 fish for age determination from each sample was only met in sixteen of the metiers. The North Sea herring landings of France, Sweden, UK/Northern Ireland, Faroe Islands and Belgium were not sampled at all.

The WG recommended that all metiers with substantial catch should be sampled (including by-catches in the industrial fisheries), and that catches landed abroad should be sampled and information on these samples should be made available to the national laboratories. Quite clearly the fishery does not fully meet the 2002 EC Directive on sampling levels and this should be noted in the report. It is important to remember here that Principle 1 refers to the performance of the whole fishery on North Sea autumn spawners.

Text added: The commercial landings used by ICES in the assessment are obtained from national laboratories of nations exploiting herring in the North Sea. Some laboratories are “correcting” the officially reported landings for assumed misreporting by areas. For example are some landings of herring officially reported at been taken in the Skagerrak by the ICES herring assessment Working Group considered to be misreported by fishing area and in reality been caught in the North Sea. These assumed misreported landings are included in the assessment of the North Sea herring stock. There may therefore be significant differences in the officially reported landings and the landings data used in the assessment.

Information on discard is rare and the estimate used by ICES does not give a true picture of discards and slipping but is an underestimate. For 2007 the figure on discard

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and slipping included in ICES assessment was 93 t. covering only one fleet. The discards of herring in the Dutch fleet are estimated to around 6000 t. per year. The estimate can not be allocated to fishing area and is not included in ICES assessment.

Although data on discard is poor and the estimate used in ICES assessment is an underestimate, the indications are that large-scale discarding is not widespread in the directed North Sea herring fishery. A number of surveys on pelagic trawlers and pursers have been conducted indicating discard rates in the order of 5 % (R31, R32).

Section 4.4.4. This section is very short and is a straight copy of the first paragraph of the 2008 ACOM advice. You should have a lot more detail in here. It might be an appropriate place to introduce and discuss the interesting stock and recruitment relationship, which has a near extinction point. The stock and recruitment relationship should be shown somewhere in the report.

No major change in 4.4.4. discussion included in 4.4.5 – see below.

Section 4.4.5. The current harvest control rule has fishing mortalities for juveniles of F0.12 not F0.05. The figure of F0.05 is in options 1 and 2 of the proposed new harvest control rule and reference points. They are the result of the EC request in 2007 for advice on North Sea herring management plans. They do form the basis for the ACOM advice for 2009 but the plan has not been formally accepted yet.

This is the first time in this report that the current low recruitment has been mentioned and it appears as an almost casual six word comment. This is a very important issue which needs to be dealt with much earlier in the report. The current six year succession of poor recruitments is unprecedented for this stock. It is a major cause for concern amongst scientists, managers and the industry. ICES set up a study group to specifically look at the problem. The study group explored many possibilities, without finding a definitive answer other than that it is environmentally induced and not as a result of exploitation. This series of low recruitments is the major reason for the current sharp decline in SSB which will continue unless recruitment improves and F on the adults is reduced. A statement such as that, somewhere in the report, is needed, you are welcome to use it. The fact that the ICES advice on the management of the stock has not been followed in recent years should be mentioned here. The TAC has been regularly set above any of the series of options put forward ACOM in their annual advice.

Text modified to: The management advice by ICES is provided in accordance with the management plan agreed by the EC and Norway. The management plan for the North Sea herring fisheries was agreed in 1997 and last amended in 2008. The objective is to maintain the spawning stock biomass (SSB) at levels greater than 800 000 t (Blim). The plan includes a harvest control rule for setting the TACs. According to the harvest control rule the TACs shall be based on a target fishing mortality for adult herring of 0.25 and for juveniles of no more than 0.05. If the SSB falls below 1.5 million t, the fishing mortalities shall be reduced proportionally.

The precautionary biomass limit reference point Blim (800 000 tonnes) was adopted by ICES in 1998 and reflects a stock size below which the recruitment may become impaired (R35 and R36). In 2007 ICES explored limit reference points for North Sea herring and concluded that there was no basis for changing Blim (R37). A low risk of SSB falling below Blim is therefore the basis of ICES precautionary advice.

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The target and trigger points used in the management plan were recommended by ICES in 1998 as the precautionary reference points Bpa and Fpa (R35 and R36). This means that the precautionary reference points were taken from the already existing management plan. In the management plan, the target fishing mortalities (Fpa) were intended as targets and not as bounds. The trigger biomass point in the rule (originally 1.3 million t but revised in 2008 to 1.5 million t) which was adopted by ICES as the Bpa was derived largely as a compromise, allowing higher exploitation at higher biomass but reflecting an ambition to maintain the stock at a high level, by reducing the fishing mortality at an early stage of decline. ICES investigated the trigger and suggested that 1.3 million tonnes was appropriate and any reduction would increase the risk of the management rule resulting in SSBs below 800 000 tonnes.

In ICES' interpretation of the precautionary approach (R38), the objective is to ensure that the SSB is above the range where recruitment may be impaired or the stock dynamics is unknown and the reference points are defined in accordance with this objective. The central reference is therefore the Blim which reflects the stock size below which the recruitment may become impaired. The Bpa takes assessment uncertainty into account and is defined so that if SSB is estimated at Bpa, the probability that it in reality is below Blim shall be less than 5%. The Flim is the fishing mortality that corresponds to Blim in a deterministic equilibrium. The Fpa is related to Flim the same way as Bpa is related to Blim.

In ICES advisory practice, Fpa has been the basis for the TAC advice unless the SSB has been below Bpa, where a reduction in F has been advised. Furthermore, Fpa and Bpa are currently used to classify the state of stock and rate of exploitation relative to precautionary limits.

ICES will accept that a harvest control rule is in accordance with the precautionary approach as long as it implies a low risk to being below Blim, even if other reference points may be exceeded occasionally. When a rule is regarded as precautionary, ICES gives its advice according to the rule. If the rule is followed, then ICES classifies exploitation as precautionary. Within this framework, other precautionary reference points generally will be redundant. However, the precautionary reference points may also be used to classify the stock with respect to precautionary limits, which may lead to a conflicting classification. This discrepancy is still unresolved.

For North Sea herring in the present situation, with a reduced recruitment, the SSB may be expected to be below 1.3 million tonnes most of the time. The management plan will reduce fishing mortality accordingly. ICES considers that the parameters of the management plan should take primacy over the management against precautionary reference points Fpa or Bpa.

The revised harvest control rule adopted by EC and Norway in December 2008 is based on advice from ICES (R39). ICES in 2008 evaluated a number of harvest control rules including the one agreed by EC and Norway and concluded that the agreed harvest control rule would reduce the risk to below 5% of SSB falling below Blim while the current low recruitment continues. The team therefore considers that the management plan agreed by EC and Norway meet the precautionary approach to management.

Scoring Comments and Scoring.

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Principle 1

1.1.1.

Your comments are over generous in relation to whether the stock is at a level which maintains a high productivity with a low probability of recruitment overfishing. My evaluation of this performance indicator is as follows.

In the current regime of poor recruitment, and overfishing of the TAC, it is likely that the SSB will fall to close to Blim and only a complete moratorium on fishing for herring in the North Sea would bring the SSB back to its target reference point in the short term (ICES 2008 advice).

It is highly likely that the stock is currently above the Blim reference point where recruitment would be impaired. The stock fell below its target reference point, Bpa, in 2006 and is currently well below that point and unlikely to reach it in the short term and not in the current recruitment regime. It cannot be considered to be fluctuating around this point at present.

The Bpa of 1.3million tonnes may not be specified as a target reference point but it is in effect a proxy for that and serves the same purpose. It was established as a political compromise but is none the less supported statistically.

This performance indicator meets all of the 60 guidepost but only half of the 80 guidepost. **Score 70**

CONDITION

Down scored to 90 and text added: ICES has for the North Sea herring advised that the harvest control rule which later was adopted by the EC and Norway is in accordance with the precautionary approach because it implies a low risk to the SSB being below Blim, even if other reference points may be exceeded occasionally.

No explicit biomass target reference point has been defined for North Sea herring. ICES assessment, however, shows that stock in recent years has been at levels consistent with the management objective of maintaining the SSB above 0.8 million t.

Fishing mortality has, however, been above the target fishing mortality defined in the EC – Norway management plan for the adult part of the stock

1.1.2

The target, precautionary reference point for biomass of 1.3mt is not so strongly established scientifically but has been subject to careful scientific scrutiny by ICES and is considered to be at an appropriate level to maintain a high yield. The EU/Norway agreement is a complex of ten rules which establish basic precautionary fishing mortality and biomass limit and target reference points with ranges for fishing mortality for both adults and juveniles separately. The agreement specifies certain scenarios where the established reference points can be modified in the light of circumstances and scientific advice. This is a complex and flexible management plan which until 2008 formed the basis of the scientific advice and management strategy for the stock. The plan was due for review in December 2007 and that review was carried out by ICES as a result of a request from the EC. As a result of that review ICES has recommended changes to the fishing mortality reference points whilst maintaining the current biomass limit and target (Bpa) reference points.

The proposed changes to the management plan have formed the basis of the scientific advice on the management of the stock in 2009.

Meets all of the 80 GP and some of the 100. **Score 90 is OK**

1.1.3

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You have not used this performance indicator but in my opinion it should be included in the assessment because, quite clearly the stock needs to be rebuilt to 1.3mt, which is an implicit and important part of the harvest control rule.

The stock is quite clearly below the precautionary approach target reference point for SSB of 1.3 million tonnes and has been below that level since 2007. ICES recognise that the current situation of decreasing biomass is not fishery induced but is the result of an unprecedented series of low annual recruitments to the stock. The reduced recruitment over the past six years remains unexplained but is considered to be environmentally induced. In that context the only harvest strategy which would re-build the stock to above the biomass precautionary target level in the short term would be a complete ban on herring fishing in the North Sea. However, although they state this as an option in their advice for the fishery in 2009 they also provide options for a fishery which would allow a harvest in the current low recruitment regime which would have a <5% chance of the SSB falling below the limit reference point of 800,000t below which recruitment would be impaired. The national monitoring schemes to collect data on the landings, biological sampling of the landings and the TAC uptake monitoring and enforcement are an integral part of the process of annual stock assessment by scientists. The annual assessment process is ultimately what will determine the success of the current re-building strategy.

In the light of my assessment of this performance indicator above my evaluation would be:

All the 60 guidepost criteria are met and half of the 80 guidepost are met therefore a **Score of 70.**

CONDITION

Not scored. Text added: Evaluations conducted by ICES (R39) showed that the performance of the harvest rule used by EC and Norway until 2008 was no longer precautionary in the situation of reduced recruitment observed since 2002. A further reduction in recruitment, higher overfishing, or less reliable assessments would all lead to a risk of SSB falling below Blim, which is incompatible with the precautionary approach. Therefore, ICES recommended the harvest rule be revised to ensure that the fishing mortality would be reduced. EC and Norway followed the recommendation and adopted a revised management plan including a harvest control rule advised by ICES. The management plan in place is likely to prevent the stock from falling below Blim

1.2.1

Your comments in support of a robust harvest strategy are sparse and paint a very optimistic picture of the current situation which is not supported by the evidence at present. To suggest that the situation is perfect and deserving of a score of 100 is generous in the extreme. My own evaluation would be for a score of 80 and I will explain that in detail below.

A formal management plan is in place in the form of the EU/Norway agreement although there are proposals in place to modify it in the light of the current environmentally induced sequence of six years of reduced recruitment. This plan forms the basis of the harvest strategy and is used by ICES in the formulation of their advice on the management of North Sea herring. The strategy is based on a complex but flexible set of rules which define a biomass limit point and a target biomass as the range for the stock. Fishing mortality reference points are in place to control the effort on the stock and maintain SSB within the specified limits.

The suggested amendments to the plan have been proposed as a result of a request from the EC to ICES for a review of the current plan and are therefore likely to be formally

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adopted in the near future. The management plan which forms the framework for the harvest strategy was formally adopted in 1997 and until recently was working very effectively to achieve the management objective of retaining SSB above a precautionary reference point of 1.3 million tonnes. ICES formulated the original management plan in 1994 which became the basis of the 1997 EU/Norway agreement. The specified fishing mortalities in the management plan were decided on the basis of extensive simulations to provide levels of both adult and juvenile fishing mortality which had a low risk of the SSB falling below the biomass limit level. As a result the SSB gradually increased from below the biomass limit of 800,000t to the target level of 1.3 million tonnes by 2001. The SSB stayed above the target reference point until 2006 when the effects of the continuing sequence of poor recruitments fed into the SSB.

The annual assessment of SSB becomes the driving force for the advice and the advice is then given in the form of fishing mortality rates on adults and juveniles in keeping with all the elements of the harvest strategy. The precautionary approach biomass level, target biomass or trigger point, Bpa, is the point at which fishing mortality has to be reduced in order to minimise the risk of SSB falling below the limit level. Since 2007 it has fallen below that point because of the succession of poor recruitments to the stock. The proposed amendments to the plan are based on the conclusions of an ICES workshop on management plans. They considered that the current trigger biomass may no longer be appropriate in the current regime of low productivity and that a harvest strategy based on a reduced fishing mortality to F0.2 would improve the stability of the annual TAC and the prospects of a high long term yield. They also suggested that a higher trigger biomass level might be appropriate. The suggested amendments to the plan, in the most recent ICES advice, are firmly based on changes to fishing mortality and do include the option to completely close the fishery on North Sea herring which would return SSB to above the target biomass of 1.3mt by 2010. This option has been tabled in the annual advice from ICES for the past two years but it has been recognised that there is still the potential for some annual harvest and therefore the advice has been based on reducing fishing mortality on adults whilst retaining the fishing mortality on juveniles at a low level.

Historical evidence of a harvest strategy working for North Sea herring is the complete moratorium on North Sea herring fishing which occurred in 1977 after the SSB had been below 100,000t for three years. Fishing was resumed in 1982 when the SSB had reached over 200,000t although it did not reach 1 million tonnes until 1988. The proposed amendments to the current harvest strategy contain an option for a complete ban on fishing.

In the light of the above comments all the 60 and all the 80 guidepost criteria are met but none of the 100. **Therefore a Score of 80 is appropriate.**

Down scored to 90 and text amended to: The observed fishing mortality on the adults has been above the target fishing mortality defined in the management plan and the harvest strategy has not been able to reduce the fishing mortality to target levels.

1.2.2

You should begin these comments with a statement that ‘the overarching mechanism in place to implement the implicit harvest strategy described in 1.2.1 above is the annual TAC set for the whole of the North Sea autumn spawning stock’. The rest of these scoring comments are OK and support your **score of 75**, with the relevant condition, in that all the 60 guidepost criteria and two thirds of the 80 guidepost criteria are met.

Reference to 1.1.2 included

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1.2.3

Once again this is an over-optimistic view of the actual situation regarding the reliability of the information available to support the harvest strategy. The guidance notes encourage you to look at factors such as the stock structure, productivity, fleet composition and environmental data most of which would score highly. However I suggest that the most important factor here relates to ‘fishery removals’. Whilst the TAC continues to be overshot the landings data cannot be considered as entirely satisfactory. Similarly enforcement of the quota also remains unsatisfactory with a further increase in the excess catch in 2007. Area misreporting of landings continues to be a problem in spite of technical and management measures implemented to improve enforcement. Biological sampling of the landings does not reach the requirements set by the EC sampling regime (see my comments on section 4.4.2 above)

In my evaluation all the 60 guidepost are met but only two thirds of the 80 guidepost criteria and therefore a **Score of 75** only is justified and **not your score of 100!**

There seems to be disagreement amongst the peer reviewers on this point. However the score has been amended to 90 and text added: However, the information on fishery removals is incomplete. Area misreporting of landings continues to be a problem and the information on discards and slipping is poor. ICES has routinely corrected landings data for known misreporting but management measures to address the misreporting has been insufficient

1.2.4

Your scoring comments in relation to monitoring of the stock are OK and fully support the **score of 90** in that all the 80 guidepost criteria are met and half of the 100 guidepost criteria.

You will note that on my evaluation of the fishery against Principle 1 it does not pass, but with a score of under 80 for this Principle it goes into a Pre-Condition status.

Principle 2

2.1.1.

The comments here are rather sparse in relation to the score. The 100 guidepost mentions target reference points and this needs to be covered if only to say that for those stocks such as mackerel, whiting, saithe etc assessed by ICES, reference points are established.

Rescored to 95 and text added: There is no quantitative information available on the total catch of retained species in the total international herring fishery in the North Sea. However, the catches of retained species in the herring fishery are considered to be negligible. Compared to the total catches of the retained species the catches in the herring fishery are negligible.

Reference points are established for the blue whiting, Norway pout, mackerel, whiting and saithe stocks. No reference point is established for the north sea sprat stock.

2.1.2 and 2.1.3

Again I do not disagree with the score but the comments are rather ‘light’ in support of the 100.

2.1.3 Rescored to 95 and text added: There is no quantitative information available on the total catch of retained species in the total international herring fishery in the North

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Sea. However, the catches of retained species in the herring fishery are considered to be negligible.

2.2.1.

Score of 90 OK

2.2.2.

The score of 90 may be right but the comments do not support it. The comment that 'there is no specific strategy in place' puts it into the 80 guidepost and no further.

Text amended to: By-catches are believed to be very limited. There is no explicit strategy in place to minimise by-catches. However, any by-catches will have an economical negative impact on the performance of the vessel and the fishermen have a strong incentive for avoiding by-catches.

2.2.3

This does not actually meet all of the 80 guidepost criteria, no more than half of them at best. See my comments about slippage regarding section 4.3.2.2 of the report. Score here should be **reduced to 70** with a condition in place for recording discarding and slippage.

There is a disagreement on this score between the peer reviewers and no change to the score has been made. Amendments made: Paragraph added to report section 4.3.2.2 – see above.

2.3.1, 2.3.2, 2.3.3

All scores OK

2.4.1 and 2.4.2

The comments here are identical. You need to mention here that there is no requirement for a strategy. Scores are OK.

Added text: Both these factors make a strategy redundant.

2.4.3

OK

2.5.1

The score of 100 is too high and not justified by the comments as the evidence is very limited.

Rescored to 90

2.5.2

The EU/Norway plan considers only what the top predator, man, wants and how to get it. It does not consider the position of herring as a lower trophic level species and its importance in the ecosystem. The score of 100 is not justified and it should be **reduced to 80**.

Rescored to 80 and text added: The plan does, however, not address potential indirect impact the removal of herring may have on lower trophic levels of the ecosystem.

2.5.3

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What are those impacts? You should spell them out clearly in the comments in order to justify the score of 100.

Rescored to 90 and text amended to: ICES provides regular descriptions of the North Sea ecosystem and interactions between fisheries and the ecosystem. The direct impacts of the herring fishery on the herring, retained species and by-catches are identified. The indirect impacts of removal of herring on the upper trophic levels are understood. The position of herring in the ecosystem is not fully understood. The low recruitment observed in recent years seems to be related to environmental changes and not to low spawning stock size. Information is insufficient to fully understand the interaction between environmental changes, the dynamics of the herring stock and the fishery.

3.1.1, 3.1.2, 3.1.3.

Score of 100 OK

3.1.4

I do not accept that the MSC guidance, on what positive and negative incentives are, is unclear. The methodology document is explicit and even gives examples. In the context of the scoring this needs to be reviewed because quite clearly it does not reach the whole of the 100 guidepost criteria which the MSC guidance explains as:

At SG100, the 'theoretically perfect' fishery, the expectation is that the management system actively and explicitly considers and reviews management policies and procedures with particular attention paid to the issue of incentives to make sure they are not contributing to unsustainable fishing practices.

There is a disagreement between peer reviewers on this score and no changes have been made.

3.2.1

Score OK

3.2.2

It should be noted that the ICES advice on this stock is consistently overridden and TAC's are set much higher than those recommended (see my comments under section 4.4.5). In that context the guidepost 80 criteria are hardly fully achieved and a **score of 75** is more appropriate.

Text added: For North Sea herring in the present situation, with a reduced recruitment, the SSB may be expected to be below 1.3 million tonnes most of the time. The management plan will reduce fishing mortality accordingly. ICES considers that the parameters of the management plan should take primacy over the management against precautionary reference points Fpa or Bpa.

3.2.3 & 3.2.4

Good comments and both scores justified.

3.2.5.

This is a classic case of where the comments and the reality of the situation fully meet the 80 guidepost criteria but do not meet any aspects of the 100 guidepost. Therefore a straight **score of just 80 only** is justified.

Due to inconsistency in peer reviewer comments no changes in scores have been made. Text amendments: At the national level a recent EU evaluation has found the MCS



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system well functioning including the internal review mechanism and the system in place to adapt as necessary (e.g. identify “hot spots” and take appropriate action.

Final comments.

I appreciate that at the moment there are two other fisheries on North Sea autumn spawning herring which have gained the MSC certification. In that context it should be noted, first of all, that the current process is evaluating the fishery with the benefit of an additional year of data on the status of the stock and new ACOM advice. Furthermore the current fishery is being evaluated under a revised assessment tree and very specific methodology guidance from the MSC.

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ENCLOSURE 5: CLIENT ACTION PLAN



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Client Action Plan

The members of the Danish Pelagic Producers Organization (DPPO) have agreed on the following action plan in response to the condition in laid down in chapter 7.6 of this report:

By the time of the first surveillance audit DPPO will provide the certification body with documented evidence that the total landings from the members have not exceeded the quotas allocated to the members (including additional or reduced allocations resulting from quota swaps).

Further, DPPO will provide documentation that the grounds for suspicion of misreporting no longer exist. And a list of all fines – if any – given to DPPO vessels related to NSH fishery will be maintained.

Hirtshals, May 17, 2009

A handwritten signature in blue ink, which appears to read 'Christian Olesen'.

Christian Olesen
CEO



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ENCLOSURE 6: DEFAULT SCORING COMMENT TABLE FOR DPPO'S NORTH SEA HERRING FISHERY

INDICATORS AND GUIDEPOSTS	Comments	Ref.	Weight	Score
1 Principle	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.			
1.1 Component	Outcome		0.5	
1.1.1 PI: Stock status (C1)	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing.		0,5	
60	It is <u>likely</u> that the stock is above the point where recruitment would be impaired.	According to ICES advice, the harvest control rule for the North Sea herring, adopted by the EC and Norway, is in accordance with the precautionary approach and implies a low risk of the SSB being below Blim(0.8 million t), the point where recruitment would be impaired. In its latest assessment of the North Sea herring stock (autumn 2007), ICES estimated the SSB of being around 0.98 million t. Simulations presented in the ICES report indicates that there is less than 5% probability that the SSB is below Blim of 0.8 million t in 2008. Therefore there is a high degree of certainty that the stock of NS herring is above the point where recruitment would be impaired There is no explicit biomass target reference point defined for North Sea herring. The objective of the long term management plan agreed by EU and Norway is to maintain		90
80	It is <u>highly likely</u> that the stock is above the point where recruitment would be impaired. The stock is at or fluctuating around its target reference point.			
100	There is a <u>high degree of certainty</u> that the stock is above the point where recruitment would be impaired. There is a <u>high degree of certainty</u> that the stock has been fluctuating around its target reference point, or has been above its target reference point, <u>over recent years</u> .			
		- ICES Advice 2008, Book 6, Paragraph 6.4.18 (R9); - Agreed record of conclusions of fisheries consultations between the EC and Norway for 2008 (R.		



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		<p>a minimum level of Spawning Stock Biomass (SSB) greater than 0.8 million t (Blim). ICES considers that the harvest control rule adopted by the two parties is in accordance with the precautionary approach because it implies a low risk (< 5%) of the stock being below Blim. The assessment team therefore defines a risk of less than 5 % of the SSB being below Blim as the “implicit” stock target reference point (as allowed by section 6.2.19 of the FAM). The harvest control rule adopted by EU and Norway implies a target fishing mortality for the adult part of the stock of 0.25 when the SSB is above 1.5 million t and between 0.25 and 0.1 when the SSB is between 1.5 and 0.8 million t.</p> <p>The target fishing mortality on juveniles is defined as no more than 0.05.</p> <p>Since 2001 the SSB has fluctuated between 0.98 and 1.76 million t and has been well above the implicit stock target reference point.</p> <p>The fishing mortalities on juveniles and on adults have, however, in recent years been above the targets. The assessment team therefore deems a score of 90 as appropriate</p>			
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1 Principle		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.		
1.1 Component		Outcome		0,5
1.1.2 PI: Reference points		Limit and target reference points are appropriate for the stock.		0,5
60	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated	- ICES Advice 2008, Book 6, Paragraph 6.4.18; - Agreed record of conclusions of fisheries consultations between the EC and Norway for 2008; - Agreed record of conclusions of fisheries consultations between the EC and Norway for 2009 dt. 10.12.2008.	90
80	Reference points are appropriate for the stock and can be estimated. The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity. 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. For low trophic level species, the target reference point takes into account the ecological role of the stock.	The precautionary biomass limit reference point Blim is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant precautionary issues. The limit reference points for North Sea herring were latest explored by ICES in 2007 and ICES concluded that there was no basis for changing Blim (R37). The implicit stock target reference point defined by the assessment team (PI 1.1.2) implies a low risk of the stock falling below the point where recruitment would be impaired. The target fishing mortality for adults allows higher exploitation at higher biomass but reflecting an ambition to maintain the stock at a high level, by reducing the fishing mortality at an early stage of stock decline. The target fishing mortality for juveniles is very low and well below the natural mortality. Simulation conducted by ICES shows that the target fishing mortalities are consistent with high yield and low risk of the stock falling below Blim. The assessment team therefore considers that the target fishing mortalities are good proxies for Fmsy.		
100	Reference points are appropriate for the stock and can be estimated. The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant <u>precautionary issues</u> . 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, <u>or a higher level</u> , and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.	The North Sea herring is to be considered as a low trophic		



INDICATORS AND GUIDEPOSTS	Comments	Ref.	Weight	Score
		<p>level species. The target reference points do not explicit take account for the ecological role of the herring stock. However, fishing at the target fishing mortality levels will ensure that the stock with high probability remains above the point where recruitment may be impaired. Fishing at the target levels will therefore not have a negative affect on the productivity of the stock and the target reference points do implicit take into account the ecological role of the stock.</p>		



MSC FISHERY ASSESSMENT REPORT

1 Principle		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.		
1.1 Component		Outcome	0	
1.1.3 PI: Stock rebuilding (C2)		Where the stock is depleted, there is evidence of stock rebuilding.	0	
60	Where stocks are depleted rebuilding strategies which have a <u>reasonable expectation</u> of success are in place. Monitoring is in place to determine whether they are effective in rebuilding the stock within a <u>specified</u> timeframe.	Ref. 1.1.1 – no evidence that the stock is depleted		0
80	Where stocks are depleted rebuilding strategies are in place. There is <u>evidence</u> that they are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a <u>specified</u> timeframe.			
100	Where stocks are depleted, strategies are <u>demonstrated</u> to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the <u>shortest practicable</u> timeframe.			



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
1 Principle		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.			
1.2 Component		Management		0,5	
1.2.1 PI: Harvest strategy		There is a robust and precautionary harvest strategy in place		0,25	
60	The harvest strategy is <u>expected</u> to achieve stock management objectives reflected in the target and limit reference points. The harvest strategy is <u>likely</u> to work based on prior experience or plausible argument. <u>Monitoring</u> is in place that is expected to determine whether the harvest strategy is working.	The elements required for a robust and precautionary harvest strategy are in place. The fishing possibilities are agreed between EC and Norway annually and on the basis of a responsive harvest control rule. The agreed quotas are implemented in national legislations and comprehensive monitoring and control systems are in place. The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the implicit reference points.	-Ices Advice 2008; -Agreed records of conclusions of consultations between the European Community and Norway		90
80	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy <u>work together</u> towards achieving management objectives reflected in the target and limit reference points. The harvest strategy may not have been fully tested but monitoring is in place and <u>evidence</u> exists that it is achieving its objectives.	The harvest strategy is under continuous evaluation and a number of improvements, especially in surveillance and control, have been introduced in recent years. The harvest strategy has achieved the objectives of maintaining the stock above Blim, however, the fishing mortality on the adults has been above the exploitation rates defined in the management plan in recent years. The assessment team therefore deems a score of 90 as appropriate.			
100	The harvest strategy is responsive to the state of the stock and is <u>designed</u> to achieve stock management objectives reflected in the target and limit reference points. The performance of the harvest strategy has been <u>fully evaluated</u> and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels. The harvest strategy is <u>periodically reviewed and improved</u> as necessary.	The harvest strategy is periodically reviewed and improvements are implemented as necessary– the last review being done in December 2008.			



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
1 Principle		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.			
1.2 Component		Management		0,5	
1.2.2 PI: Harvest control rules and tools		There are well defined and effective harvest control rules in place		0,25	
60	<p><u>Generally understood</u> harvest control 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.</p> <p>There is <u>some evidence</u> that tools used to implement harvest control rules are <u>appropriate and effective in controlling exploitation</u>.</p>	<p>The management plan agreed by EC and Norway includes a well defined harvest control rule that is consistent with the harvest strategy and operates with reduced exploitation rates as the stock approach the limit reference point of B_{lim}.</p> <p>The harvest control rule has been evaluated by ICES to be consistent with the precautionary approach. (See 1.1.2). The control rule is designed to take into account implementation errors and main uncertainties and is responsive to the state of the stock.</p>	<p>- ICES Workshop on Herring Management Plans (WKHMP) February 2008 (ICES CM 2008/ACOM:27)</p> <p>- Harvest Control rule;</p> <p>- ICES ADVICE dt. 2008</p>		75
80	<p><u>Well defined</u> 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.</p> <p>The <u>selection</u> of the harvest control rules takes into account the <u>main</u> uncertainties.</p> <p><u>Available evidence indicates</u> that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p>	<p>There is evidence that indicates that the tools in use are not entirely appropriate and effective in achieving the exploitation levels required. The latest assessment from ICES suggests that in recent years there was a probability of TAC overshoot for the human consumption fishery, which has resulted in a fishing mortality for adult herring around 20 % and above of the exploitation rates established by harvest control rule. It is in the view of assessment team, that action is required to ensure no overshooting of the human consumption TAC.</p>			
100	<p><u>Well defined</u> 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.</p> <p>The <u>design</u> of the harvest control rules take into account a <u>wide</u> range of uncertainties.</p> <p><u>Evidence clearly shows</u> that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.</p>	SEE CONDITION 1.			



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
1 Principle		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.			
1.2 Component		Management		0,5	
1.2.3 PI: Information and monitoring		Relevant information is collected to support the harvest strategy		0,25	
60	<p><u>Some</u> relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.</p> <p>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.</p>	A comprehensive range of information including some that is not directly relevant to the harvest strategy is available (for example detailed spatial information on the distribution of the fisheries and the stock).	-ICES HAWG Report 2008;		90
80	<p><u>Sufficient</u> relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.</p> <p>Stock abundance and fishery removals are <u>regularly monitored at a level of accuracy and coverage consistent with the harvest control rule</u>, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.</p>	The information required by the harvest rule is monitored on an annual basis and with the required degree of certainty. There is a good understanding of uncertainties in the data. However, the information on fishery removals is incomplete. Area misreporting of landings continues to be a problem and the information on discards and slipping is poor. ICES have routinely corrected landings data for known misreporting but management measures to address the misreporting has been insufficient.	-ICES Workshop on Herring Management Plans (WKHMP) February 2008 (ICES CM 2008/ACOM:27)		
100	<p>A <u>comprehensive range</u> 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 relevant to the current harvest strategy, is available.</p> <p><u>All information</u> required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent <u>uncertainties</u> in the information [data] and the robustness of assessment and management to this uncertainty.</p>	The assessment team therefore deems a score of 90 as appropriate.			



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
1 Principle		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.			
1.2 Component		Management		0,5	
1.2.4 PI: Assessment of stock status		There is an adequate assessment of the stock status		0,25	
60	The assessment estimates stock status relative to reference points. The major sources of uncertainty are identified.	The state of the North Sea herring stock is assessed by ICES on an annual basis. A bench-mark assessment was conducted in 2006.	- Patterson, 1998 - Needle 2000		90
80	The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points. The assessment takes uncertainty into account. The stock assessment is subject to peer review.	A robust stock assessment model (Integrated Catch-at-age Analysis) is used. The assessment is considered appropriate and takes account for the major features relevant to the dynamics of the stock and the nature of the fisheries.			
100	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery. The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way. The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. The assessment has been internally and externally peer reviewed.	Uncertainties relating to data are considered when data quality is evaluated but the outputs from model in terms of stock size and fishing mortalities are deterministic in the sense that uncertainties in input parameters are not quantified and applied to provide a stochastic assessment. The assessment is peer reviewed internally by ICES. No systematic external peer review system is in place. However, the advice on North Sea herring is regularly reviewed by STECF, and discussed with stakeholders (Pelagic RAC) and at international Conferences.			



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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.1 Component		Retained species		0,2	
2.1.1 PI: Outcome Status		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.		0,333	
60	<p>Main retained species are <u>likely</u> to be within biologically based limits or if outside the limits there are <u>measures</u> in place that are <u>expected</u> to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.</p> <p>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.</p>	<p>There is no quantitative information available on the total catch of retained species in the total international herring fishery in the North Sea. However, the catches of retained species in the herring fishery are considered to be negligible and non of the retained species are classified as main retained species. The total landings by DPPO vessels were 42,586 t in the North Sea herring fishery in 2007. Herring constituted 41,790 t or 98,1 %. The retained species were blue whiting (1.6 %), Norway pout (0.14 %), sprat (0.06 %), mackerel (0.03 %), whiting (0.01 %), saithe (less than 0.01%), other species (0.06 %). Compared to the total catches of the retained species the catches in the herring fishery are negligible. Reference points are established for the blue whiting, Norway pout, mackerel, whiting and saithe stocks. No reference point is established for the North Sea sprat stock. According to the assessments presented by ICES the stocks of blue whiting, mackerel, Norway pout and saithe are expected to be within biological limits in 2009. The sprat stock has fluctuated without trend for the past 10 years. The whiting stock is at record low level and outside biological limits. The catches taken by DPPO vessels are, however, negligible and do not hinder recovery.</p>	- Statistics from the Danish Directorate of Fisheries.		95
80	<p>Main retained species are <u>highly likely</u> to be within biologically based limits, or if outside the limits there is a <u>partial strategy of demonstrably effective</u> management measures in place such that the fishery does not hinder recovery and rebuilding.</p>				
100	<p>There is a <u>high degree of certainty</u> that retained species are within biologically based limits.</p> <p>Target reference points are defined and retained species are at or fluctuating around their target reference points.</p>				

MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.1 Component		Retained species		0,2	
2.1.2 PI: Management strategy				0,333	
60	There are <u>measures</u> 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. The measures are considered <u>likely</u> to work, based on plausible argument (eg, general experience, theory or comparison with similar fisheries/species).	DPPO has a strategy for managing retained species which is reflected in the recordings of catches of retained species which are negligible It is prohibited to sort the catches on board the fishing vessels and any catch of retained species has a negative impact on the economic value of the landings. The fishermen therefore have a strong incentive for not catching retained species.	- Protocol N1, Stakeholder-meeting (DPPO), 13 november 2008, Hirtshals, Denmark;		100
80	There is a <u>partial strategy</u> in place, if necessary that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding. There is some <u>objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or species involved. There is <u>some evidence</u> that the partial strategy is being <u>implemented successfully</u> .	The reported figures of total landings by DPPO vessels were 42,586 t in the North Sea herring fishery in 2007. Herring constituted 41,790 t or 98,1 %. The main retained species were blue whiting (1.6 %), Norway pout (0.14 %), sprat (0.06 %), mackerel (0.03 %), whiting (0.01 %), saithe (less than 0.01%), other species (0.06 %). DPPO's strategy is based on these reportings and gives clear evidence that the strategy is being implemented successfully and achieving its objective.	- Regulation on by-catch limitations: Council Regulation (EC)No 850\98; - DPPO Codex, Article 3.		
100	There is a <u>strategy</u> in place for managing retained species. The strategy is mainly based on information directly about the fishery and/or species involved, and <u>testing supports high confidence</u> that the strategy will work. There is <u>clear evidence</u> that the strategy is being <u>implemented successfully</u> , and intended changes are occurring. There is some evidence that the strategy is <u>achieving its overall objective</u> .				



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.1 Component		Retained species		0,2	
2.1.3 PI: Information and monitoring		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.		0,333	
60	<u>Qualitative information</u> is available on the amount of main retained species taken by the fishery. Information is <u>adequate</u> to <u>qualitatively</u> assess outcome status with respect to biologically based limits. Information is adequate to support <u>measures</u> to manage <u>main</u> retained species.	Accurate and verifiable information on the nature and extent of retained species in the DPPO fishery is available from the Danish Directorate of Fisheries. The information is nevertheless sufficient to estimate outcome with a high degree of certainty.	- www.fd.dk - Council Regulation (EC)No 850\98;		95
80	<u>Qualitative information</u> and some quantitative information are available on the amount of main retained species taken by the fishery. Information is <u>sufficient</u> to estimate outcome status with respect to biologically based limits. Information is adequate to support a <u>partial strategy</u> to manage <u>main</u> retained species. Sufficient data continue to be collected to detect any increase in risk level.	The information shows that catches of retained species are very small and the Assessment team concluded that information available is sufficient to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.	- DPPO Codex		
100	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations. Information is <u>sufficient</u> to <u>quantitatively</u> estimate outcome status with a <u>high degree of certainty</u> . Information is adequate to support a <u>comprehensive strategy</u> to manage retained species, and evaluate with a <u>high degree of certainty</u> whether the strategy is achieving its objective. Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.	There is no quantitative information available on the total catch of retained species in the total international herring fishery in the North Sea. However, the catches of retained species in the herring fishery are considered to be negligible.			



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.2 Component		By-catch		0,2	
2.2.1 PI: Outcome Status		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.		0,333	
60	Main bycatch species are <u>likely</u> to be within biologically based limits, or if outside such limits there are mitigation <u>measures</u> in place that are <u>expected</u> to ensure that the fishery does not hinder recovery and rebuilding. If the status is poorly known there are measures or practices in place that are expected result in the fishery not causing the bycatch species to be biologically based limits or hindering recovery.	There is a high degree of certainty that bycatch species are within biologically based limits as according to ICES there is no evidence that by-catch is an issue within North Sea Herring Fishery. However there is no official registration of by-catch which is reflected in our scoring. Sorting of catch on board the vessels is prohibited. When DPPO discard, they discard all or nothing. Most important specie being discarded is herring.	- ICES advice; - Interview with Ministry, Directorate and Client group (ref. protocols)		100
80	Main bycatch species are <u>highly likely</u> to be within biologically based limits or if outside such limits there is a <u>partial strategy</u> of <u>demonstrably effective</u> mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	Interviews with DPPO members indicate that slipping and discarding happen very rarely and that they very seldom if ever lose their gears.			
100	There is a <u>high degree of certainty</u> that bycatch species are within biologically based limits.				

MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.2 Component		By-catch		0,2	
2.2.2 PI: Management strategy		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.		0,333	
60	<p>There are <u>measures</u> 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.</p> <p>The measures are considered <u>likely</u> to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries).</p>	<p>By-catches are believed to be very limited. Any by-catches will have an economical negative impact on the performance of the vessel and the fishermen have a strong incentive for avoiding by-catches. DPPO's strategy for managing and minimising bycatch is based on this negative economic impact and reported sales figures of bycatch to the Directorate supports high confidence that this strategy is working.</p> <p>There is, however, no explicit strategy in place to minimise by-catches.</p>	- Interview with Ministry, Directorate and Client group (ref. protocols)		90
80	<p>There is a <u>partial strategy</u> in place, if necessary, for managing bycatch that is 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.</p> <p>There is <u>some objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or the species involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being implemented successfully.</p>				
100	<p>There is a <u>strategy</u> in place for managing and minimising bycatch.</p> <p>The strategy is mainly based on information directly about the fishery and/or species involved, and testing supports <u>high confidence</u> that the strategy will work.</p> <p>There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its objective.</p>				

MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.2 Component		By-catch		0,2	
2.2.3 PI: Information and monitoring		Information on the nature and amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch.		0,333	
60	<p><u>Qualitative information</u> is available on the amount of main bycatch species affected by the fishery.</p> <p>Information is <u>adequate to broadly understand</u> outcome status with respect to biologically based limits.</p> <p>Information is adequate to support <u>measures to manage bycatch</u>.</p>	<p>Qualitative but not quantitative information is available on by-catches.</p> <p>Though there is no routine monitoring of by-catches in North Sea Herring Fishery, anecdotic information indicates that by-catches are limited. This is supported by an observer survey on by-catches conducted by DTU Aqua (see 2.3.1). The assessment team therefore considers by-catches to be very limited in DPPO North Sea Herring Fishery and the information is considered adequate to determine the present risk posed by the fishery.</p>	- DPPO Codex - Interview with Ministry, Directorate and Client group (ref. protocols)		80
80	<p><u>Qualitative information and some quantitative information</u> are available on the amount of main bycatch species affected by the fishery.</p> <p>Information is sufficient to estimate outcome status with respect to biologically based limits.</p> <p>Information is adequate to support a <u>partial strategy</u> to manage main bycatch species.</p> <p>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).</p>	<p>Assessment team decided to give a score of 80 (even though quantitative data is not available), since slipping is the minor issue for this fishery.</p>			
100	<p><u>Accurate and verifiable information</u> is available on the amount of all bycatch and the consequences for the status of affected populations.</p> <p>Information is <u>sufficient</u> to quantitatively estimate outcome status with respect to biologically based limits with a <u>high degree of certainty</u>.</p> <p>Information is adequate to support a <u>comprehensive strategy</u> to manage bycatch, and evaluate with a high degree of certainty whether the strategy is achieving its objective.</p> <p>Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.</p>				



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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.3 Component		ETP species		0,2	
2.3.1 PI: Outcome Status		The fishery meets national and international requirements for 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.		0,333	
60	Known effects of the fishery are <u>likely</u> to be within limits of national and international requirements for protection of ETP species. Known direct effects are <u>unlikely</u> to create <u>unacceptable impacts</u> to ETP species.	The interactions between DPPO and ETP species are considered very limited on the basis of evidence from skippers and observer programmes.	- Bifangst af hvaler I det danske pelagiske trawlfiskeri 2006-2008. Danmarks Tekniske Universitetet , Institut for Akvatiske Ressourcer. www.aqua.dtu.dk		100
80	The effects of the fishery are known and are <u>highly likely</u> to be within limits of national and international requirements for protection of ETP species. Direct effects are <u>highly unlikely</u> to create <u>unacceptable impacts</u> to ETP species. Indirect effects have been considered and are thought to be unlikely to create <u>unacceptable impacts</u> .	DTU Aqua has undertaken observer surveys to determine by-catches of marine mammals in Danish pelagic fisheries. As no by-catches have been reported there is a high degree of certainty that the effects of this fishery are within limits of national and international requirements for protection of ETP species or that there is no significant detrimental effects of this fishery on ETP species.			
100	There is a <u>high degree of certainty</u> that the effects of the fishery are within limits of national and international requirements for protection of ETP species. There is a <u>high degree of confidence</u> that there are <u>no significant detrimental effects</u> (direct and indirect) of the fishery on ETP species.		- ICES HAWG 2007 page 511 to 532		



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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.3 Component		ETP species		0,2	
2.3.2 PI: Management strategy		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 or irreversible harm to ETP species; - ensure the fishery does not hinder recovery of ETP species; and - minimise mortality of ETP species. 		0,333	
60	There are <u>measures</u> in place that minimise mortality, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species. The measures are considered likely to work, based on <u>plausible argument</u> (eg general experience, theory or comparison with similar fisheries/species).	DPPO has adopted a codex which includes an adequate strategy to avoid catches of ETP species.	- DPPO Codex paragraph 5		100
80	There is a <u>strategy</u> 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. There is an <u>objective basis for confidence</u> that the strategy will work, based on <u>some information</u> directly about the fishery and/or the species involved. There is <u>evidence</u> that the strategy is being implemented successfully.	Information available indicates that there is very limited interaction with ETP species and supports the high confidence that DPPO's strategy is implemented successfully and is achieving its objective.			
100	There is a <u>comprehensive strategy</u> in place for managing the fishery's impact on ETP species, including measures to minimise mortality, that is designed to achieve <u>above</u> national and international requirements for the protection of ETP species. The strategy is mainly based on information directly about the fishery and/or species involved, and a <u>quantitative analysis</u> supports <u>high confidence</u> that the strategy will work. There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring. There is evidence that the strategy is achieving its objective.				

MSC FISHERY ASSESSMENT REPORT

2 Principle		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.		
2.3 Component		ETP species	0,2	
2.3.3 PI: Information and monitoring		Relevant information is collected to support the management of fishery impacts on ETP species, including: - 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.	0,333	
60	Information is <u>adequate to broadly understand</u> the impact of the fishery on ETP species. Information is adequate to support <u>measures</u> to manage the impacts on ETP species <u>Information</u> is sufficient to <u>qualitatively</u> estimate the fishery related mortality of ETP species.	Information available indicates that there is very limited interaction with ETP species.	-DPPO CODEX- Interview with Ministry, Directorate and Client group (ref. protocols) - Bifangst af hvaler I det danske pelagiske trawlfiskeri 2006-2008. Danmarks Tekniske Universitetet , Institut for Akvatiske Ressourcer. www.aqua.dtu.dk	95
80	Information is <u>sufficient</u> to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a <u>full strategy</u> to manage impacts. <u>Sufficient data</u> are available to allow fishery related mortality and the impact of fishing to be <u>quantitatively</u> estimated for ETP species.	Fishermen are not obliged to report on catches of ETP species. However in the DPPO Codex there is a clear commitment to report on by-catch of marine mammals and this information is sufficient to support the strategy and gives a high degree of certainty that the strategy is achieving its objectives.		
100	Information is <u>sufficient to quantitatively</u> estimate outcome status with a high degree of certainty. Information is adequate to support a <u>comprehensive strategy</u> to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives. <u>Accurate and verifiable information</u> is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.	Information is available, but magnitude of all impacts, mortalities and injuries are not fully verified.		



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.4 Component		Habitat		0,2	
2.4.1 PI: Outcome Status		The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.		0,333	
60	The fishery is <u>unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm as there is negligible physical interaction between the DPPO fishery and habitat. Both gears used by the DPPO vessels (pelagic trawl and purse seine) operate in mid-waters and there is almost no interaction with the sea. In pelagic and semi-pelagic fisheries the gear loss is almost 0, since the gear operates in the mid-waters and there is no contact with the sea-bed. Lost gear and ghost fishing is therefore not a relevant issue in relation to DPPO.	- Interview with Ministry, Directorate and Client group (ref. protocols)		100
80	The fishery is <u>highly unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm.				
100	There is <u>evidence</u> that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.				



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.4 Component		Habitat		0,2	
2.4.2 PI: Management strategy		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.		0,333	
60	There are <u>measures</u> in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance. The measures are considered <u>likely</u> to work, based on plausible argument (e.g general experience, theory or comparison with similar fisheries/habitats).	There is negligible physical interaction between the DPPO fishery and habitat. Both gears used by the DPPO vessels (pelagic trawl and purse seine) operate in mid-waters and there is almost no interaction with the sea.	- Interview with Ministry, Directorate and Client group (ref. protocols)		100
80	There is a <u>partial strategy</u> in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above. There is some <u>objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or habitats involved. There is <u>some evidence</u> that the partial strategy is being implemented successfully.	In pelagic and semi-pelagic fisheries the gear loss is almost 0, since the gear operates in the mid-waters and there is no contact with the sea-bed. Lost gear and ghost fishing is therefore not a relevant issue in relation to DPPO.			
100	There is a <u>strategy</u> in place for managing the impact of the fishery on habitat types. The strategy is mainly based on information directly about the fishery and/or habitats involved, and testing supports high confidence that the strategy will work. There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its objective.	The code of good practice agreed by the DPPO vessels recognises the need to protect the ecosystem. The fishing practice applied by the DPPO vessels ensures that the fishery does not pose a risk to the habitats.			



MSC FISHERY ASSESSMENT REPORT

2 Principle		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.		
2.4 Component		Habitat		0,2
2.4.3 PI: Information and monitoring		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.		0,333
60	There is a basic understanding of the types and distribution of main habitats in the area of the fishery. Information is adequate to broadly understand the main impacts of gear use on the main habitats, including spatial extent of interaction.	There is detailed information (VMS data) available on the spatial distribution of the fishery and geographic overlap between sensitive habitats and the fishery can be identified. The distribution of habitat types is known over their range. Changes in habitat distributions can be measured over time from the VMS data. There is, however no information gathering on possible physical interaction between the gears and the habitats.	- Interview with Ministry, Directorate and Client group (ref. protocols)	95
80	The nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery. 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, timing and location of use of the fishing gear. 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).			
100	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types. Changes in habitat distributions over time are measured. The physical impacts of the gear on the habitat types have been quantified fully.			



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.5 Component		Eco-system		0,2	
2.5.1 PI: Outcome status		The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		0,333	
60	The fishery is <u>unlikely</u> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The main impact of the DPPO North Sea herring fishery on the North Sea ecosystem is the indirect effect the removal of the target species may have on the ecosystem. Studies show that herring is a central component in the North Sea ecosystem both as prey and as predator. Though there is no evidence that the fishery is highly unlikely to disrupt the key elements underlying the ecosystem structure and function, studies show that historical changes to the herring stock including the stock collapse in the 1970ies have not adversely or permanently affected the structure, productivity, function or diversity of the ecosystem.	-ICES HAWG 2008 -ICES WGSAM 2007 -ICES advice 2008 book 6 -ICES advice 2008 book 1		90
80	The fishery is <u>highly unlikely</u> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.				
100	There is <u>evidence</u> 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.				



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.5 Component		Eco-system		0,2	
2.5.2 PI: Management strategy		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.		0,333	
60	There are <u>measures</u> in place, if necessary, that take into account potential impacts of the fishery on key elements of the ecosystem. The measures are considered likely to work, based on <u>plausible argument</u> (eg. general experience, theory or comparison with similar fisheries).	The management plan agreed by EU-Norway 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 EU-Norway management plan ensures a sustainable management of the fishery. The main potential impact of the herring fishery is the removal of herring from the ecosystem. The plan does, however, not address potential indirect impact the removal of herring may have on lower trophic levels of the ecosystem. Therefore a score more than 80 is not justified.	- EU-Norway management plan		80
80	There is a <u>partial strategy</u> in place, if necessary, that 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 partial strategy is considered likely to work, based on <u>plausible argument</u> (eg. general experience, theory or comparison with similar fisheries). There is <u>some evidence</u> that the measures comprising the partial strategy are being implemented successfully.				
100	There is a <u>strategy</u> that consists of a <u>plan</u> , containing 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. 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. The measures are considered likely to work based on <u>prior experience</u> , <u>plausible argument</u> or <u>information</u> directly from the fishery involved. There is <u>evidence</u> that the measures are being implemented successfully.				

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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
2 Principle		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.			
2.5 Component		Eco-system		0,2	
2.5.3 PI: Information and monitoring		There is adequate knowledge of the impacts of the fishery on the ecosystem.		0,333	
60	Information is adequate to <u>identify</u> the key elements of the ecosystem (e.g. trophic structure and function, community composition, productivity pattern and biodiversity). Main impacts of the fishery on these key ecosystem elements can be <u>inferred from existing information, but have not been investigated in detail.</u>	ICES provides regular descriptions of the North Sea ecosystem and interactions between fisheries and the ecosystem. The direct impacts of the herring fishery on the herring, retained species and by-catches are identified. The indirect impacts of removal of herring on the upper trophic levels are understood. The position of herring in the ecosystem is not fully understood. The low recruitment observed in recent years seems to be related to environmental changes and not to low spawning stock size. Information is insufficient to fully understand the interaction between environmental changes, the dynamics of the herring stock and the fishery.	-R18, ICES Advise 2008, Book 6;	90	
80	Information is adequate to <u>broadly understand the functions</u> of the key elements of the ecosystem. Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, but <u>may not have been investigated in detail.</u> The main functions of the Components (i.e. target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are <u>known</u> . Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred. Sufficient 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).		-ICES advice 2008 Book 1 - Interview with Client group (ref. protocols)		
100	Information is adequate to <u>broadly understand the key elements</u> of the ecosystem. Main <u>interactions</u> between the fishery and these ecosystem elements can be inferred from existing information, and <u>have been investigated.</u> The impacts of the fishery on target, Bycatch, Retained and ETP species and Habitats are identified and the main functions of these Components in the ecosystem are <u>understood</u> . Sufficient information is available on the impacts of the fishery on the Components <u>and elements</u> to allow the main consequences for the ecosystem to be inferred. Information is sufficient to support the development of strategies to manage ecosystem impacts.				



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.1 Component		Governance and policy		0,5	
3.1.1 PI: Legal and/or customary framework		The management system exists within an appropriate and effective 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. 		0,25	
60	<p>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.</p> <p>The management system incorporates or is subject by law to a <u>mechanism</u> for the resolution of legal disputes arising within the system.</p> <p>Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.</p> <p>The management system has a mechanism to <u>generally respect</u> 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.</p>	<p>The management system for the DPPO herring fisheries in the North-East Atlantic (ICES area I, II and international zone) incorporates the following legal instruments:</p> <p><u>International level:</u></p> <p>1. Agreed record of conclusions of fisheries consultations between Norway and the European Community for 2009 Oslo, 10 December 2008</p>	As shown in comments.		100



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INDICATORS AND GUIDEPOSTS	Comments	Ref.	Weight	Score
<p>80 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.</p> <p>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.</p> <p>The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges.</p> <p>The management system has a mechanism to <u>observe</u> 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.</p>	<p><u>EU-level:</u></p> <p>1.EU Common Fisheries Policy (Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy) with supporting regulations and action plans</p> <p><u>National level:</u></p> <p>1.Danish Fisheries Law (LBK no. 372 of 26 April 2006) with supporting regulations; 2. Regulation of Danish Fisheries 2009 (Reguleringsbekendgørelse af 19 December 2008) 3. Individual Fishing Permits for 2009 and allocation of ITQ</p>			
<p>100 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.</p> <p>The management system incorporates or is subject by law to a <u>transparent mechanism</u> for the resolution of legal disputes that is appropriate to the context of the fishery and has been <u>tested and proven to be effective</u>.</p> <p>The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges.</p> <p>The management system has a mechanism to <u>formally commit</u> to the legal rights created explicitly or established by custom on people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p><u>DPPO level:</u></p> <p>1.DPPO by-laws 2. DPPO Code of Conduct (adopted in June 2007)</p> <p>The management system for NS herring fishery is consistent with local, national and international</p>			



MSC FISHERY ASSESSMENT REPORT

		<p>lows and aim at achieving sustainable exploitation in accordance with Principles 1 and 2.</p> <p>The legal instruments include transparent mechanisms for the resolution of legal disputes that are appropriate to the context of the DPPO herring fisheries in the North-East Atlantic.</p> <p>The management system acts proactively to avoid legal disputes my means of consultations and high degree of involvement of all interested parties.</p> <p>There are no legal rights on people dependent on fishing for food and livelihood that applies to the DPPO herring fisheries in the North-east Atlantic</p>			
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MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.1 Component		Governance and policy		0,5	
3.1.2 PI: Consultation, roles and responsibilities		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.		0,25	
60	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>generally understood</u> . The management system includes consultation processes that <u>obtain relevant information</u> from the main affected parties, including local knowledge, to inform the management system.				



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80	<p>Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>explicitly defined and well understood for key areas</u> of responsibility and interaction.</p> <p>The management system includes consultation processes that <u>regularly seek and accept</u> relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.</p> <p>The consultation process <u>provides opportunity</u> for all interested and affected parties to be involved.</p>	<p>-ICES. There is a formal process established for obtaining scientific advice on NS herring fisheries management</p> <p>- EU and Norway cooperation: There is no formalized stakeholder consultation system in place. However, there is an informal consultation process in place and NGO's are invited to attend meetings as observers.</p> <p><u>EU-level</u></p> <p>- Pelagic RAC (Council decision on the establishment of Regional Advisory Councils (2004/585/EC) advises the ECon management of the pelagic fisheries). (DPPO is a member)</p> <p>-Advisory Committee on Fisheries and Aquaculture, ACFA (Council Regulation (EC) n° 657/2000 and Commission</p>	<p>- Agreed Record of conclusions of Fisheries consultations between Norway and the EU for 2009.</p>		
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<p>100</p>	<p>Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>explicitly defined and well understood for all areas</u> of responsibility and interaction.</p> <p>The management system includes consultation processes that <u>regularly seek and accept</u> relevant information, including local knowledge. The management system demonstrates consideration of the information and <u>explains how it is used or not used</u>.</p> <p>The consultation process <u>provides opportunity and encouragement</u> for all interested and affected parties to be involved, and <u>facilitates</u> their effective engagement.</p>	<p>Decision n° 2004/864/EC) advises the EC on all aspects of the CFP.</p> <p><u>National level:</u></p> <ul style="list-style-type: none"> - The EU Committee (Paragraph 5 in the Fisheries Law) is consulted in all matters related to the CFP and EU fisheries regulations. DPPO has a seat in the Committee - The Commercial Fisheries Committee (Paragraph 6 in the Fisheries Law) is consulted in all matters related to regulation of Danish commercial fisheries including fleet capacity, gear use and first hand trade in fish. DPPO has a seat in the Committee. - The EFF Surveillance Committee (Fisheries Development Committee) decides and gives advice in matters related to the use of EFF structural funds. <p>In Denmark one has to be a registered stakeholder to participate in the consultation process in the above mentioned fora. However, Danish fishery managers regularly seek informal advice from relevant stakeholders including NGOs, research institutions, local authorities and individuals.</p> <p><u>Local level:</u></p> <p>-Pelagic Fisheries Association, a sub-division of Danish Fishermens Association, organises owners, skippers and crewmembers in the Danish pelagic fisheries. The Association do frequent consultations with the DPPO and is represented in the above fora via Danish Fishermens Association.</p> <p><u>Information</u></p> <p>-ICES reports are publicly available. Meeting dates, agendas and minutes from meetings in the Pelagic - RAC are publicly available (http://www.pelagic-rac.org/). Meeting dates, work programme and minutes from meetings in - ACFA are publicly available http://ec.europa.eu/fisheries/cfp/governance/acfa -Meeting dates and minutes from The Commercial Fisheries Committee are publicly available. The agendas are often set on short notice and not publicly available (http://fd.fvm.dk/Erhvervsfiskeriudvalget)</p>			
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3 Principle		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.			
3.1 Component		Governance and policy		0,5	
3.1.3 PI: Long term objectives		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.		0,25	
60	Long-term objectives to guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>implicit</u> within management policy.	Objectives of EU Common Fisheries Policy (Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy) are consistent with MSC Principles and Criteria and the precautionary approach.	- CFP (Common Fisheries Policy) Council regulation (EC 2371\2002)- Framework regulation for common fisheries policy, Chapter 1, Article 2. -As shown in comments		100
80	<u>Clear</u> long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are <u>explicit</u> within management policy.				
100	<u>Clear</u> long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>explicit</u> within <u>and required by</u> management policy.				



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.1 Component		Governance and policy		0,5	
3.1.4 PI: Incentives for sustainable fishing		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing.		0,25	
60	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	Because of the lack of clear guidance on the definition of positive and negative incentives the assessment team has used the following definitions: <u>Incentives</u> are direct or indirect measures that reward fishermen to conduct their fisheries in sustainable manner or penalise them for not fishing sustainably. <u>Negative or Perverse incentives</u> are incentives that reward fishermen for not fishing in a sustainable manner.	- Fishing permits (See attachment from FD). - EU evaluation report 2008.		100
80	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 negative incentives do not arise.	The application since 2003 of a rights-based management system (ITQs) for the Danish North Sea Herring Fishery provides incentives for DPPPO members to conduct fisheries in a sustainable manner. The ITQ system gives them a long-term planning horizon (no "race for fish") and guarantees them a fixed share of the future (likely increased) TACs on a well-managed NS herring stock. Effective Monitoring, Control and Surveillance is one of the pillars of the EU CFP including severe penalties for illegal fishing practise. The EU MCS system is regularly reviewed, most recently in 2008.(COM(2008) 721 Final: Proposal for a Council Regulation establishing a Community control system for ensuring compliance with the rules of the CFP). The enforcement of the CFP and supporting Danish regulations related to the North Sea herring by the Fisheries Directorate is highly effective as documented in the 2008 evaluation report. No disincentives in the form of subsidies or other applies to this fishery			
100	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and <u>explicitly considers</u> incentives in a <u>regular review</u> of management policy or procedures to ensure that they do not contribute to unsustainable fishing practices.				



MSC FISHERY ASSESSMENT REPORT

INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.2 Component		Fishery- specific management system		0,5	
3.2.1 PI: Fishery-specific objectives		The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.		0,2	
60	<u>Objectives</u> , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <u>implicit</u> within the fishery's management system.	There are well-defined and measurable short and long term objectives for the North Sea herring fishery for human consumption which are consistent with MSC Principles 1 and 2.	- EU-Norway Agreement - Fishing permit - DPPO Codex - Danish Quota regulation		80
80	<u>Short and long term objectives</u> , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <u>explicit</u> within the fishery's management system.	The objectives at the DPPO level are to keep the annual landings of DPPO vessels at or below the levels specified in the individual vessel permits (the North Sea herring ITQs) and ensure compliance with other permit terms that are relevant to North Sea herring fishery.			
100	<u>Well defined and measurable short and long term objectives</u> , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <u>explicit</u> within the fishery's management system.	<p>The ITQs are shares of the annual Danish North Sea herring quota. This quota is determined (under the auspices of the EU relative stability principle) from TACs that are set in agreement between the EC and Norway with the aim of achieving and maintaining a North Sea herring stock at levels above B_{lim} (EC – Norway Long-Term Management Plan for Herring of North Sea origin and allocation of catches)</p> <p>At the DPPO level, the Code of Conduct (in paragraph 1, 3, 5, 6, and 7) includes objectives that are aiming at achieving outcomes expressed by the MSC Principles 1 and 2.</p> <p>The DPPO Code of Conduct has been implemented but consistency has yet to be demonstrated.</p>			



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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.2 Component		Fishery- specific management system		0,5	
3.2.2 PI: Decision-making processes		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives.		0,2	
60	<p>There are <u>informal</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>serious issues</u> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take <u>some</u> account of the wider implications of decisions.</p>	<p>There are well established decision-making processes that meet the objectives of the North Sea herring fishery for human consumption. These processes include the setting of the TAC on the basis of scientific advice from ICES as well as the national quotas for the EU North Sea herring fisheries and the ITQs for the DPPO vessels. The processes also include appropriate MCS strategies and measures.</p> <p>The decision-making processes are transparent and timely informed from the best available scientific knowledge.</p>	Site assessment interviews		80
80	<p>There are <u>established</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>serious and other important issues</u> 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>Decision-making processes use the precautionary approach and are based on best available information.</p> <p><u>Explanations</u> are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>				



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INDICATORS AND GUIDEPOSTS	Comments	Ref.	Weight	Score
<p>100 There are <u>established</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>all issues</u> 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>Decision-making processes use the precautionary approach and are based on best available information.</p> <p><u>Formal reporting</u> 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>There is no formal reporting to all interested stakeholders on how the management system has responded to findings and recommendations from research and monitoring evaluation and review of the DPPO/Danish/EU Herring fisheries in the North Sea. However, such reported findings and recommendations are presented and discussed in the relevant decision-making and advisory fora (see. 3.1.2) and minutes from the meetings in these fora are publicly available.</p>			



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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.2 Component		Fishery- specific management system		0,5	
3.2.3 PI: Compliance and enforcement		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with.		0,2	
60	<p>Monitoring, control and surveillance <u>mechanisms</u> exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective. Sanctions to deal with non-compliance exist and there is some evidence that they are applied.</p> <p>Fishers are <u>generally thought</u> 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.</p>	<p>There is a comprehensive MCS system implemented for the North Sea herring fishery. In 2008 EU Commission evaluated the system and found it to be functioning well.</p> <p>The MCS system has sanctions to deal with non-compliance ranging from rebuke via fines and confiscation of catch and gear to loss of license.</p>	<p>- Fishing permits</p> <p>-EU evaluation report 2008</p> <p>- stakeholder protocols I1 (DPPO) and I2 (Directorate of Fisheries).</p>		70
80	<p>A monitoring, control and surveillance <u>system</u> has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.</p> <p>Sanctions to deal with non-compliance exist, <u>are consistently applied</u> and thought to provide effective deterrence.</p> <p><u>Some evidence exists</u> to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</p> <p>There is no evidence of systematic non-compliance.</p>	<p>In general there is a high level of compliance in the North Sea Herring Fishery and there have been no criminal convictions of DPPO vessels for the last three years.</p> <p>However, there are indicators of non-compliance that some of the North Sea herring catches coming from Danish vessels could be misreported as being caught in the Skagerrak. These indications come from the interviews with the DPPO members and the Fisheries directorate. DPPO vessels, have in some cases, been fined for non-compliance with regulations and all fines have been paid.</p> <p>SEE CONDITION 2.</p>			



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INDICATORS AND GUIDEPOSTS	Comments	Ref.	Weight	Score
<p>100 A <u>comprehensive</u> 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.</p> <p>Sanctions to deal with non-compliance exist, are consistently applied and <u>demonstrably</u> provide effective deterrence.</p> <p>There is a <u>high degree of confidence</u> that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.</p> <p>There is no evidence of systematic non-compliance.</p>				



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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.3 Component		Fishery- specific management system		0,5	
3.2.4 PI: Research plan		The fishery has a research plan that addresses the information needs of management.		0,2	
60	<p>Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.</p> <p>Research results are <u>available</u> to interested parties.</p>	<p>An agreement (Agreement in the form of a Memorandum of Understanding between the EC and ICES, 2007) between the EU and ICES cater for systematic, regular and timely delivery of scientific advice in support of the CFP. The agreement includes the EU/DPPO North Sea herring fisheries. The advice is provided by ICES and STECF. To provide the advice ICES coordinates research that addresses MSC's Principle 1 and 2. The research plans are disseminated through ICES Annual Science Conference and work programmes adopted by ICES Council (Ref: www.ICES.dk). Research plans are furthermore presented to managers and stakeholders at the annual fisheries consultations between Norway and EU (Ref: Agreed record of conclusions of fisheries consultations between EC and Norway) and to the Pelagic RAC. The results of the research are published in scientific journals, ICES and STECF reports and working documents presented to managers and stakeholders at the annual consultations between EU and Norway and meetings of the Pelagic RAC.</p> <p>The advice provided by ICES and STECF together with reports from ad hoc joint EU and Norway working groups on herring fisheries management issues form the main input to the current enhancement of the management strategy on</p>	<p>- COUNCIL REGULATION (EC) No 199/2008 of 25 Feb. 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the CFP;</p> <p>- COMMISSION REGULATION (EC) No 665/2008 of 14 July 2008 on detailed rules for the application of Council Regulation (EC) No 199/2008 concerning the establishment of a Community</p>	100	
80	<p>A <u>research plan</u> provides the management system with a strategic approach to research and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.</p> <p>Research results are <u>disseminated</u> to all interested parties in a <u>timely</u> fashion.</p>				
100	<p>A <u>comprehensive research plan</u> provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.</p> <p>Research <u>plan</u> and results are <u>disseminated</u> to all interested parties in a <u>timely</u> fashion and are <u>widely and publicly</u></p>				



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	<p><u>available.</u></p>	<p>the herring fisheries within the framework of the fisheries consultations between EU and Norway</p>	<p>framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the CFP. - Agreed record of conclusions of fisheries consultations between EC and Norway</p>		
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INDICATORS AND GUIDEPOSTS		Comments	Ref.	Weight	Score
3 Principle		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.			
3.2 Component		Fishery- specific management system	-www.ices.dk -	0,5	
3.2.5 PI: Monitoring and management performance evaluation		There is a system for 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.		0,2	
60	The fishery has in place mechanisms to evaluate <u>some</u> parts of the management system and is subject to <u>occasional internal</u> review.	At the international level, there is a comprehensive MCS system implemented for the North Sea herring fishery. At the scientific level ICES undertakes annual reviews, including internal peer reviews of the management framework and its effect on the stock. These assessments are invariably subject to external scrutiny by independent third parties eg. WWF. All enforcement agencies are required to keep records and provide annual reports of inspections made and the level of compliance found within the industry. These reports form part of the annual management review undertaken.	- DPPO Codex - EU evaluation report : DK-2008-01-A		95
80	The fishery has in place mechanisms to evaluate <u>key</u> parts of the management system and is subject to <u>regular internal</u> and <u>occasional external</u> review.				
100	The fishery has in place mechanisms to evaluate <u>all</u> parts of the management system and is subject to <u>regular internal</u> and <u>external</u> review.				



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		<p>At the national level a recent EU evaluation has found the MCS system well functioning including the internal review mechanism and the system in place to adapt as necessary (e.g. identify “hot spots” and take appropriate action.</p> <p>At the DPPO level, there is a Code of Conduct in place that enables evaluation of key parts of the management system at vessel level. There are internal reviews in the form of regular annual meetings with the fishermen and regulatory monitoring by the Fisheries directorate ensures statutory compliance but cannot be construed as a formal external review of the codex. Currently there are no external mechanisms for verification of the code. The DPPO currently has this shortcoming under consideration.</p>			
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