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MSC SUSTAINABLE FISHERIES CERTIFICATION

Osprey Trawlers North Sea twin-rigged plaice

[1]

Final Report

February 2016

Prepared For: **Osprey Trawlers Group**

Prepared By: **Acoura Marine Limited**

[1] Cover image: from Wijsman et al, 2014 catch sampling report prepared for Osprey Group.

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List of Acronyms

ACFA	ICES Advisory Committee on Fisheries and Aquaculture
ACOM	ICES Advisory Committee
ASCOBANS	(Bonn Convention's) Agreement on the Conservation of Small Cetaceans in the Atlanto-Scandian and Baltic.
B_{lim}	Limit biomass reference point, below which recruitment is expected to be impaired.
B_{MSY}	Spawning Stock Biomass expected when exploiting stocks at maximum sustainable yield
B_{pa}	Precautionary reference point for spawning stock biomass
CEFAS	Centre for Environment, Fisheries and Aquaculture Science (UK)
CFP	Common Fisheries Policy
CPUE	Catch per unit of fishing effort (e.g. kg/hr fished).
CR	MSC Certification Requirements
CVO	Cooperative Visserij Organisatie
EC	European Commission
EEZ	Exclusive Economic Zone
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing Mortality
FAO	United Nations Food and Agriculture Organisation
F_{lim}	Limit reference point for fishing mortality that is expected to drive the stock to the biomass limit in the long term
F_{MP} or F_{target}	Target fishing mortality under EU Multiannual Management Plan (MAMP)
F_{MSY}	Fishing mortality consistent with maximum long term yield
F_{pa}	Precautionary reference point of fishing mortality expected to maintain the SSB at the precautionary reference point in the medium term
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
IMARES	Institute for Marine Resource & Ecosystem Studies
IMR	Norwegian Institute of Marine Research
ITQ	Individual Transferable Quota
IWC	International Whaling Commission
MAMP	EU Multiannual Management Plan for plaice and sole
MCS	Monitoring, Control and Surveillance
MLS	Minimum Legal (or where voluntary, Landing) Size for fish.

MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NEA	North East Atlantic
NEAFC	The North East Atlantic Fisheries Commission
NGO	Non-Governmental Organisation
NSRAC	North Sea Regional Advisory Council (now the NSAC)
OSPAR	Oslo-Paris Convention (Convention for the Protection of the Marine Environment of the North-East Atlantic)
P1	MSC Principle 1
P2	MSC Principle 2
P3	MSC Principle 3
PI	MSC Performance Indicator
Plaice Box	Protected area extending from 53^0N on the Dutch coast to 57^0N on the Danish coast from Netherlands to Denmark
PO	Producer Organisation
RAC	Regional Advisory Council
RIVO	Nederlands Instituut voor Visserij Onderzoek
SG	Scoring Guidepost
SI	Scoring Issue
SSB	Spawning Stock Biomass
TAC	Total Allowable Catch
TR1	Otter trawl gear with a cod end mesh size equal to or larger than 100mm
TR2	Otter trawl gear with a cod end mesh size equal to or larger than 70mm and less than 100mm.
UK	United Kingdom
UNCLOS	United Nations Convention on the Law of the Sea
UoA	Unit of Assessment (
UoC	Unit of Certification – i.e. Definition of the fishery based on species, geographical area and gear
VMS	Vessel Monitoring System
VPA	VIrtual Population Analysis an age based fisheries model used to assess the state of fish stocks
WGNSSK	ICES Working Group on the Assessment of demersal stocks in the North Sea and Skagerrak
WWF	World Wide Fund for Nature

1 Executive Summary

» This report provides details of the MSC assessment process for the Osprey Trawlers North Sea twin rig plaice fishery for Osprey Trawlers. The assessment process began in March 2015, and was concluded on **21st March 2016**.

» A comprehensive programme of stakeholder consultations were carried out as part of this assessment, complemented by a full and thorough review of relevant literature and data sources.

» A rigorous assessment of the wide ranging MSC Principles and Criteria was undertaken by the assessment team and a detailed and fully referenced scoring rationale is provided in the assessment tree provided in Appendix 1.1 of this report.

» The **Target Eligibility Date** for this assessment is **21st March 2016**

The assessment team for this fishery assessment comprised of Jim Andrews, who acted as team leader and primary Principle 2 specialist; Richard Millner, who was primarily responsible for evaluation of Principle 1 and Rod Cappell who was primarily responsible for evaluation of Principle 3.

Client strengths

» The client fishery has been certified for the past 5 years against the MSC standards, and during that time has met the requirements of all of the previous conditions of certification.

» Evidence has been presented at this re-assessment that procedures for gathering information, training staff, and recording fishing activity are fully integrated into the operating procedures of client vessels.

» Expert advisors are contracted by the client to ensure that all relevant informant is analysed, summarised and reported.

Client weaknesses

» No weaknesses in the client's operations were identified at this assessment.

Determination

» On completion of the assessment and scoring process, the assessment team concluded that the fishery should be certified for a further period of 5 years, subject to annual surveillance audits.

Rationale

» There are a number of areas which reflect positively on the fishery:

› The fishery is well documented. Good information is available, not just on fish landings but also to describe the catch of non-target species and the distribution of fishing activities.

Conditions & Recommendations

» However, a number of criteria which contribute to the overall assessment score scored less than the unconditional pass mark, and therefore trigger a binding condition to be placed on the fishery, which must be addressed in a specified timeframe (within the 5-year lifespan of the certificate). Full explanation of these conditions is provided in section 9 of the report, but in brief, the areas covered by these conditions are:

- **Reference Points** – the target reference points for the stock is not consistent with the latest estimate of F_{MSY}. Action is required to re-align the target reference point with the latest information. [Note that this condition has been harmonised with other North Sea plaice fisheries undergoing assessment or re-assessment].
- **Harvest Control Rules** – the current harvest control rules do not specifically define how the exploitation rate would be reduced as the limit reference point is approached. Action is required to specify this. [Note that this condition has been harmonised with other North Sea plaice fisheries undergoing assessment or re-assessment].
- **ETP species outcome** – the direct effects of the fishery on an ETP species, the starry ray (*Amblyraja radiata*) are not known in sufficient detail. Research is required to provide an adequate understanding of this impact.
- **ETP species information** – there is not enough information available to allow mortality of starry ray in the fishery to be quantified and to measure trends in sufficient detail to support a full strategy for this species. Again, research is required to provide an adequate understanding of the interaction between this species and the fishery.

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

Acoura Marine Ltd confirm that this fishery is within scope.

2 Authorship and Peer Reviewers

2.1 Assessment Team

Assessment team leader: Jim Andrews

Primarily responsible for assessment under Principle 2

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

Expert team member: Richard Millner

Primarily responsible for assessment under Principle 1

Dr Richard Millner has over 35 years' experience working for the UK government as an advisor on fish stocks, including wide experience of flatfish and inshore fisheries around the UK. He has been a member of ICES working groups on flatfish and demersal stocks in the North Sea and was chairman of the ICES Beam Trawl Survey Working Group. He has carried out MSC assessments and peer reviews on a number of fisheries including Hastings trammel and trawl fisheries for sole, twin-rig trawling for plaice in the North Sea and trawl fisheries for plaice and sole in the North Sea. He has published widely on flatfish fisheries, and the biology and growth of flatfish.

Expert team member: Rod Cappell

Primarily responsible for assessment under Principle 3

Rod Cappell is an independent fisheries consultant with over 20 years' experience in the sector. His company, Poseidon, is a fisheries and aquaculture consultancy delivering management and economics services to public and private clients. He has ongoing involvement in policy research for the European Commission on fisheries and maritime issues. Rod has extensive MSC auditor experience as Team Leader and P3 expert. He has been involved in the assessment of several fisheries in the Netherlands, including the sole and plaice twin-rig fisheries. He was on the original assessment team for Osprey and CVO assessments and has been involved with subsequent surveillance audits of these and Ekofish.

2.1.1 RBF Training

The Risk Based Framework was not used for this fishery assessment.

2.2 Peer Reviewers

The peer reviewers who were selected to complete a peer review for this fishery assessment are John Nichols and Mike Pawson. Both of these peer reviewers have expert knowledge of North Sea fisheries, including the plaice fishery and twin-rig trawling. They have also each participated in MSC assessments of other North Sea plaice fisheries.

3 Description of the Fishery

3.1 Units of Certification (UoC) and Scope of Certification Sought

Acoura Ltd confirm that the fishery is within scope of the MSC certification sought for the assessment as defined.

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

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

The fishery assessed for MSC certification is defined as:

Table 3.1: Proposed units of certification for the fishery under assessment.

Species:	Plaice, *Pleuronectes platessa*
Stock:	North Sea Plaice (ICES Sub-Area IV)
Geographical area:	North Sea
Harvest method:	Twin rig trawl using three different cod end mesh sizes: • UoC 1: <100mm cod end mesh • UoC2: >100mm and <120mm cod end mesh • UoC3: >120mm cod end mesh
Client Group:	Osprey Group owned trawlers (see Table 3.2~~Table 3.2~~).
Other Eligible Fishers:	Others operating in compliance with Osprey Trawlers' practices (see Table 3.18~~Table 3.18~~).

Formatte

Formatte

The Osprey Trawlers code of conduct requires that vessels only fish for plaice between the 1st March and 15th December of each year, and also observe voluntary closed areas in the North Sea, as part of the Osprey Group's commitment to fishing sustainably (these are detailed in the Osprey Trawlers Services Code of Conduct in Appendix 7 of this report).

A list of vessels in the units of certification is provided in Table 3.2~~Table 3.2~~. An up to date vessel list can be obtained by contacting Acoura.

Table 3.2: List of vessels in the proposed units of certification. Each vessel is eligible to fish in all UoCs.

PLN	Name	LOA	GT	kW
H426	Neeltje	28.8	329	650
PW447	Louwe Senior	36.6	432	746
H357	Good Hope	32.9	300	746
E104	Ansgar	36.6	435	946

Please note that whilst the Units of Certification detail the full extent of what is being assessed, it is the full and complete Public Certification Report that precisely defines the exact nature of certification for this fishery.

This Unit of Certification was used as it is compliant with client wishes for assessment coverage and in full conformity with MSC criteria for setting the Unit of Certification.

3.1.1 Other eligible fishers

The proposed Units of Certification for this fishery are as defined above, without the 'Other Eligible Fishers' specified. These Other Eligible Fishers will be eligible to join the certificate at a later date either by joining the Client Group or through a certificate sharing agreement, defined by the fishery client.

Note that because of the historical concerns about the potential for perverse incentives to arise under the EU cod recovery plan, any changes to the UoC membership will need to be carefully evaluated, according to the following general principles:-

- Vessels that have a track record of low cod bycatch are not likely to be limited in the number of days at sea for UoC2 (this applies to all of the vessels in the UoC at the time of assessment). Such vessels could join the UoC without any risk of creating a "perverse incentive" (*sensu* PI 3.1.4)
- Vessels with a track record of a higher cod bycatch may be limited by the number of days that they can fish using the gear mesh size specified in UoC2. If such vessels were to join the UoC there is a risk of a "perverse incentive" arising. This risk would have to be evaluated on a case-by-case basis by IFC.

The final decision on changes to the UoC will need to take account of the rules in force at the time that the change is proposed (which may differ from those briefly summarised above).

3.1.2 Scope of Assessment in Relation to Enhanced Fisheries

This is not an enhanced fishery.

3.1.3 Scope of Assessment in Relation to Introduced Species Based Fisheries (ISBF)

The target species is not introduced.

3.2 Overview of the fishery

The North Sea plaice fishery has been economically important to countries bordering the North Sea for well over a century. Plaice were first exploited by fleets of sailing smacks deploying small beam trawls and then towards the end of the 19th century by steam trawlers. This period saw a rapid increase in the exploited area of the North Sea as sail gave way to steam and subsequently as trawlers adopted the recently developed otter trawl (Rijnsdorp & Millner, 1996; Millner et al., 2005).

Landings increased from a level around 40,000 to 70,000t in the period 1900-1950 and with the advent of modern beam trawls and increasing fishing effort it increased to over 150,000t by the mid 1980's. Following a decline in the stock and large effort reductions in the fleet, landings fell to a minimum of 49,400t in 2008 but have recovered to around 80,000t in recent years as the stock has recovered to record levels. Most of the catch is landed by the Dutch trawl fleet or by Dutch vessels fishing on the register of other countries such as Germany and the UK. In 2014, the Netherlands fleet took 42% of the reported landing whilst UK vessels took 25%, landing around 85% of that into the Netherlands (ICES, 2015a). Denmark also made significant landings, taking around 17% of the total.

Traditionally plaice were taken by otter trawl, seine and gill nets but with the advent of highly efficient beam trawlers, initially mainly from the Netherlands, the plaice directed otter trawl fleets declined. Most plaice are now taken by beam trawlers in the mixed (plaice and sole) flatfish fishery. An 80mm minimum mesh size for beam trawlers in this fishery is permitted for vessels targeting sole south of 56^0 30N, but this retains plaice at well below the legal minimum landing size of 27cm in length. Recent estimates give the proportion of discarded plaice as 80% by number and up to 57% by weight (van Reijden et al, 2014). This compares with 50% by number and 23% by weight in the 1980's (van Beek, 1998).

The increase in fuel prices in the late 1990s led some beam trawlers to switch to alternative methods such as pulse beam trawls and twin rig otter trawls. In 2002 there were 47 Dutch vessels employing twin rig gear (Grift et al., 2004) increasing to around 70 in 2012 (Taal and Zaalmink, 2012). Landings by twin rig trawlers were about 10% of the total plaice landings by the Dutch fleet in 2012 (Taal and Zaalmink, 2012). Twin rig vessels fish at a slower speed, 2.5-3.5 knots, compared with 4.5-6.5 knots by a beamer and since the gear is substantially lighter, fuel consumption is reduced by up to 40% (Grift et al., 2004). Twin rig fishing involves long hauls of between 3-5 hours and this is only possible if the uptake of benthos and debris including sand and stones in minimal. However, the light gear and large mesh size widely used, results in a much reduced landing of sole and so the fishery is only profitable if the vessels have a high quota of plaice and are able to catch a range of other relatively high priced species such as lemon sole, turbot and, brill.

3.2.1 Species and Fishing Practice

3.2.1.1 Species type/s

The target species for the fishery under certification is plaice, *Pleuronectes platessa.* As indicated initially, this report does not intend to provide a scientifically comprehensive description of the species. Interested readers should refer to sources that have been useful in compiling the following summary description of the species and which are referenced.

3.2.1.2 Fishing Practices

Twin rig trawlers tow two trawls behind the fishing vessel using either two or three warps (see Figure 3.1). The trawls are held open by two trawl doors, and use a "clump weight" between

the nets to ensure that the nets remain close to the seabed. A typical vessel from the client fleet is shown in Figure 3.2.

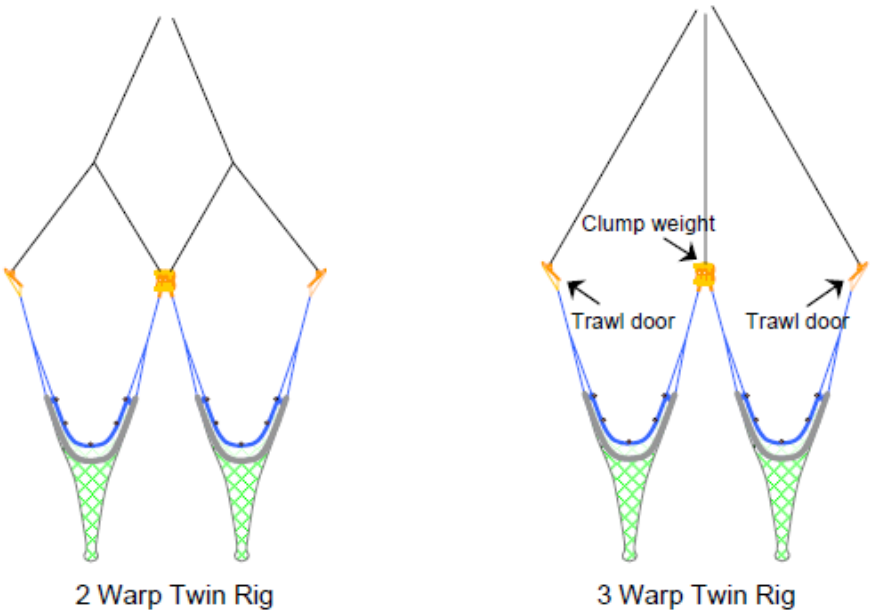


Figure 3.1: Diagram of a two-warp and three-warp twin-rig otter trawls, showing key components of the fishing gear [Source: FAO, 2012].

All of the vessels in the client fleet now use semi-pelagic trawl doors which are trimmed to “fly” 1-2m above the sea bed rather than making contact with it. The vessels use a roller clump weight, which contacts the seabed between the nets. Although the clump weight is heavy (600kg or more in air), the force exerted on the seabed is reduced by the lift generated from the net and otter boards. The otter board are connected to the net with long Dyneema “sweep” ropes that have discs rigged at intervals along them to minimise ground contact.

This is a significant change to the gear design since the fishery was originally assessed, when conventional otter boards and sweeps were used which were in contact with the seabed throughout fishing activity and along their entire lengths. These changes have been made principally because they make the fishing gear more efficient in terms of fuel consumption, which is a direct consequence of expending less energy towing the trawls across the seabed.

Figure 3.2: Fishing vessel Good Hope (H357) from the Osprey Trawlers Group.

3.2.1.3 Areas fished

The areas where different cod-end mesh sizes can be used area illustrated in Figure 3.3 below. To the north of a line running east-west across the North Sea, cod end mesh sizes of >100mm must be used (UoC 2 & 3); south of this line a mesh size of 80-99mm may be used (UoC 1). In all cases the catch must contain 70% of the target specie (unless a >120mm cod end is used). These net and catch composition requirements are imposed by the EC cod recovery plan (EC Regulation 2056/2001).

In waters around Norway, only 120mm cod-ends may be used.

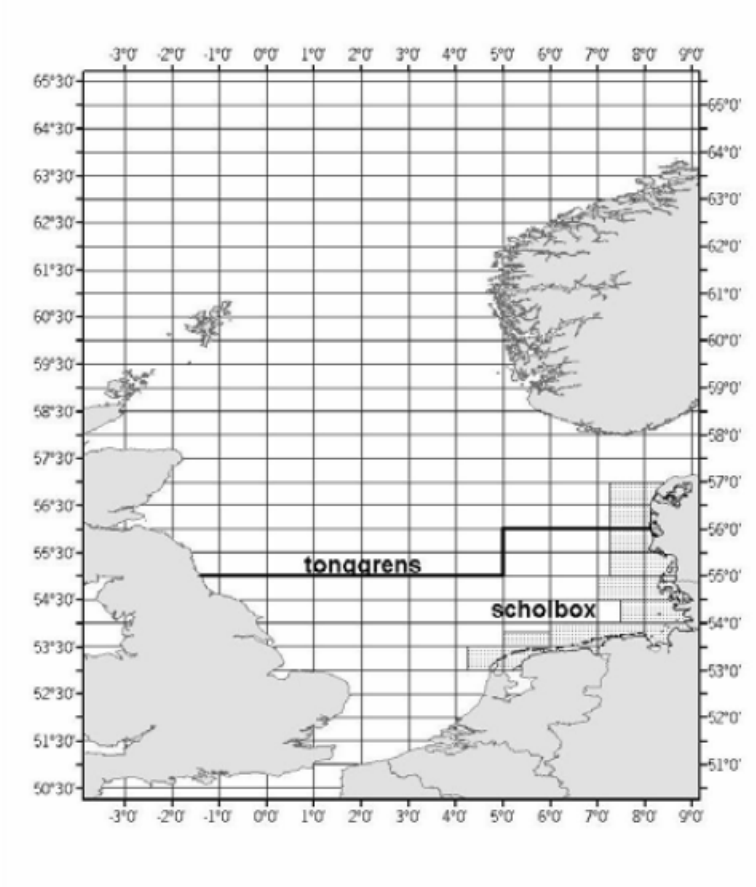


Figure 3.3: Chart showing the 55°N/56°N line established under the EC cod recovery plan (Regulation 2056/2001) for regulating fishing gear use in the North Sea. South of this line, vessels are permitted to fish for fin fish with a cod end mesh size of <100mm (UoC1). North of this line, a cod end of >100mm must be used (UoCs 2 & 3).

3.2.1.4 Historical Fishing Levels

Information about TAC and landings from the fishery in recent years is presented in Table 3.3 below.

Table 3.3: Total Allowable Catch (TAC) and landings date for the fishery in 2014.

TAC	Year	2014	Amount	111,631t
UoA share of TAC	Year	2014	Amount	72,671
UoC share of TAC	Year	2014	Amount	1,962t (2.7%)
Total green weight catch by UoC	Year (most recent)	2014	Amount	1,931t
	Year (second most recent)	2013	Amount	1,525t

3.3 Principle One: Target species background

3.3.1 Biology of the Target Species

Plaice is a demersal species generally living on sandy substrates but may also be found on mud and gravel. The species is easily identified throughout its life history. As juveniles and adults, plaice have a striking appearance and can be readily distinguished from other flatfish species by their general colour and markings (Figure 3.4). The eyed, right hand, side is greenish-brown with bright red to orange spots on it and the underside is a pearly white. This coloration varies with the substrate into which it very lightly merges (Wheeler, 1969).

Figure 3.4: Plaice *Pleuronectes platessa*

Plaice is a shallow water species found from the near coast as juveniles down to around 150 metres in northern waters. In the North Sea it is generally found in depths less than 100 metres. The species is widely distributed on the continental shelf from the Bay of Biscay in the south through the English Channel, North Sea and Irish Sea to the Baltic, Iceland, the Norwegian coast and Barents Sea in the north. The North Sea stock comprises a complex of small sub-populations with some mixing between other populations particularly in the eastern English Channel (VIId) and in the Skagerrak (IIIa). Sub-populations in the North Sea have a strong homing behaviour to specific spawning grounds (De Veen, 1978; Rijnsdorp and Pastoors, 1995; Hunter et al., 2003; 2004).

The biology of plaice has been extensively studied for over one hundred years and there is a considerable fund of knowledge about all aspects of its life history (Gibson, 2005). The spawning behaviour, location of spawning and the nursery grounds are all well described throughout the species range (Masterman, 1911; Simpson, 1959; Rogers et al., 1998; Fox et al., 2005; Taylor et al., 2007). Fecundity varies from around.30,000 eggs per female at first maturity to over 300,000 eggs depending on age. A 35cm female produces between 60,000 – 100,000 eggs per year or about 265 eggs per gram body weight. Fecundity has been shown to change noticeably over time (van Damme et al., 2008) possibly in relation to changes in stock abundance (Rijnsdorp, 1991). Male fish mature at around 2 to 3 years old whilst female fish mature a year or two later. In recent years there has been a change, with maturity occurring at younger ages and smaller sizes than in the past. This is thought to be partially a fisheries induced genetic change caused by fish which are genetically programmed to mature later at a larger size being caught before they have the opportunity to reproduce and pass on their genes (Grift et al., 2007).

Spawning and nursery areas in the North Sea are particularly well described and have changed little since studies began (Masterman, 1911; Simpson, 1959; Harding et al., 1978; Fox et al., 2005; Taylor et al., 2007). The principal spawning areas are in the eastern English Channel and the southern Bight of the North Sea. Although plaice eggs can be found in most shallow areas of the North Sea, they are at lower concentrations as one moves north (Fox et al., 2005). Prior to spawning there is some movement of fish between the southern North Sea and eastern Channel. Spawning begins in December in the southern North Sea and English Channel and continues through to March and April further north. The eggs are planktonic, around 2mm in diameter, and are easily distinguished, due to their large size, from other eggs present in the plankton at the same time. The larvae are also easily distinguished from other fish larvae by their general shape, size and pigmentation (Nichols, 1971; Russell, 1976). Larvae hatch in about three weeks and begin feeding almost immediately on phytoplankton, *Oikopleura spp*, *Frittillaria spp*, copepod nauplii and other invertebrates (Last, 1978, 1980; Ryland, 1964). During the planktonic phase, which lasts two to three months, the eggs and larvae are subjected to the residual drift which, in the southern North Sea, transports them to the shallow nursery areas along the continental coast and into the Wadden Sea, German and Danish Bights and east coast of the UK. During the larval drift period both eggs and larvae suffer high rates of mortality, estimated at around 80% per month (Bannister et al., 1973), but the precise causes of that mortality are not well understood. Starvation of early larvae has been studied (Shelbourne, 1957) but predation is likely to be the most important factor (Bunn et al., 2000; Daan et al., 1985; van der Veer, 1985). Plaice recruitment to the stock is mainly determined during the egg and larval phase and is driven by environmental factors such as sea temperature, predation, and drift of larvae to suitable nursery areas. In the final phase of planktonic development the larvae metamorphose into flatfish with the migration of the left eye onto the right side and the development of dark pigmentation on the eyed side. They then spend their first year in the shallow coastal areas followed by a gradual offshore migration, into deeper water with age (Gibson et al., 2002). In recent years, plaice distribution has changed and juveniles are not found so abundantly in the inshore nursery areas in the eastern North Sea (Beare et al., 2013).

Although the Wadden Sea is especially important as a nursery area (Kuipers, 1977; Zijlstra, 1972), settling plaice can be found on most sandy and sandy/muddy beaches around the North Sea coastline (Harlay et al., 2001; Rauck, 1974; Rogers et al., 1998) including the Thames estuary and the Wash. The nursery areas on the eastern side of the North Sea contribute most of the total recruitment (ICES, 2010a). At the time of settlement the small plaice are subjected to predation, mainly by the brown shrimp, *Crangon crangon* (van der Veer & Bergman, 1987). Overall, post settlement mortality during the first year of life, the‘0’ group phase has been estimated at about 40% per month (Bannister et al., 1973) and acts as a dampening mechanism so that variability in survivor numbers at the end of the nursery ground phase is reduced compared to the variability in numbers settling (Beverton & Iles, 1992).

The diet of post-settlement plaice is well known being dominated by polychaetes, crustaceans and molluscs (Amara et al., 2001; Thijssen et al., 1974). Post-settlement plaice may also ‘crop’ bivalve siphons without killing the prey (de Vlas, 1979; Lockwood, 1980). During the juvenile phase mortality rates gradually decline to around 10 - 20% per month during their second year as ‘1’ group fish (Bannister et al., 1973) [Note; Plaice in common with most other northern hemisphere teleost species have a nominal ‘birthdate’ of 1st January and will therefore remain as ‘0’ group fish until 31st December after which they become ‘1’ group fish]. The main predators switch from *Crangon* to shore crabs (*Carcinus maenas*) and fish as the juvenile plaice grow (Beverton & Iles, 1992). During the late summer and autumn the juvenile plaice gradually move into deeper water. A portion of 1 group and even 2-group fish may return to

shallow waters in successive years, particularly in productive areas like the Wadden Sea (Kuipers, 1973). These fish may exert an element of cannibalism on the younger fish in the area but this does not appear to have been well studied (Kuipers, 1977). Adult plaice feed on a wide variety of demersal organisms. They feed on larger molluscs including *Mactra* small scallops and razor shells, worms including *Aphrodite*, small crabs, brittle stars (*Ophiura spp*.) and even small fish such as sandeels.

There is some evidence that plaice diets may have changed over time since bivalves appeared to be more important in studies conducted in the early 20th century (Todd, 1905; Todd, 1907; Todd, 1915). This may reflect a long-term reduction in bivalve abundance in the southern North Sea, perhaps due to beam trawling (Callaway et al., 2007; Frid et al., 2000; Rumohr & Kujawski, 2000) although changes in nutrient loading and oceanography have also occurred in this region (Jennings & Kaiser, 1998). Rijnsdorp et al., (2001) examined plaice stomach contents inside and adjacent to the plaice-box protected area but no consistent differences in diet were detected between these locations.

3.3.2 Stock Structure

Although there is a single management unit covering the whole of ICES subarea IV there is known to be migration both between the North Sea and the Skagerrak (ICES division IIIa) and between the North Sea and the eastern Channel (ICES division VIId). In the Skagerrak, plaice migrate from the North Sea and mix with a component of western Skagerrak plaice, resulting in a fishery on the summer feeding grounds (Ulrich et al., 2013; WKPESTO, 2012). As a result in 2015, ICES decided to include the western Skagerrak component in the assessment as part of the wider North Sea stock (ICES, 2015b).

A similar migration of plaice from the North Sea occurs into the eastern Channel but mainly in the first quarter. Tagging data has shown that there is a spawning migration between the North Sea and the eastern Channel in December and January involving between 13% and 30% of the plaice from the southern Bight (Hunter et al., 2004a, b; WKFLAT, 2010). As a result, part of the catches in the VIId area in the first quarter have been included in the North Sea plaice assessment. In 2015, 50% of the mature animals from VIId in Q1 were added to the North Sea stock, whereas in assessments before this, 50% of the total catches were added. In addition, since 2015, 50% of the mature discards in Q1 have also been added to the North Sea stock.

3.3.3 Stock status, North Sea including Skagerrak

3.3.3.1 Spawning Stock Biomass

The trend in the spawning stock biomass is shown below (Figure 3.5). The stock declined sharply during the 1990s from a peak of over 480,000t in 1987 and fluctuated around or just below Bpa (the level of spawning biomass that should avoid recruitment failure with a high degree of certainty) of 230,000t during a number of years in the period 1994-2004. In recent years the stock has shown a strong recovery and the SSB at the start of 2016 is estimated at about 957,000t by ICES (2015a). This is a record high level for the stock and 6 times the level at which recruitment is considered to be impaired (Blim). The increase in the stock has occurred under average recruitment conditions and is not caused by a higher productivity of the stock. The main reason for the increase is considered by ICES to be the reduction of fishing mortality under the present management plan. Recent estimates of SSBmsy by ICES (WKMSYREF-3, 2014) indicated a range of 868,627 to 2,057,367. Current estimates for the combined plaice stock of 957,000t imply that the stock is fluctuating around Bmsy.

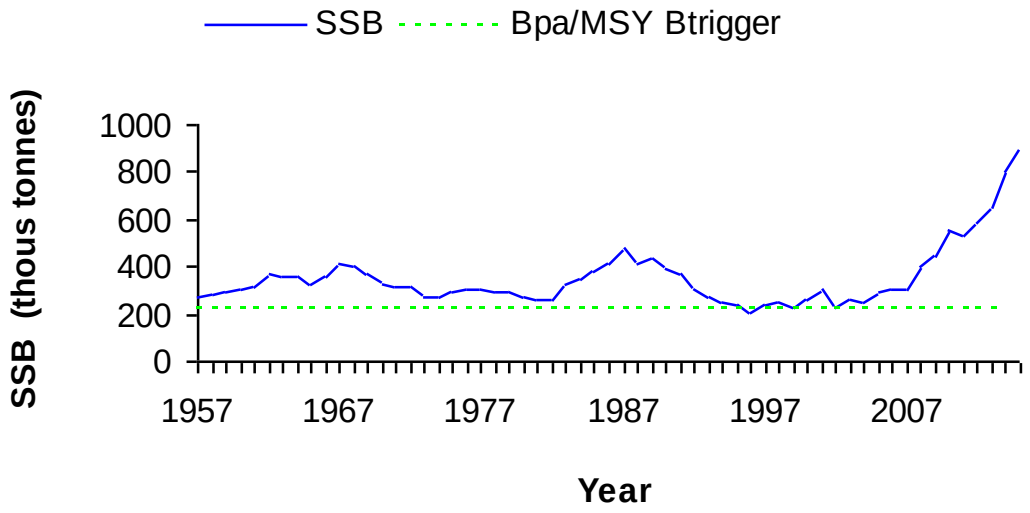


Figure 3.5: Spawning Stock Biomass (SSB) of North Sea plaice for the period 1957 to 2015 with the precautionary reference level Bpa shown (source: ICES 2015a).

3.3.3.2 Fishing mortality

Total fishing mortality which includes both human consumption and discard mortality increased over the forty year period up to 1997 after which it started to decline with the exception of a brief increase between 2001 and 2003 (Figure 3.6). Since 2003 it has decreased considerably reflecting the reduction in effort by the fishing fleet. It is estimated to have fallen below the precautionary reference level (Fpa) of 0.6 since 2005 and to be below the long-term management objective of F0.3 since 2008. In the past 7 years, fishing mortality has been estimated to be within the range of Fmsy (0.13- 0.27) and to be below the point estimate of 0.19 in 2013 and 2014.

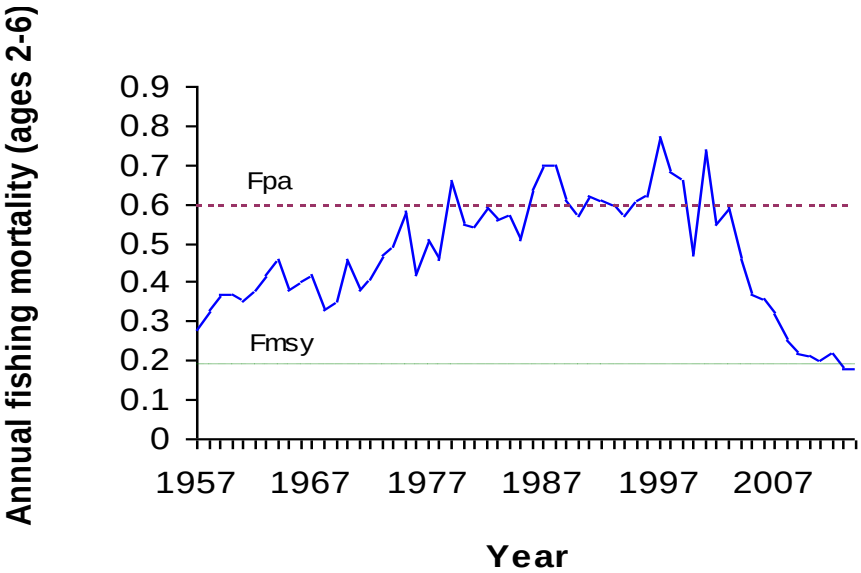


Figure 3.6: North Sea plaice total fishing mortality for landings plus discards. The precautionary reference point (Fpa) and Fmsy are based on total mortality (source: ICES 2015a).

3.3.3.3 Recruitment

Figure 3.7 shows the changes in recruitment of juvenile plaice at age 1 into the stock over the period 1957-2015. There was an increase in recruitment during the 1980s with the 1985 year-class being the largest recruitment in the time series and with other strong year classes in the 1980s including, 1981, 1984, 1986 and 1987. The strong recruitment led to a temporary increase in stock abundance despite the high level of fishing mortality. During the early 1990s, the stock declined rapidly following a period of poor recruitment apart from in 1996 and 2001 and under continuing high fishing pressure. In recent years, recruitment has varied around the long term average of around 1 billion. At the same time there has been a very strong stock recovery which implies that it has been driven mainly by the reduction in fishing mortality rather than by strong recruitment.

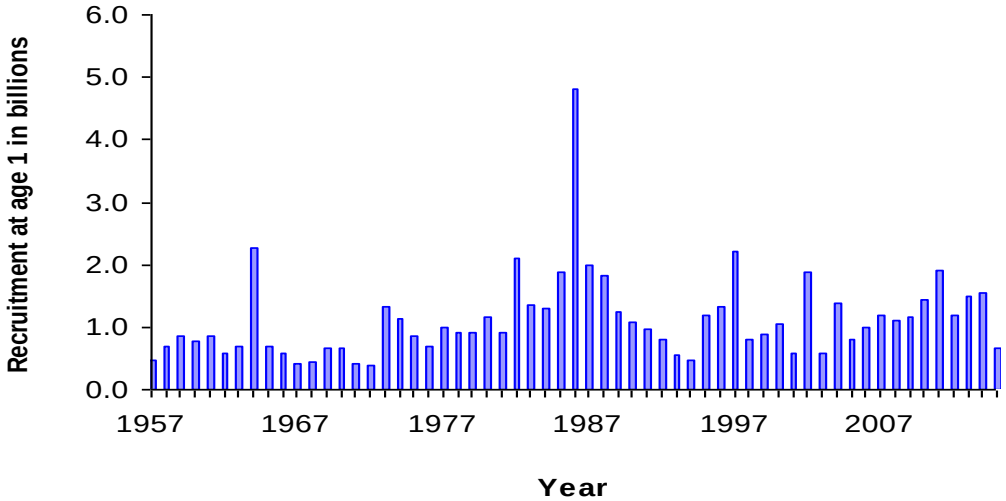


Figure 3.7: Recruitment of North Sea plaice at age 1 in billions (source: ICES 2015a).

Figure 3.8 shows the relationship between spawning stock biomass and recruitment at age 1. The scatter of points implies that there is no strong relationship between the size of the stock and recruitment over a wide range of stock abundance. There is also no clear breakpoint at which recruitment appears to be impaired.

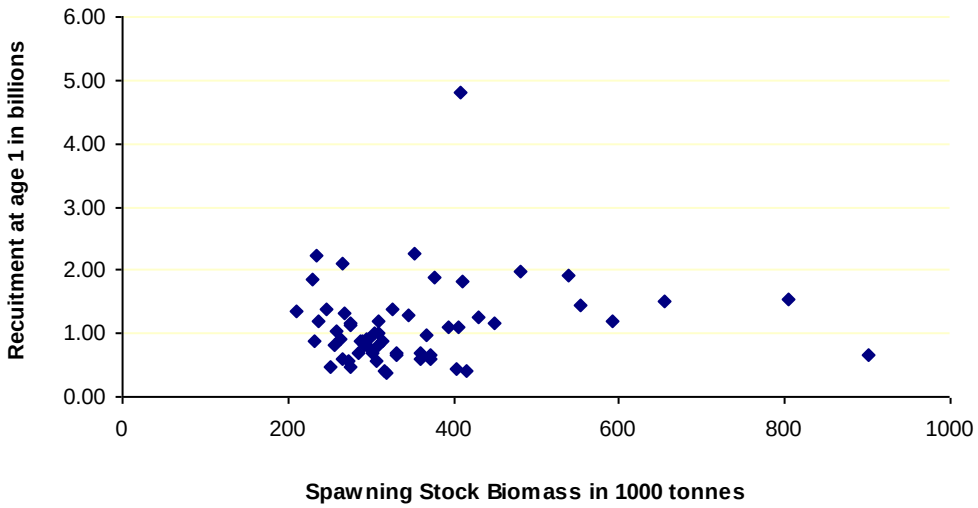


Figure 3.8: Relationship between the size of the spawning stock and number of recruits at age 1 (source: ICES 2015a).

3.3.3.4 Catch and Landings

The trend in catch (landings plus discards) between 1957 and 2014 is shown in Figure 3.9. Landings in 2014 from the combined North Sea and Skagerrak were 80,686t from a TAC of 121,687t. Discards have been a high proportion of the total catch, and in 2014, ICES estimated that 52,937t of plaice were discarded.

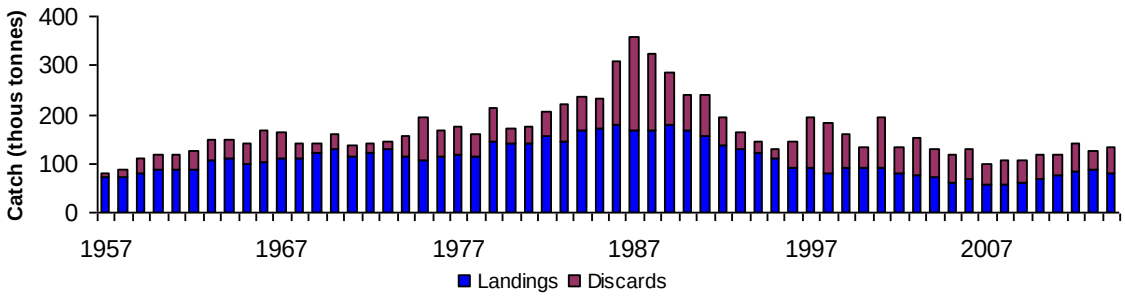


Figure 3.9: Landings and discards of North Sea plaice in thousands of tonnes (source: ICES 2015a).

3.3.4 Reference Points

3.3.4.1 Biological Reference points

Biological reference points for the North Sea plaice stock alone were established in 2004 when discard estimates were included in the assessment for the first time and are shown below (ICES 2015b). Although the stock now includes the component from the Skagerrak, the biological reference points have not yet been updated and are based on the North Sea stock only. The biomass reference points are consequently lower than they should be for the combined stock and so are marginally less precautionary but not sufficiently to have any implications in the short term. It is assumed that these will be updated in the near future by ICES.

F_{lim}	0.74
F_{pa}	0.60
F_{MSY}	0.19 (range 0.13-0.27).
B_{lim}	160 000 t
B_{pa}	230 000 t

3.3.4.2 Limit Reference Points

Limit reference points for biomass are regarded as the minimum level above which biomass should remain in order to prevent recruitment being impaired. As there is no clear breakpoint in the relationship between stock and recruitment for plaice, the limit reference point for biomass, B_{lim} was set at 160,000 t as the lowest biomass that had produced average recruitment based on figures in 2004. The lowest biomass for the combined North Sea and Skagerrak stock is around 210,000t which would imply a revised Bpa of around 300,000t. The

limit reference point for fishing mortality, F_{lim} is defined as the exploitation level that would lead to the stock falling below B_{lim} in the long term. ICES estimated F_{lim} as 0.74. Spawning Stock Biomass is estimated to be at an historically high level in 2016 and nearly 6 times the level of B_{lim} and this gives considerable confidence that it is above the level where recruitment would be impaired.

3.3.4.3 Precautionary Reference Points

In order to safeguard against the stock falling to B_{lim}, a more precautionary reference point was established by ICES which takes some account of the uncertainty in estimating biomass and fishing mortality. These reference points were defined as the precautionary points and were set to provide a buffer to reduce the probability of the stock falling to B_{lim}. The Precautionary reference point for biomass, B_{pa} was set at 230,000t, using a default multiplier of 1.4 from B_{lim} as this was considered to afford a high probability of maintaining SSB above B_{lim}. The precautionary reference fishing mortality, F_{pa}, defined as the fishing mortality that in the medium term should ensure that the SSB would be around B_{pa}, with a 50% probability, was set as 0.6. SSB has been well above B_{pa} since at least 2005.

3.3.4.4 Maximum Sustainable Yield Reference Points

In 2010 ICES implemented the MSY framework for providing advice on the exploitation of stocks. The aim was to manage all stocks at an exploitation rate (F) that is consistent with maximum long term yield while providing a low risk to the stock. Initially, following a detailed analysis which took into account the uncertainty in the stock recruit relationship for plaice, F_{MSY} was estimated at 0.25 and ICES considered that any value of F between 0.2 and 0.3 would result in high long term yields and low risk to the stock (Simmonds et al., 2010; WKFRAME-2, 2011). However, following a request from the European Commission for further advise on F_{MSY}, a workshop was held to re-evaluate the range of F_{MSY} for a number of stocks. In the case of plaice, the workshop revised the point estimate for F_{MSY} from 0.25 to 0.19 and the range from 0.13-0.27 (WKMSYREF-3, 2014). This has implications for Management Targets as the point estimate for management of F0.3 under the EU Multiannual management Plan (MAMP) is no longer within the range estimated for Fmsy (see section 3.3.8).

3.3.4.5 Management Target Reference Points

As part of a long term management plan for plaice and sole in the North Sea a target fishing mortality F_{MP} was agreed for plaice at a rate equal to or no lower than F0.3 on the basis that this would result in the highest yield from the stock in the long term (ICES 2005). The target fishing mortality was consistent with ICES advice on F_{MSY} which indicated that “the stock should be considered to be sustainably fished (e.g. in stock status tables) for any F on the range 0.2-0.3”, (ICES 2012). However, in 2014 a re-evaluation of advice on F_{MSY} ranges was requested by the EU as part of its plans to develop long term plans for mixed species in the North Sea. In order to be consistent with the ICES precautionary approach the upper bound of the range was capped, so that the probability of SSB< B_{lim} is no more than 5%. On this basis, ICES estimated a new value for F_{MSY} of 0.19 and a range for F_{MSY} of 0.13 – 0.27. This range is below the F_{mp} 0.3 and so there is an inconsistency between the management target and the current ICES advice on sustainable fishing at F_{MSY} for plaice.

3.3.5 Harvest Strategy and Harvest Control Rules

3.3.5.1 Harvest Strategy

The harvest strategy for plaice is based on an EU Multiannual Management Plan (MAMP) for the management of both plaice and sole stocks (Council Regulation (EC) No. 676/2007). The plan entails a two stage process for managing the stocks. Firstly by returning the stocks to within safe biological limits (Article 3) and in the second stage to exploit the stocks at MSY (Article 4).

The requirements for stage one have been met since plaice has been within safe biological limits since 2005 and sole in terms of F since 2008 and SSB since 2012. The implementation of the second stage was not initially defined and until 2014, plaice was managed under transitional arrangements based on the long term management target of F0.3 within the constraints that the TAC should not vary by more than 15%. Although the EU agreed to a full implementation of stage two of the plan in December 2014, the TAC for 2015 continued to be set on the basis of F0.3 with a constraint of 15% on the TAC compared to the previous year.

In addition to the strategy set out in the MAMP, a range of technical measures, effort control and closed areas are also used including:

1) There is a minimum landing size of 27cm for fish caught in IVa, IVb and IVc except in the Norwegian sector of IVa where the size is 29cm.
2) South of the area largely defined by 56^0 30N the permitted mesh size for towed gears is 80mm to allow fishing for sole in a mixed plaice and sole fishery. To the north of this the minimum mesh size is 100mm. In both cases, vessels have a cod by-catch limit of 5% by weight of the total catch. Most twin-rig vessels fishing north of 56^0 30N use mesh sizes in excess of 115mm to minimize discards of plaice and reduce the amount of benthos caught. In the Norwegian sector mesh size is generally above 130mm.
3) Closed areas operate within the 12nm zone from the coast where no fishing is permitted for vessels >300 HP and in the Plaice Box a protected area for juvenile flatfish which extends from 53^0N on the Dutch coast up to 57^0N on the Danish coast.
4) Effort restrictions have applied to vessels fishing for flatfish in the North Sea as a result of the EU MAMP which set targets for reductions in fishing effort by beam trawlers greater than 300HP and also as a result of regulations to protect cod. Under the recovery plan for cod, effort was managed by restricting kW-days at sea. The combination of effort regulations and economic factors has resulted in a large reduction in overall effort. For beam trawlers which make up the largest fleet segment, effort has decreased by 65% since its peak in 1998 (ICES 2014). There are also restrictions on effort based on beam length. The maximum beam length permitted is 24m offshore and within the 12nm zone beam length is restricted to 9m.

3.3.5.2 Harvest Control Rules

The harvest control rules are defined by the MAMP and set out how the TAC should be determined in relation to precautionary reference points and the long term management reference point. In the first stage, the procedure for rebuilding the stocks to within safe biological limits are set out in Article 3 by reducing fishing mortality on plaice by 10% each year with the constraint that the TAC should not be allowed to vary by more than 15% per

year. In the second stage, the objectives of the multiannual plan are to ensure exploitation of the stocks of plaice and sole on the basis of maximum sustainable yield. The procedure for setting the TAC in this stage is defined in Article 7:

> *1) The Council shall adopt the TAC for plaice at that level of catches which, according to a scientific evaluation carried out by STECF is the higher of : a) that TAC the application of which will result in a 10% reduction in fishing mortality rate in its year of application compared to the fishing mortality rate estimated for the preceding year.; b) the TAC application of which will result in the in the level of fishing mortality rate of 0.3 on ages two to six years in its year of application.*
>
> *2) Where application of paragraph 1 would result in a TAC which exceeds the TAC of the previous year by more than 15%, the Council shall adopt a TAC which is 15% greater than the TAC of that year.*
>
> *3) Where application of paragraph 1 would result in a TAC which is more than 15% less than the TAC of the preceding year, The Council shall adopt a TAC which is 15% less than the TAC of that year.*

The HCRs have been effective along with the reduction in overall effort in the fleets in achieving exploitation of plaice at or below the long term management target F0.3. The second stage of the MAMP clearly sets out procedures for ensuring F remains around F_{MSY} and requires that F is reduced by 10% annually if F moves above F0.3. It is implicit in this approach, that if SSB were to fall once again outside safe biological limits, F would continue to be reduced annually by 10% subject to the 15% TAC constraint. The MAMP does not clearly set out rules that would apply if the stock were to continue to decline towards limit reference points where recruitment might be impaired. The only provision for this eventuality is provided for under Article 18 of the MAMP which deals with Special Circumstances. This gives the Council of the EU, on the basis of advice from its scientific experts, the power to set a lower TAC not constrained by the 15% rule and allows it to determine a greater reduction in fishing mortality than the 10% applicable under the MAMP rules, provided these changes are agreed by a qualified majority of the Council.

3.3.5.3 Management Advice for 2015 and proposals for 2016

The agreed TAC for 2015 was 128,376t based on the F_{mp} of 0.3 but constrained by maximum increase in TAC of 15% compared with the previous year. This was expected to lead to an SSB of around 750,000t in 2016.

The TAC advice from ICES for 2016 was for a combined TAC for the North Sea and Skagerrak. If the advice follows the long term management F of F0.3 with a constraint of 15% on the TAC, this would result in a combined TAC of 159,197t and SSB in 2016 of 940,500t. If the advice follows the MSY approach with no constraint on the TAC compared with the previous year, the TAC would be set at 106,231t and an estimated SSB of just over a million tones.

3.3.6 Data Collection

North Sea plaice is one of the most heavily studied stocks in the eastern Atlantic with fishery data collection extending back to the late 1800s and a full age based assessment time series available from 1957. Since 2004 the assessment has also included numbers at age of discards as well as retained fish.

Approximately 63% of the total landings weight are sampled. Landings data are split by sex separately for the Netherlands and Belgium (accounting for 50% of the landings) using sex ratios obtained during market sampling and sex combined for all other countries. Age, length and maturity data are collected by the Netherlands, France, Germany, Denmark and Belgium. Sampling levels are currently considered to be satisfactory. Discards form a substantial part of the total catch particularly in the North Sea beam trawl fishery targeted at sole. The proportion of plaice discarded in this fishery has increased considerably since the 1970's and is now estimated to be around 80% by number and over 50% by weight (van Reijden, 2014). Discard estimates are based on observer programs in the Dutch, UK, German and Danish fleets for 2000-2014 and from Belgium for more recent years. Prior to that, a reconstructed discard series for 1957-1999 is used (ICES, 2005). Since 2004 a 'self-sampling' program for discarding has also been in operation within the Dutch beam trawl fleet that provides valuable additional data on spatial and temporal trends in discarding. The programme was improved in 2009 and 2010 by comparing the data with observer trips and from 2011, Dutch discard data has come from self-sampling trips alone which has greatly extended the coverage in area and gear types. In 2013, a total of 132 trips were sampled by the programme including 9 trips in vessels using demersal otter trawl 70-99mm mesh and 13 with demersal otter trawl using 100-119mm gear which are consistent with two of the UoCs under assessment. The discard data was considered by ICES in 2014 to be robust and consistent from year to year. For the first time in 2015, landings and discard estimates from the Skagerrak were included in the assessment. Landings from the Skagerrak generally amounted to less than 15% of the total from area IV in the North Sea.

Natural mortality is set at 0.1 for all ages whilst maturity is set at 0.5 for ages 2 and 3 and fully mature from age 4 onwards. In the assessment of the stock these values are assumed to be constant over time because incorporation of historic changes has been shown to have little effect on the estimation of SSB which is used to assess biological sustainability.

Fishery independent information in the form of CPUE (Catch Per Unit Effort, the quantity of fish caught by a standard amount of fishing effort) data is available from three separate research vessel surveys. The RV surveys generate age disaggregated tuning indices which are currently used in the stock assessment process to calibrate the assessment. Surveys consist of two Dutch research vessel surveys using an 8m beam trawl with 40mm mesh cod

end. One survey, begun in 1985 covers the south-eastern part of the North Sea (BTS-Isis) and the other, started in 1996, covers the central North Sea (BTS-Tridens). Up to 2001 both surveys were used as tuning indices for plaice age groups 1-4 but since 2001 age groups up to 9 have been included. In 2015, the BTS-Isis survey was used separately up to 1995 and a combined Isis and Tridens survey used from 1996-2014. A third Dutch survey (SNS) is carried out in September/October using a 6m beam trawl with 40mm mesh cod end. This survey is targeted at juveniles, with transects perpendicular to the coast. It provides a time series of tuning data back to 1990 for plaice ages 1-3 for the assessment and a '0' group index for the estimation of recruitment.

Additional coastal surveys are conducted by a number of countries and a combined international index used for estimating recruitment of plaice at age 0 and 1. Commercial LPUE (Landings Per Unit Effort) data from the Dutch beam trawler fleet and the UK beam trawler fleet up to 2002 (excluding flagged vessels) are also available to the Working Group but are currently only used in exploratory analyses of the data and not in the final assessment.

3.3.7 Stock Assessment

Assessment of North Sea plaice is carried out by the ICES Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK). Prior to 2007 the Working Group met annually, in September each year, and their assessments were reviewed and endorsed subject to any changes, by the ICES ACFM (now ACOM) at their meeting in October. The Working group now meets in May which allows their assessments and report to be reviewed and endorsed at the May meeting of ACOM. The assessment uses official national landings data which is recorded by all countries participating in the fishery, and reported to ICES, together with the total landings estimated by the Working Group. Estimated landings for 2014 for the North Sea and Skagerrak were 80,686t compared with 86,222t the previous year and were 34% below the combined TAC of 111,631t.

The assessment is regularly reviewed through bench mark assessments carried out to assess the robustness of input parameters and models used in the assessment, including most recently in 2015 (WKPLE, 2015). In addition there have been numerous reviews of key parameters such as precautionary reference points (ICES 2004), Stock identity (WGPESTO 2012) and MSY reference points (WKMSYREF3) as well as analysis of alternate assessment models such as Aarts and Poos (2009) who reviewed a statistical catch at age model.

The assessment model used for this stock is an aged based model, the extended survivors analysis (XSA), using landings and discards, calibrated with three fishery independent, survey indices. The XSA model has been used within ICES as an important tool for catch-at-age analysis for most demersal stocks. Careful consideration is given by the WG each year to the appropriateness of all aspects of the model parameters in relation to each species. In addition, in 2010, a statistical catch at age model (SCA) developed by Aarts and Poos (2009) was used alongside XSA. This model has the advantage that it includes data on landings and discards separately and allows for observational errors on those and other data sources. The output from this model provides SSB estimates with 95% probability bounds around the median and gave similar trends in stock abundance and mortality to the conventional XSA approach.

The output from XSA shows a slight historical bias with F in previous years being overestimated and SSB underestimated compared with the current year. This retrospective pattern is considered by the WG to be driven by differences in the trends in abundance in the survey time series as well as previously by uncertainty in discards estimates. Splitting the

survey time series in recent years has reduced the bias and the trends in both SSB and mortality were similar in 2015 to previous assessments in 2013 and 2014. The improvement in the level of sampling of discards and availability of 13 years of discard samples has also helped to reduce variability in the retrospective patterns in recent years.

The addition of Skagerrak plaice into the assessment for the first time in 2015 has not affected the trends in biomass, mortality or recruitment but has resulted in an overall increase in stock abundance of around 20% in recent years.

3.3.7.1 Client catch composition

The plaice catch is sorted into four size categories for sale after landing, equivalent to fish 27-31cm (category 4), 31-35cm (category 3), 35-41cm (category 2) and >41cm (category 1). The length composition of the landings of plaice from three UoC vessels all fishing with 100+mm mesh in 2008 and 2009 is shown in Figure 3.10. The most abundant size group in the landings in both years were in the smallest size categories, 27-31cm.

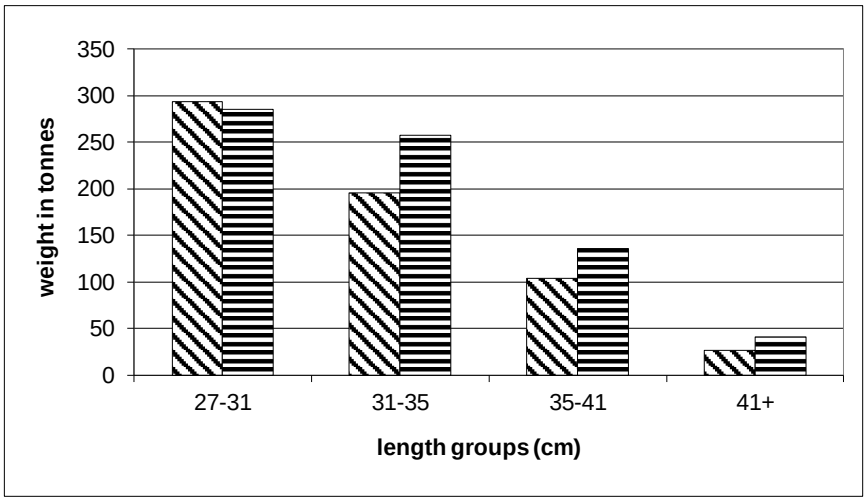


Figure 3.10 Profile of landings of plaice by EC market size category for vessels in UoC in 2008 (diagonal bars) and 2009 (horizontal bars). [Source: B. Keus, *pers comm*.].

3.3.8 Key Low Trophic Level Species

The assessment team has considered the status of the target species with respect to the criteria for determining “Key Low Trophic Level” species set out by the MSC (CRv1.3 at §CB2.3.13). We conclude that the target species plaice is a predator of small fish and benthos and is not a key lower trophic level species.

3.4 Principle Two: Ecosystem background

The information presented in this section is provided to support the rationale set out for the Principle Two Performance Indicators in Appendix 1 of this report. Principle Two of the MSC Standard has 5 components:-

- Retained non-target species
- Bycatch species (discarded non-target species)
- Endangered, Threatened or Protected (ETP) species
- Habitats
- Ecosystems

This section considers the information available about the information available about the effect of the fishery on each of these Principle Two components in turn. We also describe the information available about the status of the components; the management arrangements that are in place to mitigate or regulate adverse impacts; and the procedures in place to gather information about fishery impacts on a.

3.4.1 Non-target species

Most fishing activities, including those under assessment, result in the capture of non-target species in addition to the target species of fish. Non-target species may include other species of fish, as well as other vertebrates, and invertebrates.

In an MSC assessment, the non-target species in the catch may be considered as either “retained non-target species” or “bycatch” (discarded non-target species). Some “Endangered Threatened or Protected” (ETP) species may also be caught as non-target species.

This sub-section of the report considers the information that is available about the catch, discards and landings from the Osprey Group trawlers and from other comparable vessels working in the North Sea to build up a picture of which non-target species may be relevant to each of the UoCs under assessment.

Under the MSC Certification Requirements, a distinction is made between “main” non-target species and other non-target species. The MSC define “main” retained species as those that make up 5% or more of the total catch (unless the retained species have a high value, are particularly vulnerable, or the fishery is large (MSC GCR at §GCB3.5.2). This distinction is applied in this section of the report.

For many fisheries there is a paucity of information available about non-target species capture, discarding and landings. For this fishery the reverse is true – there have been many studies conducted by the industry and by independent scientists. The challenge for the assessment team has been to review and distil the information available so that the assessment can be performed.

In order to conduct a thorough audit, all of the available information to the assessment team about the retained catch and landings data has been considered here, as well as all of the information available about discarding from the fishery. We have also summarised the comments made by stakeholders about the catch of non-target species, and the information available about the relevant management actions in place that related to these non-target species. Having considered all of this information, we have identified which species should be considered “main” retained and bycatch (discarded) species, and which should be regarded as ETP species.

3.4.1.1 Catch studies

Catch studies conducted aboard fishing vessels can provide information about the unsorted catch obtained using the fishing gear, and may also examine the fate of the catch (i.e. whether it is retained aboard the vessel or discarded at sea). The information available from catch studies is summarised here.

3.4.1.1.1 North Sea Plaice & lemon sole study

In 2004, scientists from Cefas in the UK carried out a study of the catch obtained by twin rig trawl fisheries working in the North Eastern North Sea (Cefas, 2004). Although much of this study took place to the north west of the main fishing grounds presently fished by this UoC (compare Figure 3.11 and Figure 3.23), there is an overlap in the areas, and the study examined catches obtained with 100mm and 120mm cod end meshes. It therefore provides some useful context and information about the character of the UoCs under assessment.

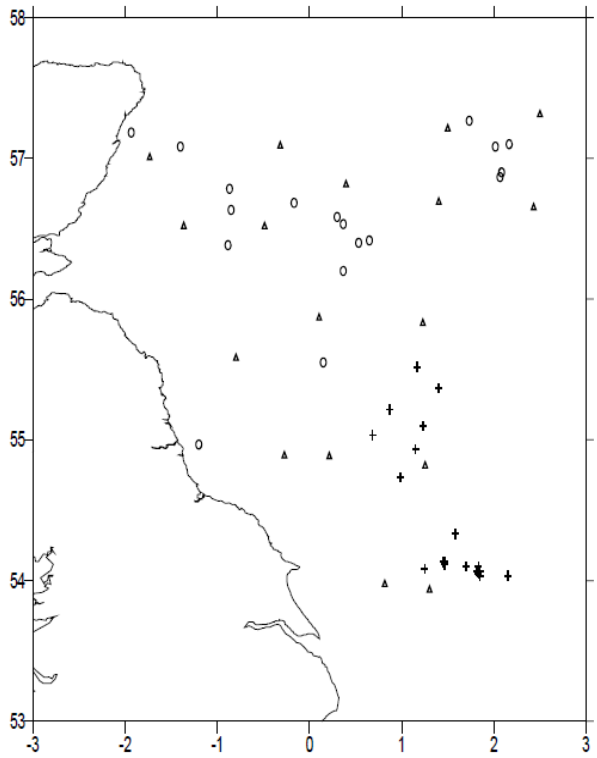


Figure 3.11: Location of sample stations examined in the North Sea plaice & lemon sole study (plus and circle stations were sampled by commercial vessels; triangle stations by RV Cefas Endeavour). [Source: Cefas, 2004].

A total of 44 hauls were examined in this study (23 from one vessel and 18 aboard another). The key findings of this study were that plaice comprised over 70% of the catch in the twin-rig trawl fishery, and that lemon sole (*Microstomus kitt*) formed between 12 and 16% of landings. Catch composition varied between areas, with the highest catch of plaice between 60 and 90 nautical miles of the Humber Estuary northwards.

The comparison of 100mm and 120mm gear in this study was inconclusive, though the smaller meshed cod-end resulted in the retention of more small plaice and lemon sole than the larger meshed gear.

3.4.1.1.2 RIVO twin rig trawl study (2003 & 2004)

In 2003 and 2004, RIVO (the Netherlands Institute for Fisheries Research) published reports about the (then new) North Sea twin rig trawl; fishery on behalf of the Dutch Fisheries Product Board (van Keeken et al, 2003; Grift et al, 2004). These reports were based on studies of landings, interviews with fishermen, and 5 trips aboard twin rig vessels using a 100mm mesh as well as 4 trips aboard twin rig vessels using an 80mm mesh (that were targeting Nephrops). The studies also examined discard survival. The key findings are summarised below.

The data presented in these reports do not enable the quantity of discards or retained species to be considered as a proportion of the total catch, and also aggregate landing data for both the 80mm *Nephrops*-directed twin rig trawl fishery with that for the 100mm plaice-directed fishery. They do not, therefore, provide information that identifies “main” non-target species for the UoCs under assessment here. Nevertheless they provide some useful historical information about catch and discard composition.

The studies found that twin rig trawlers landed more cod, red mullet, Nephrops, red gurnard, dab and whiting than a beam trawler and fewer plaice per day at sea. Sole, however, were hardly caught in the twin rig trawls.

Discard rates (in terms of discards per unit effort) from the twin rig trawl fishery targeting plaice (with 100mm mesh nets) were lower than that from the beam trawl fishery. Discard rates in twin rig vessels using 80mm mesh sizes to target *Nephrops* were higher than beam trawl discards however.

Post-capture survival rates were reported to be low in both twin-rig and beam trawl fisheries, with most fish dying within 60 hours of capture, and average survival of 8%.

The reports found that the plaice discarded from 100mm twin rig trawl gear were larger than those from the 80mm twin rig gear and 80mm beam trawl gear (Figure 3.12).

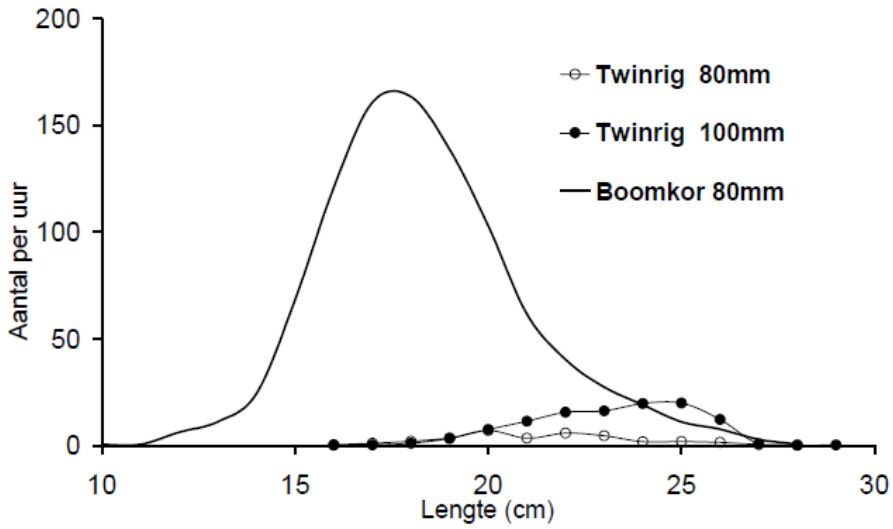


Figure 3.12: Length distribution of plaice discards from 80mm and 100mm twinrig trawl fisheries and 80mm beam trawls (“Boomkor”). [Source: Grift et al, 2004].

This report also documented the patterns of fishing activity observed during the study period from 2002-03. This information is shown in Figure 3.13, providing some independent verification of historical patterns of fishing activity. The pattern of activity is similar to that seen in recent years (see Figure 3.23), which gives relevance to this study, even though it is more than 10 years old.

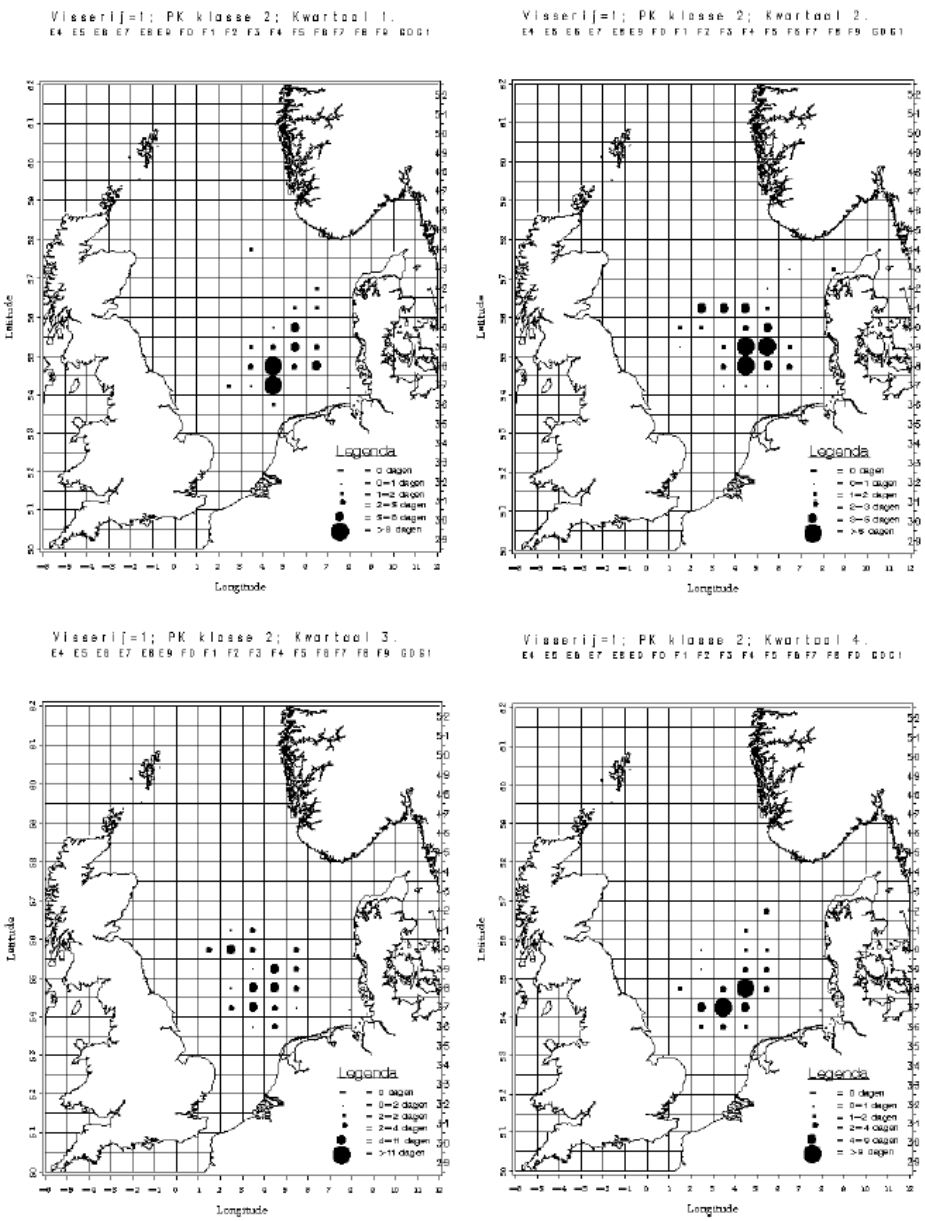


Figure 3.13: Seasonal pattern of fishing industry activity in the North Sea for larger trawlers in the TR1 (>100mm) twin rig trawl fishery for each year quarter over the period 2002-2003. [Source: Grift et al, 2004].

These studies also considered the numbers of benthic invertebrate species caught and discarded per hour from the North Sea twin rig and beam trawl fisheries. The quantity discarded was consistently lower in the twin rig trawl fishery than the beam trawl fishery (see Table 3.4).

Table 3.4: Numbers of invertebrate species discarded per hour in North Sea twin-rig and beam trawl fisheries in 2002 and 2003. [Source: van Keeken et al, 2003].

Species	2002		2003	
	Twinrig	Beamtrawl	Twinrig	Beamtrawl
Starfish (Asterias rubens)	51	496	136	1130
Sand star	2	409	272	2064
Brittle star	<1	821	2	867
Swimming crab	17	555	44	361
Spider crab	<1	206	7	537
Hermit crab	2	316	6	100
Heart urchin	0	154	12	164
Total	**74**	**2957**	**479**	**5223**

3.4.1.1.3 IMARES gear study (Osprey Group, 2014)

In September 2014, IMARES were commissioned by Osprey Trawlers to examine the catch characteristics of a new trawl design. The new design was developed to reduce discards and fuel consumption. Compared to the “old” net the “new” net had a lighter ground rope, more space between the discs on the ground rope in the middle of the ground rope, thinner Dyneema rope and larger mesh sizes in several parts of the net. This study was conducted aboard the FV Good Hope at locations within the UoC area on the Dogger Bank (see Figure 3.14). This study examined both the retained and discarded catch.

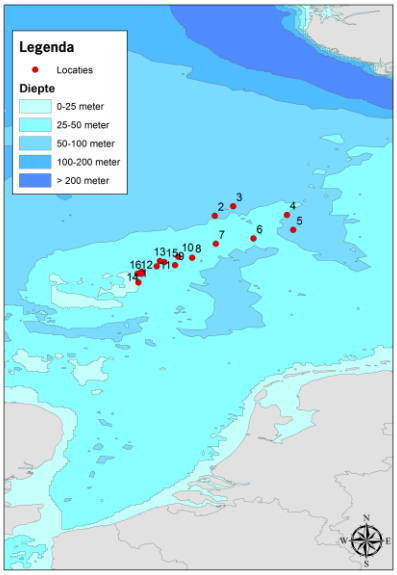


Figure 3.14: Location of trawls hauls on the Doggerbank sampled during gear trials for Osprey trawlers. [Source: Wijsman et al, 2014].

The results of this study found no significant difference in the retained catch between the “old” and “new” nets on trial (see Table 3.5). In both cases, plaice made up over 88% of the total catch, followed by turbot (approximately 4% of retained catch). Around 99% of all of the plaice caught were retained. Retention rates were high for other valuable flatfish species such as

turbot, sole, and lemon sole and also for gurnard species. All of the spurdog, spotted and starry rays caught in this trial were discarded.

Table 3.5: Catch composition in old and new net designs aboard the FV *Good Hope*, September 2014. Orange shading indicates the target species. There were no "main" non target species making up 5% or more of the catch. [Source: Wijsman et al, 2014].

Species Name			Catch new net						Catch old net					
			Average catch per haul (kg)			%	Discarded	Retained	Average catch per haul (kg)			%	Discarded	Retained
Dutch	English	Scientific	Discarded	Retained	Total		%	%	Discarded	Retained	Total		%	%
Dikrugtong	Thickback sole	*Microchirus variegatus*	0.00	0.00	0.00	0.0%	NA	NA	0.00	0.00	0.00	0.0%	100.0%	0.0%
Doornhaai	Spurdog	*Squalus acanthias*	0.25	0.00	0.25	0.0%	100.0%	0.0%	0.00	0.00	0.00	0.0%	NA	NA
Dwergpijlinktvis	Common squid	*Alloteuthis subulata*	0.00	0.00	0.00	0.0%	NA	NA	0.00	0.00	0.00	0.0%	100.0%	0.0%
Dwergtong	Solenette	*Buglossidium luteum*	0.00	0.00	0.00	0.0%	100.0%	0.0%	0.01	0.00	0.01	0.0%	100.0%	0.0%
Gevlekte gladde haai	Spotted smooth hound	*Mustelus asterias*	0.19	0.00	0.19	0.0%	100.0%	0.0%	0.00	0.00	0.00	0.0%	100.0%	0.0%
Gevlekte rog	Spotted ray	*Raja montagui*	0.08	0.00	0.08	0.0%	100.0%	0.0%	0.00	0.00	0.00	0.0%	NA	NA
Grauwe poon	Grey gurnard	*Eutrigla gurnardus*	0.42	11.90	12.32	2.4%	3.4%	96.6%	0.26	8.28	8.53	1.7%	3.0%	97.0%
Griet	Brill	*Scophthalmus rhombus*	0.00	1.24	1.24	0.2%	0.0%	100.0%	0.00	1.39	1.39	0.3%	0.0%	100.0%
Harnasmannetje	Hooknose	*Agonus cataphractus*	0.00	0.00	0.00	0.0%	NA	NA	0.00	0.00	0.00	0.0%	100.0%	0.0%
Heek	Hake	*Merluccius merluccius*	0.00	0.08	0.08	0.0%	0.0%	100.0%	0.00	0.18	0.18	0.0%	0.0%	100.0%
Inktvis	Squid		0.00	0.24	0.24	0.0%	0.0%	100.0%	0.00	0.00	0.00	0.0%	NA	NA
Kabeljauw	Cod	*Gadus morhua*	0.83	1.26	2.09	0.4%	39.8%	60.2%	0.09	0.16	0.25	0.0%	36.6%	63.4%
Noordzeekrab	Edible crab	*Cancer pagarus*	1.29	0.00	1.29	0.3%	100.0%	0.0%	1.63	0.00	1.63	0.3%	100.0%	0.0%
Noorse kreeft	Nephrops	*Nephrops norvegicus*	0.03	0.79	0.81	0.2%	3.1%	96.9%	0.01	0.54	0.54	0.1%	1.1%	98.9%
Rode poon	Red gurnard	*Chelidonichthys cuculus*	0.00	0.90	0.90	0.2%	0.0%	100.0%	0.00	1.70	1.70	0.3%	0.0%	100.0%
Rog	Ray species	*Raja spp*	0.00	1.02	1.02	0.2%	0.0%	100.0%	0.00	0.00	0.00	0.0%	NA	NA
Schar	Dab	*Limanda limanda*	3.16	5.66	8.82	1.7%	35.8%	64.2%	6.27	4.42	10.69	2.1%	58.6%	41.4%
Schol	Plaice	*Pleuronectes platessa*	4.57	441.75	446.32	87.2%	1.0%	99.0%	6.02	433.61	439.62	88.2%	1.4%	98.6%
Schurftvis	Scaldfish	*Arnoglossus laterna*	0.00	0.00	0.00	0.0%	100.0%	0.0%	0.00	0.00	0.00	0.0%	100.0%	0.0%
Sterrog	Starry ray	*Amblyraja radiata*	8.67	0.00	8.67	1.7%	100.0%	0.0%	6.17	0.00	6.17	1.2%	100.0%	0.0%
Tarbot	Turbot	*Scophthalmus maximus*	0.00	21.73	21.73	4.2%	0.0%	100.0%	0.00	21.39	21.39	4.3%	0.0%	100.0%
Tong	Sole	*Solea solea*	0.00	0.25	0.25	0.0%	0.0%	100.0%	0.00	0.04	0.04	0.0%	0.0%	100.0%
Tongschar	Lemon sole	*Microstomus kitt*	0.17	4.19	4.36	0.9%	4.0%	96.0%	0.35	4.39	4.75	1.0%	7.4%	92.6%
Witje	Witch	*Glyptocephalus cynoglossus*	0.00	0.24	0.24	0.0%	0.0%	100.0%	0.00	1.22	1.22	0.2%	0.0%	100.0%
Wijting	Whiting	*Merlangius merlangus*	0.02	0.00	0.02	0.0%	100.0%	0.0%	0.00	0.00	0.00	0.0%	NA	NA
Zeedonderpad	Shorthorn sculpin	*Myxocephalus scorpius*	0.04	0.00	0.04	0.0%	100.0%	0.0%	0.00	0.00	0.00	0.0%	NA	NA
Zeeduivel	Wolf fish	*Anarhichas lupus*	0.00	0.96	0.96	0.2%	0.0%	100.0%	0.00	0.47	0.47	0.1%	0.0%	100.0%
		TOTAL	**19.72**	**492.20**	**511.92**		**3.9%**	**96.1%**	**20.81**	**477.78**	**498.58**		**4.2%**	**95.8%**

3.4.1.1.4 Cefas data (Osprey Group, 2015)

During July 2015, a study of catch composition and discarding was carried out aboard the FV Ansgar, a member of the client fleet (Cefas, 2015). During this study, different cod-end mesh sizes were used in each of the two trawls towed behind the vessel, enabling the direct comparison of the number of each species in the catch and subsequently retained. The results of this study are summarised in Table 3.6~~Table 3.6~~ overleaf. This indicates that plaice made up over 70% of the retained catch (by number) in both 110mm and 95mm gear. In both types of gear the only non-target species that made up more than 5% of the retained catch during this study was the dab, *Limanda limanda* (19.8% of the retained catch in 110mm gear and 17.5% in 95mm gear).

This study examined the likely fate of the fish in the catch. Most of the dab that were caught were likely to be discarded (62% of those in 110mm gear were discarded; 81% in 95mm gear). By contrast, over 90% of the lemon sole (*Microstomus kitt*) that were caught by each gear type were likely to be retained for landing.

On the basis of this study, it is apparent that dab are a “main” catch component, and that most of the dab caught in the fishery are discarded. No other species made up more than 5% of the catch.

It is noted that this particular study considers the number rather than weight of fish. It is therefore likely to give a higher estimate of discarding than studies examining the weight of fish discarded, since most discarded fish tend to be small.

Table 3.6: Summary of catch composition and proportions of retained catch from the FV Ansgar, July 2015. Rose coloured shading indicates species making up 5% or more of the catch. Orange shading highlights the target species. Figures indicate numbers of individuals and not weight. [Source: Cefas, 2015]

Fish species		110mm cod end mesh						95mm cod end mesh					
		Number in catch				Fate		Number in catch				Fate	
Common Name	**Scientific Name**	**Discarded**	**Retained**	**Total**	**%**	**% retained**	**% discarded**	**Discarded**	**Retained**	**Total**	**%**	**% retained**	**% discarded**
Anglerfish (Monkfish)	*Lophius piscatorius*	0	33	33	0.1%	100%	0%	0	1	1	0.0%	100%	0%
Brill	*Scophthamus rhombus*	0	28	28	0.1%	100%	0%	0	9	9	0.0%	100%	0%
Cod	*Gadus morhua*	0	10	10	0.0%	100%	0%	0	0	0	0.0%	NA	NA
Crab (edible)	*Cancer pagurus*	36	95	131	0.6%	73%	27%	174	526	700	2.6%	75%	25%
Dab	*Limanda limanda*	2799	1689	4488	19.8%	38%	62%	3918	892	4810	17.5%	19%	81%
Spurdog	*Squalus acanthias*	0	0	0	0.0%	NA	NA	2	0	2	0.0%	0%	100%
Flounder	*Pleuronectes flesus*	0	0	0	0.0%	NA	NA	0	1	1	0.0%	100%	0%
Garfish	*Belone belone*	0	0	0	0.0%	NA	NA	6	0	6	0.0%	0%	100%
Grey Gurnard	*Eutrigla gurnardus*	672	0	672	3.0%	0%	100%	1011	0	1011	3.7%	0%	100%
Haddock	*Melanogrammus aeglefinus*	0	2	2	0.0%	100%	0%	0	0	0	0.0%	NA	NA
Hake (European)	*Merluccius merluccius*	0	11	11	0.0%	100%	0%	0	0	0	0.0%	NA	NA
Horse Mackerel	*Trachurus trachurus*	20	0	20	0.1%	0%	100%	0	0	0	0.0%	NA	NA
John Dory	*Zeus faber*	0	3	3	0.0%	100%	0%	0	7	7	0.0%	100%	0%
Lemon Sole	*Microstomus kitt*	11	687	698	3.1%	98%	2%	46	1056	1102	4.0%	96%	4%
Ling	*Molva molva*	0	1	1	0.0%	100%	0%	0	0	0	0.0%	NA	NA
Red mullet	*Mullus barbatus*	0	0	0	0.0%	NA	NA	0	1	1	0.0%	100%	0%
Common Squids	*Loligo forbesii*	0	0	0	0.0%	NA	NA	12	13	25	0.1%	52%	48%
Plaice (European)	*Pleuronectes platessa*	1870	14157	16027	70.7%	88%	12%	1784	17762	19546	71.3%	91%	9%
Starry Smoothound	*Mustelus asterias*	0	0	0	0.0%	NA	NA	4	0	4	0.0%	0%	100%
Sole (Dover sole)	*Solea solea*	0	2	2	0.0%	100%	0%	35	8	43	0.2%	19%	81%
Starry Ray	*Raja radiata*	498	0	498	2.2%	0%	100%	0	0	0	0.0%	NA	NA
Tub Gurnard	*Trigla lucerna*	0	0	0	0.0%	NA	NA	0	27	27	0.1%	100%	0%
Turbot	*Scophthalmus maximus*	0	43	43	0.2%	100%	0%	0	129	129	0.5%	100%	0%

Information on the catch of benthic species was also presented in this study, and is summarised below:-

Table 3.7: Summary of invertebrate catch composition from the FV Ansgar, July 2015. Note that these are actual numbers observed, not raised numbers [Source: Cefas, 2015]

Species		110mm cod end mesh	95mm cod end mesh
Common Name	**Scientific Name**	**Number in catch**	**Number in catch**
Swimming crab	*Liocarcinus depurator*	1	1
Angular crab	*Goneplax rhomboides*	0	1
Hermit crab	*Pagurus* spp.	4	6
Icelandic cyprene (shell only)	*Arctica islandica*	14	0
Scallop (shell only)	*Pecten maximum*	2	0
Razorshell (shell only)	*Ensis* spp.	16	24
Common starfih	*Asterias rubens*	9	194
Seven-armed starfish	*Luidia ciliaris*	31	0
Brittlestar	*Ophiuroidea*	0	2
Edible sea urchin	*Echinus esculenus*	0	2
Green seaweed	*Chlorophycea*		Present
Bladder wrack	*Fucus vesiculosus*		Present
Sponges	Porifera	Present	Present

3.4.1.1.5 IMARES & North Sea Foundation Report

In 2013 the North Sea Foundation teamed up with WWF-Netherlands and the Dutch trawl operator Ekofish to examine whether industrial survey (catch) data could be used to strengthen scientific assessment of the key commercial by-catch species in the North Sea flatfish fishery. IMARES were contracted by these partners to carry out the research work. The results of this work have been published in the document “Fishing for Knowledge” and also in an IMARES report (van der Reijden et al, 2015).

This work was carried out with the aim of establishing accurate CPUE data for turbot (*Scopthalmus maximus*), brill (*Scopthalmus rhombus*) and lemon sole (*Microstomus kitt*). During 2014 a total of 24 hauls were carried out in 24 ICES rectangles in the central North Sea (all located in ICES Sub-Area IVb, see Figure 3.15). Two trawls were used in the study – one with a 100mm cod-end mesh on the starboard side of the vessel, and a 120mm cod-end mesh on the port side.

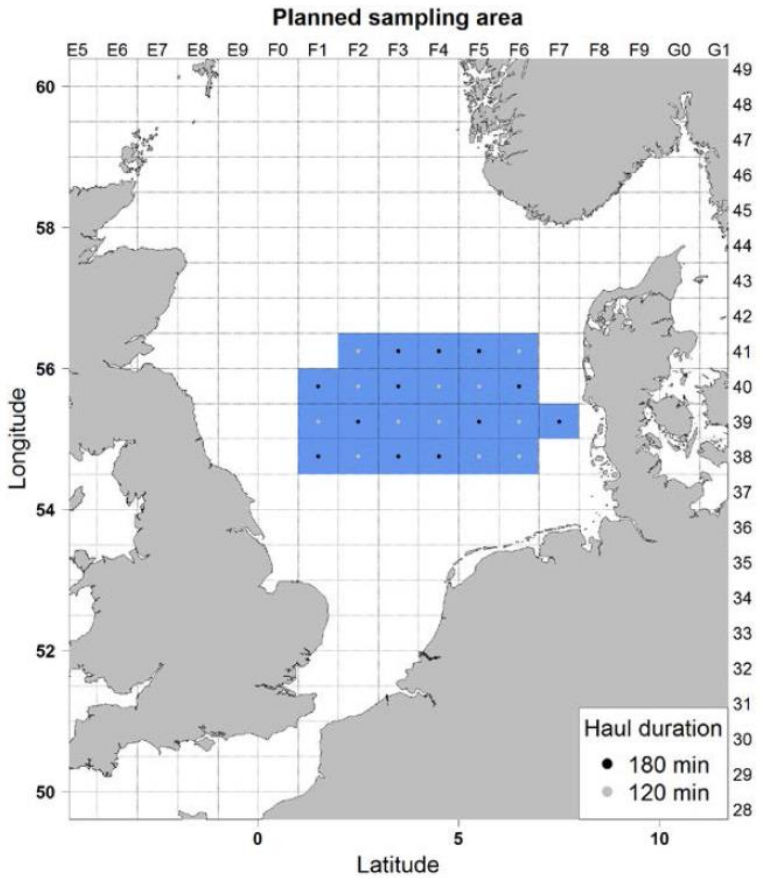


Figure 3.15: Sampling locations for trawls examined in the "Fishing for knowledge" project (Source: van der Reijden, 2015).

Some of the results of this study are shown in Table 3.8. This table excludes the quantity of target species caught, so it is not possible to display the catch composition as proportions of the total catch (so it is not possible to determine whether any of the species listed are "main" retained or discarded species, *sensu* MSC CR definitions). The most abundant non-target species caught in this study were lemon sole and witch. The most abundant elasmobranch in the catch was the spiny dogfish, and most of these individuals were male. By contrast, females were the more abundant gender for all other elasmobranch species.

This study reported that for the key species of interest (turbot, brill and lemon sole), there was only a statistically significant difference in the catch composition in 100 and 120mm nets with respect to the number of lemon sole caught. Mesh size was reported to have no significant effect on the average length of the catch of these 3 species. Trawl duration (120 or 180 minutes) was also found to have no significant effect on either catch (kg) or catch rate (kg/h).

The overall conclusion of this work was that an industry-based survey could improve the robustness of the stock assessment for turbot and brill in the North Sea.

Table 3.8: Results of catch analysis from the Ekofish trawler FV Enterprise in the North Sea using 100 and 120mm cod end mesh in 2014. Table shows the total numbers caught, measured for length distribution and total number of otoliths collected. For shark and skate species, the numbers are displayed separately for females and (males). For species with more than 100 individuals caught, the minimum, maximum and average length is given, also females and (males) separately. (Source: van der Reijden et al, 2015).

Scientific name	English name	Sample size			Length		
		Caught	Measured	Otoliths	Min	Max	Average
Agonus cataphractus	*Hooknose*	1	1				
Anarhichas lupus	*Seawolf*	1	1				
Chelidonichthys lucerna	*Tub gurnard*	651	555		21	53	30.8
Gadus morhua	*Cod*	502	502		19	110	47.7
Glyptocephalus cynoglossus	*Witch*	1202	723		10	49	34.3
Hippoglossoides platessoides	*American plaice*	1	1				
Hippoglossus hippoglossus	*Atlantic halibut*	2	2				
Leucoraja naevus	*Cuckoo ray*	7 (1)	7 (1)				
Lophius piscatorius	*Angler fish*	99	99				
Melanogrammus aeglefinus	*Haddock*	134	134		12	48	38.3
Merlangius merlangus	*Whiting*	180	180		19	34	26.9
Merluccius merluccius	*Hake*	36	36				
Microstomus kitt	*Lemon sole*	3974	2628	851	15	43	27.1
Platichthys flesus	*Flounder*	62	62				
Pollachius virens	*Saithe*	1	1				
Raja brachyura	*Blonde ray*	1 (2)	1 (2)				
Raja montagui	*Spotted ray*	45 (28)	45 (28)				
Scomber scombrus	*Mackerel*	4	4				
Scophthalmus maximus	*Turbot*	384	384	333	21	57	37.0
Scophthalmus rhombus	*Brill*	174	174	142	23	59	32.7
Scyliorhinus canicula	*Small-spotted catshark*	8 (4)	8 (4)				
Solea solea	*Sole*	7	7				
Squalus acanthias	*Spiny dogfish*	32 (143)	32 (143)		81 (27)	130 (115)	102.0 (81.0)
Zeus faber	*John dory*	7	7				
Total		**7693**	**5772**	**1326**			

3.4.1.1.6 Client catch data (Agonus, 2015)

The client has a catch monitoring programme in place, with a crew member nominated to take samples from commercial catches and to record the species composition. Training in species identification has been provided to crew members, and all vessels are equipped with ID guides to assist identification of non-target species.

The sampling protocol that was introduced in 2013 require the crew to record the presence and abundance of species listed under national legislation and binding international agreements. The crew are also required to record all cod, sharks and rays in sampled hauls (see Table 3.9). The sampling protocol and the list of ETP species examined is included at section 11.4.1 of this report.

Table 3.9: List of the non-ETP species recorded under the client self-sampling programme. [Source: Agonus, 2015].

No.	Nederlandse naam	Engelse naam	Wetenschappelijke naam
	Haaien		
1	Hondshaai	Lesser spotted dogfish	*Scyliorhinus canicula*
2	Kathaai	Nursehound	*Scyliorhinus stellaris*
3	Gladde haai (zandhaai)	Common smoothhound	*Mustelus mustelus*
4	Gevlekte gladde haai (zandhaai)	Starry smoothhound	*Mustelus asterias*
5	Ruwe haai	Tope shark	*Galeorhinus galeus*
6	Voshaai	Common Thresher Shark	*Alopia vulpinus*
	Roggen		
1	Sterrog	Starry skate	*Amblyraja radiata*
2	Stekelrog	Thornback ray	*Raja clavata*
3	Gevlekte rog	Spotted ray	*Raja montagui*
4	Blonde rog	Blonde ray	*Raja brachyura*
5	Koekoeksrog of Grootoogrog	Cuckoo ray	*Raja Naevus*
6	Golfrog	Undulate ray	*Raja undulata*
7	Kleinoogrog	Small eyed ray	*Raja microocellata*
8	Kaardrog	Fuller's ray	*Leucoraja fullonica*
9	Torpedorog	Marbled Torpedo Ray	*Torpedo marmorata*
10	Pijlstaartrog	Common stingray	*Dasyatis pastinaca*
11	Scherpsnuit	Long nosed skate	*Dipturus oxyrinchus*

During 2014, a total of 88 hauls by the client fleet were sampled and analysed. These hauls were all conducted using cod end mesh sizes larger than 100mm (typically 115-119mm).

The results indicate that, on average, plaice made up 87.6% of retained catch from the client fleet, and lemon sole 4.3% of retained catch. One of the client vessels, PW447, reported that lemon sole would have made up 8% of the retained catch on the basis of these samples (see Table 3.10).

Table 3.10: Estimated percentages of marketable catch (retained species) calculated as percentages of sample weight from the client self-sampling programme in 2014. [Source: Agonus, 2015].

Landings									
Vessel	**Tot kg**	**% plaice > 27 cm**	**% dab >23 cm**	**% cod > 35 cm**	**% Lem. s. >**	**% TUR**	**% BLL**	**Witch**	**% GUR**
PW447	1150,7	85.2	1,9	0.03	8.0	0.96	0.08	1.26	0.06
H426	641.4	90.1	2.0	0.17	1.2	0.28	0	0	0.17
H357	1210.5	87.5	0.2	0.0	3,8	0	0	0	0
Average		**87.6**	**1,4**	**0,07**	**4.3**	**0.4**	**0.03**	**0.4**	**0,08**

Discard proportions are calculated from sample weight, and the results are shown in Table 3.11. None of the discarded species made up more than 5% of the sample weight. Plaice were discarded in the highest volume, followed by dab.

Table 3.11: Discards (as a proportion of sample weight) for Osprey vessels during 2014. [Source: Agonus, 2015]

	Discards							
Vessel	**% plaice**	**% dab**	**% Cod**	**% Lem**	**% GUR**	**% St. Ray**	**% Discard Total**	**% Rest**
PW447	2.0	0.2	0	0.12	0.02	0	2.34	0.23
H426	1.7	0.8	0	0,03	0.0	0.21	2,74	3.34
H357	2.5	1.1	0	0	0	0	3.6	4.8
Average	**2.1**	**0.7**	**0**	**0,05**	**0.01**	**0.07**	**2.9**	**2,8**

Over 2014, the total discarding rate was estimated at 2.9%. For reference, an IMARES observer trip aboard the vessel H357 found a discarding rate of 4%, which is consistent with the 3.6% reported by self-sampling aboard the same vessel over the year.

Particular attention has been paid to the cod catch in the fishery. The percentage of cod in landings was 0.5% in 2014 (in 2013 this was 0.8% and in 2012 it was0.32%). Crew records showed no undersized cod in sampled hauls.

No interactions with species meeting the MSC definition of ETP species (i.e. protected under national legislation or listed in CITES Appendix I) were recorded in 2014.

The fleet recorded catches of 20 sharks in 88 sampled hauls (19 spurdog; and 1 starry smoothound).

A total of 3559 kg of rays were landed in 2014 (an increase from previous years – only 181kg were landed by the UoC vessels in 2013). This equates to 0.2% of landings in 2014. Ray species were not differentiated in the landings, but the data from catch analysis aboard the vessels indicates that only starry rays and spotted rays were caught. All starry rays are reported to be discarded, though only one vessel (H426) reported starry ray catches during 2014.

3.4.1.2 Retained catch and landings data

Studies of the retained catch aboard fishing vessels and their landings data provide an indication of the species that are retained and landed from the fishery. The sources of information available about the retained catch in the client fleet and the North Sea are summarised below.

3.4.1.2.1 Client landings data

Information about retained non-target species is available from the landings and sales data for the client fleet during 2012 and 2013. These data aggregate the landings from UoC2 (100-119mm cod end mesh) and UoC 3 (>120mm). The target species (plaice) made up nearly 90% of landings over this period. Only dab (*Limanda limanda*) and lemon sole (*Microstomus kitt*) made up more than 1% of landings in both years, and neither of these species comprised 5% of landings (see Table 3.12).

Table 3.12: Landings data for the Osprey fleet in 2012 (aggregating catches taken with both 100-119mm and >120mm cod end mesh sizes). Orange shading indicates the target species. [Source: Osprey Trawlers].

2012 Landings			2013 Landings		
Species	**Landings (kg)**	**%**	**Species**	**Landings (kg)**	**%**
plaice	1,672,645.00	88.1	plaice	1,640,570.00	89.3
dab	79,767.00	4.2	lemon sole	81,614.00	4.4
lemon sole	59,506.00	3.1	dab	48,750.00	2.7
turbot	22,519.00	1.2	whiting	15,750.00	0.9
cod	15,478.00	0.8	witch	13,031.00	0.7
grey gurnard	14,981.00	0.8	turbot	8,930.00	0.5
hake	8,200.00	0.4	cod	7,993.00	0.4
witch	6,135.00	0.3	squid	5,749.00	0.3
crab	5,380.00	0.3	wolffish	2,261.00	0.1
brill	3,357.00	0.2	grey gurnard	1,744.00	0.1

3.4.1.3 Discard studies

Some information is available to describe patterns of fish discarding in the units of assessment, and is considered here.

3.4.1.3.1 Netherlands discard sampling of plaice and cod fisheries (2009)

In 2009, IMARES published a report on discard sampling over the period 2004-08 in the North Sea cod and plaice fisheries (Aarts & van Helmond, 2009). The main subject of this study was the North Sea beam trawl fishery, but it also included some studies of the twin-rig trawl fishery, using 80, 100 and 110mm cod-end mesh sizes (UoC 1 and UoC2 for this fishery assessment). This study considered only the discarding of the target species (cod and plaice) and not the discarding of non-target species.

3.4.1.3.2 Netherlands discard self-sampling programme (2014)

Following on from the work summarised above, the Netherlands Government has established a discard self-sampling programme in order to meet the information gathering requirements of the EC Data Collection Framework, and to inform the implementation of the EU "landing obligation" that is being introduced under the EC Common Fisheries Policy.

Most of the information gathered under this programme is derived from samples taken by fishing vessel crews aboard a reference fleet of 23 vessels (discard species composition is determined by ICES from discard sub-samples taken on the self-sampled fishing trips). In addition, 10 observer trips are carried out aboard vessels in the self-sampling programme in order to validate its findings.

The data gathered from discard self-sampling in this reference fleet is analysed by IMARES and raised to the fleet level to provide an indication of discarding rates for key species. The most recent report (van der Reijden, 2014) is for samples gathered in the 2013 calendar year.

The fishing metiers that are monitored in this programme include beam trawlers, Scottish seiners and otter trawlers. In the otter trawl metier, two mesh sizes are examined: 70-99mm and 100-119mm. Only the results for these two metiers are considered here.

For otter trawlers using 70-99mm cod-end meshes and targeting demersal fish, the largest catch component was plaice, of which around 46% of those caught were discarded. The next largest catch component was dab, around 95% of which were discarded. Valuable flatfish such as turbot were all retained, but overall most of the fish caught by this metier were discarded (see Figure 3.16).

IMARES have provided data to inform this assessment on the proportion that the discarded species made up of the total catch in the two otter trawl metiers. For the 70-99mm mesh fishery, the species where the quantity discarded made up more than 1% of the total catch are shown in Table 3.13. This indicates that the quantity of plaice discarded was around 21% of the total catch for this metier over the period 2011-2013, and that dab discards were just over 19% of the total catch.

By contrast, most of the fish caught in the 100-119mm metier were retained (see Figure 3.17). Plaice were the largest catch component, and around 79% of plaice were retained. In this study it was found that most of the dab caught in the fishery were discarded.

Table 3.13: List of discarded species where the quantity discarded from the 70-99mm cod-end mesh size otter trawl fishery in the North Sea made up more than 1% of the total catch. (Target species shaded orange; non-target species making up more than 5% of the catch shaded in rose) [Source: van der Reijden, pers comm].

Species		**Discarded quantity as a percentage of total catch (%)**			
Common name	**Scientific name**	**2011**	**2012**	**2013**	**Mean**
Plaice	*Pleuronectes platessa*	16.91	24.55	20.45	20.64
Dab	*Limanda limanda*	16.12	16.47	25.30	19.30
Gurnard	*Eutrigla gurnardus*	3.02	4.18	4.66	3.95
Whiting	*Merlangius merlangus*	4.05	2.27	3.06	3.13
Lesser spotted dogfish	*Scyliorhinus canicula*		0.54	2.01	1.28
Starry ray	*Amblyraja radiata*		0.95	1.43	1.19

Figure 3.16: Piecharts of catch composition and the proportional distribution of landings, discarded fish and discarded benthos for otter trawlers using 70-99mm cod-end meshes. [Source: van der Reijden, 2014.]

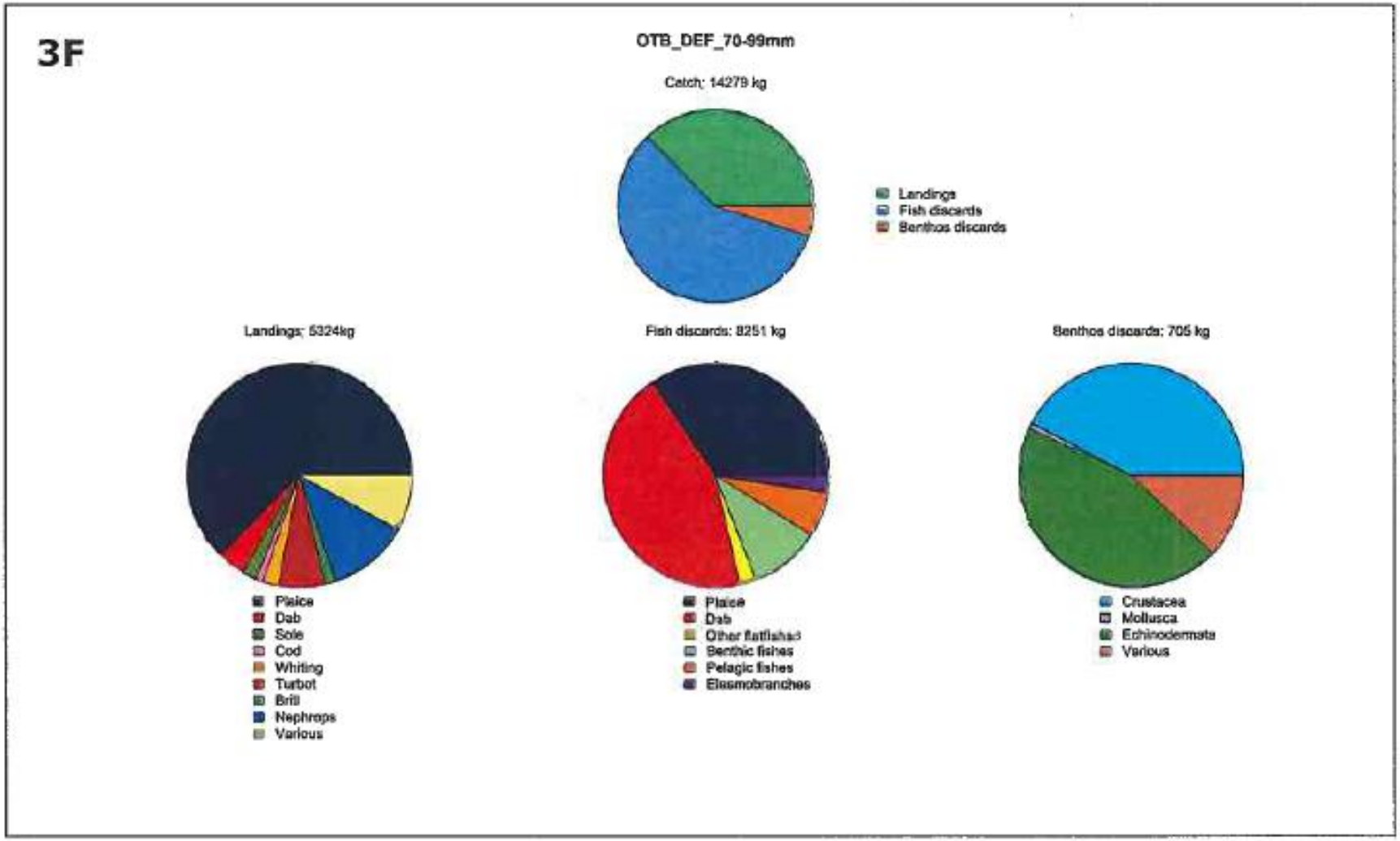
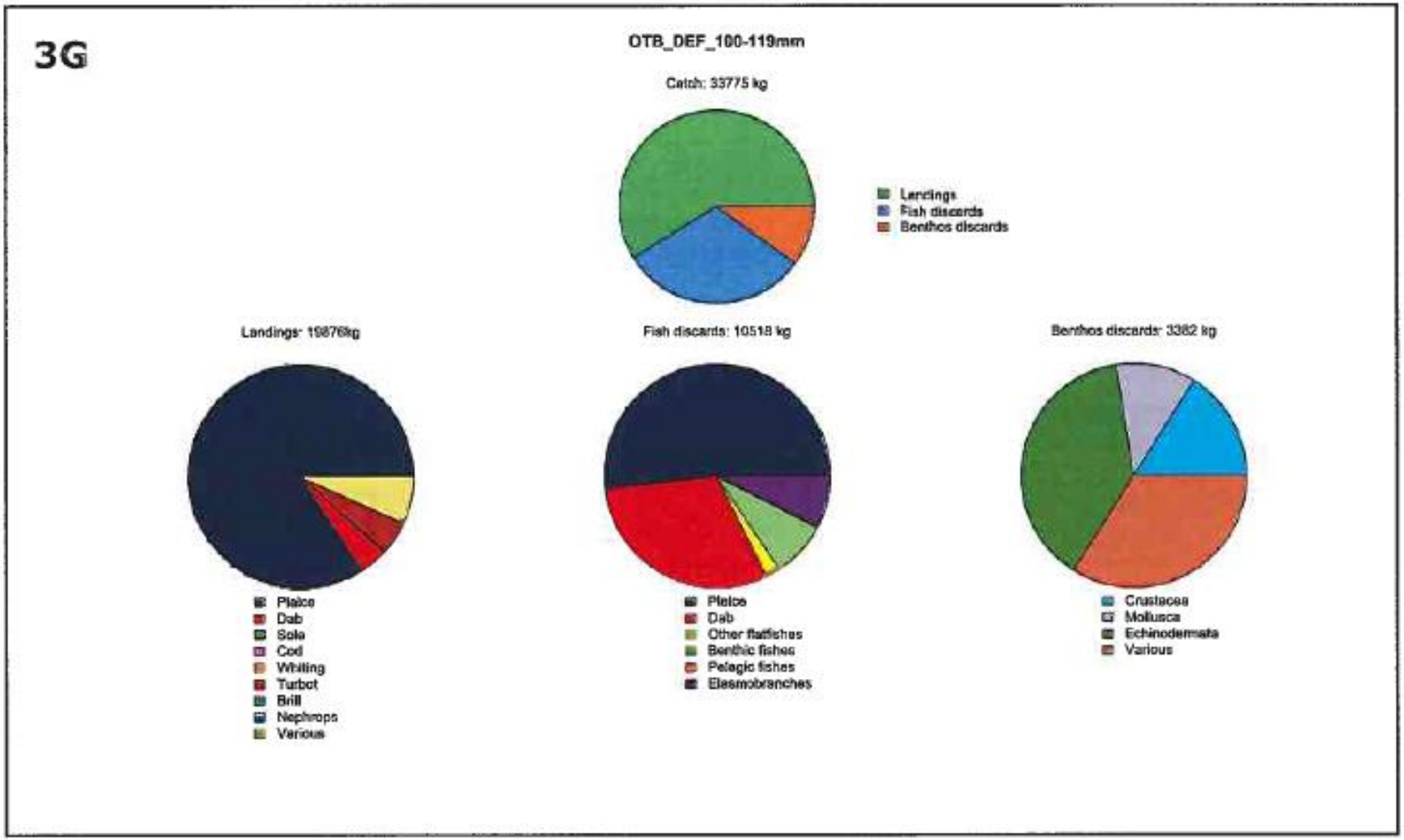


Figure 3.17: Piecharts of catch composition and the proportional distribution of landings, discarded fish and discarded benthos for otter trawlers using 100-119mm cod-end meshes. [Source: van der Reijden, 2014.]



In the 100-119mm otter trawl (twin-rig) metier, three species were discarded in quantities that exceeded 5% of the catch (see Table 3.14). These were the target species, dab (*Limanda limanda*), and starry rays (*Amblyraja radiata*)

Table 3.14: List of discarded species where the quantity discarded from the 100-119mm cod-end mesh size otter trawl fishery in the North Sea made up more than 1% of the total catch. (Target species shaded orange; non-target species making up more than 5% of the catch shaded in rose) [Source: van der Reijden, pers comm].

Species		**Discarded quantity as a percentage of total catch (%)**			
Common name	**Scientific name**	**2011**	**2012**	**2013**	**Mean**
Plaice	*Pleuronectes platessa*	15.91	25.94	15.33	19.06
Dab	*Limanda limanda*	9.81	7.06	9.87	8.91
Starry Ray	*Amblyraja radiata*	1.03	9.63	5.83	5.50
Gurnard	*Eutrigla gurnardus*	1.50	0.31	1.84	1.22

3.4.1.4 Stakeholder views on non-target species

During the course of this assessment, several stakeholder groups made comments to the assessment team about the catch of non-target species in the twin-rig trawl fishery. These views are recorded in the notes of interviews with the North Sea Foundation; Osprey Trawlers; IMARES; the Ministry for Economic Affairs; WWF-Netherlands; and the Netherlands Elasmobranch Society. A full account of each interview is presented in section 0 of this report, and the key points raised at each meeting are summarised below:-

a) **North Sea Foundation** drew the team's attention to the "Fishing for Knowledge" study, and highlighted concerns about the catch of elasmobranch species (particularly spurdog and ray species). It was felt that work should be carried out to improve catch recording and identification for these species, and that an improved catch handling protocol could improve post-capture survival (see full account in section 11.2.1 of this report).

b) **Osprey Trawlers** provided information about the catch and landings of their vessels to inform the assessment. They also indicated that the only non-target species that is consistently caught in the fishery is the lemon sole. The vessels favour fishing grounds where they catch predominantly plaice, and by staying north of the Dogger Bank they are able to minimise spurdog catches. They participate in the IMARES self-sampling programme, and have also commissioned their own studies into catch and discard composition. A crew member aboard each Osprey vessel is trained in ETP species identification and specifically tasked to carry out the tasks associated with monitoring catch composition (see section 11.4.1). Osprey Trawlers also have their own catch handling protocol in place (see full account in section 11.2.2 of this report).

c) **IMARES** provided information on the operation of the Netherlands Government's catch monitoring programme and other work being carried out to support the implementation of the EC Landings Obligation for this fishery. The results of IMARES studies are

reported in sections 3.4.1.1.3, 3.4.1.3.1 and 3.4.1.3.2 of this report, and the full account of the interview is presented in section 11.2.3 of this report.

d) **Ministry for Economic Affairs** provided background information on the statutory controls in place for managing both retained and discarded species capture in this fishery. Information was also presented about Government and EU actions to protect elasmobranch species, as well has for habitat protection (see full account in section 11.2.4 of this report);

e) **WWF-Netherlands** expressed concern about the impact of the fishery on vulnerable non-target species and in particular cod and elasmobranch species; catches of both were thought to be low because abundance is low and WWF-NL favour more selective fishing methods. Gear selectivity and catch handling were felt to be important factors for minimising impacts on non-target species. It was also noted that shark and ray species are listed as indicators of Good Environmental Status in the EU Marine Strategy Framework Directive (see full account in section 11.2.5 of this report).

f) **Netherlands Elasmobranch Society** are particularly concerned about the potential impact of this fishery on vulnerable non-target species and in particular elasmobranchs. NEV felt that starry rays should now be considered an “ETP” species as a result of EC regulation of “prohibited species” under the annual TAC regulation (note that the assessment team responded to this comment by contacting the MSC for clarification and re-classifying this species as an “ETP” rather than a discarded non-target species (see sections 3.4.2 and 12.1 of this report). NEV are working with the fishing industry to improve catch identification and recording, and would like to see elasmobranch nursery areas defined in the North Sea, and were concerned about the potential ecosystem impacts of elasmobranch removal (see full account of interview in section 11.2.6 of this report).

3.4.1.5 Defining "main" non target and ETP species for assessment

From the studies considered here, it is possible to identify the non-target species in the catch and landings from the fishery that could either be regarded as "main" retained or discarded species for each Unit of Certification under assessment (i.e. those making up 5% or more of the catch). It is also possible to identify ETP species in the catch.

As a precautionary measure, the assessment team has considered it appropriate to regard any non-target species that has been recorded in any of the studies presented during the site visit at more than 5% of the catch as a "main" retained or discarded species. ETP species that were recorded in these studies have also been noted for consideration. The result of this audit of "main" non-target and ETP species is presented in Table 3.15.

Table 3.15: List of the non-target species catch components that can be identified from studies of the units of assessment.

UoC (and cod-end mesh size)	Component		
	"Main" Retained Species	**"Main" Discarded Species**	**ETP Species (present in catch)**
UoC1 (<100mm)	None reported at >5% of catch	Dab (Cefas, 2015; van der Reijden et al, 2014)	No data
UoC2 (100-119mm)	Lemon sole (Cefas, 2004; Agonus, 2015)	Dab (Cefas, 2015; van der Reijden et al, 2014)	Starry ray (Wijsman et al, 2014; van der Reijden et al, 2014; Agonus, 2015)
UoC3 (>120mm)	Lemon sole (Cefas, 2004)	No data.	Starry ray (Wijsman et al, 2014)

Where data are unavailable for a UoC we have considered it likely that the UoC will have a catch composition similar to the adjacent UoC.

The assessment team note that some of the species that stakeholders raised concerns about during interview are not shown in this table (notably spurdog, and also bull huss and starry smooth hounds). In the case of spurdog, in particular, the evidence available from several recent studies (Wijsman et al, 2014; Cefas, 2015; van der Reijden et al, 2015) is that catch rates from all of the Osprey UoCs are low (much less than 1%), and that all individuals are returned to the sea as discards. The assessment team has therefore concluded that on the basis of the information presented, neither spurdogs nor these other species conform to the MSC definition of "ETP" species, and no evidence has been presented to indicate that these are "main" retained or discarded species.

3.4.1.6 Status of "main" non target and ETP fish species

The status of each of the species listed in Table 3.15 is considered in turn below.

3.4.1.6.1 Dab, Limanda limanda

Dab in the North Sea, Skagerrak and Kattegat is managed under a precautionary TAC together with flounder. Dab is mainly caught as a by-catch species in the fisheries for plaice and sole in the North Sea and Skagerrak. There is a long time series of data on landings but this is of limited value since dab is heavily discarded in most fisheries. Stock abundance estimates are available from the International Bottom Trawl Survey (IBTS) in Q1 in the North

Sea although it is uncertain how effectively dab is collected in the otter trawl survey gear. The survey indices indicate a generally stable stock abundance over the past 25 years (Figure 3.18).

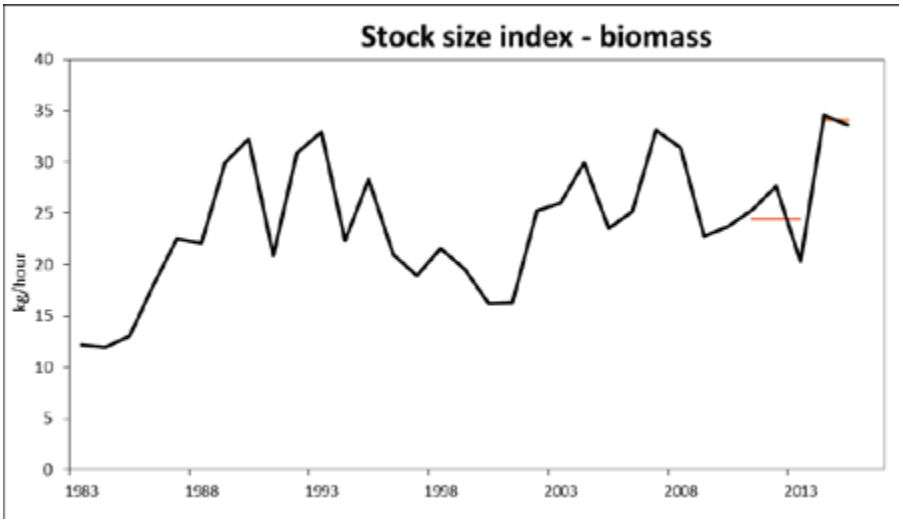


Figure 3.18: Mature biomass index for dab, *Limanda limanda*, in Subarea IV and Division IIIa (kg hour−1, from IBTS Q1). Source: ICES 2015c.

There is little information on stock identity and no precautionary reference points or management plan. ICES consider dab as a data limited species for which there is historical information on landings together with discards in recent years and survey estimates of abundance but no information on fishing mortality. TAC advice is provided based on the survey abundance index adjusted by status-quo catch including discards.

3.4.1.6.2 Lemon sole, Microstomus kitt

Lemon sole is assessed by ICES in the combined areas covering the North Sea (subarea IV), Skagerrak, Kattegat (division IIIa) and Eastern English Channel (division VIId). It is managed under a precautionary TAC together with witch flounder (*Glyptocephalus cygnoglossus*). Lemon sole is mainly a by-catch species in the fishery for plaice and in other mixed demersal fisheries. It is widely distributed within the North Sea, VIId and IIIa but the highest concentrations occur in the north-western North Sea associated with stony or hard sandy sediments (Figure 3.19). There is little information on stock identity and no precautionary reference points or management plan.

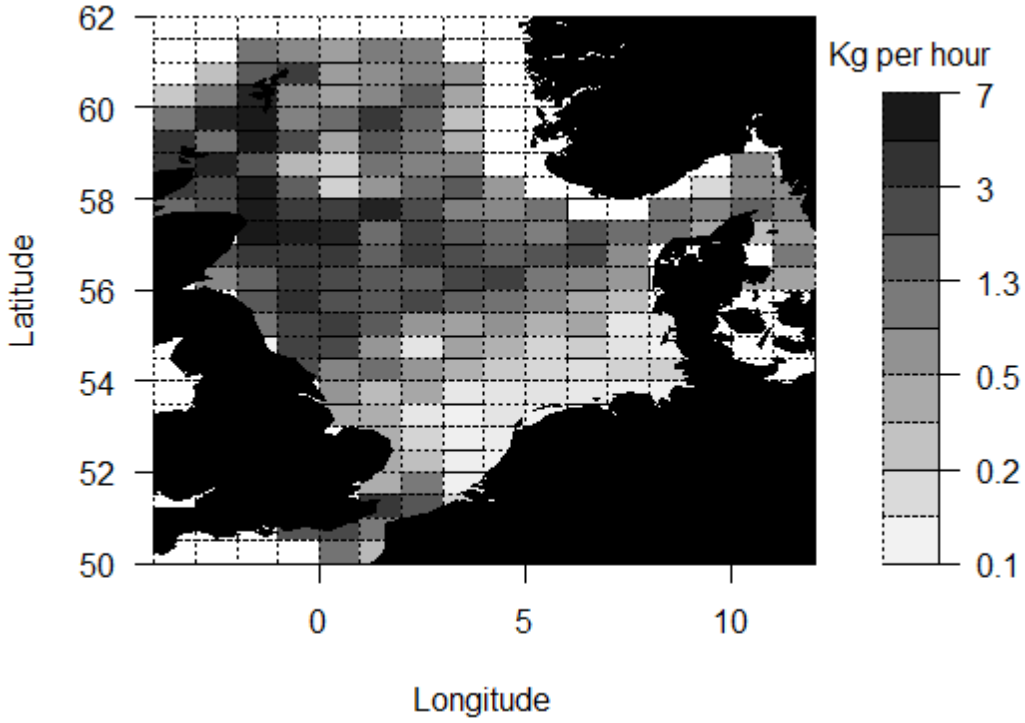


Figure 3.19: Average distribution of lemon sole in the greater North Sea derived from IBTS Q1 data (1983-2014). Source: ICES, 2015d.

Stock abundance estimates are available from the International Bottom Trawl Survey (IBTS) in Q1 in the North Sea although as with other flatfish, it is uncertain how effectively lemon sole is collected in the otter trawl survey gear. The survey indices indicate wide variability from year to year but a generally stable stock abundance over the past 15 years (Figure 3).

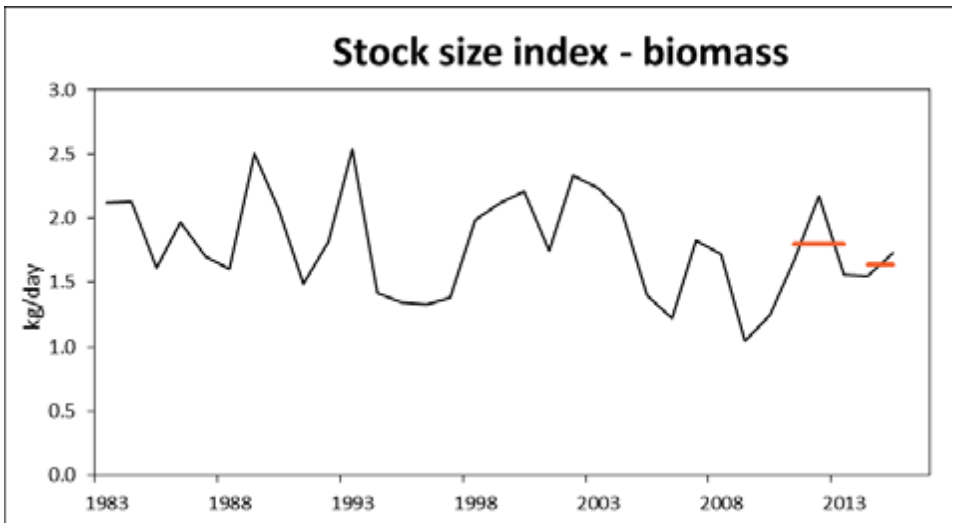


Figure 3.20: Index for mature biomass for Subarea IV (kg hr^{-1}; from IBTS Q1). Source: ICES 2015d.

As with similar data limited stocks where there is survey information but no mortality estimates, the ICES framework for data limited stocks was applied in estimating the biennial TAC (ICES, 2012b). The advice is based on the ratio of the survey abundance index for the two most recent years compared with the abundance index for the preceding three years adjusted by status-quo landings for 2015. This implies a 9% reduction in abundance leading to TAC advice for 2016 and 2017 of 3959t compared with 4350t in 2015.

It was noted in the "Fishing for knowledge" study that the IBTS survey was considered to provide a relatively robust indication of stock status (van der Reijden et al, 2015).

3.4.1.6.3 Starry Ray, Amblyraja radiata

The starry ray is caught as a bycatch mainly in the mixed demersal fisheries in the North Sea., especially the beam trawl fisheries for plaice and sole. Landings data are incomplete as elasmobranches were only required to be separately identified from 2008. In addition, starry rays are heavily discarded in most fisheries across the whole length range. The distribution of starry rays during the third quarter of the year is shown in Figure 3.21. It is widely found in deeper water north of 55^{0}N.

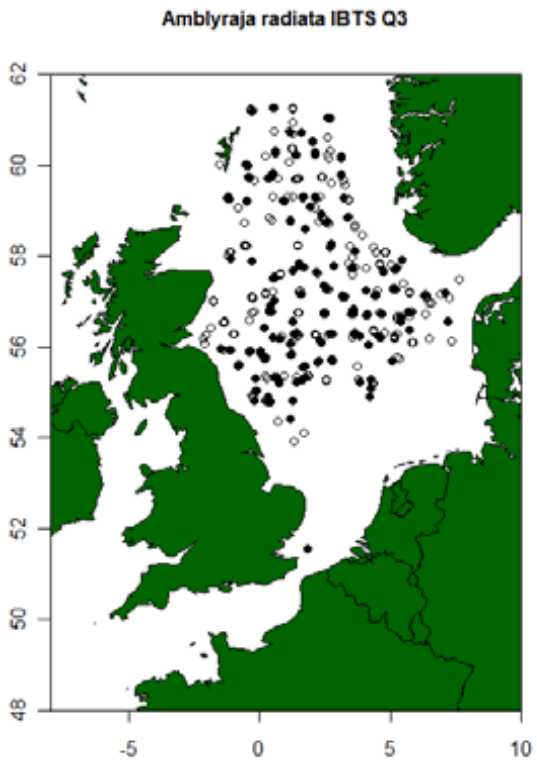


Figure 3.21: Distribution of starry ray from IBTS Q3 surveys, 2005-2009. Source: WGEF 2014.

Abundance indices are available from the IBTS Q1 survey (Figure 3.22) which indicate that the stock appeared to increase from 1970s to the early 1990s and to have decreased steadily since then with a 47% decrease between the average abundance in 2010/11 compared with the average for the previous 5 years (ICES 2012c).

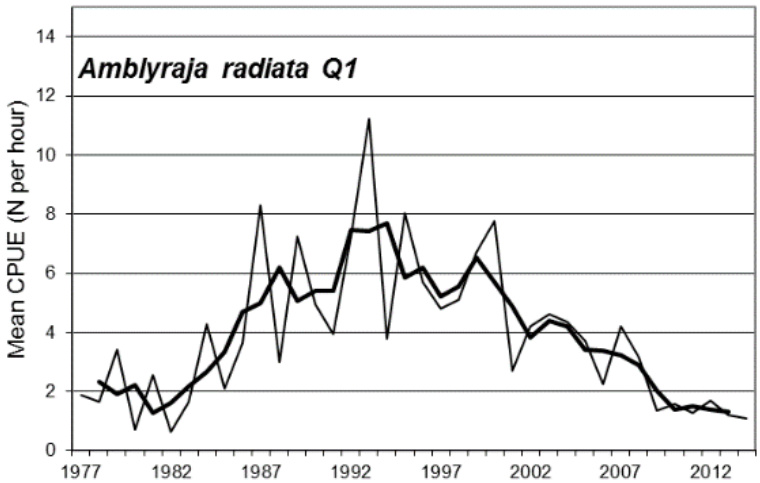


Figure 3.22: Average catch in number per hour (thin line) and three year running mean (dark line) from the North Sea IBTS Q1 survey. Source WGEF, 2014.

No assessment is available for the stock and no reference points have been estimated. Advice on the stock will be updated by ICES in late 2015.

3.4.1.7 Management of non-target species catch

The statutory and non-statutory measures and strategies in place for managing non-target species catch are described briefly below.

3.4.1.7.1 Statutory management

3.4.1.7.1.1 Fisheries legislation

The EU Common Fisheries Policy establishes a statutory management strategy that applies to both the target species (plaice) in this fishery and to many of the non-target species. Until recently, this management strategy was limited to imposing restrictions on the size of many of the fish that could be landed, and the quantity of those species that are managed under a TAC.

The new EU CFP Regulation as introduced a new approach to management known as the “landings obligation”. Under the landings obligation, all fish species that are managed under a TAC must be retained aboard fishing vessels and landed. The landings of these species are counted against the quota allocated to each fishing vessel. The landings obligation is being phased in over a number of years, starting in 2015 with pelagic fisheries, extending to demersal fisheries in 2016, and being fully implemented across all TAC species by 2019.

The Landing Obligation is also being implemented by the new European process of regionalisation in which Member States in the sea basin areas (Baltic Sea, North Sea, North Western Waters, South Western Waters and Mediterranean Seas) work together to jointly-agreed discard plans. Plans have been drawn up for the North Sea, which are due to be agreed by the European Commission as “delegated acts” (this has already happened for pelagic fisheries in the Mediterranean, North-western waters and the North Sea).

Under the current proposals agreed for the North Sea, in 2016 vessels using a mesh size of 100mm or more will be required to land haddock, plaice and northern prawn. Vessels using 80-99mm mesh will need to land Nephrops, common sole and northern prawn in 2016. More

species are due to be phased in to the regulation in 2017 and 2018, ahead of full implementation of the landings obligation for all TAC species in 2019.

The Netherlands Government reported that plaice will be considered a target species for vessels using BT1 and TR1 gear. The landings obligation shall apply to plaice caught with these métiers from 1st January 2016, so plaice discarding will not be permitted after this date.

In recognition of the challenges that the landings obligation will pose, the full penalties for infringing the obligation will not be introduced until 2018. Prior to this date, non-compliance will be remedied through a fine; after 2018 both a fine and penalty points will apply.

The survival of plaice in the sole fishery is presently being investigated by the industry under an EMFF funded project, to determine if there are grounds for exemption for this or other fisheries on the basis of high discard survival.

The Government reported that the fishing plans submitted by POs to the Government may need to be revised in response to the landings obligation, because these plans may be based on a MLS that is larger than the EC MLS, creating a risk of highgrading.

The Netherlands Government also reported that real time closures are implemented by the Netherlands and UK Governments in ICES sub-areas IVb-IVc & VIId to minimise cod catches. These closures are altered each month, and protect 1/16th of the 9-10 ICES rectangles where past catches of juvenile cod have been highest (see interview record at section 11.2.4.)

3.4.1.7.1.2 Environmental legislation

EC Environmental legislation provides a further dimension to the management of non-target species. Some species are protected under the EU Habitats and Species Directive (Directive 92/43/EC), and thus classified as “ETP” species (see section 3.4.2).

Certain other species that are not managed under EC TAC and quota regulations may be considered as indicators of “good environmental status” under the EC Marine Strategy Framework Directive (Directive 2008/56/EC, known as the MSFD). Criteria for identifying indicator species were set out by the EC in 2010 (Commission Decision of 1st December 2010).

The Netherlands set out information on environmental targets and associated indicators in 2011 (Boon et al, 2011), and its monitoring programme for MSFD objectives in 2014 (MSFD Monitoring Programme, 2014). These documents indicate that the MSFD target for commercial fish stocks is to achieve F_{msy}, stocks above B_{pa} and to minimise discards (i.e. as set out in the CFP). The target set for depleted stocks of sharks, skates and rays fished by the EU fleet is recovery (or rebuilding) in line with the EU Shark Action Plan.

The progress of implementation of this Directive is summarised on an EU “scoreboard” which indicates that the Netherlands is on schedule with the implementation of this Directive (EU Marine Strategy Framework Directive Scoreboard, 2015). This indicates that the Netherlands is on schedule with respect to its reporting requirements under the MSFD.

The EU Shark Action Plan was approved by the Commission in 2009 (EC, 2009). The objectives of the plan are to deepen knowledge both on shark fisheries and on shark species and their role in the ecosystem; ensure that directed fisheries for shark are sustainable and that the by-catch is properly regulated; and encourage a coherent approach between the internal and external EC fishery policy for sharks.

Since 2003, the EC has had legislation in place to regulate the removal of shark fins on board vessels. This legislation was revised in 2013 (Regulations 1185/2003 and 605/2013 respectively).

The Netherlands Government reported to the assessment team that a national action plan for elasmobranchs is being developed and is due to be published in summer 2015. This will build upon the 2009 EU action plan and will propose actions such as working on ID skills; raising awareness of ray species status; proposing the use of technical measures (such as escape panels / grids) that may reduce catch rates; investigating catch handling procedures that will improve discard survival; improving understanding of the species' biology to inform management (see interview record at section 11.2.4.).

3.4.1.7.2 Client actions

During the course of the site visit, the client mentioned several initiatives that have been established to minimise the catch of non-target species. The principal action taken by skippers is to fish in areas where the main catch component is likely to be plaice, and to preferentially use a larger mesh size than the statutory minimum to select larger fish. The client reported that skippers now fish to the north of the Dogger Bank specifically to avoid catches of spurdog, which are less abundant in the northern area.

In addition to this, the client has established measures to assist the recording of non-target species catches in the fishery. Agonus (2015) report that vessels have on board:-

1. Sampling protocol including ETP list and list of rays and sharks;

2. Deck Sample recording lists (see Annex 4.);

3. Excel sheet (Monstertreklogboek);

4. Plasticized identification sheets.

To determine species all vessels have on board.

1. Fishes of the North Sea (Zeevissengids Sportvisserij Nederland).

2. Nature guide sea and coastal life (Snelzoek Natuurgids zee en kustleven).

In 2011 a species database with pictures of the most common species to be encountered was developed and given to all vessels on a CD. (Soortenbank). This database is still in the computers used on board of the vessel.

The results of client self-sampling of the catch are summarised in section 3.4.1.1.6 of this report, and demonstrate both that the client is monitoring catches and that the data gathered are comparable with those gathered aboard client vessels by independent scientific observers, providing some reassurance that the procedures, protocols and training in place are being implemented.

3.4.2 Endangered, Threatened and Protected (ETP) species

The MSC define Endangered Threatened & Protected (ETP) species as those that are recognised by national ETP legislation and those species that are listed in Appendix 1 of the Convention on International Trade in Endangered Species (CITES)[2].

The species that fall within the scope of this definition include the species listed in Annex II of the EC Habitats Directive (92/43/EC) and the Wild Birds Directive (2009/147/EC). The species listed in this legislation which could be vulnerable to capture in North Sea trawl fisheries are:-

- Bottlenose dolphins (*Tursiops truncatus*)
- Harbour porpoise (*Phocoena phocoena*
- Harbour seals (*Phoca vitulina*)
- Grey seals (*Halichoerus grypus*)
- Basking shark (*Cetorhinus maximus*)
- Marine turtles (several species)

In 1998 the EC introduced measures to protect cetaceans from marine fisheries (EC Regulation, 88/98 subsequently amended by Regulations 812/2004 and 809/2007). Whilst principally directed at drift net fisheries, these measures also apply to trawl fisheries. They require, *inter alia*, that observers are carried on fishing vessels of more than 15m overall length to monitor cetacean by-catch, and that Member States establish appropriate means for recording bycatch incidence.

During the course of this assessment, and in response to comments made by stakeholders, the assessment team has sought clarification on whether species listed under Article 12 of the annual TAC Regulation (currently Council Regulation 2015/104) should be regarded as ETP species.

The MSC has advised that the listing of species in this Regulation for the purpose of protecting their conservation status would automatically qualify them as “ETP species”; however the setting of a “0 TAC” would not automatically qualify a species as “ETP” (see IFC guidance request and MSC response in section 12.1 of this report).

In summary, Article 12 of Regulation 2015/104 states that it is prohibited for EU vessels to fish for, to retain on board, to tranship or to land various species in the Unit of Certification area (ICES subarea IV). These species are listed below (please note that the list has been edited to exclude species that are not prohibited in ICES sub area IV. It includes some species that are not likely to be found in ICES sub area IV (such as manta rays) for completeness; however we have truncated some long lists of species that are not known to be caught in this fishery such as sawfish and *Mobula* rays) :-

a) Starry ray (*Amblyraja radiata*)

b) [Several sawfish species]

c) Basking shark (*Cethorhinus maximus*) and white shark (*Carcharodon carcharias*)

[2] Note that this list is from MSC Certification Requirements v1.3 at §CB3.11.1. The revised and more extensive list set out in Annex SA of CRv2.0 does not apply to this assessment, by virtue of the implementation timeframes set out in the MSC Fisheries Certification Requirements (at page 6).

d) Common skate (*Dipturus batis*) complex (*Dipturus* cf. *flossada* and *Dipturus* cf. *intermedia*)

e) Tope shark (*Galeorhinus galeus*)

f) Smooth lanternshark (*Etmoperus pusillus*)

g) Kitefin shark (*Dalatias licha*), birdbeak dogfish (*Deania calcea*), leafscale gulper shark (*Centrophorus squamosus*), great lanternshark (*Etmopterus princeps*) and Portuguese dogfish (*Centroscymnus coelolepis*);

h) Porbeagle shark (*Lamna nasus*);

i) reef manta ray (*Manta alfredi*)

j) Giant manta ray (*Manta birostris*)

k) [Several species of *Mobula* rays]

[species listed under l, m, n of the Regulation are not prohibited in ICES subarea IV]

o) Guitarfishes (*Rhinobatidae*)

p) Angel shark (*Squatina squatina*)

As a consequence of this new legislation and the interpretation now required by the MSC, starry rays (*Amblyraja radiata*), which were previously regarded as a non-target species must now be regarded as ETP species.

A list of the ETP species protection for elasmobranchs in the Netherlands was provided to the assessment team by the Netherlands Elasmobranch Society (NEV). This list is reproduced in Table 3.16 of this report, overleaf.

The list of ETP species that is used by the client aboard fishing vessels has recently been updated and is shown in Table 3.17.

The legislation briefly summarised above determines the context against which the effect of this fishery on ETP species must be assessed. There is a good correspondence between the statutory requirements, the list of ETP elasmobranchs provided by the NEV, the MSC scheme definition, and the ETP list used by the client vessels for recording interactions at sea.

Concerns about the conservation status of the spurdog (*Squalus acanthias*) were raised by stakeholders with the assessment team. A zero TAC has been set for spurdogs over the past few years, thereby prohibiting landings but not fishing. This protection has been maintained in EC Regulation 2015/104. As a consequence spurdog do not match the MSC ETP criteria because they are not presently listed in national legislation, CITES Appendix II or on the "prohibited" list in Regulation 2015/104. Spurdog are thus considered as a potential discarded non-target species for this assessment, rather than an ETP species.

Table 3.16: List of protection measures for elasmobranchs provided by the Netherlands Elasmobranch Society (key overleaf). [Source: Irine Kingma, NEV, pers comm]

Nederlandse naam	Latijnse Naam	IUCN[A]	TAC[B]	CMS	CITES[C]	OSPAR	F&F art 4	Visserij wet	NL Rode lijst	Doelsoorten lijst
Haringhaai	*Lamna nasus*	CR	X	yes	App. II	yes	no	yes		
Doornhaai	*Squalus acanthias*	CR	0	yes	No	yes	no	yes		
Zee-engel	*Squatina squatina*	CR	X	No	No	yes	Tabel 2	no		
Reuzenhaai	*Cetorhinus maximus*	EN	X	yes	App. II	yes	Tabel 2	no		
Voshaai	*Alopias vulpinus*	NT	NDF	No	No	No	no	yes		
Gevlekte gladde haai	*Mustelus asterias*	LC	No	No	No	No	Tabel 2	no	yes	yes
Hondshaai	*Scyliorhinus canicula*	LC	No	No	No	No	Tabel 2	no		
Gladde haai	*Mustelus mustelus*	DD	No	No	No	No	no	yes		
Ruwe haai	*Galeorhinus galeus*	DD	No	No	No	No	no	yes	yes	yes
Vleet	*Dipturus batis/ Raja batis*	CR	X	No	No	yes	no	yes	no	no
Golfrog	*Raja undulata*	EN	*	No	No	No	Tabel 2	no		
Blonde rog	*Raja brachyura*	NT	*	No	No	No	Tabel 2	no		
Stekelrog	*Raja clavata*	NT	*	No	No	yes	no	yes	yes	yes
Gevlekte rog	*Raja montagui*	LC	*	No	No	yes	no	yes		yes
Koekoksrog	*Leucoraja naevus / Raja naevus*	LC	*	No	No	No	Tabel 2	no		
Sterrog	*Amblyraja radiata / Raja radiatia*	LC	X	No	No	No	Tabel 2	no		
Pijlstaartrog	*Dasyatis pastinaca*	DD	*	No	No	No	no	yes	yes	yes

Key:

IUCN: red list

TAC: x= prohibited; 0= 0tac; NDF=not under CFP (RFMO); *=group ray TAC

CMS: listing

CITES: listing per appendix

OSPAR: listing

F&F: flora and fauna legislation NL=> species listed under table2 need a management regime, only applicable in 2 miles zone

Visserijwet: national fisheries law, governing commercial catches

Table 3.17: ETP species list used to record interactions aboard Osprey Group fishing vessels. [Source: Osprey Trawler Group].

No.	Nederlandse naam	Engelse naam	Wetenschappelijke naam
1	**Alle zeezoogdieren**	**All marine mammals**	
2	**Alle vogels**	**All birds**	
	Zeezoogdieren		
3	Bruinvis	Harbour porpoise	*Phocoena phocoena*
4	Gewone zeehond	Harbour seal	*Phoca vitulina*
5	Grijze zeehond	Grey seal	*Halichoerus grypus*
	Haaien		
6	Doornhaai	Spurdog	*Squalus acanthias*
7	Reuzenhaai	Basking shark	*Cetorhinas maximus*
8	Haringhaai	Mackerel shark, Porbeagle	*Lamna nasus*
9	Witte haai	White shark	*Carcharodon carcharias*
10	Zee-engel	Angelshark	*Squatina squatina*
	Roggen		
11	Vleet	Flapper or Common skate	*Dipturus batis*
12	Grote Manta	Giant Manta ray	*Manta birostris*
	Vissen		
13	Steur	Sturgeon	*Acipenser sturio*
14	Elft	Allis shad	*Alosa Alosa*
15	Guitaarvissen	Guitarfishes	*Rhinobatidae*

The client reported no interactions with ETP species other than starry ray (*Amblyraja radiata*) during recent fishing years (Agonus, 2015). This view was consistent with catch analysis and observer trips carried out by IMARES and reported in section 3.4.1 of this report.

The available information indicates that catch rates of starry ray are around 2% of the total catch in this fishery (1.7% recorded by Wijsman et al, 2014; 2.2% recorded by Cefas, 2015). This would indicate an annual catch of around 63t of starry ray by the vessels within this UoC (based on observations of total annual landings of just under 2000t and plaice retention rates of 88% from catches typically comprising 70% plaice (these data derived by Cefas, 2015).

The environmental NGOs interviewed during the assessment raised concerns about catch handling and discarding procedures, and felt that post-capture mortality could be significantly improved if these procedures were improved.

3.4.3 Habitats

The MSC Scheme requires that fisheries should be unlikely to cause serious or irreversible harm to habitats. Serious harm in this context means gross changes in habitat types or abundances, and disruption in the function of the habitats. Irreversibility means changes that represent some sort of regime shift from which it may not automatically recover. When assessing habitat impacts, the full extent of the habitats has to be taken into account, and not just the part of the habitats that overlap with the fishery (hence the habitat Component of the fishery is assessed on a bioregional basis, in common with the other Principle 2 components).[3]

These requirements mean that fisheries which have an impact on marine habitats can attain the MSC standard, providing that these impacts are neither serious nor irreversible.

This section considers the potential impact of the Osprey twin rig North Sea Plaice fishery, the habitats which may be affected by its operation, and the potential significance of the impacts.

Mobile fishing gear, such as otter trawls, can have an impact on seabed habitats. These impacts have been studied globally and in detail in the North Sea (see, for instance the review by Jennings & Kaiser, 1998; and also Frid *et al*, 1999; Frid *et al*, 2000 and Eigaard *et al*, 2015). These studies indicate that the impact of fishing gear on seabed habitats is determined by several factors. The type of fishing activity and its intensity are very important, as is the sensitivity of the seabed. Some seabed habitats (such as biogenic reefs) are highly sensitive to even a low level of fishing activity; whilst other habitats (such as mobile sandy areas) are comparatively robust. Certain fishing methods (such as dredging and trawling using heavy gear) have a high impact on the seabed, whilst other fishing methods (such as static gear and pelagic trawls) have little or no impact on the seabed. The intensity of fishing is another important factor – intense fishing on a relatively robust habitat might have a significant adverse effect; whilst low fishing pressure in more sensitive areas might generate less concern.

The relationship between seabed sensitivity and trawl activity was explored by Hiddink et al (2007). This report found that frequently trawled areas were uncommon and tended to occur primarily in areas of lower sensitivity. A meta-analysis of 40 studies of otter trawling (Kaiser et al, 2006) found that there was little or no impact on gravel and sand substrates. Impacts were detectable in muddy habitats, with recovery from trawling taking several days. Biogenic reefs were highly sensitive to otter trawl impacts, with recovery taking years. Work is underway through the “Benthis” project to try to better understand and map seabed sensitivity and impacts of trawling (Benthis, 2013a,b).

The North Sea place twin-rig trawl fishery uses fishing gear that is designed to be towed across gravel, sandy and muddy seabeds. The groundropes have rubber bobbins and the fleet does not use “rockhopper” groundropes. The body of the net is not designed to contact the seabed.

All of the vessels in the client fleet now use semi-pelagic trawl doors which are trimmed to “fly” 1-2m above the sea bed rather than making contact with it. The vessels use a roller clump weight, which contacts the seabed between the nets. Although the clump weight is heavy (600kg or more in air), the force exerted on the seabed is reduced by the lift generated from the net and otter boards. The otter board are connected to the net with long Dyneema “sweep” ropes that have discs rigged at intervals along them to minimise ground contact. The client reported to the assessment team that Dyneema sweeps can be used because there is little contact between them and the seabed. The “flushing” or “herding” effect of the sweeps is

[3] See MSC CR v1.3 at §CB3.14.

thought to be achieved by hydrostatic pressure or vibrations in the water rather than physical disturbance of the seabed.

This is a significant change to the gear design since the fishery was originally assessed, when conventional otter boards and sweeps were used which were in contact with the seabed throughout fishing activity and along their entire lengths. These changes have been made principally because they make the fishing gear more efficient in terms of fuel consumption, which is a direct consequence of expending less energy towing the trawls across the seabed.

Various workers have noted that the trawl door marks are the most frequently observed impact of otter trawls on the seabed (Caddy, 1973; Gilkinson et al, 1997; Friedlander et al, 1999). By switching to the use of semi-pelagic trawl doors, this impact has been eliminated. Other workers have noted that the length of the sweeps used in trawls is related to seabed character; long sweeps cannot be used on rough ground where there is a risk of snagging on boulders, and can only be used on smooth seabeds (Polet & Depestele, 2010).

The distribution of seabed habitats in the North Sea is well documented, and the client has produced maps annually showing the actual distribution of fishing effort relative to these habitats, as well as Natura 2000 sites in the North Sea (see Figure 3.23). The comparison of this map with the map produced during the early days of the twin-rig plaice trawl fishery (Figure 3.13) shows that the distribution of fishing effort has remained constant for 10 years or more.

Some indication of the level of interaction between the fishery under assessment and marine benthos is provided by analysis of catches. The catch of benthic invertebrates in 80mm beam trawls and 100mm twin trawls was compared on a quantitative basis by in 2004. This study found that twin rig trawls caught far fewer benthic invertebrates beam trawlers (van Keeken et al, 2003; Grift et al, 2004). The species composition of benthic invertebrates in the catch from that study is shown in Table 3.4. More recent studies have also shown a low catch rate of benthic species in gear trials (see Table 3.7 of this report).

Osprey Trawlers Services have observed voluntary closed areas over the previous period of MSC Certification, and have made a commitment to maintain these closures. The location of these voluntary closed areas is shown in Figure 3.24 of this report.

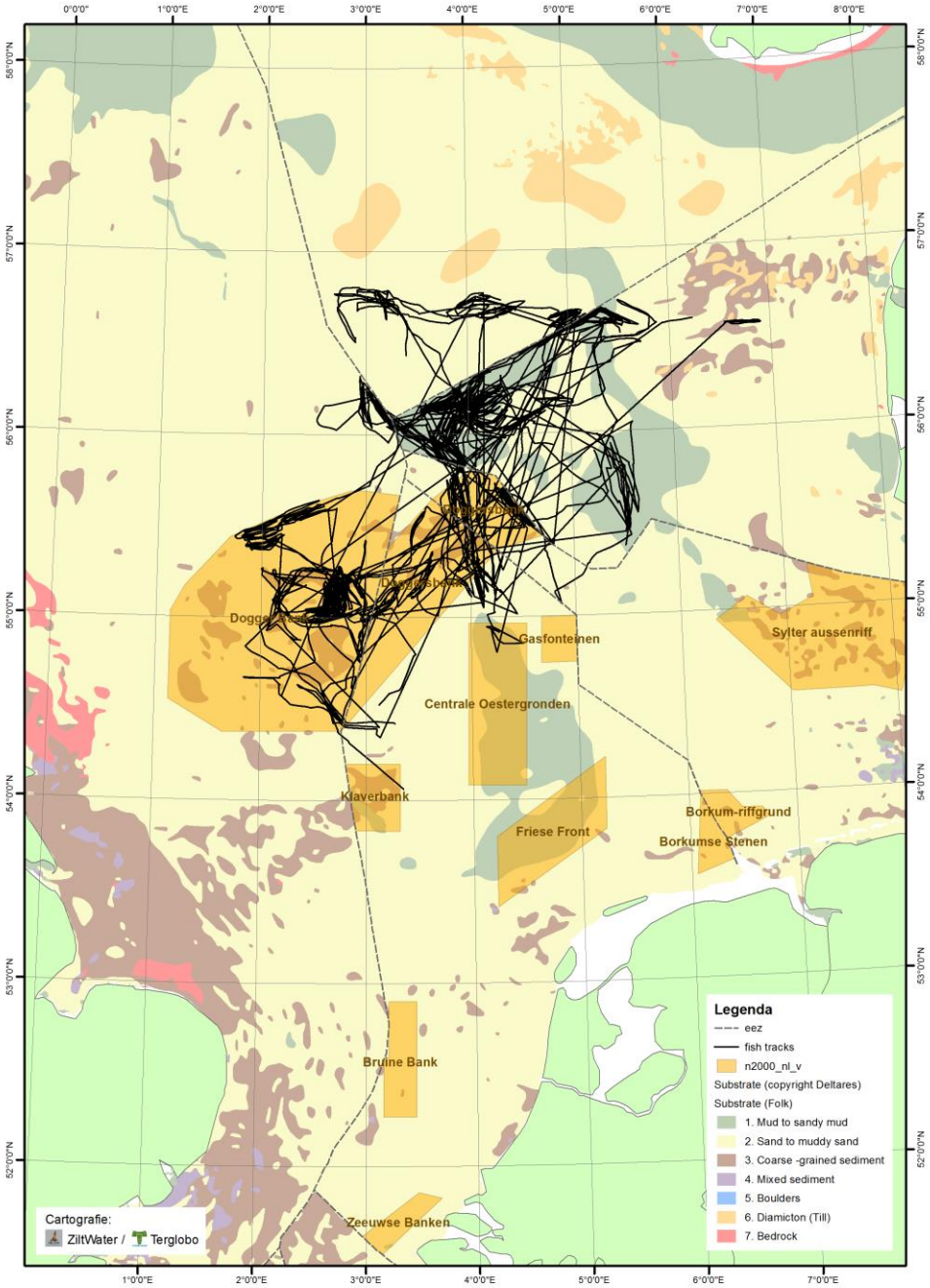


Figure 3.23: Trawl tracks for the vessels in the Osprey fleet in the North Sea during 2014 superimposed on a map showing seabed substrate and the location of Natura 2000 sites. [Source: Ziltwater].

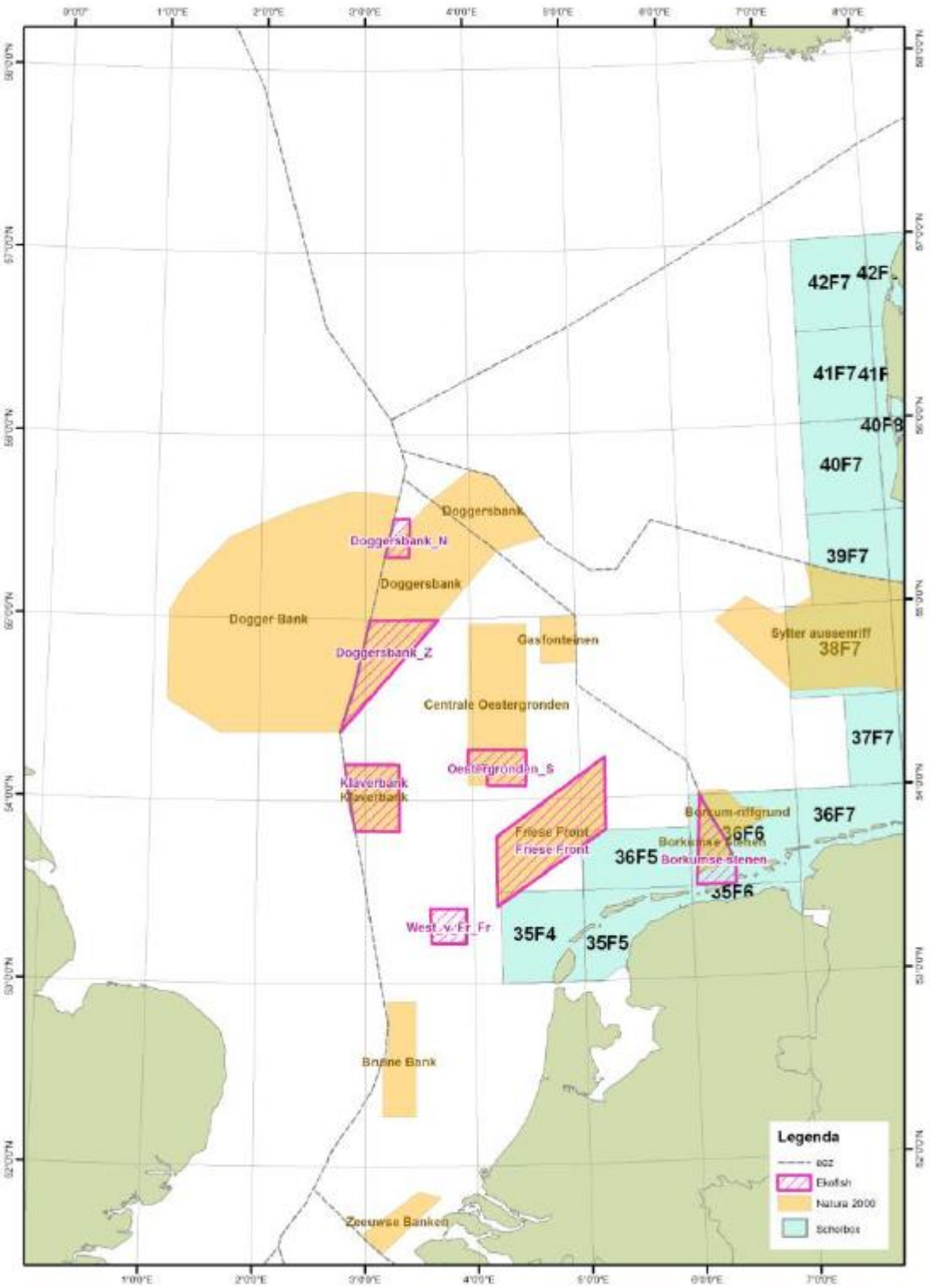


Figure 3.24: Location of voluntary closed areas in the North Sea that are observed by Osprey Trawlers Services vessels. [Source: Osprey Trawlers Services].

The significance of the effect of the fishery on marine habitats can be most objectively assessed by considering its impact on habitats that have been identified as sensitive, threatened and / or declining. To make this assessment, the assessment team has used two sources of information: the sea areas that are statutorily designated as "Natura 2000" sites under the EC Habitats Directive (92/43/EC) and EC Birds Directive (2009/147/EC) in order to protect habitats and species; and the list of benthic habitats and species that has been identified by the OSPAR Commission (to which both the European Community and the Netherlands Government are contracting parties).

3.4.3.1 Interactions with Natura 2000 sites

There are a number of Natura 2000 sites in the unit of certification area. The location of these sites in the North Sea is shown in Figure 3.23. These sites have been identified and proposed on the basis of the best available information, and are intended to protect those marine habitats which are considered to be most likely to suffer severe or irreversible harm from human activities, including fishing.

The tracks of the Osprey Trawler Group vessels are also shown in Figure 3.23. It is evident that fishing activity takes place within the Dogger Bank Natura 2000 site, which was created to protect the "subtidal sandbank" habitats of the Dogger Bank.

The UK Joint Nature Conservation Committee (JNCC) hosts information about the Dogger Bank Natura 2000 site (JNCC, 2015), which includes links to information held by Dutch and German authorities, which share jurisdiction of the site.

JNCC (2015) describe the Dogger Bank as:-

> *"The Dogger Bank is the largest single continuous expanse of shallow sandbank in UK waters which was formed by glacial processes before being submerged through sea level rise. It is located in the Southern North Sea, approximately 150km north east of the Humber Estuary. The Dogger Bank region is an important location for the North Sea harbour porpoise population and as such they are included as a non-qualifying feature. Grey and common seals are known to visit the bank and are included as non-qualifying features at the site. The southern area of the bank is covered by water seldom deeper than 20m and extends within the SAC in UK waters down to 35 - 40m deep. The bank structure slopes down to greater than 50m deep in UK, Dutch and German waters. Its location in open sea exposes the bank to substantial wave energy and prevents the colonisation of the sand by vegetation on the shallower parts of the bank. Sediments range from fine sands containing many shell fragments on top of the bank to muddy sands at greater depths supporting invertebrate communities, characterised by polychaete worms, amphipods and small clams within the sediment, and hermit crabs, flatfish, starfish and brittlestars on the seabed. Sand eels are an important prey resource found at the bank supporting a variety of species including fish, seabirds and cetacean. Occasional, discrete areas of coarser sediments (including pebbles) were recorded on the bank, dominated by the soft coral* **Alcyonium digitatum** *known as dead man's fingers, the bryozoan sea chervil* **Alcyonidium diaphanum** *and serpulid worms. The SAC in UK waters adjoins the Dutch and German Dogger Bank SACs.*

The Dogger Bank is considered to be moderately vulnerable to demersal trawling impacts, which requires the competent authorities responsible for the area to manage human activities such that they do not result in damage to, or deteroriation of, the sandbank feature.

With respect to the management of fishing activities within the Dogger Bank Natura 2000 site, the JNCC advise that:-

> *No fisheries management measures have yet been put in place to protect the designated features of this site. Dogger Bank extends across the Dutch, German and Danish sectors of the North Sea and both the Netherlands and Germany have designated their areas of the bank as SACs. The UK, Dutch, German and Danish Governments have been working through the Dogger Bank Steering Group to agree a joint management proposal to cover all three sites. Stakeholders have been actively involved in this process through the North Sea Regional Advisory Council (RAC).*
>
> *Fisheries management measures will be implemented through the EU's Common Fisheries Policy (CFP). The Dogger Bank Steering Group has drawn up management proposals which will be submitted to a regional group of EU Member States with a direct management interest in the area (the Scheveningen-Group) in 2015 for development as a joint proposal to the European Commission.*

There are very few trawl tracks extending into other Natura 2000 sites in the area. These areas have in the past been covered by voluntary closures that were implemented by the Osprey Group prior to the creation of the Natura 2000 sites. Osprey Trawlers have now indicated that these voluntary closures should not be maintained, as there is a statutory protection framework in place for these areas.

WWF have raised concerns that during the previous period of assessment the client fleet adopted voluntary closed areas, but that these are not due to be maintained under the present assessment (see interview in section 11.2.5 of this report).

The Netherlands Government has confirmed that management measures are being progressed for the Dogger Bank and other Natura 2000 sites in the North Sea (including the Friesian Bank and the Central Oyster Grounds), which will create protected areas within these sites using the powers set out in Article 11 of the EC CFP Regulation.

3.4.3.2 Interactions with OSPAR habitats

In 2008, the OSPAR Commission identified 16 benthic marine habitats and species that were considered to be threatened or declining (OSPAR, 2012). These are:-

- Carbonate mounds
- Deep sea sponge aggregations
- Intertidal mudflats
- Intertidal mudflats - sub-type estuarine
- Intertidal mudflats - sub-type marine
- Intertidal *Mytilus edulis* beds on mixed and sandy sediments
- Littoral chalk communities
- *Lophelia pertusa* reefs
- Maerl beds
- *Modiolus modiolus* horse mussel beds
- Oceanic ridges with hydrothermal vents/fields
- *Ostrea edulis* beds
- *Sabellaria spinulosa* reefs
- Seamounts
- Seapens and burrowing megafauna communities
- *Zostera* beds including *Z. marina* and *Z. noltii* beds

The distribution of these species and habitats is available in map form for all of the North Sea (EMODNET, 2015). Having inspected the distribution of these habitats and species maps (Figure 3.25), it appears that there is little or no interaction between the Osprey Group trawl fleet and OSPAR habitats in the North Sea.

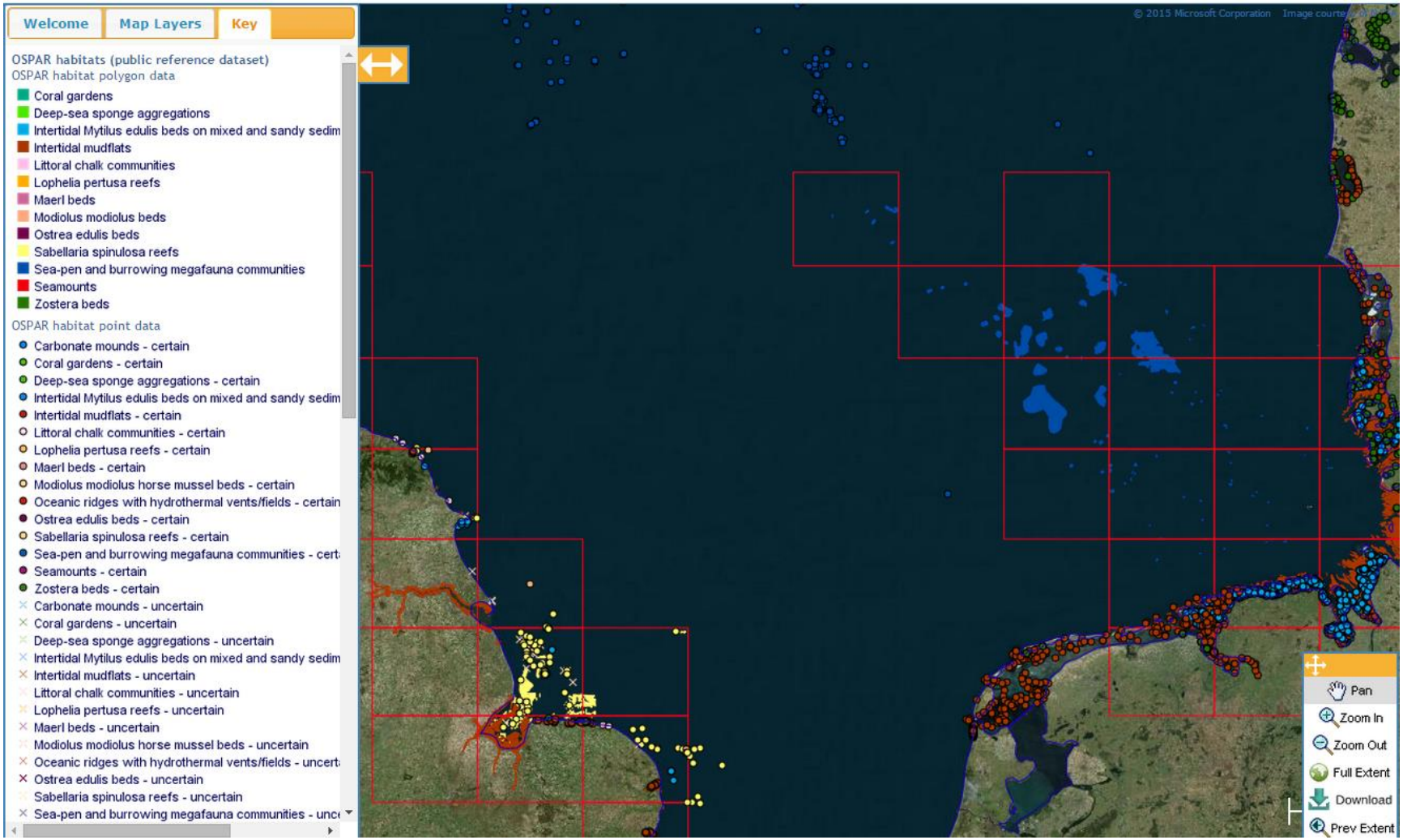


Figure 3.25: Map showing the location of OSPAR habitats in the North Sea. [Source: EMODNET, 2015].

3.4.4 Ecosystems

The North Sea is a semi-enclosed water body, situated on the continental shelf of Northwest Europe. Bounded by a number of countries, this relatively shallow sea (generally shallower than 200m) is strongly affected by both saline inflows from the north, and from freshwater inputs from the major rivers of the continent. It is a highly productive ecosystem, in which the highest values of primary productivity occur in the coastal regions (influenced by terrestrial nutrient inputs), on the Dogger Bank, and at tidal fronts.

The North Sea is the focus of a range of human activities, including fishing, dredging, oil and gas exploration, and shipping, and is a recipient for discharges from sources on land or offshore. In recognition of the potential impacts on the ecosystem, the Ministers at the 3rd Conference in The Hague in 1990 requested that OSPAR and ICES should establish a North Sea Task Force, with one of the tasks being to produce a Quality Status Report for the North Sea. This was completed in 1993 and identified fisheries as having major impacts on the North Sea ecosystem.

A range of information exists on elements of the North Sea ecosystem, including considerable knowledge on the oceanography, plankton and fish distribution and abundance. Certain types of data, notably those related to fisheries, physical oceanography, plankton and nutrients, are measured throughout the North Sea, with many programmes covering several decades of observation. Other data, including biological effects (ecotoxicology), sediment chemistry (contaminants), species introductions, hazardous algal blooms in coastal waters and benthos surveys tend to be more localized (for example concentrated in coastal waters) or cover a more limited period of time, i.e., years rather than decades.

The process of linking these components of the North Sea ecosystem is tasked to the ICES Regional Ecosystem Study Group for the North Sea (REGNS) (ICES, 2005), which met in May 2004 to develop a methodological approach for undertaking an Integrated Ecosystem Assessment of the North Sea. The process aims to bring together information from a range of other ICES Working Groups and organisations (including OSPAR and SAHFOS).

More recently, Cefas have published an ecosystem model to support an ecosystem approach to fisheries management in the North Sea (Mackinson and Daskalov, 2007). Detailed mass-balance trophic models of the North Sea have been developed using the Ecopath with Ecosim methodology (Daskalov & Mackinson, 2004). The ICES Working Group on Multispecies Assessment Methods has recently begun to compare results from North Sea Ecopath and Ecosim models with results from multi-species VPA assessments. Because plaice generally show low interaction with other fish species, this is unlikely to lead to substantial revisions in the perception of energy flows to or from this species. Plaice were also included as a key component in the demersal benthivore guild in the food web analyses of Greenstreet et al. (1997) and Heath (2005).

Perhaps more significantly, ICES has recently explored the consequences of issuing mixed fisheries advice for the North Sea (ICES, 2013x), which considers the effect of different TAC scenarios on fish catches across the range of mixed-species fishing metiers practised in the North Sea. Under various mixed-species management scenarios, the plaice TAC may need to be reduced when compared to that set under a single species regime, in order to ensure that overall fishing pressure on the most vulnerable component (typically cod) is sustainable.

The impact of fishing gears on benthos and the geochemistry of the seabed of the North Sea has been the focus of many studies. The most notable impact is through the activities of the beam-trawl fleet, though demersal otter trawling cannot be disregarded. Comparisons of

historical and modern data on benthic abundance and diversity have shown potential local effects (Frid et al, 2002), and more regional changes in sessile, scavenger and predator species (Rumohr & Kujawski, 2000). These changes result from a combination of the physical impact of fishing and additional potential food for scavenging and predator species in fishing grounds that have been disturbed by fishing gear.

Though it is very difficult to separate the effects of commercial fisheries from natural fluctuations in reproductive success and predator-prey interactions, models suggest that trawling reduces biomass, production, and species richness. The impacts of trawling is greatest in areas with low levels of natural disturbance, and least in areas with high rates of natural disturbance. For the North Sea, models suggest that the bottom-trawl fleet reduced benthic biomass and production by 56% and 21%, respectively, compared with an unfished situation (Hiddink et al, 2006). It should, however, be noted that the Osprey twin-rig fishery tends to take place on seabed habitats that are relatively resilient, and covers a relatively small area (see section 3.4.3 above).

The effect of the fishery on marine habitats and ecosystems in the North Sea is managed by EC Member States under a range of legislation and international agreements, including the EC Habitats Directive, EC Birds Directive, OSPAR Convention, Convention on Biological Diversity, Bern Convention and Bonn Convention. Collectively, these Conventions and Regulations create a framework for managing ecosystem impacts, and this approach is being developed further under the EC Water Framework Directive (2000/60/EC) and EC Marine Strategy Framework Directive (2008/56/EC), which aim to achieve good ecological and environmental status throughout the EC.

3.5 Principle Three: Management system background

The North Sea plaice fishery operates in the North Sea across several European Member State jurisdictions (Netherlands, UK, Germany, Denmark) that are all bound by the same rules and regulations as defined under the EU Common Fisheries Policy (CFP). Plaice fishing also extends into the Norwegian zone.

The UoC vessels are UK-registered and so fish under UK licences with UK quota, are members of UK POs and report (via electronic logbooks) to UK authorities. They are also members of Dutch POs and are bound by the rules set by the Dutch POs, including the landing of fish through Dutch markets.

The vessels are bound by the rules of the CFP, which are implemented in each Member State's waters. The objective of the CFP is to ensure that fisheries and aquaculture are ecologically, economically and socially sustainable. It is also concerned with maintaining employment and the sector's economic viability.

The CFP was revised in order to make fisheries more sustainable and the new policy came into force in 2014. This includes commitments to:

- Fish stocks at Maximum sustainable yield (MSY)
- Greater regionalization (through increased roles for Regional Advisory Councils, including the North Sea Advisory Council (North Sea AC)
- An ecosystem approach to fisheries by ensuring fishing capacity is in line with fishing opportunities and moving more stocks under Long Term Management Plans
- An obligation to land the fish that is caught (discard ban)

The landing obligation will be introduced in phases between 2015 and 2019. From 2016 in the plaice fishery, the discarding of plaice will not be permitted and from 2019 this will be extended to all quota species. In 2014, the Ministry of Affairs awarded grants totalling €4.5 million in support of the Dutch fisheries sector. Supported projects include studies into preventing bycatch, such as placing cameras on fishing vessels or improving fishing nets. No subsidies are given that would increase the fishing capacity of individual vessels or the fleet overall.

Catch limits (quota) are applied in the plaice fishery and certain areas of the sea may also be closed to fishing, for example the real time closures (RTC) introduced as part of the cod recovery plan in the North Sea.

The CFP includes requirements for fishing vessels longer than 12 metres to report their logbook data, including catch data, electronically and to have an approved satellite-based vessel monitoring system (VMS) on board. Fishing vessels longer than 18 metres are also required to have an automatic identification system (AIS) on board. From 1 May 2014, AIS must be on board all vessels over 15 metres in length.

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

EU level

The vessels operate under the CFP, which has common requirements irrespective of which Member State they operate under or the Member State waters they fish in.

The CFP is revised every 10 years based on an extensive consultation and review process with inputs from all member states and representative bodies. The European Commission's Directorate General for Fisheries and Maritime Affairs (DG MARE) is the primary policy and

management body for EU fisheries, overseeing implementation of the CFP in each EU Member State.

Fishing opportunities are set each year by the European Commission based on ICES advice following review by STECF and approval by the European Parliament and the Council of Ministers. In previous years political influence could result in decisions on quota deviating from the scientific advice. The additional scrutiny and commitment to fishing at MSY means that this is no longer the case and, when the ICES advice is reviewed (by STECF) the fishing opportunities follow this. In the case of North Sea plaice, operating under a long term management plan with sole, greater certainty is possible as quota can only increase or decrease by 15% from one year to the next. North Sea Advisory Council (NSAC) provides North Sea management advice to the European Commission. This is a multi-stakeholder organisation established in 2004 with 25 members[4] covering commercial fishing representatives, environmental NGOs and recreational fisher representatives. The principle objective of the NSAC is to "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. This will be done within the general aim of attaining the sustainable management of fisheries, incorporating an ecosystem based approach and based of the precautionary principle." Each year the NSAC agrees a workplan with its members, which is approved by the European Commission. The workplan identifies specific areas of work that will be addressed and sets out the meeting schedule for the year.

While the NSAC remains advisory, its contribution to policy and management decisions at an EU level has grown in importance.

National level

Vessels in the UoC effectively operate under two MS: the UK and the Netherlands.

As the vessels are UK-registered, they operate under policy developed by the UK Department for the Environment, Food and Rural Affairs (DEFRA) and Marine Scotland (for Scottish vessels and waters).

In the Netherlands fisheries are under the responsibility of the Ministry of Economic Affairs (MoEA). The Directorate General for Agri and Nature under the MoEA develops Dutch fisheries policy based on the CFP as well as environmental policy, illustrating the close linkage between policy considerations under the MSC Principles 1 and 2.

A co-management approach is adopted in the Netherlands with the ministry and the industry active in developing and implementing policy.

Industry Representation

There are several tiers of industry representation, which form a crucial role in providing the industry with an effective voice in both management and science. They also play an important role in lobbying. Not least among these various representative bodies is the Cooperative Visserij Organisatie (CVO), representing the seven Dutch Fish Producer Organisations. The CVO is the client for other MSC certificates for North Sea sole and plaice fisheries.

The vessels in the UoC are members of both UK and Dutch Fish Producer Organisations. The management of UK quota involves the UK POs, while the landing of fish into the Netherlands involves the Dutch POs (e.g. Urk P.O,). The vessels are therefore informed by and can engage with management authority consultations via either or both PO representatives.

[4] See membership list at: http://www.nsrac.org/category/about-nsrac/members-list/

Scientific Advice

The core backdrop to the management of this fishery is the advice provided by the ICES Advisory Committee (ACOM), which draws on the on-going work of international scientists from relevant research laboratories and institutions on the stock biology and marine science. The main working group responsible for providing advice on plaice fisheries is the Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK), which also regularly reviews stock assessment and data gathering methodologies.

There is an excellent level of relevant scientific capacity in the Netherlands. In terms of fisheries the statutory national scientific role is provided by IMARES (Institute for Marine Resources and Ecosystem Studies), part of the Wageningen University & Research Centre. The purpose of IMARES is to "provide the scientific support that is essential for developing policies and innovation in respect of the marine environment, fishery activities, aquaculture and the maritime sector." IMARES therefore plays an important role in commercial fisheries through research and advice on fish and shellfish population biology, stock status, dynamics and wider ecosystem aspects.

a. Compliance and enforcement.

There is a high degree of enforcement and control in the plaice fishery. Inspections occur at sea by the respective Member State control agencies, through the scrutiny of elogbooks and on landing, throughout the sales and supply chain to ensure that all fish handled is legally caught.

Vessels provide elogbook data directly to UK control authorities, the Marine Management Organisation for English vessels and Marine Scotland Compliance in Scottish vessels. This data is then shared with the Dutch authorities (NVWA). These control agencies, along with Danish and German control agencies, have developed a high level of co-operation and conduct joint operations in North Sea waters.

The Dutch Food and Consumer Product Safety Authority (NVWA) is the primary control agency; it monitors the entire fisheries chain, from catching or farming to the restaurant. It is also the body responsible for vessel, port and market inspections.

Overall there is a high degree of confidence in the enforcement system and no evidence of systematic non-compliance.

Client Code of Conduct

In addition to the formal management system described above, the client has implemented a Code of Conduct for member vessels. This is reproduced i

Table 3.18: Osprey Trawlers Services Code of Conduct for vessels fishing in the MSC Certificate. [Source: Osprey Trawlers].

Code of Conduct Osprey Trawlers Services

Introduction

This Code of Conduct states the rules, schemes and operational practices that MFV in the Osprey Trawlers Ltd must operate to. All ships must comply to these demands in order to maintain their North Sea plaice MSC (sub)certification inside the Group. This Code has been signed by all skippers and owners of the vessels that are member of the Osprey Trawlers Group.

Objectives

The objectives of this Code are to:

- Objective 1 promote the ecologically sustainable development of the North Sea plaice fishery and the sustainable use of living aquatic resources and their environments;
- Objective 2 establish practices, in accordance with the relevant regulations, for responsible fishing, taking into account relevant biological, technological, social, environmental and commercial factors;
- Objective 3 provide standards of conduct for all persons involved in the Osprey Trawlers Group;
- Objective 4 promote best practice in the Osprey Trawlers twin-rigged plaice fishery through appropriate and relevant training

General principles

The Osprey Trawlers Group will:

- Principle 1 strive to conserve and protect aquatic ecosystems;
- Principle 2 minimize the catch of non-target species, the incidental catch of non-utilised species, marine mammals and seabirds;
- Principle 3 will comply with all applicable laws and regulations governing their harvest and post-harvest activities;
- Principle 4 will strive to implement clean production principles including minimizing any wastage of resource;
- Principle 5 will participate in the development and application of selective fishing gear and methods, including those that reduce unwanted by-catch and discards;
- Principle 6 will strive to resolve disputes in a timely and cooperative manner;
- Principle 7 will plan, prepare and implement appropriate and relevant training packages for those who work on board of vessels of the Osprey Trawlers Group.

Specific principles and measures

The signatories of this Code undertake that:

- OTMG 1. they will establish a procedure for the training of crewmen in the code of conduct, the management system and legal and administrative requirements. Records will to be kept of training;

- OTMG 2. their vessel participates in the fishing for litter scheme (retain material such as derelict fishing gear and other garbage recovered during routine operations for disposal on shore);
- OTMG 3. their vessel participates in the SFAV scheme (This scheme of the "Stichting Afvalstoffen Visserij" covers the disposal of bilge water, paint, waste diesel, fuel oil, engine oil etc);
- OTMG 4. their vessel will fish only in ICES subdivision IVa and IVb and will stay outside 12 nautical mile limits;
- OTMG 5. they will respect closed areas in the framework of Natura 2000 when they are implemented (become law), until closed areas are implemented in the framework of Natura 2000 they will not fish in the voluntary closed areas as agreed in 2010 with WWF for the first MSC certification period (see attached map);
- OTMG 6. their vessel will not fish on plaice during the spawning season of plaice and therefore will operate a fishing season that opens on 1 March and closes on 15 December;
- OTMG 7. their vessel will only fish from Monday to Friday. This means that they will not fish (no nets in the water) from Saturday 06:00 AM to Monday 06:00 AM. Other MFV operations are permitted during 06:00 Sat – 06:00 Mon, i.e. steaming to and from fishing grounds.
- OTMG 8. they will comply with all applicable laws and regulations governing their fishery;
- OTMG 9. their vessel belongs to a PO and operates under PO rules;
- OTMG 10. they will only use the prescribed fishing gear needed for the MSC standard as described in this Code (see below);
- OTMG 11. they will comply with all measures to avoid catches of undersized cod (eg cod avoidance scheme, real time closures (RTC) already operational in England and Scotland):
- OTMG 12. they will comply with (voluntary) measures to avoid catches of juvenile plaice when operational (Dutch PO plaice RTC scheme)
- OTMG 13. they if requested will participate, with researchers and managers, in the collection of timely and reliable statistics needed for the conservation and management of fish stocks;
- OTMG 14. they will conduct trial modifications to the fishing gear to minimize discards;
- OTMG 15. they will train a crew member on the recognition of PET species;
- OTMG 16. they will record all interactions with protected, endangered or threatened (PET) species. Where significant impacts are identified they will make a clear plan of action to improve the situation and accordingly amend to this Code;
- OTMG 17. all their landings will be registered at a fish auction in the Netherlands or the United Kingdom
- OTMG 18. No member/vessel will be accepted into the group without signing this Code;

- OTMG 19. they will pay a fine of 2.500 Euro to Osprey Group Ltd in case of a first violation of the measures in this Code;
- OTMG 20. they will, in case of a second violation of the measures in this Code, lose the right to land MSC certified plaice for a period of one month;
- OTMG 21. they will, in case of a third violation of the measures in this Code, lose their membership of the Osprey Group and their product can no more be landed as MSC certified fish.
- OTMG 22. they will annually review the code of conduct to ensure its continued use, applicability and relevance and additional measures may be evoked as the Osprey Trawlers Group deems necessary
- OTMG 23. amendments and acceptance of new members will be decided on by majority vote.
- OTMG 24. this Code will be signed by all vessels skippers and owners;

Prescribed fishing gear

Gear description:	Twin rigged otter trawl
Sweeps:	250-300 m steel wire sweeps with 70 mm rubbers and a larger 150 mm rubber every 50m
Footrope:	between 55 and 70 m covered with 200 mm rubbers:
Mesh size:	Either minimum of 95 mm mesh side or minimum of 115 mm mesh size in cod end
Tickler chains:	Maximum of 4 tickler chains (max 13 mm chain material)
Clump:	weight maximum 1300 kg.
Doors:	Pelagic doors floating about 2.5 – 3 meters above seafloor with maximum weight of 900 kg each

Implementation and timing

Osprey Trawler Services Ltd. has developed this Code of Conduct for the unit of certification in the Osprey Trawler Services Ltd. North Sea ICES IVb twin rigged plaice fishery. Osprey Trawler Services Ltd. will undertake preparations for the Code of Conduct during the MSC fishery assessment process. The Code will be implemented at the point of successful MSC certification.'

4 Evaluation Procedure

4.1 Harmonised Fishery Assessment

At the time of writing, 4 MSC assessments had already been completed that overlap with this assessment (detailed below) and findings presented in published assessment reports. In addition 3 MSC assessments overlapping this fishery are currently underway (also detailed below).

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

Completed assessments

» **Cooperative Fishery Organization (CVO) North Sea plaice and sole:**

https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/cooperative-fishery-organisation-cvo-north-sea-plaice-and-sole

» **Ekofish Group-North Sea twin rigged otter trawl plaice:**

https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/Ekofish-Group-North-Sea-twin-rigged-otter-trawl-plaice/Ekofish-Group-North-Sea-twin-rigged-otter-trawl-plaice

» **DFPO Denmark North Sea plaice**

https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/Denmark-North-Sea-plaice

» **Osprey Trawlers North Sea twin-rigged plaice**

https://www.msc.org/track-a-fishery/fisheries-in-the-program/certified/north-east-atlantic/Osprey-Trawlers-North-Sea-twin-rigged-plaice/Osprey-Trawlers-North-Sea-twin-rigged-plaice

Assessments in progress

» CVO Pulse sole & plaice

https://www.msc.org/track-a-fishery/fisheries-in-the-program/in-assessment/north-east-atlantic/cvo-pulse-sole-and-plaice

» DFPO Kattegat and Baltic Plaice

https://www.msc.org/track-a-fishery/fisheries-in-the-program/in-assessment/north-east-atlantic/dfpo-kattegat-and-baltic-plaice/

4.1.1 Harmonisation Details

Harmonisation meeting/s

A harmonisation discussion took place between the CABs for these fisheries (Intertek Fisheries Certification, MRAG Americas and Acoura) on the 14th July 2015 to discuss Principle 1 harmonisation for the North Sea plaice fisheries.

Meeting Outcomes

The scores awarded in this assessment are consistent with the outcome of that harmonisation discussion.

The scores awarded for the different North Sea plaice fisheries are summarised in Table 4.1.

The team has carefully considered the MSC Guidance for harmonisation of cumulative impacts of scores for PI2.1.1, 2.2.1 and 2.4.2. We have concluded that because this re-assessment is using the Performance Indicators and Scoring Guideposts from CRv1.3, and because these establish the normative requirements for this assessment, it is not appropriate to consider cumulative impacts without deviating from the normative certification requirements specified in CRv2.0 and v1.3. We have, nevertheless, aligned the scores awarded for this re-assessment under Principles 2 and 3 with those awarded for other fisheries, and have clearly identified where our scoring has deviated in accordance with CR V2.0 at PB3.

4.2 Previous assessments

This fishery was first assessed and certified against the MSC Standard in 2010. The fishery was certified, with four conditions of certification. These conditions were all satisfied and were closed during the previous period of certification.

Full details of the previous period of assessment are available on the MSC website here.

4.2.1 Re-assessment with outstanding conditions

All of the conditions of certification were closed on or before the final surveillance audit during the period of certification.

Table 4.1: Summary of scores awarded for all MSC-certified North Sea plaice fisheries.

Principle	PI No.	Performance Indicator (PI)	CVO Plaice & Sole	DFPO North Sea	Ekofish (Original)	Osprey (Original)	This Fishery		
				(Trawl only)			UoC 1	UoC 2	UoC 3
One	1.1.1	Stock status	90	80	NA	100	90	90	90
	1.1.2	Reference points	80	80	NA	95	75	75	75
	1.1.3	Stock rebuilding	NA	NA	NA	NA	NA	NA	NA
	1.2.1	Harvest strategy	90	85	NA	85	95	95	95
	1.2.2	Harvest control rules & tools	90	80	NA	85	75	75	75
	1.2.3	Information & monitoring	80	80	NA	80	90	90	90
	1.2.4	Assessment of stock status	95	80	NA	90	90	90	90
Two	2.1.1	Outcome	80	80	NA	80	80	80	80
	2.1.2	Management	85	90	NA	85	80	80	80
	2.1.3	Information	80	80	NA	85	80	80	80
	2.2.1	Outcome	80	80	NA	80	80	80	80
	2.2.2	Management	80	80	NA	80	80	80	80
	2.2.3	Information	80	85	NA	80	80	80	80
	2.3.1	Outcome	80	80	NA	80	70	70	70
	2.3.2	Management	80	80	NA	80	80	80	80
	2.3.3	Information	80	70	NA	80	65	65	65
	2.4.1	Outcome	80	75	NA	80	80	80	80
	2.4.2	Management	80	75	NA	80	90	90	90
	2.4.3	Information	80	80	NA	80	85	85	85
	2.5.1	Outcome	90	90	NA	90	90	90	90
	2.5.2	Management	85	90	NA	85	95	95	95
	2.5.3	Information	90	90	NA	90	90	90	90
Three	3.1.1	Legal & customary framework	90	90	NA	90	95	95	95
	3.1.2	Consultation, roles &	90	85	NA	90	95	95	95
	3.1.3	Long term objectives	100	100	NA	85	100	100	100
	3.1.4	Incentives for sustainable fishing	80	85	NA	80	80	80	80
	3.2.1	Fishery specific objectives	80	80	NA	80	90	90	90
	3.2.2	Decision making processes	80	80	NA	80	85	85	85
	3.2.3	Compliance & enforcement	90	85	NA	90	85	85	85
	3.2.4	Research plan	85	80	NA	85	80	80	80
	3.2.5	Management performance	98	85	NA	95	90	90	90

PI 1.1.3 Not scored	86.9	80.6	NA	91.3	85.0	85.0	85.0
PI 1.1.3 Scored	NA	NA	NA	NA	NA	NA	NA
	82.0	81.7	NA	82.3	81.7	81.7	81.7
	88.3	86.0	NA	86.1	89.3	89.3	89.3

Note that the original Ekofish assessment cannot be compared to other assessments because it was carried out before the introduction of the default assessment tree.

4.3 Assessment Methodologies

4.3.1 Standard Used

This fishery was assessed using the Standard Requirements defined within the MSC Certification Requirements (CR) v1.3 and the Process Requirements defined within the MSC Fishery Certification Requirements (FCR) v2.0. This means that all of P-Annexes set out in the FCR apply to this assessment, and that the S-Annexes do not. The rationale for this approach is set out in the FCR.

4.3.2 Reporting Template

All reports for this fishery assessment have been produced using the MSC Full Assessment Reporting Template v2.0.

4.3.3 Assessment Tree

The default assessment tree set out in the MSC Certification Requirements (CR) v1.3 has been used for this assessment.

During week commencing 22nd June 2015, 3 members of the assessment team, undertook a site visit to the Netherlands. This enabled a scheduled programme of consultations to take place with key stakeholders in the fishery. Prior notification of this site visit was issued on the MSC website and sent to stakeholders by e-mail in order that all relevant stakeholders were aware of the opportunity to meet with the assessment team.

Itinerary of field activities

Day 1 – 22nd June 2015 – Utrecht

» On day 1, the assessment team met with the North Sea Foundation and with the client to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

Day 2 – 23rd June 2015 – Urk

» On day 1, the assessment team met with the North Sea Foundation and with the client to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

Day 3 – 24th June 2015 – Den Haag, IJmuiden

» On day 2, the assessment team met with The Ministry of Economic Affairs and fishery scientists from IMARES to discuss the fishery under assessment and provide an opportunity for interested parties to submit comments, additional information or ask questions of the assessment team.

Day 3 – 25th June 2015 - Urk

» On day 3, the assessment team visited the client's net loft to inspect the fishing gear used in the fishery. This was to provide further detail on the fishing methods and practice in use under this fishery assessment.

Additional individuals contacted during field activities

In response to stakeholder comments during the site visit, the assessment team contacted two additional stakeholders afterwards. These were:-

» WWF – Netherlands

» Nederlandse Elasmobranchen Vereniging (NEV, the Netherlands Elasmobranch Society)

4.3.4 Consultations

Stakeholder issues

Written and verbal representations were provided to the assessment team expressing a range of views, opinions and concerns. The team is of the view that matters raised have been adequately debated and addressed as a part of the scoring process for this fishery, and that none of the issues raised, therefore, require separate attention beyond that represented in this report.

Interview Programme

Following the collation of general information on the fishery, a number of meetings with key stakeholders were scheduled by the team to fill in information gaps and to explore and discuss areas of concern.

Meetings were held as follows:

Table 4.2: Interview Programme

Name	Position	Organisation
Cees De Boer	Director	Osprey Trawlers Group
Bert Keus	Consultant	Osprey Trawlers Group
Christine Absil		North Sea Foundation
Anne Doeksen		North Sea Foundation
David Miller	Fisheries Researcher	IMARES
Karin van der Reijden	Fisheries Researcher	IMARES
Henk Offringa	Senior Policy Officer	Ministry for Economic Affairs
Emilie Reuchlin-Hugenholtz		WWF – Netherlands
Irene Kingma		Nederlandse Elasmobranchen Vereniging

Source: FCI assessment team

Summary of Information Obtained

A record of written submissions and a note of each stakeholder interview is included in section 11 of this report.

The key points raised during discussions with stakeholders were:-

» **Plaice stock status** – all stakeholders considered that the North Sea plaice stock was increasing in size. There were no concerns that the fishery was unsustainable.

» **Environmental impacts** – concerns were raised about some of the potential environmental impacts of the fishery. The key concerns were:-

› **Elasmobranch species** – there was concern about the effect that the fishery may be having on some elasmobranchs, in particular spiny dogfish and ray species (notably the starry ray which was added to the EC "prohibited" list in early 2015).

› **Habitat impacts** – concern was raised about the potential impact of the fishery on marine habitats, and in particular in respect of the withdrawal of the voluntary closed areas that had been included in the previous assessment as a condition of certification.

The assessment team has investigated these concerns as part of the re-assessment process.

4.3.5 Evaluation Techniques

Public Consultation

A total of 42 stakeholder individuals and organisations having relevant interest in the assessment were identified and consulted during this assessment. The interest of others not appearing on this list was solicited through the postings on the MSC website. These were felt to be the most appropriate media for making these public announcements as the processes used on the MSC website for tracking and announcing the various stages of the assessment as it progresses - from Full Announcement through to Certification - form an ideal tool through which to channel stakeholder interest and keep them abreast of the important stages of the assessment as a whole.

Initial approaches were made by email. Issues raised during correspondence were investigated during research and information gathering activities, and during interviews.

Process

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

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

» **MSC Principle 1** - Resource Sustainability

» **MSC Principle 2** - Ecosystem Sustainability

» **MSC Principle 3** - Management Systems

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

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

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

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

» Decision to use the MSC Default Assessment Tree contained within the MSC Certification Requirements (Annex CB)

» Description of the justification as to why a particular score has been given to each sub-criterion

» Allocation of a score (out of 100) to each Performance Indicator

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

Scoring outcomes

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

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

» The fishery must obtain a score of 60 or more for each Performance Indicator.

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

Table 4.3: Scoring elements for the fishery under assessment

Component	Scoring elements	Main/not main	Data-deficient or not
Target species	Plaice	NA	Not data-deficient
Retained non-target species	Dover sole	Main	Not data-deficient
Discarded non-target species (Bycatch)	Dab	Main	Not data-deficient
ETP Species	Starry ray	NA	Not data deficient
Habitats	Soft seabed habitat (sand / muddy sand)	NA	Not data deficient
Ecosystems	North Sea ecosystem	NA	Not data deficient

4.3.6 Risk Based Framework Use

The Risk Based Framework has not been used in this assessment.

5 Traceability

Traceability of product from the sea to the consumer is vital to ensure that the MSC standard is maintained. There are several aspects to traceability that the MSC require to be evaluated: Traceability within the fishery; at-sea processing; at the point of landing; and subsequently the eligibility of product to enter the chain of custody. These requirements are assessed here.

5.1 Traceability within the fishery

Acoura Fisheries have evaluated the key elements of traceability within the fishery as required by MSC Certification Requirements v1.3 at §27.12.1, below.

5.1.1 Tracking & tracing systems

All of the vessels operating in the Unit of Certification are tracked at all times by satellite VMS systems.

All of the vessels are also required to report the fishing location, the type of fishing gear used, and the quantity of fish caught daily using the EC electronic logbook system. These catch reports are reconciled with landings records and sales notes as required under the EC requirements for the Registration of Buyers and Sellers of first sale fish. There is therefore a high degree of confidence that the fishing activity carried out by the vessels under assessment is tracked and recorded by independently verifiable mechanisms.

Dutch fishery officials (LNV), the UK control agency (MMO) and the Lowestoft PO report no compliance issues specific to these vessels and a high level of compliance in this fleet overall. Therefore the risk that catch is misreported is deemed to be low.

5.1.2 Catch segregation and labelling

Plaice are readily identified and distinguished from the other species in the catch. Fish are sorted aboard the fishing vessel and segregated by species and by size. The catch is labelled aboard the fishing vessel with the date and location of capture.

The risk of substitution of certified plaice with non-certified fish of a different species is negligible.

5.1.3 Risk of vessels fishing outside the UoC

The location of all catches and their origin has to be recorded by each fishing vessel. Vessel activity is monitored using VMS equipment ~~(on most of the vessels)~~ and through catch and landings records (for all vessels). Vessels are require by EU and Norwegian legislation to comply with technical regulations governing the mesh size that can be used in trawls (see section 3.2.1 of this report). Enforcement agencies monitor compliance with these regulations both at sea and in port (see section 3.5). Compliance by Osprey Group vessels with these regulations is reported to be excellent.

Osprey vessels observe a self-imposed closed season between the 15th December and 1st March of each year during which they do not fish for plaice. The electronic monitoring of vessel activities (VMS and e-logbook) and systems for recording landings mean that the date

of capture for any batch of fish from the UoC can be identified, and thus that any plaice caught by Osprey vessels within this period of time can be distinguished from plaice caught at other times of year.

The combination of enforcement and compliance monitoring, catch recording and landings monitoring, coupled with the catch labelling procedures implemented by the client fleet means that the risk of a vessel fishing outside the UoC geographic area or using fishing gear outside the scope of the UoC and substituting certified fish with non-certified fish is considered to be very low.

5.1.4 On-board processing

Fish are gutted at sea and landed whole. There is no processing of the fish at sea.

5.1.5 Trans-shipment and first point of landing

There is no trans-shipment of fish at sea.

At the first point of landing, all catches are labelled and transported by the client to the first point of sale, which is the fish auction at Urk in the Netherlands. All of the client's vessels are within the UoC, and no fish from other eligible fishers in the UoA are mixed with UoC fish at the point of landing or in transit.

5.1.6 Risk of substitution of certified fish with non-certified fish prior to and at the point of landing.

The legislative requirements and traceability systems in place for monitoring areas of fishing and the type of fishing gear used mean that any plaice that might be caught during any fishing activities outside the geographic area of UoC would be clearly identified and physically segregated from MSC-certified plaice caught in this UoC (such fish would be placed in separate fish boxes and labelled with the area where they were caught).

The requirements of the EC legislation applying to Registered Buyers and Sellers of fish prevent comingling of fish from different vessels prior to sale (because sales records have to be reconciled with landings records from vessels, which in turn have to be reconciled with daily logbook catch declarations).

The risk of substitution of certified fish with non-certified fish and comingling of MSC and non-MSC product prior to the point of first sale is therefore considered to be very low.

5.1.7 Eligibility of Inseparable or Practically Inseparable (IPI) stock(s) to Enter Further Chains of Custody

There are no Inseparable or Practically Inseparable (IPI) stocks in this fishery.

5.2 Eligibility to Enter Further Chains of Custody

Acoura Fisheries has evaluated the eligibility of fish from this fishery to enter into further chains of custody as required by MSC Certification Requirements at §27.12.2, below.

5.2.1 Eligibility to enter further certified chains of custody

Tracking and traceability information for this fishery is considered sufficient for product to be eligible to enter further chains of custody.

5.2.2 Parties eligible to use the fishery certificates

The only company eligible to use the fishery certificate is Osprey Trawler Group BV. The only vessels eligible to operate within the fishery are those specified in this report or listed in the current MSC Certificate for the fishery.

5.2.3 Eligible points of landing

Landings will be made primarily at Harlingen and on occasion to other Dutch, German and Danish designated ports (namely Urk, Cuxhaven and Bremerhaven). At all of these ports regular inspection of landings are made by fishery officials to ensure landed quantities match log book submissions. Vessels are required to declare their intention to land before arriving in port, to facilitate catch inspections.

Fish from the UoC are transported by Osprey Trawler Group BV, with copies of all of the relevant paperwork describing the point of capture and the point of landing, to the fish auction at Urk.

Ultimately all certified fish will pass through the sales system at Urk fish market. The certified fish remain the property of the individual vessels fishing under Osprey Trawler Group BV until sold on the Urk fish auction.

5.2.4 Point of change of ownership from which Chain of Custody certification is required

The assessment team and Acoura have determined that because the systems in place are considered to be sufficient to ensure that all fish and fish products identified as such by the fishery originate from the certified fishery it is appropriate for the fishery certificate to extend to the point of sale at Urk fish auction in the Netherlands.

At each surveillance audit, Acoura will check that the systems described in this evaluation remain effective.

5.3 Target eligibility date

The **Target Eligibility Date** for this fishery will be the **21st March 2016.** The rationale for this date is that day on which the current period of certification ends and will allow for an unbroken period of certification.

6 Evaluation Results

6.1 Principle Level Scores

The performance of this fishery in relation to MSC Principles 1, 2, and 3 is summarised in the table below.

Table 6.1: Final Principle Scores

Principle	Final Principle Scores		
	UoC 1	UoC 2	UoC 3
Principle 1 – Target Species	85	85	85
Principle 2 – Ecosystem	81.7	81.7	81.7
Principle 3 – Management System	89.3	89.3	89.3

6.2 Summary of PI Level Scores

The scores assigned to each Performance Indicator for this fishery are shown in Table 6.3~~Table 6.3~~.

6.3 Summary of Conditions

A score of less than 80 was awarded for 4 Performance Indicators for each UoC (i.e. a total of 12 instances). The assessment team has therefore set conditions for continuing certification that the client for certification is required to address. The conditions are applied to improve performance to at least the 80 level within a period set by the certification body but no longer than the term of the certification.

As a standard condition of certification, the client has developed an 'Action Plan for Meeting the Conditions for Continued Certification', which has been approved by Acoura.

As a standard requirement of the MSC certification methodology, the fishery shall be subject to (as a minimum) annual surveillance audits. Progress towards the milestones set out in the conditions shall be reviewed at these annual audits. The annual surveillance audits shall be publicised and reports made publicly available.

The Conditions, associated timescales and relevant Scoring Indicator are summarised in Table 6.2~~Table 6.2~~ and set out in detail in section 9 of this report.

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Table 6.2: Summary of conditions for the Osprey Group North Sea twin rig plaice trawl fishery.

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
1, 2, 3	By the third annual surveillance audit, the following SG80 SIs must be met: The target reference point (F_{MP}) is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.	1.1.2	N
4, 5, 6	By the third annual surveillance audit, the following SG80 SI must be met: Well-defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	1.2.2	N
7, 8, 9	By the third annual surveillance audit, the following SG80 SI must be met: Direct effects are highly unlikely to create unacceptable impacts to ETP species.	2.3.1	N
10, 11, 12	By the third annual surveillance audit, the following SG80 SIs must be met: a) Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species. […] c) Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.	2.3.3	N

6.4 Recommendations

There are no recommendations for this fishery.

6.5 Determination, Formal Conclusion and Agreement

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

It is therefore determined that the **fishery should be certified according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries**.

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

Table 6.3: Scores for the Osprey Group North Sea twin rig plaice trawl fishery. Scores shaded green attain the unconditional pass level. Yellow shading indicates a conditional pass, and red shading would indicate a fail.

Principle	Component	PI No.	Performance Indicator (PI)	UoC 1	UoC 2	UoC 2
				<100mm	100-119mm	>120mm
One	Outcome	1.1.1	Stock status	90	90	90
		1.1.2	Reference points	75	75	75
		1.1.3	Stock rebuilding	NA	NA	NA
	Management	1.2.1	Harvest strategy	95	95	95
		1.2.2	Harvest control rules & tools	75	75	75
		1.2.3	Information & monitoring	90	90	90
		1.2.4	Assessment of stock status	90	90	90
Two	Retained species	2.1.1	Outcome	80	80	80
		2.1.2	Management	80	80	80
		2.1.3	Information	80	80	80
	Bycatch	2.2.1	Outcome	80	80	80
		2.2.2	Management	80	80	80
		2.2.3	Information	80	80	80
	ETP species	2.3.1	Outcome	70	70	70
		2.3.2	Management	80	80	80
		2.3.3	Information	65	65	65
	Habitats	2.4.1	Outcome	80	80	80
		2.4.2	Management	90	90	90
		2.4.3	Information	85	85	85
	Trophic function	2.5.1	Outcome	90	90	90
		2.5.2	Management	95	95	95
		2.5.3	Information	90	90	90
Three	Governance and policy	3.1.1	Legal & customary framework	95	95	95
		3.1.2	Consultation, roles &	95	95	95
		3.1.3	Long term objectives	100	100	100
		3.1.4	Incentives for sustainable fishing	80	80	80
	Fishery specific management system	3.2.1	Fishery specific objectives	90	90	90
		3.2.2	Decision making processes	85	85	85
		3.2.3	Compliance & enforcement	85	85	85
		3.2.4	Research plan	80	80	80
		3.2.5	Management performance	90	90	90

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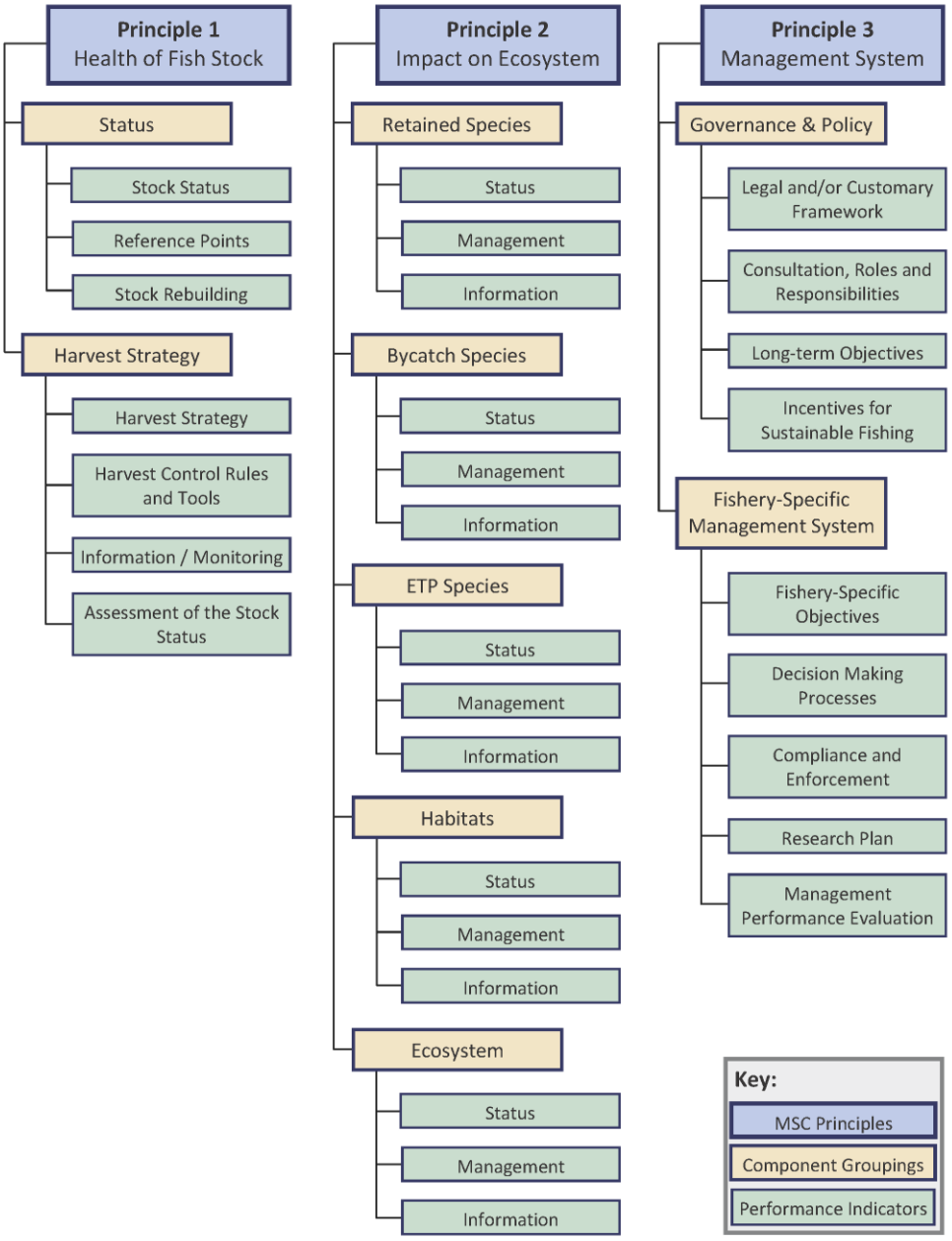
Appendices

8 Appendix 1: Scoring and Rationales

8.1 Appendix 1a – MSC Principles & Criteria

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



Principle 1

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

Intent:

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

Status

» The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing.

» Limit and target reference points are appropriate for the stock (or some measure or surrogate with similar intent or outcome).

» Where the stock is depleted, there is evidence of stock rebuilding and rebuilding strategies are in place with reasonable expectation that they will succeed.

Harvest strategy / management

» There is a robust and precautionary harvest strategy in place, which is responsive to the state of the stock and is designed to achieve stock management objectives.

» There are well defined and effective harvest control rules in place that endeavour to maintain stocks at target levels.

» Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.

» The stock assessment is appropriate for the stock and for the harvest control rule, takes into account uncertainty, and is evaluating stock status relative to reference points.

Principle 2

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

Intent:

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

Retained species / Bycatch / ETP species

» Main species are highly likely to be within biologically based limits or if outside the limits there is a full strategy of demonstrably effective management measures.

» There is a strategy in place for managing these species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.

» Information is sufficient to quantitatively estimate outcome status and support a full strategy to manage main retained / bycatch and ETP species.

Habitat & Ecosystem

» The fishery does not cause serious or irreversible harm to habitat or ecosystem structure and function, considered on a regional or bioregional basis.

» There is a strategy and measures in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.

» The nature, distribution and vulnerability of all main habitat types and ecosystem functions in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery and there is reliable information on the spatial extent, timing and location of use of the fishing gear.

Principle 3

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

Intent:

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

Governance and policy

» The management system exists within an appropriate and effective legal and/or customary framework that is capable of delivering sustainable fisheries and observes the legal & customary rights of people and incorporates an appropriate dispute resolution framework.

» Functions, roles and responsibilities of organisations and individuals involved in the management process are explicitly defined and well understood. The management system includes consultation processes.

» The management policy has clear long-term objectives, incorporates the precautionary approach and does not operate with subsidies that contribute to unsustainable fishing.

Fishery specific management system

» Short and long term objectives are explicit within the fishery's management system.

» Decision-making processes respond to relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.

» A monitoring, control and surveillance system has been implemented. Sanctions to deal with non-compliance exist and there is no evidence of systematic non- compliance.

» A research plan provides the management system with reliable and timely information and results are disseminated to all interested parties in a timely fashion.

8.1.1 Principle 1 Scoring Tables

Evaluation Table for PI 1.1.1

PI 1.1.1		**The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	It is likely that the stock is above the point where recruitment would be impaired.	It is highly likely that the stock is above the point where recruitment would be impaired.	There is a high degree of certainty that the stock is above the point where recruitment would be impaired.
	Met?	Y	Y	Y
	Justification	The stock is well above the reference point below which risk of recruitment failure may occur (Blim). Based on the ICES advice (ICES, 2015a), the SSB is expected to be around 957,000t in 2016 which is 6 times the level of Blim (160,000t). The SSB is also well above Bpa (230,000t) which is the biomass level set to ensure a low probability of the biomass falling to Blim. The current level of fishing mortality (F_{2014} = 0.18) is also well below Flim (0.6), the level at which continued fishing would be likely to lead to recruitment failure. The stock is at an historically high level and <u>there is a high degree of certainty</u> that the stock is above the point where recruitment would be impaired and this satisfies the first SG at 100.		
b	**Guide post**		The stock is at or fluctuating around its target reference point.	There is a high degree of certainty that the stock has been fluctuating around its target reference point, or has been above its target reference point, over recent years.
	Met?		Y	N
	Justification	Under the Multiannual Management Plan (MAMP), the target reference point in stage two of the plan has been defined as no lower than F0.3. This was determined on the basis that F0.3 would ensure exploitation of the plaice stock at MSY. The current values for F_{catch} have been below F0.3 since 2008 and consequently, the stock can be considered to be at or fluctuating around its target reference point. The issue of whether the target reference point is consistent with MSY is considered under 1.1.2		
References		EU. 2007 WKMSYREF-3. 2014. ICES. 2015a. ICES. 2015b.		
Stock Status relative to Reference Points				
		Type of reference point	**Value of reference point**	**Current stock status relative to reference point**
Target reference point		F_{MP}	0.3	F0.3/F0.18 = 1.67 957,000 in 2016
Limit reference point		Blim	160,000 t000t SSB	957,000/ / 160,000 = 5.98
OVERALL PERFORMANCE INDICATOR SCORE: All SGs met at 80 and one of two met at SG 100				**90**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.1.2

PI 1.1.2		**Limit and target reference points are appropriate for the stock**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Generic limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.	Reference points are appropriate for the stock and can be estimated.	
	Met?	Y	Y	
	Justification	For plaice, limit and precautionary reference points have been set for both biomass and fishing mortality. All reference points have a firm technical basis and have been set taking uncertainty into account. The current reference points were established in 2004 when discard estimates were included in the assessment for the first time. The reference points are based on the North Sea stock only and do not include the addition of plaice from the Skagerrak which add around 10% more to the stock size. This is not expected to change the appropriateness of the reference points and satisfies the first SI at 80.		
b	**Guide post**		The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.	The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of precautionary issues.
	Met?		Y	Y
	Justification	The biomass limit reference point is set at Blim. As there was no evidence of a breakpoint in the stock-recruit relationship, Blim has been set at the lowest observed SSB at which recruitment does not appear to have been reduced. This is an acceptable precautionary approach. The associated limited reference point for fishing mortality is Flim which is the fishing mortality likely to result in the SSB falling below Blim in the long term. This satisfies the second guideline at SG80 & 100.		
c	**Guide post**		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.	The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.
	Met?		N	N
	Justification	Under the second stage of the Multiannual Management Plan (MAMP), the aim is the exploitation of plaice on the basis of maximum sustainable yield. The MAMP defines F_{MSY} as a rate equal to or no lower than 0.3. Subsequently ICES carried out an evaluation of MSY for plaice and concluded that fishing within the range F_{catch} 0.25 – 0.3 would be consistent with MSY (ICES 2012; WKFRAME, 2011). Since the range encompassed the MAMP target reference point of 0.3, this was considered to meet the requirements of SG c. However, a further evaluation of MSY has now established that the median point for Fmsy is 0.19 and the likely range is from 0.13 to 0.27 (WKMSYREF-3, 2014). The new range is outside the MAMP target of 0.3 and so the target reference point no longer satisfies the requirements of SG c at 80.		
d	**Guide post**		For key low trophic level stocks, the target	

PI 1.1.2		Limit and target reference points are appropriate for the stock		
			reference point takes into account the ecological role of the stock.	
	Met?		Not relevant	
	Justification	[Note: Where relevant, insert rationale for status of stocks against key LTL criteria, in addition to further rationale that key LTL requirements are met. *(Reference: CR Annex CB2.3.13- CB2.3.21)*]		
References		ICES. 2012. WKFRAME. 2011. WKMSYREF-3. 2014.		
OVERALL PERFORMANCE INDICATOR SCORE: Two of three scoring guidelines met at 80				**75**
CONDITION NUMBER (if relevant):				**1, 2, 3**

Evaluation Table for PI 1.1.3

PI 1.1.3		**Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Where stocks are depleted rebuilding strategies, which have a reasonable expectation of success, are in place.		Where stocks are depleted, strategies are demonstrated to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the specified timeframe.
	Met?	NA		NA
	Justification	Scoring of this PI is not applicable, as PI 1.1.1 scores 80 or more.		
b	**Guide post**	A rebuilding timeframe is specified for the depleted stock that is the shorter of 30 years or 3 times its generation time. For cases where 3 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	A rebuilding timeframe is specified for the depleted stock that is the shorter of 20 years or 2 times its generation time. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.	The shortest practicable rebuilding timeframe is specified which does not exceed one generation time for the depleted stock.
	Met?	NA	NA	NA
	Justification	Scoring of this PI is not applicable, as PI 1.1.1 scores 80 or more.		
c	**Guide post**	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within a specified timeframe.	There is evidence 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 specified timeframe.	
	Met?	NA	NA	
	Justification	Scoring of this PI is not applicable, as PI 1.1.1 scores 80 or more.		
References		NA		
OVERALL PERFORMANCE INDICATOR SCORE:				**N/A**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.1

PI 1.2.1		**There is a robust and precautionary harvest strategy in place**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points.
	Met?	Y	Y	Y
	Justification	There is a well defined harvest strategy which incorporates a range of components including a monitoring programme, regular evaluation of the state of the stock in relation to precautionary reference points and controls on the fishery through TACs, effort limitation and technical measures. The monitoring information feeds into an annual assessment which determines the state of the stock in relation to target and limit reference points. A TAC is set based on management objectives set out in the Multiannual Management Plan. In the short term this aimed to reduce fishing mortality progressively by 10% each year until inside safe biological limits. In the longer term, the strategy aims to exploit the fishery at MSY. The elements of the harvest strategy have worked effectively together towards achieving this aim and this satisfies both SG 80 and SG 100.		
b	**Guide post**	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Y	Y	Y
	Justification	ICES undertook a re-evaluation of the MAMP in 2010 (ICES 2010b) following evaluations by STECF (Simmonds et al, 2010) and IMARES (Miller and Poos, 2010) and concluded that the plan was precautionary for both plaice and sole. In addition, routine monitoring of the state of the stock is undertaken through collection of fisheries data, fisheries independent surveys and through the annual assessments. The improved status of the stock which is at historically high levels of SSB and reduction in F to within the range of F_{MSY} is evidence that it is achieving its objectives. The stock appears to be at or fluctuating around its management target levels with F below 0.3 since 2008. This meets the SGs at 80 and 100.		
c	**Guide post**	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	Extensive monitoring of the state of the stock is undertaken through collection of fisheries data, fisheries independent surveys and through the annual assessments to ensure that the harvest strategy is working.		
d	**Guide post**			The harvest strategy is periodically reviewed and improved as necessary.

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
	Met?			N
	Justification	Elements of the harvest strategy have been reviewed including the reference points (WKMSYREF-3, 2014), input and output of the assessment (ICES 2015b) and the MAMP (ICES 2010b). Review of the MAMP resulted in agreement that stage two of the Management Plan should be implemented to ensure exploitation at MSY but it has not yet been updated to include new ICES MSY reference targets. This satisfies the SG at 80 but not at 100 as the HS has not yet been improved to take the new MSY target into account.		
e	Guide post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	[Scoring issue need not be scored if sharks are not a target species]. [Note: Insert as much text as required to justify the SG level achieved for this scoring issue]		
References		ICES. 2010b. WKMSYREF-3. ICES. 2015b. Miller, D. C. M. and Poos, J. J. 2010. Simmonds et al., 2010.		
OVERALL PERFORMANCE INDICATOR SCORE: All scoring guidelines met at 80 and 2 of 3 met at SG 100				**95**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.2

PI 1.2.2		**There are well defined and effective harvest control rules in place**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
	Met?	Y	N	
	Justification	The harvest control rules are set out under the Multiannual Management Plan for flatfish (EC 676/2007) and are fully consistent with the Harvest Strategy. The main mechanisms to contain the harvest of North Sea plaice are capacity restrictions and the setting of an annual TAC under agreement between the EU and Norway. Under the first stage of the MAMP, the TAC is determined by selecting a fishing mortality that will ensure the spawning stock biomass will remain above precautionary levels. If the spawning stock biomass is outside the precautionary reference level Bpa of 230,000t, fishing mortality is required to be reduced annually by 10% (within a maximum annual variation in TAC of 15%). Under the second stage, the exploitation rate is reduced on an annual basis if the fishing mortality exceeds the management target of 0.3. Although these rules are designed to ensure that the SSB does not approach limit reference points, the MAMP does not specifically define how the exploitation rate would be reduced if the limit reference points were approached. As a result, the SG at 80 is not met.		
b	**Guide post**		The selection of the harvest control rules takes into account the main uncertainties.	The design of the harvest control rules takes into account a wide range of uncertainties.
	Met?		Y	N
	Justification	The main areas of uncertainty are associated with determining stock levels above which recruitment will not be impaired. The use of precautionary reference points for biomass and mortality ensures these areas of uncertainty are considered in the harvest control rules. Uncertainty in the stock-recruitment relationships for plaice have also been taken into account in evaluating the MAMP (Simmonds et al, 2010). However, the current assessment model (XSA) does not incorporate uncertainty in some of the input data such as landings and discard estimates, and so these uncertainties are not directly taken into account by the harvest control rules. In view of this, the SG at 100 is not considered to be fully met.		
c	**Guide post**	There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.
	Met?	Y	Y	N
	Justification	The long term reduction in fishing mortality since the introduction of the MAMP and the steady increase in spawning stock biomass to reach historically record levels in recent years is evidence that the harvest control rules are effective. Fishing mortality in 2014 was estimated at 0.18 (ICES 2015a) which is within the range of		

PI 1.2.2		There are well defined and effective harvest control rules in place
		Fmsy and SSB was expected to reach around 1 million tones which is nearly six times the level at which the stock is considered to be at risk of recruitment impairment.
References		ICES. 2015a. Simmonds et al., 2010. .
OVERALL PERFORMANCE INDICATOR SCORE: Only three of four SGs are met at 80		**75**
CONDITION NUMBER (if relevant):		**4, 5, 6**

Evaluation Table for PI 1.2.3

PI 1.2.3		**Relevant information is collected to support the harvest strategy**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Y	Y	Y
	Justification	There is a comprehensive range of data to support the harvest strategy and control rules, including information on fleet structure, amount and age compositions of the landings and stock productivity. All plaice landings are recorded by all countries participating in the North Sea flatfish and mixed demersal fisheries. The UoC vessels in the fishery under assessment put all their landings through the electronic fish auctions which ensures that all data is made available to the authorities. The accuracy of landings data is continually monitored at national level and enforcement action taken against individuals where appropriate. The WGNSSK have not identified any problems in relation to the validity of these data. The landings are also well sampled by the participating countries who fully comply with the EU minimum sampling levels. Data on landings by sex are available from Netherlands and Belgium accounting for approximately 50% of the landings. Length at age, weight at age and maturity are available for the Netherlands, France, Germany, Denmark and Belgium, accounting for approximately 75% of the landings. There is extensive information on fleet composition and this is used to monitor and regularly reduce effort. There is detailed environmental data available for the North Sea although this data is not yet incorporated into assessment models used routinely. This meets the requirements of the first guideline at SG100.		
b	**Guide post**	Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Y	Y	N
	Justification	Stock abundance is monitored through three surveys carried out annually which cover the main distribution of plaice in the North Sea and between them cover the period 1982-2014. These survey indices of abundance are used directly in calibrating the assessment. The surveys indicate differing trends in the development of the stock biomass and recruitment in recent years probably as a result of a shift in distribution of juvenile plaice, and splitting them by time series appears to provide better comparison in the estimates of stock abundance from year to year. The surveys also provide indices for estimation of recruitment to the stock. There is an extensive programme of market sampling of the landings, which provides an estimate of age composition by sex and by quarter. Commercial LPUE		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
		data from the Dutch beam trawler fleet and the UK beam trawler fleet (excluding flagged vessels) is also used in exploratory runs in the assessment. All these indices are subject to rigorous scrutiny each year, by the assessment working group, and any uncertainties identified and addressed. As a result there have been several changes in the way that the indices are used and the time periods considered appropriate. Fishery removals are regularly monitored for discards. Discards of juvenile plaice are a major problem in the plaice fishery and observations indicate that the proportions discarded are up to 80% in number and 57% in weight (Uhlmann et al., 2012; van Reijden et al., 2014) and have increased in recent years. Discarding of plaice is a particular problem in the beam trawl fisheries which are traditionally targeted at sole and use an 80mm mesh size but there are also high levels of discards in other gears including twin-rig gear. Improvements in the level of sampling have occurred in recent years so that there are now 14 years of data from a range of countries which ICES considers to be “robust and consistent between years” (WKPLE, 2015). Sampling covers all the main gear types and provides good spatial and temporal coverage (Reijden et al. 2014). These improvements satisfy the SG at 80. Thee is an improving understanding of the uncertainties in the assessment but this is not yet sufficient to inform management decisions and so SG 100 is not considered to be met.		
c	**Guide post**		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	Good information is available on all other fishery removals from the stock		
References		WKPLE. 2015. Uhlmann et al., 2012. Reijden et al., 2014.		
OVERALL PERFORMANCE INDICATOR SCORE: All SGs met at 80 and one of two SGs at 100				**90**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.4

PI 1.2.4		**There is an adequate assessment of the stock status**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**		The assessment is appropriate for the stock and for the harvest control rule.	The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.
	Met?		Y	Y
	Justification	The assessment model used for this stock is based on an aged based extended survivors analysis (XSA), using landings and discards and calibrated with three fisheries independent survey indices. The XSA model has been used within ICES as an important tool for catch-at-age analysis for most demersal stocks. Careful consideration is given by the WGNSSK each year to the appropriateness of all aspects of the model parameters in relation to each species and these are detailed in the WG reports. The model uses appropriate biological data for the stock and nature of the fishery. Since 2004, the assessment has included age compositions of the discards. This has resulted in a more robust assessment and a reduction in bias. This meets the first element of SG80 and SG100.		
b	**Guide post**	The assessment estimates stock status relative to reference points.		
	Met?	Y		
	Justification	The assessment estimates spawning stock biomass and fishing mortality on a annual basis and these estimates are directly comparable against target and limit reference points.		
c	**Guide post**	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y	N
	Justification	The current assessment model (XSA) does not incorporate uncertainty in the input data such as landings and discard estimates derived from sampling. However, the input data are rigorously tested in benchmark assessments and a range of input data tested in trial runs during the assessment process. In addition, statistical models which can allow for observational error have also been carried out and showed a similar trend in SSB to that from the standard XSA model. Uncertainty is also accounted for in estimating target reference points and in the estimation of ranges of fishing mortality at MSY. This satisfies the SGF at 80 but the assessment model would need to model uncertainty in a probabilistic way to meet the SG 100.		
d	**Guide post**			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			N
	Justification	The assessment is tested through a benchmark procedure where all input data and relevant assumptions are reviewed and some alternative assessment approaches such as the statistical catch at age model (SCA) explored. The assessment is generally robust from year to year with similar trends in SSB and F but there is still		

PI 1.2.4		There is an adequate assessment of the stock status		
		a tendency to underestimate F and recruitment and overestimate SSB. Alternative assessment approaches have been examined but not yet rigorously explored to the extent that they can be considered as alternatives to the existing XSA model.		
e	Guide post		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?		Y	Y
	Justification	The assessment is internally peer reviewed by an internal audit within the WGNSSK group itself and by the ICES Advisory Committee (ACOM). It is also peer reviewed for the EU by the Scientific, Technical and Economic Committee (STECF). This meets the SG 80. Regular benchmark assessments are carried out in which key assumptions, input data and models used in the assessment are tested and reviewed by working group members and external peer reviewers (WKPLE, 2015).		
References		WKPLE. 2015.		
OVERALL PERFORMANCE INDICATOR SCORE: All SGs met at 80 and two of four at 100				90
CONDITION NUMBER (if relevant):				

8.1.2 Principle 2 Scoring Tables

Evaluation Table for PI 2.1.1

PI 2.1.1		**The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	Met UoC1?	Y	Y	N
	UoC2	Y	Y	N
	UoC3	Y	Y	N
	Justification	For the purposes of an MSC assessment, "retained" species are those that are caught in the fishery and are landed by fishing vessels, even if these species have no commercial value. The MSC define "main" retained species as those that make up 5% or more of the total catch (unless the retained species have a high value, are particularly vulnerable, or the fishery is large (MSC GCR at §GCB3.5.2). A detailed examination of the catch and landings data available for all three UoCs is set out in section 3.4.1 of this report. This information enables both "main" and "minor" non-target species in the catch from different gear types to be identified (see Table 3.5, Table 3.6~~Table 3.6~~, Table 3.8, Table 3.10, Table 3.12). The client fleet is presently only fishing with the fishing gear types of UoC2 and UoC3. For these two UoCs there are data available from recent landings records which show the aggregate catch composition for the two UoCs. Lemon sole are the most abundant non-target species, making up just over 4% of the catch, and up to 8% from one of the UoC vessels (Agonus, 2015). An earlier study (Cefas, 2004) found that lemon sole made up between 12 and 16% of landings. For UoC1, it is possible to infer the catch that the client would be likely to take from commercial fishing operation from several studies. The first is a recent (2015) study commissioned by the client. This study compared the catch composition from trawls with 95 and 110mm cod ends (Cefas 2015). This found that none of the retained species in the catch in either net made up more than 5% of the catch. The most abundant non-target retained species in each mesh sized net was again lemon sole. The client indicated that lemon sole are a high value species that skippers wish to catch. On the basis of the information available, it seems that the only "main" retained species in the catch from all 3 UoCs are lemon sole, *Microstomus kitt*. The other retained species (such as turbot, brill, witch and grey gurnard) make up less than 5% of the catch. Target reference points have not been set for many of these species, so they have not been evaluated against this scoring issue. Lemon sole is assessed by ICES in the combined areas covering the North Sea (subarea IV), Skagerrak, Kattegat (division IIIa) and Eastern English Channel (division VIId). It is managed under a precautionary TAC together with witch flounder (*Glyptocephalus cygnoglossus*). It is widely distributed within the North Sea, VIId and IIIa but the highest concentrations occur in the north-western North Sea associated with stony or hard sandy sediments (Figure 3.19). There is little information on stock identity and no precautionary reference points or management plan.		

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species		
		Stock abundance estimates are available from the International Bottom Trawl Survey (IBTS) in Q1 in the North Sea although (as with other flatfish) it is uncertain how effectively lemon sole is collected in the otter trawl survey gear. The survey indices indicate wide variability from year to year but a generally stable stock abundance over the past 20 years (Figure 3). It was noted in the "Fishing for knowledge" study that the IBTS survey was considered to provide a relatively robust indication of stock status (van der Reijden et al, 2015). The indications of a relatively stable stock abundance for lemon sole over the past 20 years, coupled with independent verification of the robustness of the stock index provides confidence that the species is highly likely to be within biologically based limits, meeting the SG60 and SG80 requirements for this SI.		
b	**Guide post**			Target reference points are defined for retained species.
	Met? **All UoCs**			N
	Justification	Lemon sole is assessed by ICES in the combined areas covering the North Sea (subarea IV), Skagerrak, Kattegat (division IIIa) and Eastern English Channel (division VIId). It is managed under a precautionary TAC together with witch flounder (*Glyptocephalus cygnoglossus*). There is no analytical assessment of the stock, and reference points have not been defined.		
c	**Guide post**	If main retained species are outside the limits there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.	If main retained species are outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	
	Met? **All UoCs**	NA	NA	
	Justification	The main non target species (lemon sole) is not considered to be outside biological limits, so this SI is not scored.		
d	**Guide post**	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.		
	Met? **All UoCs**	Y		

PI 2.1.1		The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species
	Justification	Lemon sole are considered by ICES to be a data limited stock. A precautionary TAC has therefore been set for lemon sole, based upon a stock size index derived from the IBTS. As with other data-limited stocks in the EC, the ICES framework was applied in determining the biennial TAC (based on recent survey indices and landings data). This has resulted in a reduction in the TAC for 2016 and 2017.
References		Cefas, 2004; Agonus, 2015; ICES, 2012b; ICES, 2015d; van der Reijden et al, 2015.

OVERALL PERFORMANCE INDICATOR SCORE:	**80**
CONDITION NUMBER (if relevant):	**NA**

Evaluation Table for PI 2.1.2

PI 2.1.2		**There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing retained species.
	Met? **All UoCs**	Y	Y	N
	Justification	Under the MSC CR, the terms “measures”, “partial strategy” and “strategy” have a particular meaning:- • **Measures** – are individual actions that are in place either to manage an impact directly or coincidentally; • **Partial strategy** – represents a cohesive arrangement which may comprise one or more measures and an understanding of how they work but which may not have been designed to manage the specific impact; and • **Strategy** – this is a cohesive and strategic arrangement of measures that are designed to manage an impact of the fishery. *Summarising MSC Guidance on CRv1.3, §GCB3.3*[5] The single main retained species, Lemon sole (*Microstomus kitt*) is managed under a precautionary TAC which maintains landings at a level that is set relative to recent survey indices and landings, using the ICES framework for data limited stocks (ICES, 2012b). The advice is based on the ratio of the survey abundance index for the two most recent years compared with the abundance index for the preceding three years adjusted by status-quo landings for 2015. This implies a 9% reduction in abundance leading to TAC advice for 2016 and 2017 of 3959t compared with 4350t in 2015. Lemon sole are managed under a combined TAC with witch. This prevents effective control of single species exploitation rates, and can thus only be considered a “partial strategy”. Some, but not all, of the other retained species are managed under the EU TAC regulation (such as turbot and brill), which provides a strategy for managing them. For other retained species (such as witch and grey gurnard), the TAC is set on a precautionary basis, and for others (such as squid) there is no evidence of a strategy, The SG60 and 80 standards are met because there is a partial strategy in place for managing the catch of the single main retained species. SG100 is not met because there is no strategy in place for all retained species.		

[5] Note that the definitions set out in Table SA8 of CRv2.0 are not applicable to this fishery (see section 4.3.1 of this report).

PI 2.1.2		There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species		
b	Guide post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met? All UoCs	Y	Y	N
	Justification	The time series of data describing lemon sole abundance from the International Beam Trawl Survey (IBTS) provides confidence that lemon sole stock status has been relatively stable for 20 or more years. The recent "Fishing for knowledge" report provided independent verification that the IBTS index for this specie is likely to be robust. Together, these pieces of information satisfy the SG60 and 80 requirements. SG100 is not met because there is no evidence that the management strategy has been tested.		
c	Guide post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met? All UoCs		Y	N
	Justification	There is a partial strategy for managing lemon sole stock status is based on setting a precautionary TAC (in combination with witch). ICES report that the official combined lemon sole and witch landings have been lower than the TAC since 2008, indicating that this partial strategy is being implemented successfully, meeting the SG80 requirements.		
d	Guide post			There is some evidence that the strategy is achieving its overall objective.
	Met?			N
	Justification	The evidence from the International Beam Trawl Survey (IBTS) provides evidence that the management strategy for lemon sole is achieving the objective of maintaining a stable stock. The recent "Fishing for knowledge" report provided evidence that the IBTS index is likely to be robust for this species. These combined data provide some evidence that the overall objective is being achieved; however, as noted above, the lemon sole management regime is considered to represent a partial strategy rather than a full strategy so the SG100 requirement is not met..		
e	Guide post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	Not relevant	Not relevant	Not relevant
	Justification	No shark finning has been reported or recorded in this fishery.		

PI 2.1.2	**There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species**	
References	ICES, 2015d; van der Reijden et al, 2015.	
OVERALL PERFORMANCE INDICATOR SCORE:		**80**
CONDITION NUMBER (if relevant):		**NA**

Evaluation Table for PI 2.1.3

PI 2.1.3		**Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Qualitative information is available on the amount of main retained species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
	Met? UoC 1	Y	Y	N
	UoC 2	Y	Y	N
	UoC 3	Y	Y	N
	Justification	**UoC 1** The client fleet is not presently fishing using trawls with a cod-end mesh smaller than 100mm. Information is however available about the catch composition from otter trawlers using this size of cod-end. A study of catch composition was carried out by the client fleet in 2015 (see section 3.4.1.1.4) using a 95mm cod-end, and which provides quantitative information for the likely catch composition from the client fleet if this gear was to be used (see Table 3.6~~Table 3.6~~). Information from other vessels routinely using this gear is presented in section 3.4.1.3.2 of this report and Table 3.13 & Figure 3.16. The information available is both qualitative and quantitative and therefore meets the SG60 and 80 requirements for this SI. The requirements of SG100 are not met however. **UoC 2 & 3** The client fleet is presently operating with nets with cod end mesh sizes in the 100-119mm range (UoC2) and >120mm (UoC3). Qualitative and quantitative information on catch composition from these nets is summarised in section 3.4.1.1 of this report. In brief, all UoC vessels maintain an EC logbook recording their catch whilst at sea, and are also required to report their landings of target and non-target species retained by the fishery. Landings information from recent years is presented in this report at Table 3.12. The species of fish captured and retained by the fishery are also recorded under the client self-sampling programme, as well as through independent fishery observers from IMARES. This information meets the SG80 requirements, but SG100 is not met because the consequence for the status of affected populations is not known.		
b	**Guide post**	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
	Met? (All UoCs)	Y	Y	N

PI 2.1.3		Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species		
	Justification	The information available for each UoC indicates that the only "main" retained species is lemon sole. This information is summarised in section 3.4.1.1 of this report, and includes both catch and retained catch information for each UoC. The information available about the lemon sole stock is composed of landings data and information from the International Beam Trawl Survey (IBTS). This information is sufficient to determine an index of stock status. This index has been relatively stable over many years, indicating that the stock is within biologically based limits. Landings data indicate that the level of exploitation of lemon sole is within the limits determined under ICES procedures for data-deficient stocks. The information available is sufficient to meet the SG80 requirements, but does not provide the "high degree of certainty" required at SG100.		
c	**Guide post**	Information is adequate to support measures to manage main retained species.	Information is adequate to support a partial strategy to manage main retained species.	Information is adequate to support a strategy to manage retained species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met? **(All UoCs)**	Y	Y	N
	Justification	The information available about the lemon sole stock is composed of landings data and information from the International Beam Trawl Survey (IBTS). The information available is sufficient to support a "partial strategy" for management of this stock, which is based on the combined TAC set for both lemon sole and witch in ICES subarea IV and Divisions IIIa and VIId. The partial strategy of a combined TAC meets the SG80 requirements. SG100 is not met because the information available is not adequate to support a strategy for lemon sole, nor is there a high degree of certainty that it is achieving its objective.		
d	**Guide post**		Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator score or the operation of the fishery or the effectiveness of the strategy)	Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.
	Met? **(All UoCs)**		Y	N
	Justification	Logbook records and landings declarations show the quantities of all species retained by the fishery, and would detect an increase in risk level for any retained species. The reporting requirements apply to all UoCs. These data are reported in ICES stock assessments and provide an independent and verifiable means of detecting changes in risk level.		

PI 2.1.3		**Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species**
		The annual IBTS surveys provide an index of stock status, and are used to determine the TAC that is appropriate for the status of the stock. The TAC is adjusted in response to changes detected in the IBTS. Evidence of this is provided by the recent decision to reduce the lemon sole TAC for 2016 and 2017 in response to recent landings and changes to the IBTS stock index. The data collected meets the SG80 requirements for this fishery.
References		ICES, 2015d; section 3.4.1.2.
OVERALL PERFORMANCE INDICATOR SCORE (All UoCs):		**80**
CONDITION NUMBER (if relevant):		**NA**

Evaluation Table for PI 2.2.1

PI 2.2.1		**The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).	There is a high degree of certainty that bycatch species are within biologically based limits.
	Met? (All UoCs)	Y	Y	N
	Justification	For the purposes of MSC assessment, the term "bycatch" means those fish that are discarded from the catch and are not landed. To avoid confusion in the scoring comments, we have used the descriptive term "discarded species" in describing this element of the catch. The MSC define "main" discarded species as those that make up 5% or more of the total catch (unless the discarded species, are vulnerable, or the fishery is large (MSC GCR at §GCB3.5.2). Information from independent studies of discarding as well as self-sampling by the client fleet is presented in detail in section 3.4.1.3 of this report. On the basis of these studies, only dab (*Limanda limanda*) can be identified as a "main" discarded species in UoC1 and UoC2. Catch data gathered aboard one of the UoC vessels found that dab comprised 19.8% of the catch in 110mm mesh nets and 17.5% of the catch in 95mm nets (Cefas, 2015). Another study found that in UoC 1, dab discarding averaged 19.3% of catch over the period 2011-13; in UoC2 this figure was at 8.9% of the total catch (van der Reijden, pers comm., based on data presented in van der Reijden et al, 2015). There are no data available on discarding from UoC3 (this is the cod-end mesh size of over 120mm used in Norwegian waters. In Norwegian waters discarding of many species is not allowed. However when vessels re-enter EU waters undersized fish will be discarded. It could be assumed that discard percentages for UoC3 are lower that those for UoC 1 and 2 because of the larger mesh size used; however, on a precautionary basis, and in the absence of evidence to the contrary, it is presumed that dab are also discarded from this UoC. There is no analytical assessment for dab in the North Sea. The stock is managed under a precautionary TAC together with flounder. Stock abundance is estimated through the International Beam Trawl Survey (IBTS). The survey indicates a generally stable stock abundance over the past 25 years (see Figure 3.18), indicating that it is highly likely that this stock is within biologically based limits, meeting the SG80 requirements for this SI. The assessment team notes that spurdogs and some other elasmobranch species are discarded from the fishery. The catch and discard data availalble from studies of catch composition and discarding behaviour indicate that these species comprise a very small component of the catch (less than 1% in the case of spurdogs) and these are thus not considered as "main" discarded species.		
b	**Guide post**	If main bycatch species are outside biologically based limits there are mitigation measures in place that are expected to ensure	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the	

PI 2.2.1		The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups		
		that the fishery does not hinder recovery and rebuilding.	fishery does not hinder recovery and rebuilding.	
	Met? (All UoCs)	NA	NA	
	Justification	The main non target species (dab) is not considered to be outside biological limits, so this SI is not scored.		
c	**Guide post**	If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.		
	Met? (All UoCs)	Y		
	Justification	Dab are considered by ICES to be a data limited stock. A precautionary TAC has been set for dab, based upon a stock size index derived from the IBTS. As with other data-limited stocks in the EC, the ICES framework was applied in determining the biennial TAC (based on recent survey indices and landings data). This has resulted in an increase in the TAC for 2016 and 2017.		
References		Cefas , 2015; van der Reijden et al, 2015; van der Reijden pers comm, ICES, 2015c.		
OVERALL PERFORMANCE INDICATOR SCORE (All UoCs):				**80**
CONDITION NUMBER (if relevant):				**NA**

Evaluation Table for PI 2.2.2

PI 2.2.2		**There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There are measures in place, if necessary, that are expected to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main bycatch species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing and minimizing bycatch.
	Met?	Y	Y	N
	Justification	Under the MSC CR, the terms "measures", "partial strategy" and "strategy" have a particular meaning:- • **Measures** – are individual actions that are in place either to manage an impact directly or coincidentally; • **Partial strategy** – represents a cohesive arrangement which may comprise one or more measures and an understanding of how they work but which may not have been designed to manage the specific impact; and • **Strategy** – this is a cohesive and strategic arrangement of measures that are designed to manage an impact of the fishery. *Summarising MSC Guidance on CRv1.3, §GCB3.3*[6] The single main discarded species, dab (*Limanda limanda*) is managed under a precautionary TAC which maintains landings at a level that is set relative to recent survey indices and landings, using the ICES framework for data limited stocks (ICES, 2012b). The advice is based on the ratio of the survey abundance index for the two most recent years compared with the abundance index for the preceding three years adjusted by status-quo landings for 2015. This implies a 20% increase in TAC for 2016 and 2017. Because most dab caught in EC fisheries are discarded, ICES has estimated the total catch (including both discards and landings) over recent years. Total catch has been estimated in excess of 67,000t, with landings estimated at 5-7,000t in recent years. The dab and flounder TAC (governing landings) has been set at 18,434t since 2012. In 2014 and 2015, ICES recommended a TAC (for landings) of 7,795t. For 2016 and 2017, ICES has advised that the total catch of dab should be ≤76,075t. The partial strategy in place for managing dab stocks in the EU serves to ensure that this species remains within biologically based limits, meeting the SG80 requirements. The client fleet has taken steps to minimise discarding in the fishery, by fishing on ground where plaice abundance is high, and favouring mesh sizes in excess of the statutory minimum (Osprey vessels typically use a 115-119mm mesh size when fishing in UoC2 where 100mm is the minimum allowed; and when fishing in the Norwegian sector the Osprey vessels use a mesh size much larger than the		

[6] Note that the definitions set out in Table SA8 of CRv2.0 are not applicable to this fishery (see section 4.3.1 of this report).

PI 2.2.2		There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations		
		120mm limit). However, these measures can only be considered a "partial strategy", and do not meet the SG100 requirements. The assessment team note that these observations are based upon the evidence derived from fishing activities in ICES Sub Area IVb. If fishing effort should move to the south, where it is understood that the abundance of non-target species may be greater, then catch composition may change and other "main" non-target species may need to be considered. The score awarded here is, however, consistent with that awarded to other North Sea plaice fisheries, giving reassurance that it is appropriate.		
b	**Guide post**	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or species involved.
	Met?	Y	Y	N
	Justification	The time series of data describing lemon sole abundance from the International Beam Trawl Survey (IBTS) provides confidence that dab stock status has been relatively stable or increasing for over 20 years. ICES determined that the TAC for dab could be increased by 20% for the next two years. Together, these pieces of information satisfy the SG80 requirement. SG100 is not met because there is no evidence that the management strategy has been tested.		
c	**Guide post**		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	N
	Justification	The partial strategy for managing dab stock status is based on setting a precautionary TAC (in combination with flounder). ICES report that the official combined dab and flounder landings have been lower than the TAC since 2006, indicating that this strategy has been implemented successfully, as far as retained dab catches are concerned; in 2016 and 2017, ICES have advised on an overall catch basis (i.e. combining both landings and discards). The advice for 2016 and 2017 will result in the total catch advised being higher than the estimated total catch in recent years. This provides clear evidence that the partial strategy for managing this species is being implemented successfully, meeting the SG80 requirements.		
d	**Guide post**			There is some evidence that the strategy is achieving its overall objective.
	Met?			N
	Justification	The evidence from the International Beam Trawl Survey (IBTS) provides evidence that the management strategy for dab is achieving the objective of maintaining a stable stock. The recent decision to increase the dab TAC provides further evidence that this objective is being met; ; however, as noted above, the dab management regime is considered to represent a partial strategy rather than a full strategy so the SG100 requirement is not met		
References		ICES, 2015c; section 3.4.1.6.1 of this report.		

PI 2.2.2	**There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations**
OVERALL PERFORMANCE INDICATOR SCORE:	**80**
CONDITION NUMBER (if relevant):	**NA**

Evaluation Table for PI 2.2.3

PI 2.2.3		**Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Qualitative information is available on the amount of main bycatch species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main bycatch species taken by the fishery.	Accurate and verifiable information is available on the catch of all bycatch species and the consequences for the status of affected populations.
	Met? UoC 1	Y	Y	N
	UoC 2	Y	Y	N
	UoC 3	Y	Y	N
	Justification	**UoC 1** The client fleet is not presently fishing using trawls with a cod-end mesh smaller than 100mm. Information is however available about the catch composition and discarding from otter trawlers using this size of cod-end. A study of catch composition was carried out by the client fleet in 2015 (see section 3.4.1.1.4) using a 95mm cod-end, and which provides quantitative information for the likely catch composition and discarding behaviour from the client fleet if this gear was to be used (see Table 3.6~~Table 3.6~~). Information on discarding from other vessels routinely using this gear is presented in section 3.4.1.3.2 of this report and Table 3.13 & Figure 3.16. These data indicate that the only "main" discarded species in this UoC are dab, *Limanda limanda*. The information available is both qualitative and quantitative and therefore meets the SG60 and 80 requirements for this SI. The requirements of SG100 are not met however. **UoC 2 & 3** Quantitative information is available on the catch composition and discarding from these UoCs from several one-off studies and also from sustained ongoing monitoring of the fishery. These studies and the ongoing monitoring have been undertaken by both the client fishery, NGOs and also IMARES on behalf of the Netherlands Government. The findings of all of the studies that have been presented to the assessment team are summarised in section 3.4.1 of this report. These studies show consistently that only dab are a "main" discard from UoC1 and UoC2; as a precaution it is presumed that dab are also a "main" discard from UoC3 as well. The information available on catch composition and discarding from the fishery includes information about the size of fish caught in different gear types. The information presented in these different studies extend beyond the MSC category of "main" discarded species, to include those species that form a minor component of the catch, as well as benthic invertebrates. The extent of the information available is sufficient to meet the SG60 and SG80 requirements for the "main" discarded species of dab, as well as for all other discarded species. The consequences of discarding for all species and the status of the affected populations is not known, so the SG100 requirements are not met. A score of 80 is therefore appropriate for UoCs 2 & 3.		

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch		
b	Guide post	Information is adequate to broadly understand outcome status with respect to biologically based limits	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with respect to biologically based limits with a high degree of certainty.
	Met?	Y	Y	N
	Justification	The only species that is considered as a "main" discarded species from studies of all of the UoCs are dab, *Limanda limanda*. The information available about the dab stock is composed of landings data and information from the International Beam Trawl Survey (IBTS). This information is sufficient to determine an index of stock status. This index has been relatively stable over many years, indicating that the stock is within biologically based limits. Landings data indicate that the level of exploitation of dab is within the limits determined under ICES procedures for data-deficient stocks. Evidence supporting this view is provided by the recent ICES decision to increase the dab TAC by 20%. The information available is sufficient to meet the SG80 requirements, but does not provide the "high degree of certainty" required at SG100.		
c	Guide post	Information is adequate to support measures to manage bycatch.	Information is adequate to support a partial strategy to manage main bycatch species.	Information is adequate to support a strategy to manage bycatch species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	Y	Y	N
	Justification	The information available about the dab stock is composed of landings data and information from the International Beam Trawl Survey (IBTS). The information available is sufficient to support a "partial strategy" for management of this stock, which is based on the combined TAC set for both dab and flouncer in ICES subarea IV and Divisions IIIa and VIId. The partial strategy of a combined TAC meets the SG80 requirements. SG100 is not met because the information available is not adequate to support a strategy for dab, nor is there a high degree of certainty that it is achieving its objective.		
d	Guide post		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 effectively of the strategy).	Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.
	Met?		Y	N
	Justification	Logbook records and landings declarations show the quantities of all species retained by the fishery, and would detect an increase in risk level. These data are		

PI 2.2.3		Information on the nature and the amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch
		and are reported in ICES stock assessments and provide an independent and verifiable means of detecting changes in risk level. The annual IBTS surveys provide an index of stock status, and are used to determine the TAC that is appropriate for the status of the stock. The TAC is adjusted in response to changes detected in the IBTS. Evidence of this is provided by the recent decision to increase the dab TAC for 2016 and 2017 in response to recent landings and changes to the IBTS stock index. The data collected meets the SG80 requirements for this fishery. The client fleet has a protocol in place for catch sampling and analysis, which is reported on an annual basis. For example, in 2014, the client fleet took catch samples from 88 trawl hauls, identified the species within them, and reported on the levels of discarding and retention of these species (see results in section 3.4.1.1.6 of this report). IMARES work with the Netherlands trawl fleet to obtain catch samples that are subsequently analysed by IMARES scientists on land. The results of this monitoring are published (e.g. van der Reijden et al, 2015) and are summarised in section 3.4.1.3.2 of this report. The information available comfortably meets the SG80 requirements.
References		Agonus, 2015; ICES, 2015cvan der Reijden et al, 2015; section 3.4.1 of this report.
OVERALL PERFORMANCE INDICATOR SCORE (All UoCs):		**80**
CONDITION NUMBER (if relevant):		**NA**

Evaluation Table for PI 2.3.1

PI 2.3.1		**The fishery meets national and international requirements for the protection of ETP species** **The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species.
	Met? (All UoCs)	Y	Y	Y
	Justification	The MSC define Endangered Threatened & Protected (ETP) species as those that are recognised by national ETP legislation and those species that are listed in Appendix 1 of the Convention on International Trade in Endangered Species (CITES) (MSC CRv1.3 at CB3.11.1[7]). The MSC has indicated that species listed as "prohibited" under EC Regulation 104/2015 should also be regarded as ETP species for the purposes of MSC assessments (see section 12 of this report). Catch data provided from observations of the fishery has been compared with the lists of potential ETP species available (CITES Appendix I; ETP species lists used in the fishery; and the list of prohibited species set out in Article 12 of EC Regulation 104/2015). The information from the fishery indicates that there are very limited interactions with ETP species. Just one ETP species, the starry ray (*Amblyraja radiata*) is caught in the fishery. This is a species that is listed in Article 12 of EC Regulation 104/2015. Two studies provided indications that the level of starry ray catch in the fishery is around 2% of the total catch. (1.7% recorded by Wijsman et al, 2014; 2.2% recorded by Cefas, 2015). The ICES elasmobranch working group (WGEF, 2014) reported that starry ray abundance has declined by around 47% since its peak level in 1992. The requirement of the legislation protecting this species is that vessels should not "*fish for, retain on board, transship or land*". All of the available evidence, from self-sampling of the catch and from independent observations is that the client vessels do not deliberately fish for starry rays, and that they are returned to the sea rather than being retained on board, transshipped or landed. Despite the fact that there is evidence of a long-term decline in the abundance of starry rays, there is a high degree of certainty that the client fleet are acting in accordance with the limits set to protect this species, set out in Article 12 of Regulation 104/215. The SG60, 80 and 100 requirements are therefore met for this SI.		

[7] Note that the more expansive definition set out in Annex SA of CRv2.0 does not apply to this fishery (see section 4.3.14~~.3.1~~ of this report).

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PI 2.3.1		The fishery meets national and international requirements for the protection of ETP species The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species		
b	Guide post	Known direct effects are unlikely to create unacceptable impacts to ETP species.	Direct effects are highly unlikely to create unacceptable impacts to ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the fishery on ETP species.
	Met? (All UoCs)	Y	N	N
	Justification	In accordance with the MSC Certification requirements, the assessment team has considered whether the known direct effects (capture and discarding) of starry ray by the fishery under assessment may be hindering the recovery and rebuilding of this species. The IBTS index shows a steady decline of starry ray in the North Sea (see Figure 3.22). The assessment team has therefore considered whether the activities of the fishery under assessment has contributed to this decline and may be hindering the rebuilding of the stock, using the evidence available. The evidence that is available to assist this determination includes the analysis of catch composition and discarding rates in the client fleet (Table 3.5 & Table 3.6~~Table 3.6~~); discarding rates reported by the client (Table 3.10) and consideration of the total landings from the fishery (Table 3.3). The distribution of starry rays in the North Sea is also relevant to the assessment of impacts. In 2014, the total landings from the client fleet were 1,931t from a North Sea plaice TAC of 111,631t. Catch data indicate that around 87% of all plaice caught are retained (Table 3.10), which indicates that these 1.931t were derived from a catch of just under 2,220t of plaice. Plaice typically form at least 70% of the catch; using this figure it is possible to estimate that the total catch of fish required to yield the recorded plaice landings would be 3,170t. Catch studies show that starry rays may comprise up to 2.2% of the catch (see Table 3.6~~Table 3.6~~). Using the total catch estimate of 3,170t of fish in this fishery, this would indicate that around 70t of starry rays are caught in this fishery per year. The distribution of starry rays in the North Sea is known from the IBTS Q3 results (see Figure 3.21), and the pattern of activity of the client fleet is also available (see Figure 3.23). This information shows that the fishery overlaps with the starry ray distribution in the central North Sea, and that the starry ray range extends considerably further north, beyond the extent of the twin-rig trawl fishery. The conclusion of this assessment is that the direct effect of this fishery (the capture of around 70t of starry rays in just part of the species overall range) is unlikely to hinder the recovery of rebuilding of starry rays in the North Sea, meeting the SG60 requirements. The level of certainty of this assessment is not sufficient to warrant a higher score than this however.		

PI 2.3.1		**The fishery meets national and international requirements for the protection of ETP species** **The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species**		
c	**Guide post**		Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.
	Met?		Y	N
	Justification	The potential indirect effects of this fishery on the ETP species that it is known to interact with (starry ray, *Amblyraja radiata*) are considered likely to be physical impacts of the gear on the species that does not result in capture; and the consequences of prey removal by the fishery. Starry ray are bottom-dwelling species that feed mainly on amphipods when less than 40cm long, and feed on polychaete worms and decapods (such as crabs & hermit crabs) when larger than this (Kulka et al, 2009). There is evidence from the observation of twin-rig trawl catches that these invertebrate species form a very small part of the catch (Table 3.4 & Table 3.7 of this report), much lower than in beam trawlers for example. The low catch of these species in twin-rig trawlers indicates that the fishery is not likely to deplete the availability of prey for starry rays. Physical impacts of the fishing gear on starry rays could arise when the trawl passes over any rays on the seabed that are not subsequently caught. Impacts from trawl doors are unlikely to occur, as semi-pelagic doors are now used by the client fleet. The sweeps and footrope of the fishing gear are supported by bobbins that are specifically designed to minimise ground contact and allow the gear to pass over non-target species. The only part of the fishing gear in contact with the seabed that presents a potential risk would be the roller clump weight. The distribution of starry rays in the North Sea is known from the IBTS Q3 results (see Figure 3.21), and the pattern of activity of the client fleet is also available (see Figure 3.23). This information shows that the fishery overlaps with the starry ray distribution in the central North Sea, and that the starry ray range extends considerably further north, beyond the extent of the twin-rig trawl fishery. On the basis of this information, it appears to be unlikely that the fishery would have adverse indirect effects on starry rays through either the removal of prey species or the physical impact, and the SG80 requirements are therefore met.		
References		Section 3.4.1 of this report. Kulka et al, 2009.		
OVERALL PERFORMANCE INDICATOR SCORE:				**70**
CONDITION NUMBER (if relevant):				**7, 8, 9**

Evaluation Table for PI 2.3.2

PI 2.3.2		**The fishery has in place precautionary management strategies designed to:** • **Meet national and international requirements;** • **Ensure the fishery does not pose a risk of serious harm to ETP species;** • **Ensure the fishery does not hinder recovery of ETP species; and** • **Minimise mortality of ETP species.**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There are measures in place that minimise mortality of ETP species, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.	There is a comprehensive strategy in place for managing the fishery's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species.
	Met?	Y	Y	N
	Justification	ETP species are protected by a range of EC Regulations, Directives and national legislation that is summarised in section 3.4.2 of this report. Together, these form a coherent strategy for protecting ETP species within the North Sea. Evidence from the analysis of catches and discards from the fishery under assessment over a period of many years shows that although the fishery takes place in a sea area inhabited by many ETP species, only one of these is reported to be caught in the fishery. This species is the starry ray, and it became an ETP species following its inclusion in Article 12 of the annual TAC Regulation (Council Regulation 2015/104). The historical evidence from the fishery provides evidence that there are effective measures in place that avoid interactions with all ETP species apart from starry ray. Further to this, the evidence from catch and discard studies demonstrates that even prior to the introduction of Council Regulation 2015/104, the vessels in the UoC were acting in manner compliant with the Regulation by discarding all of the starry rays that were caught. The combination of the overall management strategy for ETP species, couple with the measures that the client fleet has in place to avoid interactions with them and the observations of the client fleets compliance with the requirements of the strategy in place meets the SG60 and 80 requirements for this SI.		
b	**Guide post**	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is an objective basis for confidence that the strategy will work, based on information directly about the fishery and/or the species involved.	The strategy is mainly based on information directly about the fishery and/or species involved, and a quantitative analysis supports high confidence that the strategy will work.
	Met?	Y	Y	N
	Justification	The catch and discard data presented in section 3.4.1~~3.4.1~~ of this report provide an objective basis for confidence that the strategy will work. This information shows that		

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PI 2.3.2		**The fishery has in place precautionary management strategies designed to:** • **Meet national and international requirements;** • **Ensure the fishery does not pose a risk of serious harm to ETP species;** • **Ensure the fishery does not hinder recovery of ETP species; and** • **Minimise mortality of ETP species.**		
		only one ETP species is caught in the fishery, and that even before they were identified as an ETP species, the starry ray caught in the fishery were all discarded. This information, derived directly from the fishery and for the species involved, provides an objective basis for confidence that the strategy in place will work, meeting the SG80 requirements.		
c	**Guide post**		There is evidence that the strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	N
	Justification	As noted above, the catch and discard data presented in section 3.4.1~~3.4.1~~ of this report provide an objective basis for confidence that the strategy will work. This information shows that only one ETP species is caught in the fishery, and that even before they were identified as an ETP species, the starry ray caught in the fishery were all discarded. This evidence meets the SG80 requirements.		
d	**Guide post**			There is evidence that the strategy is achieving its objective.
	Met?			N
	Justification	The available evidence from the IBTS surveys is that the North Sea population of starry rays is in decline. The strategy for protecting this species was only introduced in early 2015 under Council Regulation 2015/104. There is no evidence, yet, that the strategy is achieving its objective, so this SI is not met at the SG100 level.		
References		Section 3.4.1 & 3.4.2 of this report.		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**NA**

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Evaluation Table for PI 2.3.3

PI 2.3.3		**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.**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.	Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.
	Met?	Y	N	N
	Justification	It is possible to estimate the quantity of ETP species caught in the fishery. For most ETP species, there is no mortality at all. For starry ray, it is estimated that around 70t are caught and discarded per year (see rationale for this under PI2.3.1, SIb). There is no estimate available of the starry ray stock size, so this figure cannot be used to quantify the impact on this species. It does, however, provide a qualitative indication that the impact of the fishery on this ETP species. The distribution of starry rays in the North Sea is known from the IBTS Q3 results (see Figure 3.21), and the pattern of activity of the client fleet is also available (see Figure 3.23). This information shows that the fishery overlaps with the starry ray distribution in the central North Sea, and that the starry ray range extends considerably further north, beyond the extent of the twin-rig trawl fishery. Together, this quantitative and qualitative information is sufficient to meet the SG60 requirements for this SI, but not the SG80 requirements, because fishery-related mortality cannot be quantified for the fishery.		
b	**Guide post**	Information is adequate to broadly understand the impact of the fishery on ETP species.	Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species.	Accurate and verifiable information is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species.
	Met?	Y	Y	N
	Justification	The likelihood of the fishery affecting the protection and recovery of starry rays was considered under PI2.3.1 SIa. In summary the conclusion drawn was that the quantity of starry rays caught in the fishery can be estimated from catch data (at around 70t per year); and the range of the starry ray extends well beyond the extent of the North Sea twin-rig trawl fishery. The catch and spatial data available is sufficient to determine whether this fishery may be a threat to the protection and recovery of starry rays. The client's commitment to ongoing monitoring of both catches and the location of fishing activities would also detect any change in risk level. In conclusion, the information available is sufficient to determine whether the fishery is likely to be a threat to the recovery or protection of starry rays, meeting both the SG60 and 80 requirements.		
c	**Guide post**	Information is adequate to support measures to manage	Information is sufficient to measure trends and support a full strategy	Information is adequate to support a comprehensive strategy to manage impacts,

PI 2.3.3		**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.**		
		the impacts on ETP species.	to manage impacts on ETP species.	minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	Y	N	N
	Justification	The main information available about the effect of the fishery is the catch and discarding data, and also the spatial data that shows the extent of the overlap between the fishery and the species concerned. Trends in the population status of starry ray are also available from the International Beam Trawl Survey (IBTS). This information is adequate to support management actions (such as Regulation 2015/104 that protects starry rays), meeting the SG60 requirements of this SI, but is not capable of supporting a full strategy to manage impacts as required at SG80.		
References		Section 3.4.1 & 3.4.2 of this report.		
OVERALL PERFORMANCE INDICATOR SCORE:				**65**
CONDITION NUMBER (if relevant):				**10,11, 12**

Evaluation Table for PI 2.4.1

PI 2.4.1		**The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	The fishery is unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.	There is evidence that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.
	Met?	Y	Y	N
	Justification	Comparisons of the impacts of different marine habitats and fishing gear types indicate that twin-rig trawling causes less impact on marine habitats, and catches considerably fewer benthic invertebrates than beam trawling. The client fleet has developed fishing gear that minimises contact with the seabed compared to traditional twin-rig trawl gear, and compared to the gear that was originally certified. In particular, the current pattern of gear uses semi-pelagic trawl doors which make no contact with the seabed, and a roller clump weight (rather than chain) to further minimise seabed impacts. The footrope of the net is rigged with rubber rollers of alternating sizes, which lifts the net above the seabed and further minimizes seabed impacts. Habitats that are potentially vulnerable to harm from human activities are protected in the North Sea by EU Natura 2000 sites, and also identified under the OSPAR list of threatened and / or declining habitats. The location of Natura 2000 sites relative to fishing activity by Osprey Group vessels is shown in Figure 3.23 of this report, indicating that fishing takes place within the Dogger Bank Natura 2000 site. Figure 3.25 shows the location of OSPAR habitats in the North Sea, and suggests little or no overlap with the Osprey Group “trawl footprint”. The Dogger Bank Natura 2000 site has been designated to protect the large subtidal sandbank habitat feature of the area. This habitat has been identified as “moderately vulnerable” to fishing impacts, and an appropriate conservation response is considered to be the implementation of management measures. These measures are understood to be in development and due to be implemented in the near future after several years of discussions. Evidence from studies of fishing impacts indicates that subtidal sandbank habitats recover from trawl impacts; harm is therefore unlikely to be either serous or irreversible in the Natura 2000 site. Looking more widely at the distribution of fishing activity relative to seabed habitats that is shown in Figure 3.23, it is clear that the client fleet only operates on sand, mud, and muddy sand seabed habitats. Again, all of these habitats are reported to recover from trawling, so again impacts seem unlikely to be either serious or irreversible. The good understanding of both the distribution and character of marine habitats and the distribution of fishing activity, as well as the duration of impacts, indicate that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm, meeting the SG80 requirement of this PI. Although there is some evidence to demonstrate the spatial relationship between the fishery and marine habitats, there have been no fishery-specific studies of habitat impacts, so the SG100 requirements are not met.		
References		Section 3.4.3 of this report.		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**NA**

Evaluation Table for PI 2.4.2

PI 2.4.2		**There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of the fishery on habitat types.
	Met?	Y	Y	Y
	Justification	The EC Natura 2000 network of protected sites and its supporting legislation represents a formal strategy for protecting vulnerable and endangered marine habitats and species from all human activities, including fishing. The Natura 2000 network comprises Special Protection Areas classified under the Birds Directive 79/409/EEC and Special Areas of Conservation designated under the Habitats Directive 92/43/EEC. These Directives mean that EC Member States are bound by law to both designate and protect Natura 2000 sites on land and at sea. Details on the establishment of a marine network of conservation areas under Natura 2000 can be found in the "*Guidelines for the establishment of the Natura 2000 network in the marine environment. Application of the Habitats and Birds Directives*". The EC has issued guidance to Member States concerning how fisheries should be managed in Natura 2000 sites in its document "*Fisheries Measures for Marine Natura 2000 sites*". The CFP has been used as the basis for protecting marine habitats outside Natura 2000 sites, and thus forms part of the strategy for managing the impacts of fishing on marine habitats where this is necessary. Article 2 of the CFP provides that it is to apply a precautionary approach in taking measures to minimise the impact of fishing activities on marine ecosystems. As an example, EC Regulation 602/2004 prohibits trawling in certain areas to the north west of Scotland in order to protect *Lophelia* reefs. There is no similar Regulation in force for the UoC area. Together, the Natura 2000 network and the CFP represent a strategy for managing the impacts of this fishery on habitat types, meeting the SG100 requirements for this SI.		
b	**Guide post**	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).	There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.	Testing supports high confidence that the strategy will work, based on information directly about the fishery and/or habitats involved.
	Met?	Y	Y	N
	Justification	Information is available to show the distribution of fishing activity relative to marine habitats and Natura 2000 sites in the North Sea (Figure 3.23) and also the location of OSPAR habitats (Figure 3.25). This information provides confidence that the fishery is not impacting habitats that are likely to suffer serious or irreversible harm;		

PI 2.4.2		There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types		
		instead it takes place on habitats that are known to recover swiftly from trawl impacts. This information satisfies the SG60 and SG80 requirements. The SG100 requirements are not met because there is no evidence that the specific impacts of the client fleet's trawl gear on the habitats within the trawl footprint have been tested.		
c	Guide post		There is some evidence that the partial strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	N
	Justification	The designation of marine Natura 2000 sites provides some evidence that the management strategy is being implemented successfully, meeting the SG80 requirements. Clear evidence of the strategy being implemented successfully will be provided when the management plans for the Dogger Bank and other North Sea Natura 2000 sites are implemented.		
d	Guide post			There is some evidence that the strategy is achieving its objective.
	Met?			Y
	Justification	There is evidence from assessments carried out by the European Environment Agency that the Natura 2000 sites within the UoC area are in good condition. This provides some evidence that the EC strategy for marine habitat protection is achieving its objectives.		
References		Section 3.4.3 of this report.		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				NA

Evaluation Table for PI 2.4.3

PI 2.4.3		**Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There is basic understanding of the types and distribution of main habitats in the area of the fishery.	The nature, distribution and vulnerability of all main habitat types in the fishery are known at a level of detail relevant to the scale and intensity of the fishery.	The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.
	Met?	Y	Y	Y
	Justification	The distribution of habitat types in the North Sea is well known, and the distribution and range of vulnerable habitat types is also known in the North Sea. The most vulnerable habitats have either been designated within Natura 2000 sites or identified as OSPAR habitats (see Figure 3.23 and Figure 3.25).		
b	**Guide post**	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.	The physical impacts of the gear on the habitat types have been quantified fully.
	Met?	Y	Y	N
	Justification	The nature of the impacts of towed trawls on benthic marine habitats is well documented globally. Studies that are relevant to the UoC under assessment have been carried out for otter trawls in the North Sea. The spatial extent of the interaction between the UoCs and benthic habitats can be assessed by reference to maps showing the distribution of fishing activity relative to these habitats (see Figure 3.23 and Figure 3.25). The information about the spatial extent of vessel activity is derived from VMS satellite tracking data which provides independent, accurate, and ongoing information about the timing and location of use of the fishing gear. The SG80 requirements are met by the information available, but SG100 is not met in the absence of fishery-specific quantifiable information about habitat impacts.		
c	**Guide post**		Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	Changes in habitat distributions over time are measured.
	Met?		Y	N

PI 2.4.3		**Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types**
	Justification	Any changes in the operation of the fishery would be immediately detected by the VMS tracking of the trawl fleet. This would reveal any movement of fishing activity into areas where there may be vulnerable marine habitats. In addition to this, the client fleet has provided annual reports about vessel activity as part of its commitment to ongoing MSC certification. Further information about the increase in risk to habitats in the UoC would be provided by the ongoing monitoring of the status of marine habitats within Natura 2000 sites, which represent the most vulnerable and important marine habitats in Europe. Combined, these monitoring programmes would detect any increase in risk to habitats in the UoC area.
References		Section 3.4.3
OVERALL PERFORMANCE INDICATOR SCORE:		**85**
CONDITION NUMBER (if relevant):		**NA**

Evaluation Table for PI 2.5.1

PI 2.5.1		**The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	The fishery is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is evidence that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Y	Y	Partial
	Justification	The role of Plaice in the North Sea ecosystem is relatively well understood. Plaice is dominantly benthivorous, feeding mainly on polychaetes and crustaceans, with bivalves and small demersal fish featuring in the diet of larger plaice. Food-web studies suggest that post-juvenile plaice function mainly as an energy sink in the North Sea ecosystem and that relatively small proportions of plaice biomass are passed onto the demersal piscivore guild and an even smaller proportion to the pelagic piscivore guild. This clearly suggests that removal of plaice at sustainable levels should not give rise to significant impacts on the wider foodweb of the North Sea. Serious depletion of the spawning stock could give rise to reduced availability of juvenile plaice on inshore nursery grounds where they are likely to form an important prey item for other species. There is potential that this could have negative consequences for dependent species, especially in circumstances where no alternative prey species was available. There is no evidence however to suggest that the removal of plaice at current levels is likely to have such a consequence, based on the most recent estimate of SSB (in 2009) and fishing mortality (in 2008), ICES classifies the stock as having full reproductive capacity and as being harvested sustainably. SSB is estimated to have increased above the B_{pa}. Fishing mortality is estimated to have decreased to below F_{pa} and F_{target}. The team concluded that at present rates of exploitation for North Sea plaice, the demersal trawl fishery was highly unlikely to disrupt key elements underlying ecosystem structure and function. Accordingly the SG 80 has been met. While no conclusive evidence that the fishery is highly unlikely to disrupt the key elements of ecosystem structure and function was presented to the assessment team, the team were of the opinion that the observed increase in SSB and the fact the North Sea plaice stock is now considered to have full reproductive capacity provides some evidence that the fishery was highly unlikely to cause serious disruption to key elements underlying ecosystem structure and function. SG80 has been fulfilled and the SG100 has been partially fulfilled. A score of 90 is appropriate.		
References		Section 3.4.3		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				**NA**

Evaluation Table for PI 2.5.2

PI 2.5.2		**There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There are measures in place, if necessary.	There is a partial strategy in place, if necessary.	There is a strategy that consists of a plan, in place.
	Met?	Y	Y	N
	Justification	The main ecosystem effects of the fishery are likely to result from the removal of the target species (and any associated removals of non-target species) and effects on marine habitats. The effect of fishery removals is addressed under the TAC and quota management system for saithe and other fish species that has been established by the EC and Norwegian Government, and implemented via relevant management agreements. TACs are set for all species at a level compatible with MSY (or the transition to MSY); and all fishery-related mortality is taken into account to ensure that impacts on fish stocks (and hence the North Sea ecosystem) are within appropriate limits. Habitat protection measures established by the EC Natura 2000 network represent a strategy to prevent serious or irreversible harm to marine ecosystems in the UoC area. Other measures (such as the Marine Strategy Framework Directive) are in place, with the goal of achieving Good Environmental Status by 2020. Other measures (such as the trawling restrictions established by the EC cod recovery plan) provide additional management constraints on fishing activity which have the potential to benefit marine ecosystems. Together these form a partial strategy that meets the SG80 requirements for the fishery; SG100 is not met because there is no ecosystem management plan in place.		
b	**Guide post**	The measures take into account potential impacts of the fishery on key elements of the ecosystem.	The partial strategy takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	The strategy, which consists of a plan, contains measures to address all main impacts of the fishery on the ecosystem, and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem. 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.
	Met?	Y	Y	N
	Justification	With respect to the potential effect of the fishery on the North Sea ecosystem via the removal of target and non-target fish species, the relevant management strategies takes account of the best available information on fish stocks and fishery-related removals from the area.		

PI 2.5.2		There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function		
		The identification and protection of marine habitats through the Natura 2000 sites within the EC EEZ is based upon the best available information about the distribution and vulnerability of marine habitats. These aspects of the strategy for managing the effects of the plaice fishery on fish stocks and marine habitats are designed to avoid serious or irreversible harm, and area intended to achieve an outcome consistent with the SG80 level of performance There is no strategy in the form of a plan in place to address all of the impacts of the fishery, as required at SG100. Some recent developments in multispecies management and integrated assessment might ultimately result in the requirements of this scoring guidepost being met, but they do not presently satisfy its requirements.		
c	**Guide post**	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The partial strategy is considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ecosystems).	The measures are considered likely to work based on prior experience, plausible argument or information directly from the fishery/ecosystems involved.
	Met?	Y	Y	Y
	Justification	There are strategies in place to govern fishing activity (such as a TAC, closed areas, and technical measures determining net mesh size); other strategies to protect marine habitats (such as the CFP and Natura 2000 network); and also measures implemented by the client fleet which determine the location of fishing activity. Information from the fishery indicates that there are low levels of capture of non-target species or ETP species; that it does not have an irreversible impact on vulnerable marine habitats. The function of the ecosystem is understood and the fishery is considered highly unlikely to have adverse effects upon it, satisfying the SG60, 80 and 100 requirements.		
d	**Guide post**		There is some evidence that the measures comprising the partial strategy are being implemented successfully.	There is evidence that the measures are being implemented successfully.
	Met?		Y	Y
	Justification	Surveillance of the fishery ensures that technical measures and effort controls are observed. VMS monitoring ensures that spatial and temporal closures are respected, and provides ongoing monitoring of the overlap between the fishery and vulnerable marine habitats. Management of the plaice fishery has resulted in a steadily increasing stock, and it is unlikely that there have been perturbations in the ecosystem due to fluctuations in the plaice stock. Collectively, this provides evidence that the measures and strategies that govern this fishery and which serve to minimise ecosystem impacts are being implemented successfully.		

PI 2.5.2	**There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function**	
References	Section 3.4.3	
OVERALL PERFORMANCE INDICATOR SCORE:		**95**
CONDITION NUMBER (if relevant):		**NA**

Evaluation Table for PI 2.5.3

PI 2.5.3		**There is adequate knowledge of the impacts of the fishery on the ecosystem**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Information is adequate to identify the key elements of the ecosystem (e.g., trophic structure and function, community composition, productivity pattern and biodiversity).	Information is adequate to broadly understand the key elements of the ecosystem.	
	Met?	Y	Y	
	Justification	The Cefas ecosystem model and other work provide a broad understanding of the key elements of the ecosystem, including trophic structure, predator-prey interactions and competition between species.		
b	**Guide post**	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, and have not been investigated in detail.	Main impacts of the fishery on these key ecosystem elements can be inferred from existing information and some have been investigated in detail.	Main interactions between the fishery and these ecosystem elements can be inferred from existing information, and have been investigated in detail.
	Met?	Y	Y	N
	Justification	The interactions between the fishery and non-target species including ETP species have been investigated. Interactions between trawl fisheries and seabed habitats in the North Sea have also been investigated. A detailed investigation of the interactions between the key ecosystem elements in the North Sea was published by Cefas in 2008. More recently, ICES has published mixed-species advice for North Sea fisheries which considers the effect of the plaice fishery on the stocks and fisheries of the other main commercial species in the North Sea. The information available indicates that some, but not all of the main interactions have been investigated in detail. A score of 80 is warranted, but not a score of 100.		
c	**Guide post**		The main functions of the Components (i.e., target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are known.	The impacts of the fishery on target, Bycatch, Retained and ETP species are identified and the main functions of these Components in the ecosystem are understood.
	Met?		Y	N
	Justification	The impacts of the fishery on the target, bycatch and ETP species can be identified from landings data, self-sampling, and independent observer records. The main functions of the species that are affected by the fishery are understood from studies of the species concerns, their populations and biology, and also from ecosystem models of the North Sea. The SG80 requirements are therefore met, but the SG100 requirements for the functions of all of the components are not.		
d	**Guide post**		Sufficient information is available on the	Sufficient information is available on the impacts of the

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
			impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.	fishery on the Components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?		Y	Y
	Justification	There is good information available on the impacts of the fishery on ecosystem components from the catch data provided both by the fleet and from independent studies of catch composition; landings data which provides an indication of the overall scale of impacts; VMS data and habitat maps which enable impacts on benthic habitats to be inferred, and the ecosystem models that are being developed for the North Sea. This information meets the SG80 and SG100 requirements.		
e	**Guide post**		Sufficient data continue to be collected to detect any increase in risk level (e.g., due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	Information is sufficient to support the development of strategies to manage ecosystem impacts.
	Met?		Y	Y
	Justification	There is an established and ongoing catch sampling programme and statutory requirement to report landings that would detect changes in the effect of the fishery on non-target or ETP species. VMS monitoring of vessels would also detect changes in the pattern of fishing activity relative to areas with vulnerable marine habitats. The information that is available from the monitoring of fisheries impacts (listed for SId above) is sufficient to support the development of strategies for managing ecosystem impacts. This information is being incorporated into ecosystem models to assist fish stock management, and also into work to implement the Marine Strategy Framework Directive.		
References		Section 3.4 of this report		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				**NA**

8.1.3 Principle 3 Scoring Tables

Evaluation Table for PI 3.1.1

PI 3.1.1		**The management system exists within an appropriate legal and/or customary framework which ensures that it:** • **Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and** • **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.**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	(Y)	(Y)	(Y)
	Justification	The fishery operates in EU waters managed under both Dutch and UK regulations, which both reflect EU level management. The principle legislative instrument for fisheries management in the EU is the Common Fisheries Policy (CFP), which aims at achieving sustainable fisheries management across the EU. This clearly aims to achieve both P1 (stock management) and possibly to a lesser extent P2 (wider ecosystem impacts). For example, the regulation states: "The Common Fisheries Policy should ensure that fishing and aquaculture activities contribute to long-term environmental, economic, and social sustainability." (EC, 2013) The CFP is enacted into Dutch and UK law, directly reflecting the scope and objective of the CFP and as such aim at achieving sustainable fisheries in accordance to MSC P1 and P2. Underneath the umbrella of the CFP, there are many binding EC regulations covering all aspects of fisheries, which are amended and updated as required. For example, some of the key recent pieces of legislation include the Technical Regulation, Control Regulation and requirement for Registration of Buyers. Recent infraction proceedings taken by the Commission against several Member States demonstrate that the at EU level the mechanism can be *'considered effective'.* The EU shares North Sea waters with Norway. There has been a bilateral agreement between the EU and Norway on fisheries matters since 1981 (EC Reg 2214/80), which is extended every six years with a 9 month termination period that has not been invoked to date. The framework agreement includes: Article 2 1. Each Party shall, as appropriate, determine annually for its area of fisheries jurisdiction, subject to adjustment when necessary to meet unforeseen circumstances, and on the basis of the need for rational management of the living		

PI 3.1.1		**The management system exists within an appropriate legal and/or customary framework which ensures that it:** • **Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and** • **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.**		
		resources: (a) the total allowable catch for individual stocks or complexes of stocks, taking into account the best scientific evidence available to it, the interdependence of stocks, the work of appropriate international organizations and other relevant factors; he annual allocation of plaice quota to Norway has been agreed on an ongoing basis since and this is a binding procedure SG100 is met.		
b	**Guide post**	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a transparent_mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery.	The management system incorporates or subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective.
	Met?	(Y)	(Y)	(N)
	Justification	Following the review of the CFP in 2002, much increased emphasis was placed on stakeholder engagement in the management process as a means of proactively avoiding disputes. Regional Advisory Councils (RAC) were created, including one for the North Sea that has a number of specific Working Groups, with active representation of both fishermen and environmental NGOs, and participation of regulators and managers with observer status. The main mechanisms for the resolution of legal disputes are the Dutch and UK judicial systems. In the event of a fisheries infringement, the relevant Member State control agencies enforce the above EC regulations and apply appropriate sanctions. Agencies pass infringement details to the public prosecutor who will then decide the value of the fine. Fishermen, or industry representatives can appeal to the full judicial process. Within the EU waters where the fishery operates and/or where fish is landed, the system is proven to be *effective'.* *Within the North Sea, the fishery is shared between the EU and Norway. Article 8 of the bilateral agreement states:* The Parties agree to consult on questions relating to the implementation and proper functioning of this Agreement, or in the event of a dispute concerning the interpretation or application thereof. *D*ifficulties have been found in achieving agreement on TACs for specific stocks in isolated years. For example, there was a failure to agree the 2010 plaice quota with Norway. This showed that the system is effective in dealing with most issues (SG80 is met), but was not proven to be effective when tested and *SG100 is not met.*		
d	**Guide post**	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the

PI 3.1.1		**The management system exists within an appropriate legal and/or customary framework which ensures that it:** • **Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; and** • **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.**		
		of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	objectives of MSC Principles 1 and 2.
	Met?	(Y	(Y)	(Y)
	Justification	The EU CFP sets out a formal commitment to observe the legal and customary rights of people dependent on fishing, through its objectives and a commitment to relative stability (meaning Member States are consistently allocated the same proportion of particular stocks): “In view of the precarious economic state of the fishing industry and the dependence of certain coastal communities on fishing, it is necessary to ensure relative stability of fishing activities by the allocation of fishing opportunities among the Member States, based upon a predictable share of the stocks for each Member State.” Objectives of the CFP include: (f) contribute to a fair standard of living for those who depend on fishing activities, bearing in mind coastal fisheries and socio-economic aspects; (i) promote coastal fishing activities, taking into account socio- economic aspects; The vessels are registered in the UK and fish in the waters of EU member states. The vessels are subject to the CFP, which does ‘formally commit’ to fisheries-dependent communities and therefore SG 100 is met. This is also true for operations in the Norwegian Zone; the vessels continue to be managed under the CFP and the Norwegian Marine Resources Act makes a similar formal commitment and SG100 is met: “The Fisheries policy shall contribute to establish a sound basis for an economically viable development of the fisheries industry. A sustainable management of the living marine resources is pre-conditional. Through marked orientation and increased value adding, the fisheries sector shall contribute to good employment and living opportunities in the coastal communities.”		
References		EC Regulation 1380/2013 EC Regulation 2214/80 UK Government Fisheries Blue Book https://www.gov.uk/government/publications/fishing-regulations-the-blue-book/section-a-principal-acts-relating-to-sea-fishing Presentation on Norway’s 2009 Marine Resource Act: https://www.imr.no/filarkiv/2010/06/norwegian_fisheries_and_aquaculture_fkd.pdf/nb-no		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.1.2

PI 3.1.2		**The management system has effective consultation processes that are open to interested and affected parties.** **The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.
	Met?	(Y)	(Y)	(Y)
	Justification	Section 3.5 of this assessment report provides a description of the key roles and responsibility in the fishery management process. Organisations and their roles are well defined at both an EU level, through, for example, participation in the NSAC, and at national and local levels via Ministry of Economic Affairs and similar, including: » Management / administration: EU DG Mare, Ministry of Economic Affairs » Scientific Advice: ICES, EU's STECF & ACOM, Imares. » Control & Enforcement: EU Community Fisheries Control Agency (CFCA), NVWA, Norwegian Directorate of Fisheries & Coastguard » Industry Representation: UK & Dutch POs, VisNED. The N. Sea region also has strong NGO representation, which, over recent years have played an important role in encouraging a more ecosystem-based approach to fisheries management.		
b	**Guide post**	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used.
	Met?	(Y)	(Y)	(N)
	Justification	The main regular consultation process is via the North Sea Advisory Council which involves Industry / NGO / Scientific participants. This includes the potential for local knowledge to be included. All changes in policy such as CFP reform requires extensive consultation processes by DG Mare of the European Commission, consulting with all EU and national level representatives. SG80 is met.		

PI 3.1.2		**The management system has effective consultation processes that are open to interested and affected parties.** **The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties**		
		Although the management system regularly seeks and accepts relevant information, there is no evidence that explanations are offered for how it is used or not used in all circumstances so 100 not met.		
c	**Guide post**		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.
	Met?		(Y)	(Y)
	Justification	There is extensive involvement of all interested and affected parties in regular consultation and EC consultation is an open, public process. In the North Sea effective engagement is facilitated through the NSAC including the active involvement of Environmental NGOs, along with consultation exercises. The EC must develop and consult on policies and regulations based on the Better regulation guidelines (SWD (2015) 211), which sets out the EC requirements for effective consultation processes. The reform of the CFP with a greater emphasis on regionalization and sea basin-level management (enhancing the role of the NSAC), along with the development of the Better Regulation Guidelines ensures more effective consultation and is a recent improvement in performance that meets SG100, which was not the case in some earlier assessments. A higher score of 95 overall is therefore justified compared to previous assessments scoring at 90.		
References		• http://www.nsrac.org • http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/index_en.htm • EC SWD (2015)		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.1.3

PI 3.1.3		**The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Long-term objectives to guide decision-making, consistent with the MSC Principles and Criteria and the precautionary approach, are implicit within management policy	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy.
	Met?	(Y)	(Y)	(Y)
	Justification	The CFP contains clear long-term objectives that guide decision-making and are consistent with MSC principles. These are presented below: 1. The CFP shall ensure that fishing and aquaculture activities are environmentally sustainable in the long-term and are managed in a way that is consistent with the objectives of achieving economic, social and employment benefits, and of contributing to the availability of food supplies. 2. The CFP shall apply the precautionary approach to fisheries management, and shall aim to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield. In order to reach the objective of progressively restoring and maintaining populations of fish stocks above biomass levels capable of producing maximum sustainable yield, the maximum sustainable yield exploitation rate shall be achieved by 2015 where possible and, on a progressive, incremental basis at the latest by 2020 for all stocks. 3. The CFP shall implement the ecosystem-based approach to fisheries management so as to ensure that negative impacts of fishing activities on the marine ecosystem are minimised, and shall endeavour to ensure that aquaculture and fisheries activities avoid the degradation of the marine environment. 4. The CFP shall contribute to the collection of scientific data. 5. The CFP shall, in particular: (a) gradually eliminate discards, on a case-by-case basis, taking into account the best available scientific advice, by avoiding and reducing, as far as possible, unwanted catches, and by gradually ensuring that catches are landed; (b) where necessary, make the best use of unwanted catches, without creating a market for such of those catches that are below the minimum conservation reference size; (c) provide conditions for economically viable and competitive fishing capture and processing industry and land-based fishing related activity;		

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach
		(d) provide for measures to adjust the fishing capacity of the fleets to levels of fishing opportunities consistent with paragraph 2, with a view to having economically viable fleets without overexploiting marine biological resources; (e) promote the development of sustainable Union aquaculture activities to contribute to food supplies and security and employment; (f) contribute to a fair standard of living for those who depend on fishing activities, bearing in mind coastal fisheries and socio-economic aspects; (g) contribute to an efficient and transparent internal market for fisheries and aquaculture products and contribute to ensuring a level–playing field for fisheries and aquaculture products marketed in the Union; (h) take into account the interests of both consumers and producers; (i) promote coastal fishing activities, taking into account socio- economic aspects; (j) be coherent with the Union environmental legislation, in particular with the objective of achieving a good environ mental status by 2020 as set out in Article 1(1) of Directive 2008/56/EC, as well as with other Union policies. The CFP is explicit in requiring the precautionary approach to guide all management policy, including the national management of vessels and the Long Term Management Plan for plaice and sole in the North Sea that governs the fishery. SG100 is therefore met.
References		REGULATION (EU) No 1380/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 3.1.4

PI 3.1.4		**The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure they do not contribute to unsustainable fishing practices.
	Met?	(Y)	(Y)	(partial)
	Justification	The reform of the CFP attempted to move away from the often-critcised centralized and complex suite of management measures that began to characterize European fisheries. Instead the reformed CFP (1380/2013) has increased regionalisation and encourages results-based management are intended to enable locally-specific measures and incentives to achieve desired outcomes. One example where this new approach has been developed is the introduction of the Landing Obligation (discard ban). The specifics of the landing obligation are still being determined (as the EC has stated the expected result, not the exact method of achieving this), but details have been developed regionally. For the North Sea the Scheveningen group has proposed a regional discard plan outlining how North Sea member states, including the Netherlands and the UK, will interpret the regulation. The need to avoid by-catch that would prevent a fishery from operating incentivizes increased selectivity and spatial/temporal management to avoid by-catch. This, along with additional effort for fisheries showing low cod by-catch levels, demonstrate that the management system provides incentives that are consistent with P1 and P2 (the first part of SG80 is met). In some existing North Sea Plaice fisheries that are MSC certified, conditions exist in relation to a perverse incentive resulting from the effort management regime under the cod recovery plan: the use of smaller mesh nets ensures more days at sea are available than for larger mesh nets that are assumed to target cod. Stakeholders no longer report this as an issue as days at sea have not limited North Sea activity (quota limits the fishery first). Vessels potentially impacted by the regulation have shown that their cod by-catch is sufficiently low to warrant additional days at sea being allocated (a positive incentive). As such the second part of SG80 is met as the management system has sought to ensure perverse incentives do not arise. The reform of the CFP did give some consideration to incentives and this is reflected in the Landing Obligation and the introduction of the European Maritime and Fisheries Fund (EMFF) where funding is available to innovate (new technical and organizational knowledge), for increased gear selectivity (on size and species), to reduce incidental/accidental by-catches. Vessel owners and fishermen working on board vessels also receive financial support for participating in trials and pilot projects and for collaborating with scientists. POs also receive funding to help implement the discard ban, for better labelling of products and for the marketing of new products. Incentives can also take the form of quota allocation. Member States are free to allocate their national quotas to different vessel segments, giving for example more quotas to vessels that fish more environmentally friendly. This has occurred with the allocation of effort, but not with quota allocation. It is also evident from the measures		

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing
		still included under the EMFF that Member States have retained some subsidies that may not be effective in incentivising sustainable practice. As such the reformed CFP provides evidence of incentives being considered and some progress towards the expectations under SG100 and a partial score of 90 is given.
References		Common Fisheries Policy Regulation (EU) no. 1380/2013 (the "Basic Regulation") North Sea Demersal Discard Plan: http://www.nsrac.org/category/keydocs/approved-plans/ MMO days at sea in cod recovery zone: https://www.gov.uk/government/publications/manage-your-fishing-effort-cod-recovery-zone
OVERALL PERFORMANCE INDICATOR SCORE:		**90**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 3.2.1

PI 3.2.1		**The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system.
	Met?	(Y)	(Y)	(Partial)
	Justification	CR V1.3 states: "The objectives shall be assessed under this PI and the strategies that implement the objectives shall be assessed under P1 and P2." The fishery-specific management system is based on the multi-annual plan for plaice and sole in the North Sea (EC Reg. 676/2007). The objective of the plan is to ensure, in a first stage, that stocks of plaice and sole in the North Sea are brought within safe biological limits, and in a second stage and after due consideration by the Council on the implementing methods for doing so that those stocks, are exploited on the basis of maximum sustainable yield and under sustainable economic, environmental and social conditions. Exploitation at MSY is the explicit objective of the plan with well-defined and measurable short and long term objectives. It therefore achieves SG100 in relation to Principle 1 objectives. In relation to Principle 2 objectives, the plan states that, in line with the CFP, an ecosystem approach should be adopted that, inter alia, seeks to reduce to a minimum the impact of fishing on marine ecosystems. This is consistent with MSC P2 principles and explicitly stated and so SG80 is met. Specifically for the plaice fishery it recognizes the contribution that the sole fishery makes to fishing mortality and that the sole fishery must therefore be a consideration in management of plaice: 6. Consequently, in drawing up the multiannual plan, account should also be taken of the fact that the high fishing mortality rate for plaice is due to a great extent to the large discards from beam-trawl sole fishing with 80mm nets in the southern North Sea. The above represent explicit well-defined and manageable objectives in relation to P1 and some P2 aspects. However other ecosystem objectives are less well defined and measurable and SG100 is not met in relation to P2 objectives. A partial score of 90 is therefore given.		
References		COUNCIL REGULATION (EC) No 676/2007 of 11 June 2007 establishing a multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea. Amended by: Council Regulation (EC) No 1224/2009 of 20 November 2009		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.2.2

PI 3.2.2		**The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	(Y)	(Y)	
	Justification	Section 3.5 of this report details the various parties involved in decision-making. In summary, each year, data is collected from member state fleets and surveys by Member State management authorities; ICES advice is produced (then reviewed by STECF) for consideration by the EC. The EC then proposes fishing opportunities that must be agreed by the European Parliament and the Council of Ministers before the TAC for the following year is set. Decision-making is well established in order to deliver the fishery-specific objectives. SG 80 is met.		
b	**Guide post**	Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	(Y)	(Y)	(N)
	Justification	The annual revision of TAC shows how management can respond to any serious issues that emerge. Research and monitoring is commissioned by or shared with decision-making bodies to enable them to respond appropriately. Each member state has the authority to close the fishery in its waters in response to important issues such as by-catch or habitat impact that are identified through research and monitoring. This has not occurred to date and discussions continue over the management of vulnerable in marine SACs through the restriction of certain fishing gears. Emerging issues are raised (e.g. through NSAC) and considered against the wider implication of management action such as socio-economic impact or displacement of effort into other fisheries (SG80 is met). It is not however evident that the response to all issues is timely and adaptive (for example the plaice and sole stocks were above the agreed limits for three years with Member States requesting action before the EC confirmed the LTMP had entered the second management stage) and therefore SG100 is not met.		
c	**Guide post**		Decision-making processes use the precautionary approach	

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.		
			and are based on best available information.	
	Met?		(Y)	
	Justification	In line with the CFP the multi-annual plan states that: "the Community is to apply the precautionary approach in taking measures to protect and conserve the stock, to provide for its sustainable exploitation and to reduce to a minimum the impact of fishing on marine ecosystems." The multi-annual plan has been evaluated by STECF and the ICES assessment benchmarked; both consider the multiannual plan and the annual assessment to be precautionary and SG80 is met.		
d	**Guide post**	Some information on fishery performance and management action is generally available on request to stakeholders.	Information on fishery performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders provides comprehensive information on fishery performance and management actions and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	(Y)	(Y)	(N)
	Justification	The North Sea is perhaps the most intensively studied and monitored sea area in the world. All member state vessels must report daily landings of quota species through e-logbooks. Additional information on fleet capacity, effort and economic performance in the fishery is collected as a requirement of the Data Collection Framework applied in each member state. These data are collated by the Joint Research Council (JRC) and used by ICES and STECF working groups in formulating advice on the fishery and the fleets targeting it. This information is available from the relevant working group websites: Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak: http://www.ices.dk/community/groups/Pages/WGNSSK.aspx STECF final reports: https://stecf.jrc.ec.europa.eu/reports The above reports explain how the information is analysed and interpreted in the formulation of advice. The Commission publishes all decisions related to the fishery such as annual TACs and days at sea. These, along with Member State specific decisions, are communicated by the UK and Dutch authorities to the fishing sector either directly to quota holders or via Producer Organisations. Management authorities have improved their reporting of decisions and how those decisions have been reached. SG80 is met. This does not, however, extend to formal reporting to all stakeholders and may not be considered comprehensive in relation to management actions and their response to research, monitoring and evaluation. SG 100 is not met.		

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery under assessment.		
e	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	(Y)	(Y)	(Y)
	Justification	The fishery is not showing a disrespect or defiance of the law by repeatedly violating the same law or regulation. Industry and management authorities in both the UK and the Netherlands that are associated with the plaice North Sea plaice fishery do attempt to comply in a timely fashion with judicial decisions. This is evidenced by the control agencies commitments to prosecutions and legal challenges as well as Managing Authority responses to European decisions on quota management (overshoots, roll over, etc.) and the implementation of real time closures (SG80 is met). In the Netherlands, the management system shows pro-active avoidance through the system of co-management that has been established. In the UK extensive consultation with stakeholders prior to implementing new regulation and regular meetings between industry representatives and managers also seeks to avoid disputes arising. SG100 is met p=[		
References		COUNCIL REGULATION (EC) No 676/2007 of 11 June 2007 establishing a multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea. Amended by: Council Regulation (EC) No 1224/2009 of 20 November 2009 Netherlands Ministry of Economic Affairs: implementation of quotas and real time closures. http://www.government.nl/issues/fisheries/fishing-quotas-and-temporary-closure-of-fishing-areas		
OVERALL PERFORMANCE INDICATOR SCORE:				**85**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.2.3

PI 3.2.3		**Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Monitoring, control and surveillance mechanisms exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	(Y)	(Y)	(N)
	Justification	MCS in the North Sea plaice fishery (as stated in the EC implementing regulation 404/2011 and the specific control and inspection programme EC reg 2013/328/EU) is a combination of technical measures such as the requirement for Vessel Monitoring Systems (VMS) on vessels over 12m (all UoC vessels) and e-logbooks. This is supported by at sea inspection, aerial surveillance and port inspection. There is also corroboration of logbook data with sales notes. EC Reg 2013/328: The specific control and inspection programme should be established for the period until 31 December 2018 and should be implemented by Belgium, Denmark, Germany, Ireland, France, the Netherlands, Sweden, and the United Kingdom. This is co-ordinated by the European Fisheries Control Authority (EFCA). Control authorities have a reasonable expectation and confidence that MCS measures in the North Sea plaice fishery are effective. The resources available to and used by those authorities have demonstrated an ability to enforce the regulations applying to the fishery (SG80 is met). No evidence of consistent enforcement is available to counter the anecdotal information received on inconsistencies between control agencies and therefore it is maintained that SG100 is not met.		
b	**Guide post**	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	(Y)	(Y)	(N)
	Justification	According to Article 117 of the Control Regulation a system of mutual assistance shall be established for ensuring the administrative cooperation among Member States and the Commission. Such administrative co operation is essential to ensure that a level playing field in the EU is established and that illegal activities are properly investigated and sanctioned. This co-ordination of control activities and the application of sanctions are in place in all MS around the North Sea and are thought to provide effective deterrence. (SG80 is met). Proving effective deterrence is more difficult and this is not demonstrated. There are also ongoing suggestions of inconsistent application of sanctions, often at the judicial level (some judges within MS being more lenient than others) and so SG100 is not met.		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
c	Guide post	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	(Y)	(Y)	(Y)
	Justification	There is evidence and through consultation with stakeholders a high degree of confidence that the vessels involved in the plaice fishery do comply with the management system and provide all necessary information, e.g. through daily reporting of landings via the e-logbook and prior notification of landing to designated ports (SG100 is met).		
d	Guide post		There is no evidence of systematic non-compliance.	
	Met?		(Y)	
	Justification	Control authorities (Marine Scotland Compliance, UK and NVWA Netherland) have reported no evidence of systematic non-compliance in the North Sea plaice fishery (SG80 met).		
References		Marine Scotland Compliance pers. comm. NVWA pers. comm EC Control Regulation: Council Regulation (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the Common Fisheries Policy COMMISSION IMPLEMENTING REGULATION (EU) No 404/2011 laying down detailed rules for the implementation of Council Regulation (EC) No 1224/2009 establishing a Community control system for ensuring compliance with the rules of the Common Fisheries Policy COMMISSION IMPLEMENTING DECISION of 25 June 2013 establishing a specific control and inspection programme for fisheries exploiting cod, plaice and sole in the Kattegat, the North Sea, the Skagerrak, the eastern Channel, the waters west of Scotland and the Irish Sea		
OVERALL PERFORMANCE INDICATOR SCORE:				**85**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.2.4

PI 3.2.4		**The fishery has a research plan that addresses the information needs of management**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	Met?	(Y)	(Y)	(N)
	Justification	Research co-ordinated by the ICES Working Group informs the management system in respect to P1 and some P2 matters. Together this can be considered a research plan that helps to achieve P1 and P2 objectives, meeting SG80. IMARES undertakes further research work on plaice and the fleets targeting it, as well as economic institutions such as Wageningen University as plaice is a key fishery for the Dutch demersal fleet. This extends to some P3 matters, but a comprehensive research plan is not evident and SG100 is not met.		
b	**Guide post**	Research results are available to interested parties.	Research results are disseminated to all interested parties in a timely fashion.	Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available.
	Met?	(Y)	(Y)	(N)
	Justification	There is dissemination of information from ICES, including the publication of latest advice on the website (www.ices.dk). National science providers such as IMARES, Cefas and ILVO in Belgium as well as EC-funded studies involving international collaboration do disseminate to NSAC and wider (SG80 is met). A pre-requisite of European funding is that the work includes dissemination of results. These and ICES research are publicly available, but the other main institutions (CEFAS, IMARES, ILVO) also undertake research commissioned by national government and industry that is not all publicly available and therefore SG100 is not met.		
References		Latest advice published on the ICES website: http://www.ices.dk/community/advisory-process/Pages/Latest-advice.aspx		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.2.5

PI 3.2.5		**There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives** **There is effective and timely review of the fishery-specific management system**		
Scoring Issue		SG 60	SG 80	SG 100
a	**Guide post**	The fishery has in place mechanisms to evaluate some parts of the management system.	The fishery has in place mechanisms to evaluate key parts of the management system	The fishery has in place mechanisms to evaluate all parts of the management system.
	Met?	(Y)	(Y)	(N)
	Justification	The plaice fishery is managed through the LTMP for plaice and sole with the vessels subject to other management measures under UK and Dutch fisheries legislation based on the CFP. The CFP is reviewed and subject to reform over a ten year cycle. Within this time supporting legislation is also developed and reviewed. This process ensures the key parts of the management system are evaluated and SG80 is met. Various other elements of the fishery management system are subject to periodic evaluation, which is a requirement of EC regulations. At a national level the Ministry of Economic Affairs regularly evaluates NVWA in the Netherlands and DEFRA evaluates the MMO in the UK. However it is not evident that all P2 and P3 elements are evaluated and so SG100 is not met.		
b	**Guide post**	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	(Y)	(Y)	(Y)
	Justification	Article 17 of the multiannual plan has explicit requirement for the evaluation of the management system: 1. The Commission shall, on the basis of advice from STECF, evaluate the impact of the management measures on the stocks concerned and the fisheries on those stocks, in the second year of application of this Regulation and in each of the following years. 2. The Commission shall seek scientific advice from the STECF on the rate of progress towards the objectives of the multiannual plan in the third year of application of this Regulation and each third successive year of application of this Regulation. The Commission shall, if appropriate, propose relevant measures, and the Council shall decide by qualified majority on alternative measures to achieve the objectives set out in Articles 3 and 4. The regular internal review by DG MARE and ICES, along with external review by STECF meets the requirements for SG100.		
References		COUNCIL REGULATION (EC) No 676/2007 of 11 June 2007 establishing a multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea. Amended by: Council Regulation (EC) No 1224/2009 of 20 November 2009		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				

8.2 Appendix 1.2 Risk Based Framework (RBF) Outputs

The Risk Based Framework was not used for this assessment.

9 Appendix 2: Conditions of certification

The three units of certification returned a score of less than 80 for 4 performance indicators, creating a total of 12 conditions. Each UoC returned the same score, and there were no differences in the scoring rationales between UoCs. The relationship between the conditions and the Units of Certification are shown in the table below.

Table 9.1: Summary of conditions for each Unit of Certification.

Performance Indicator	Condition		
	UOC 1	UOC 2	UOC 3
1.1.2: Reference points	1	2	3
1.2.2: Harvest Control Rules	4	5	6
2.3.1: ETP species outcome	7	8	9
2.3.3: ETP species information	10	11	12

The conditions are presented below. In the interests of brevity, a single set of conditions is presented, covering all 3 UoCs.

9.1 Conditions 1, 2, 3: Reference points

Performance Indicator	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 (SG80c)
Score	75
Rationale	Under the second stage of the Multiannual Management Plan (MAMP), the aim is the exploitation of plaice on the basis of maximum sustainable yield. The MAMP defines F_{MSY} as a rate equal to or no lower than 0.3. Subsequently ICES carried out an evaluation of MSY for plaice and concluded that fishing within the range F_{catch} 0.25 – 0.3 would be consistent with MSY (ICES 2012; WKFRAME, 2011). Since the range encompassed the MAMP target reference point of 0.3, this was considered to meet the requirements of SG c. However, a further evaluation of MSY has now established that the median point for Fmsy is 0.19 and the likely range is from 0.13 to 0.27 (WKMSYREF-3, 2014). The new range is outside the MAMP target of 0.3 and so the target reference point no longer satisfies the requirements of SG c at 80.
Condition	By the third annual surveillance audit, the following SG80 SIs must be met: The target reference point (F_{MP}) is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.
Milestones	At the first annual audit, the client will present the CAB with evidence that there is a plan in place to ensure consideration by management of a change to the LTMP to adopt a new target fishing mortality consistent with the change in the estimate of F_{MSY}. At the second annual audit, the client will present the CAB with evidence to show progress against the plan described above, including agreement by management in principle to incorporate into the LTMP a new target fishing mortality consistent with the change in the estimate of F_{MSY}.

	At the third annual audit, the client will show that the target reference point contained within the LTMP is such that the stock is maintained at a level consistent with Bmsy or some measure or surrogate with similar intent or outcome. These milestones provide incremental steps in achieving the condition. Only when the final step is complete will the team be able to revise the score. By the third annual audit the required minimum score is 80.
Client action plan	Prior to formulation of the current management plan, the scientific advice was that high long term yields (~MSY) would be obtained at a fishing mortality in the range of 0.3 to 0.4. Thus 0.3 was chosen as the target F in the plan. Since then, the ICES estimate of Fmsy has been revised several times and the range is currently at 0.13-0.27. While the actual F has been within this range for a number of years now, it is of course unfortunate that the target no longer reflects the current understanding of the stock perfectly. The Client will therefore work – notably through the NSAC – to ensure that the next management plan (likely a North Sea and Skagerrak mixed-species management plan) contains a target F that is consistent with the best estimate of the Fmsy range. Year 1: The Client will present a plan for adoption by the NSAC to ensure that the next management plan contains a target F that is consistent with the best estimate of the Fmsy range. Year 2: The Client will endeavour to gain agreement by management in principle to incorporate a target F that is consistent with the best estimate of the Fmsy range. Year 3: The Client will present evidence that a target F consistent with the best estimate of the Fmsy range is included in the management plan.
Consultation on condition	The EU fishery policy specifies science-based management, and the EU has committed to MSY-based management. Other LTMPs contain a requirement for a lower F when SSB falls below a trigger. The assessment team believes that the commitment to science-based management will translate into recommendations for a higher level of science-based management for the plaice reference points. The track record therefore indicates that the on-going activities of the EU are already consistent with the achievement of this Condition. The CAB determined that no specific further commitment by the EU in relation to this Condition is required.

New Conditions only			
Relates to conditions from previous certification?	No	**If yes, reason for being raised again**	NA

Conditions carried over from previous certification	
Progress made during previous certification	NA
Rationale for recommending recertification despite outstanding condition	NA

9.2 Conditions 4, 5, 6: Harvest Control Rules

Performance Indicator	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached (SG 80a)
Score	75
Rationale	The harvest control rules are set out under the Multiannual Management Plan for flatfish (EC 676/2007) and are fully consistent with the Harvest Strategy. The main mechanisms to contain the harvest of North Sea plaice are capacity restrictions and the setting of an annual TAC under agreement between the EU and Norway. Under the first stage of the MAMP, the TAC is determined by selecting a fishing mortality that will ensure the spawning stock biomass will remain above precautionary levels. If the spawning stock biomass is outside the precautionary reference level Bpa of 230,000t, fishing mortality is required to be reduced annually by 10% (within a maximum annual variation in TAC of 15%). Under the second stage, the exploitation rate is reduced on an annual basis if the fishing mortality exceeds the management target of 0.3. Although these rules are designed to ensure that the SSB does not approach limit reference points, the MAMP does not specifically define how the exploitation rate would be reduced if the limit reference points were approached. As a result, the SG at 80 is not met.
Condition	By the third annual surveillance audit, the following SG80 SI must be met: Well-defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.
Milestones	At the first annual audit, the client will present the CAB with evidence that there is a plan in place to ensure consideration of changes to the LTMP by management to specify how fishing mortality will be reduced as SSB approaches SSB_{LIM} At the second annual audit, the client will present the CAB with evidence to show that progress has been made against the plan presented at the first audit, including evidence that changes to the LTMP to specify how fishing mortality will be reduced as SSB approaches SSB_{LIM} have been agreed to in principle by management. At the third annual audit, the client will present the CAB with evidence to show that changes to the LTMP have been adopted which specify how fishing mortality will be reduced as SSB approaches SSB_{LIM}. These milestones provide incremental steps in achieving the condition. Only when the final step is complete will the team be able to revise the score. By the third annual audit the required minimum score is 80.
Client action plan	The Client will work – notably through the NSAC – to ensure that the next management plan (likely a North Sea and Skagerrak mixed-species management plan) contains a defined reduction in F as the SSB approaches the limit reference point. Year 1: The Client will present a plan for adoption by the NSAC to ensure that the next management plan contains a defined reduction in F as the SSB approaches the limit reference point. Year 2: The Client will endeavour to gain agreement by management in principle to incorporate a defined reduction in F as the SSB approaches the limit reference point. Year 3: The Client will present evidence that a defined reduction in F as the SSB approaches the limit reference point is included in the management plan.

Consultation on condition	The EU fishery policy specifies science-based management, and the EU has committed to MSY-based management. Other LTMPs contain a requirement for a lower F when SSB falls below a trigger. The assessment team believes that the commitment to science-based management will translate into recommendations for a higher level of science-based management for the Plaice harvest control rule. The track record therefore indicates that the on-going activities of the EU are already consistent with the achievement of this Condition. The CAB determined that no specific further commitment by the EU in relation to this Condition is required.

New Conditions only			
Relates to conditions from previous certification?	No	**If yes, reason for being raised again**	NA

Conditions carried over from previous certification	
Progress made during previous certification	NA
Rationale for recommending recertification despite outstanding condition	NA

9.3 Condition 7, 8, 9: ETP species outcome

Performance Indicator	The fishery meets national and international requirements for the protection of ETP species The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.
Score	70
Rationale	The evidence that is available to assist this determination includes the analysis of catch composition and discarding rates in the client fleet (Table 3.5 & Table 3.6~~Table 3.6~~); discarding rates reported by the client (Table 3.10) and consideration of the total landings from the fishery (Table 3.3). The distribution of starry rays in the North Sea is also relevant to the assessment of impacts. In 2014, the total landings from the client fleet were 1,931t from a North Sea plaice TAC of 111,631t. Catch data indicate that around 87% of all plaice caught are retained (Table 3.10), which indicates that these 1.931t were derived from a catch of just under 2,220t of plaice. Plaice typically form at least 70% of the catch; using this figure it is possible to estimate that the total catch of fish required to yield the recorded plaice landings would be 3,170t. Catch studies show that starry rays may comprise up to 2.2% of the catch (see Table 3.6~~Table 3.6~~). Using the total catch estimate of 3,170t of fish in this fishery, this would indicate that around 70t of starry rays are caught in this fishery per year. The distribution of starry rays in the North Sea is known from the IBTS Q3 results (see Figure 3.21), and the pattern of activity of the client fleet is also available (see Figure 3.23). This information shows that the fishery overlaps with the starry ray distribution in the central North Sea, and that the starry ray range extends considerably further north, beyond the extent of the twin-rig trawl fishery. The conclusion of this assessment is that the direct effect of this fishery (the capture of around 70t of starry rays in just part of the species overall range) is unlikely to hinder the recovery of rebuilding of starry rays in the North Sea,

	meeting the SG60 requirements. The level of certainty of this assessment is not sufficient to warrant a higher score than this however.
Condition	By the third annual surveillance audit, the following SG80 SI must be met: Direct effects are highly unlikely to create unacceptable impacts to ETP species.
Milestones	At the first annual audit, the client will present the CAB with evidence that there is a plan in place to gather information about the effect that the fishery may have on starry ray. At the second annual audit, the client will present the CAB with evidence to show that progress has been made against the plan presented at the first audit, including evidence that research into an evaluation of the direct effect of the fishery on starry rays has commenced. At the third annual audit, the client will present the CAB with a report evaluating the direct effect of the fishery on starry rays. These milestones provide incremental steps in achieving the condition. Only when the final step is complete will the team be able to revise the score. By the third annual audit a minimum score of 80 should be attained.
Client action plan	At the first annual audit, Osprey Trawlers will present the CAB with evidence that there is a plan in place to gather information about the impact that the Osprey Trawlers fishery may have on the starry ray population. At the second annual audit, Osprey Trawlers will present the CAB with evidence to show that progress has been made against the plan presented at the first audit, including evidence that research into an evaluation of the direct impact of the fishery on the starry ray population has commenced. At the third annual audit, Osprey Trawlers will present the CAB with a report evaluating the direct impact of the Osprey Trawlers fishery on the starry ray population.
Consultation on condition	Osprey Trawlers will consult with scientific bodies (IMARES and others) in order to evaluate the possibilities of estimating the impact of the Osprey Trawlers fishery on the starry ray population and to evaluate trends.

New Conditions only			
Relates to conditions from previous certification?	No	**If yes, reason for being raised again**	NA

Conditions carried over from previous certification	
Progress made during previous certification	NA
Rationale for recommending recertification despite outstanding condition	NA

9.4 Condition 10, 11, 12: ETP species information

Performance Indicator	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.
Score	65
Rationale	The fishery did not meet the SG80 requirements for two Scoring Issues for this Performance Indicator. The scoring rationale is reproduced below. **SIa: Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.** It is possible to estimate the quantity of ETP species caught in the fishery. For most ETP species, there is no mortality at all. For starry ray, it is estimated that around 70t are caught and discarded per year (see rationale for this under PI2.3.1, SIb). There is no estimate available of the starry ray stock size, so this figure cannot be used to quantify the impact on this species. It does, however, provide a qualitative indication that the impact of the fishery on this ETP species. The distribution of starry rays in the North Sea is known from the IBTS Q3 results (see Figure 3.21), and the pattern of activity of the client fleet is also available (see Figure 3.23). This information shows that the fishery overlaps with the starry ray distribution in the central North Sea, and that the starry ray range extends considerably further north, beyond the extent of the twin-rig trawl fishery. Together, this quantitative and qualitative information is sufficient to meet the SG60 requirements for this SI, but not the SG80 requirements, because fishery-related mortality cannot be quantified for the fishery. **SIc: Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.** The main information available about the effect of the fishery is the catch and discarding data, and also the spatial data that shows the extent of the overlap between the fishery and the species concerned. Trends in the population status of starry ray are also available from the International Beam Trawl Survey (IBTS). This information is adequate to support management actions (such as Regulation 2015/104 that protects starry rays), meeting the SG60 requirements of this SI, but is not capable of supporting a full strategy to manage impacts as required at SG80.
Condition	By the third annual surveillance audit, the following must be met: SG80 SIs b) Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species. […] d) Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.
Milestones	At the first annual audit, the client will present the CAB with evidence that there is a plan in place to gather information about the effect that the fishery may have on starry ray, *Amblyraja radiata*. This plan should include proposals to allow fishery related mortality to be quantitatively estimated and to measure trends in mortality.

	At the second annual audit, the client will present the CAB with evidence to show that progress has been made against the plan presented at the first audit, including evidence that research into an evaluation that will quantify the effect of the fishery on starry rays has commenced. At the third annual audit, the client will present the CAB with a report evaluating the effect of the fishery on starry rays and including a quantified estimate of mortality and an indication of trends that would be sufficient to support a management strategy. These milestones provide incremental steps in achieving the condition. Only when the final step is complete will the team be able to revise the score. By the third annual audit a minimum score of 80 should be attained.
Client action plan	At the first annual audit, Osprey Trawlers will present the CAB with evidence that a plan has been developed to gather further quantitative information about the impact that the fishery may have on the population starry ray, *Amblyraja radiata*. This plan will include proposals to allow the fishery related mortality induced by Osprey Trawler vessels and starry ray stock size to be quantitatively estimated and to measure trends in mortality. At the second annual audit, the client will present the CAB with evidence to show that progress has been made against the plan presented at the first audit, including evidence that research into an evaluation that will quantify the effect of the Osprey Trawlers fishery on the starry rays population has commenced. At the third annual audit, the client will present the CAB with a report evaluating the effect of the Osprey Trawlers fishery on the starry rays population and including a quantified estimate of the impact of the Osprey Trawlers fishery on the starry ray population and an indication of trends.
Consultation on condition	Osprey Trawlers will consult with scientific bodies (IMARES and others) in order to evaluate the possibilities of estimating the impact of the Osprey Trawlers fishery on the starry ray population and to evaluate trends.

New Conditions only			
Relates to conditions from previous certification?	No	**If yes, reason for being raised again**	NA

Conditions carried over from previous certification	
Progress made during previous certification	NA
Rationale for recommending recertification despite outstanding condition	NA

10 Appendix 3: Peer Review Reports

10.1 Peer Reviewer 1

Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes**	**Certification Body Response**
Justification: It is likely that the conclusions arrived at by the assessment team is justified by the information that is available, and the evidence presented is adequate for this purpose for most performance indicators. However, I have a number of concerns about some of the scoring and the need for and likely outcome of some of the conditions, as detailed below.		Comment noted. We have responded to each comment raised below.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	**No**	**Certification Body Response**
Justification: There are four conditions, two concerning management of the target species (plaice) against reference points, and two (virtually identical) concerning information on starry ray catches and the implications for stock status (this has recently been designated an ETP species). Only one of these conditions is likely to have any impact on the way in which this fishery operates (P1 reference points and HCRs have to be seen in the context of the EC's North Sea sole and plaice long-term management plan, and not just ICES single species advice), and the operation of the fishery in relation to starry ray is acknowledged to conform with international requirements.		We have reviewed the conditions. Whilst we respect the PR comments, we conclude that the scoring is appropriate in the report, and that the conditions are an appropriate response to the shortcomings identified in the fishery. Regarding the condition set for plaice reference points and HCRs, the team respect and accept the comments made, but consider that the scoring response and condition generated is consistent with and required by MSC certification requirements, even if it may be slightly at odds with the EC's approach to management.

If included:

Do you think the client action plan is sufficient to close the conditions raised?	**Yes/No**	**Certification Body Response**
Justification: The client action plan broadly satisfies the requirements of the current conditions, but may need to be revisited depending on the assessment teams' response to PR comments. Since the issues concerning P1 require the EC to re-consider the management plan, and the team indicates that the on-going activities of the EU are already consistent with the achievement of this Condition and that no specific further commitment by the EU in relation to this Condition is required, it is difficult to see what the client might realistically achieve. The action plans for the two ETP conditions are very similar, involving data collection		We have reviewed the conditions in the light of the comments made by this peer reviewer. The assessment team consider that the conditions are consistent with the shortcomings identified in the fishery and the client action plans represents an appropriate response to these conditions.

and analysis with the aim of evaluating the impact of the fishery on the starry ray stock, rather than any action to minimize this.	

General Comments on the Assessment Report (optional)

I have no substantial editing comments other than the ones indicated below, though it would be useful to check through for fish name typos.

List of Acronyms: you show CVO as the Centre for Fisheries Research, Wageningen University and Research Centre, Netherlands, but it is (also?) the Cooperative Visserij Organisatie, which represents the seven Dutch Fish Producer Organisations.

CAB response: This is an error and has been corrected in the report. CVO is the Cooperative Visserij Organisatie.

3.1 Unit(s) of Certification – make sure that you consistently use Units of Certification, and it would be useful here to explain why the three mesh sizes have been designated as 3 separate UoCs (presumably regulations and non-target species catch composition). Do all identified vessels fish in both of the active UoCs?

CAB response: All of the vessels listed fish in both of the active UoCs. The distinction between the UoCs takes account of both EC and Norwegian fisheries regulations governing the spatial extent of fishing activities and the MSC CR requirements for distinguishing between different UoCs. We have addressed the issue of consistent terminology (Units of Certification) in this section in our editing of the report.

In **3.2 Overview of the fishery** it would be useful to provide a chart indicating where the UoCs are operating, especially if there are area differences between UoCs.

CAB response: We have added a chart to the report.

Under **3.2.2 Species**, you state that this report does not intend to provide a scientifically comprehensive description of the species, but in **3.3 Principle One: Target Species Background** then present a more comprehensive description of the species than is necessary in an MSC assessment report (though it mirrors that in many MSC plaice fishery assessments: why not just refer interested readers to one of these?).

CAB response: Comment noted; the descriptive text is similar to that which we have used in other assessments and provides the reader with a brief overview of the species and fishing methods.

3.3.3.1 Spawning Stock Biomass – you mention "the stock" and the "combined plaice stock" – is there a difference? See next point.

CAB response: There is no difference between the terms. Section 3.3.3 is headed as "Stock Status, North Sea including Skagerrak" and the term "combined stock" has been used in 3.3.3.1 only to emphasise that the very large SSB includes the Skagerrak.

3.3.4.2 Limit Reference Points - when there is no clear breakpoint in the S/R relationship, Blim is normally set at Bloss, but here it is set at 160 kt whilst Bloss in the 2015 assessment appears from Fig. 7 to be around 200 kt. Why no comment on this, and the knock on effect on Bpa, in view of the recognition that the biological reference points are based on the North Sea stock only and do not includes the component from the Skagerrak? This is relevant to 3.3.5.3 Management Advice for 2015 and proposals for 2016, where you say that the agreed TAC of 128,376t for 2015 was expected to lead to an SSB of around 750,000t in 2016, whilst ICES advice for 2016 was for a combined TAC for the North Sea and Skagerrak of 159,197t and SSB in 2016 of 940,500t. Is like being compared with like?

CAB response: The point about the level of Blim is a valid one. Blim was defined in 2004 as the lowest SSB at which there was no evidence of a decline in recruitment and was observed to occur in 1996 at 160,000t, based on the North Sea stock alone. The text in 3.3.4.1 does in fact note that the reference points are based on the North Sea stock excluding Skagerrak. The inclusion of the Skagerrak simply increases the stock by a multiplier and this explains why the lowest SSB in Fig 7 is around 200,000t while Blim remains at the historically determined figure of 160,000t. This would imply that the biomass reference points are slightly less precautionary than for the North Sea stock alone. This will not affect any of the conclusions in the short term since the stock is currently so far above any of the biomass reference points but additional text will be added to clarify this. Note that on the Management Advice, the SSB in 2016 was estimated at 750,000t whereas the advice on the combined stock was for 2017 not 2016 and was of course higher at 940,000t.

3.3.4.3 MSY and Target Reference Points: Noting that ICES estimates of SSBmsy range from rather less than the current, record high SSB estimate to more than twice that level, does this not suggest that SSBmsy has no credence as a reference point? Is there really such a difference between ICES' estimate of Fmsy at 0. 25 in 2010, when it considered that any value of F between 0.2 and 0.3 would result in high long term yields and low risk to the stock, and that in 2014 with a range of Fmsy from 0.13 to 0.27? In both cases the target fishing mortality of F0.3 under the EU MAMP is at the top end of ICES' Fmsy estimates, but there is not necessarily an inconsistency between the EU's management target and the current ICES advice (the latter is not binding and has no legal stature) and you state under 3.3.5.1 Harvest Strategy that plaice has been within safe biological limits since 2005 and sole in terms of F since 2008 and SSB since 2012. Given the points made above about the estimation of Blim and SSBmsy, some consideration of just how robust is ICES advice on sustainable fishing at Fmsy for North Sea plaice is merited, and whether this should lead to a condition on this fishery (bearing in mind the need to balance exploitation of both plaice and sole in more or less the same fishery).

CAB response: We agree that the SSBmsy range is so wide that it would be difficult to apply as a target reference point. This is why the F target is preferred and has been

used as the main point for assessing compliance. The second point on whether the existing management reference point of 0.3 is effective or whether the latest ICES estimate of Fmsy should be preferred is a difficult call. However after detailed discussion on harmonisation with MRAG and other assessors, it was agreed that for consistency, the current ICES advice should be used unless there are strong reasons to reject them.

Under **3.3.7 Stock assessment**, you note that the XSA model is used for NS plaice, even though SCA was tested in 2010 when both models gave similar trends in SSB and F. Why, if SCA has the advantage of including data on landings and discards separately (presumably important for plaice), allows for observational errors and gives SSB estimates with 95% probability bounds around the median (an MSC criterion), is it not now used for NS plaice?

CAB response: It is likely that the SCA model for NS plaice may be adopted in future but it is currently still under evaluation by ICES.

Ecosystem Background - 3.4.1 Retained catch: though you imply that you have had to select carefully from the copious information available for these UoCs, why do you include the 2004 North Sea Plaice and lemon sole study, which only partially overlapped the UoC fishery area, may be out of date (the plaice stock has increased considerably in the meantime; lemon sole tend to be less represented in the UoC's catches) and in which the comparison of 100mm and 120mm gear was inconclusive?

CAB response: The text indicates that whilst "*the challenge for the assessment team has been to review and distil the information available*" we go on to say that "*In order to conduct a thorough audit, all of the available information about the retained catch and landings data has been considered here….*". We have, however, revised the text to make it clear that we have also reported on all of the discard data presented to the assessment team.

Our inclusion of the 2004 data is to ensure completeness and thoroughness. We have noted that this is an old study and that it only partially overlaps with the UoCs in our comments. These older studies also provide an historical context for the evaluation, and we have revised the text to make it clear why it is included.

Under **3.4.1.1.2 RIVO twin rig trawl study (2003 & 2004)**, don't you mean that the plaice discarded from 100mm twin rig trawl gear were larger than those from the 80mm gear?

CAB response: You are quite right, yes we do. We have corrected the text.

One questions how relevant to this assessment are the patterns of fishing activity observed during 2002-03 (Figure 3.13~~Figure 3.13~~), though you later point out that the client's maps of annual fishing effort (see Figure 3.23~~Figure 3.23~~) show that the distribution of fishing effort has remained constant for 10 years or more.

This historical information seems unnecessary, and this section really starts at IMARES gear study (Osprey Group, 2014). Even then, there is some confusion in the (order of) presentation of information about retained and discarded species, which should be resolved.

CAB response: The older data provides useful historical context; we have revised the text to illustrate its relevance, and in particular it helps to demonstrate that the fishing grounds and catch composition has been relatively consistent over a considerable time.

What type of trawl was used in the 2013 IMARES industrial survey study?

CAB response: Commercial gear is used in this study. The gear is distinguished by mesh size and overall method (i.e. beam trawls and otter trawls are considered separately).

Under **.3.4.1.3.1 Netherlands discard sampling of plaice and cod fisheries (2009),** you indicate that a summary of the IMARES 2009 report on the Netherlands discard sampling of plaice and cod fisheries, which included the twin-rig trawl fishery, using 80, 100 and 110mm cod-end mesh sizes (UoC 1 and UoC2 for this fishery assessment) has been presented. Where is it?

CAB response: This report considered only the discarding of cod and plaice, and not the discarding of non-target species. Our text did not make this clear and we have revised it in response to this comment.

At **3.4.1.5 Defining "main" non target and ETP species for assessment** and **3.4.2 ETP species** you provide an explanation of why MSC consider that starry rays (which are not exploited in the North Sea) should now be considered an "ETP" species as a result of EC regulation of "prohibited species" under the annual TAC regulation, and that spurdog do not conform to the MSC definition of "ETP" species, despite the stock being threatened and spurdog cannot be landed and have to be returned to the water. Some comment on this absurdity is surely merited, and spurdog should at least be regarded them as a vulnerable bycatch species under PI 2.2.

CAB response: This is a good point. We have clarified our report so to explain why spurdog are not considered to be either a minor or main discarded species in PI 2.2.

You note that the list of species for which it is prohibited for EU vessels to fish, to retain on board, to tranship or to land in ICES subarea IV has been edited to exclude species that are not prohibited in ICES sub area IV and exclude species that are not known to be caught in this fishery, yet all the deep water sharks, manta rays and guitar fish are unlikely to be caught in the North Sea. (NB giant manta ray is included in Table 3.17: ETP species list used to record interactions aboard Osprey Group fishing vessels, but they have only been recorded in the North Atlantic around the Azores).

CAB response: We take your point. We have clarified the text to make it clear that we have excluded from the list the long lists of sawfish and Mobula rays (items b and k) in the interests of brevity, although we do mention them as well as other species (such as manta rays) which are not found in the UoC area. We have however excluded those species that are not prohibited from capture in ICES subarea IV to avoid confusion.

3.4.3 Habitat impacts. You state that, by switching to the use of semi-pelagic trawl doors, the most observed impact of otter trawls on the seabed has been eliminated (do the doors never contact the sea bed?), but neglect to mention the impact of the central clump weight and the

groundropes, which have to scrape the sea bed to flush plaice into the net. Presumably, reference to “trawl tracks” means the route taken by trawls calculated from positioning equipment (VMS e.g.).

CAB response: The text already mentions use of a clump weight of 600kg or more and also the use of long Dyneema sweeps rigged with discs. We have amended the text to clarify that the gear in use has less contact with the seabed than the previously certified gear.

Performance Indicator Review

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

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.1.1	*Yes*	*No*	*NA*	*Though this PI also concerns SSB (the stock is well above Bmsy trigger), if the target reference point in stage two of the mp has been defined as no lower than F0.3 and F_{catch} has been below F0.3 since 2008 (and is now below any FMSY advised by ICES), the stock can be considered to be at or fluctuating around its target reference point and SG100 is met. The issue of whether the target reference point is consistent with MSY is considered under 1.1.2, and should be scored there.*	*SG100 requires that the stock has been fluctuating around its target reference point with a "high degree of certainty". Although F has been below Ftarget since 2008, there is always some uncertainty in the precise level of mortality especially in a stock where discards are included and are not as well sampled as would be preferred. It is clear that it satisfies the SG80 but not yet fully clear that it satisfies the SG100.*
1.1.2	*Yes*	*No*	NO. It is unclear how it can be demonstrated that a new target	*b: Blim has been set below the lowest observed SSB for the combined stocks, and this should be rectified. You need to*	*b: ICES has not yet redefined reference points for the combined stock and will need to do so in the near future. The current limit reference point at 160,000t*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
			reference point (F_{MP}) will better maintain the stock at a level consistent with B_{MSY}, given that the latter is so poorly estimated in the assessment and the stock is already at an historic high (see scoring comments against 1.2.1). A lower F (than 0.3) might sacrifice yield to the fishery with no gain in sustainability.	*decide whether this satisfies the second guideline at SG80.* *c. It is far from clear from ICES assessments and the evolution of stock status whether the F_{MSY} target at 0.3 does not maintain the stock at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome. The estimated Bmsy range is generally above the current historic high stock level, and there is no S/R relationship. I suggest that the rather shakey ICES advice should not undermine what is clearly a well managed fishery (and where sole considerations are probably paramount, see PI 3.2).*	*will be marginally less precautionary for the combined stock and on the basis of Bloss should probably be closer to 200,000t but this is not considered a significant enough difference to affect the scoring at SG80.* *C: The really strong increase in SSB has occurred at F levels below 0.3 and so it could be argued that the target F0.3 is too high. We took the view that for consistency, the most recent ICES advice on Fmsy should be accepted unless there are strong reasons to reject it. As a result, F.0.3 is not consistent with the new advice on Fmsy and SG c at 80 fails.* *ICES are required to provide advice consistent with fishing at MSY. The Condition is designed to ensure that managers move to set a target F that is consistent with the most recent ICES advice on Fmsy.*
1.1.3	*Yes*	*Yes*	*NA*		*No response required.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
1.2.1	*Yes*	*No*	*NA*	*d. It is not necessary for managers to update the Management Plan to include new ICES MSY reference targets if this advice does not improve stock status or lead to better management of the fishery.*	*See comments under 1.1.2 c and Condition. Managers are required to fish at MSY and the best available advice is that this is at an F range below the current target F.*
1.2.2	*Yes*	*No*	*NO. I would argue that well-defined harvest control rules that are consistent with the harvest strategy are already in place and (will) ensure that the exploitation rate is reduced as limit reference points are approached.*	You state that the HCRs have been effective in achieving exploitation of plaice at or below the long term management target F0.3, which satisfies SG100d. You also note that there is a mechanism (in the unlikely event of the stock declining towards a point where recruitment might be impaired) under Article 18 of the MAMP giving the power to set a TAC not constrained by the %age rules, provided these changes are agreed by a qualified majority of the Council. This really ought to satisfy SG80a.	*It is clear that the MAMP can be interpreted in a number of ways in relation to how it sets out the strategy for dealing with a declining stock. The HCR does outline mechanisms for reducing exploitation if F exceeds F0.3 and this should be effective in preventing the SSB falling to Blim. However, the HCR does not explicitly set out rules for the situation in which Blim is approached and so we took the view after discussion with other assessors reviewing NS and Skagerrak plaice that it fails to achieve SG80 on issue (a).* *The Condition requires managers to make this explicit. by clearly setting out what action would be taken as Blim was*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					approached.
1.2.3	*Yes*	*Yes*	*NA*		*No response required.*
1.2.4	*Yes*	*No*	*NA*	*The benchmark led to the Skagerrak component being incorporated into the 2015 assessment, and explored alternative assessment approaches, such as the SCA model, but decided not to use this in place of the existing XSA model (even though it potentially offered a number of benefits). Why does that not satisfy SG 100d?*	*It is true that the SCA model as well as a number of others have been tried but none have been rigorously explored to the level that they offer and alternative to XSA at present.*
2.1.1	*Yes*	*Yes*	*NA*	*.*	*No response required.*
2.1.2	*Yes*	*Yes*	*NA*		*No response required.*
2.1.3	*Yes*	*No*	*NA*	*SG100a. Could it not be inferred from the low level of catches of retained species by the UoCs*	*Whilst we agree with your reasoning, SG100a applies to "all" rather than just "main" retained species. There is*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				that the consequence for the status of affected populations is known (i.e. no effect)? SG100c. There does seem to be sufficient information available from landings data and the IBTS to support a strategy for lemon sole and other retained species (even though there is no explicit strategy), and to provide a high degree of certainty that it is achieving its objective in terms of stock trends (if not status against reference points). *Given that UoC 1 is not currently operating, and there is necessarily some extrapolation between UoCs in terms of data availability, the 3 UoCs should be scored individually here.*	*adequate information available for each UoC for the **main** retained species for each UoC, but not for **all** retained species.* *This is a good point, and we have amended the evaluation table for scoring issue a in response to the comment. It is appropriate to report on all UoCs collectively for the other SIs, as they are all subject to the same statutory catch reporting requirements.*
2.2.1	*No*	*No*	*NA*	*This PI requires a fishery not to hinder recovery of depleted*	*We have reviewed the catch data from studies of the fishery. Spurdog catches*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				bycatch species, so you must include spurdog since you have decided that they are not an ETP species. *SG80b. Lemon sole is a retained non-target species, dealt with under PI 2.1. This seems to be a typo, see also 2.2.2b*	*have been recorded in studies of the UoCs in recent years, and in all cases have been reported at much less than 1% of the catch. On this basis the team concluded that spurdog do not need to be considered as a "main" retained or discarded non-target species. We have amended our scoring comments in the light of these comments to clarify our rationale.* *This is indeed a typographic error and has been corrected.*
2.2.2	*No*	*No*	*NA*	*See comments above on spurdog. Scoring probably unchanged.*	*As noted above, the available information indicates that spurdog are only caught in very small quantities (less than 1%) by the client fleet.*
2.2.3	*Yes*	*Yes*	*NA*	*Given that UoC 1 is not currently operating, and there is necessarily some extrapolation between UoCs in term of data availability, the 3 UoCs should be scored individually here.*	*We have clarified the distinction between the UoCs for SIa.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.3.1	*Yes*	*Yes*	*No. It is unlikely that any reasonable changes in the operation of the fishery will reduce direct effects on starry ray, or allow the client to demonstrate that these are highly unlikely to create unacceptable impacts.*	In view of the relatively low catch of starry rays by the UoCs, all of which are returned to the sea (as has been the case for most fisheries in the North Sea, and see comments against PI2.3.2), the low score here seems unwarranted. I am particularly concerned that an NGO (NEV) appears to have influenced the MSC to classify this species as having ETP status, when this has not changed the way North Sea fisheries deal with it.	*Our scoring here has been precautionary and reflects the view that we cannot be sure that direct effects of these UoCs are "highly unlikely" to create unacceptable impacts on starry ray.* *The condition generated here asks the client to gather information about the impacts of their fishery on starry rays and to take any response necessary, which is consistent with MSC scheme requirements.*
2.3.2	*Yes*	*Yes*	*NA*		*No response required.*
2.3.3	*Yes*	*Yes*	Yes	I suggest that this is the only condition that should be applied to PI 2.3, in that information is clearly needed to estimate the impact of fishing on starry rays and to measure trends and support a strategy to manage this. If there really is a UoC-related problem, a	*Comment noted. We remain of the view that PI 2.3.1 SIa is not met at the SG80 level, so a condition is required therefor that PI as well as for this one.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				condition to deal with this could then be raised against 2.3.1. Even then, you say at 2.5.3e that there is an ongoing catch sampling programme and statutory landings reporting that would detect changes in the effect of the fishery on non-target or ETP species, and that the information available from monitoring fisheries impacts is sufficient to support the development of strategies for managing ecosystem impacts.	*We note the comment about the catch sampling programme – this would detect a change in risk level (the requirement of 2.5.3e), but the scoring of PI2.3.3 requires more information than this for the ETP species concerned. The scoring is therefore considered to be appropriate.*
2.4.1	*Yes*	*Yes*	*NA*		*No response required.*
2.4.2	*Yes*	*Yes*	*NA*		*No response required.*
2.4.3	*Yes*	*Yes*	*NA*		*No response required.*
2.5.1	*Yes*	*Yes*	*NA*		*No response required.*
2.5.2	*Yes*	*No*	*NA*	*SG100c: why do you not consider that the measures are likely to work?*	*We have revised this score to 100 in response to the comment and amended the scoring comments accordingly.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.5.3	*Yes*	*Yes*	*NA*		*No response required.*
3.1.1	*Yes*	*Yes*	*NA*		*No response required.*
3.1.2	*Yes*	*Yes*	*NA*		*No response required.*
3.1.3	*Yes*	*Yes*	*NA*		*No response required.*
3.1.4	*Yes*	*Yes*	*NA*		*No response required.*
3.2.1	*Yes*	*Yes*	*NA*		*No response required.*
3.2.2	*Yes*	*Yes*	*NA*		*No response required.*
3.2.3	*No*	*Yes*	*NA*	*SG100a: you have scored this as not met, because " Industry stakeholders have questioned the consistency of how measures are enforced between different control agencies". Some substantive evidence is required here, not just hearsay.*	*In response to this comment, the 3.2.3 scoring text has been amended to the following: "No evidence of consistent enforcement is available to counter the anecdotal information received on inconsistencies between control agencies and therefore it is maintained that SG100 is not met."*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
3.2.4	*Yes*	*No*	*NA*	*SG100b. Can you provide evidence that there are research results that are relevant to management of this fishery that are not publicly available?*	*In response to this comment the 3.2.4 scoring text has been amended to the following:* *"These and ICES research are publicly available, but the other main institutions (CEFAS, IMARES, ILVO) also undertake research commissioned by national government and industry that is not all publicly available and therefore SG100 is not met."*
3.2.5	*Yes*	*Yes*	*NA*		*No response required.*

Comments	Certification Body Response
No further comments.	No response required.

10.2 Peer Reviewer 2

Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes/No**	**Conformity Assessment Body Response**
Justification: **Yes**		Comment noted; no response required.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	**Yes/No**	**Conformity Assessment Body Response**
Justification: **Yes**		Comment noted; no response required.

If included:

Do you think the client action plan is sufficient to close the conditions raised?	**Yes/No**	**Conformity Assessment Body Response**
Justification: Yes the action plans clearly demonstrate the commitment of the client to monitor, provide the relevant information and, where appropriate, fund vital pieces of research through IMARES.		Comment noted; no response required.

General Comments on the Assessment Report (optional)

This is an exceptionally well written, very clearly constructed and informative report. It comprehensively addresses and deals with all the relevant issues related to a complex mixed fishery in the environmentally and politically sensitive North Sea. The mixed demersal fisheries in the North Sea are undergoing a period of great change in terms of legislation, directives and guidelines and these are all well described and evaluated

The assessment team has consulted widely, with all the relevant organisations, and has fully reported and taken into account the results of their meetings. For example their re-classification of the starry ray as an ETP species was the direct result of listening to the views of the Netherlands Elasmobranch Society.

In terms of the information presented, style and ease of reading this, in my opinion, is a model report for anyone interested in the complexities of managing and exploiting current North Sea demersal fisheries.

If I have just one criticism of the report it is that some of the Figures need attention to better presentation. For example the style format and clarity of Figures 4,5 and 6.could be improved and the data lines made bolder (I almost missed Bpa/Msy B Trigger on Figure 4). Similarly the captions on many of the other Figures, particularly those copied from other documents, are very small and difficult to read. The labelling on the pie charts is poor. These are all relatively minor, simply resolved, editorial issues which do not detract seriously from the overall quality of the report.

CAB response: Comments noted. We have revisited the labelling of figures and, where possible, have made them clearer.

Performance Indicator Review

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

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
1.1.1	*Yes*	*No*	*N/A*	*Why does this not reach SG 100 at scoring issue (b)? There is a greater than of 95% probability that the stock has been above its target reference point over recent years. The MSY issue is dealt with under 1.1.2. Score 100*	*The target reference point is taken as F0.3. Although F has been below Ftarget since 2008, there is always uncertainty in the precise level of F and so it is not yet possible to infer with a "high degree of certainty" that the stock is fluctuating around its target reference point and SG100 is not achieved.*
1.1.2	*Yes*	*No*	*Yes*	*B loss is an acceptable basis for Blim and is the default position for many stocks. Indeed a robust stock and recruitment relationship is rare. Bloss does take precautionary issues into account and scoring issue (b) is met at SG 100. Unfortunately the technical issue of re-defining the FMSY target inevitably results in a default score of 60 at scoring issue (c) resulting in a Condition. This Condition should be very quickly met by a revision of reference points by ICES.*	*We agree that Bloss does take precautionary issues into account and that this would satisfy scoring issue (b) a SG 100. However, as it had failed at SG 80, no scoring issues at SG 100 were considered initially. We have, however, revised the score of SIb in response to this comment.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
1.1.3	*N/A*	*N/A*	*N/A*		
1.2.1	*Yes*	*No*	*N/A*	*In my opinion SG 100 is met at scoring issue (d). The harvest strategy has been regularly reviewed and the current requirement to re-visit FMSY has been addressed at 1.1.2. Score 100 (but it is not a big issue!)*	*It is true that the HS has been reviewed but it was felt that until it incorporated the new advice on Fmsy it did not meet the full requirement at SG 100 for issue (d).*
1.2.2	*No*	*No*	*No*	It seems strange that for a stock which is well managed and in a very healthy situation in terms of SSB should generate a Condition based on this PI, As the report clearly shows the current state of the stock is not the result of a series of good recruitments but because of good management. The low score and resultant Condition here appears to be solely related to the clarity of the provision for action when approaching or at Blim. The report does indicate that there is a provision for this eventuality which is provided for under Article 18 of the MAMP which deals with Special Circumstances. This gives the Council of the EU, on the basis of advice from its scientific experts, the power to set a lower TAC not constrained by the 15% rule and allows it to determine a greater reduction in fishing mortality than the 10% applicable under the MAMP rules, provided these changes are agreed by a qualified majority of the Council. This appears to satisfy the requirements SG 80 for scoring issue (a). Whilst I accept that it	*It is clear that the MAMP can be interpreted in a number of ways in relation to how it sets out the strategy for dealing with a declining stock. The HCR does outline mechanisms for reducing exploitation if F exceeds F0.3 and this should be effective in preventing the SSB falling to Blim. However, the HCR does not explicitly set out rules for the situation in which Blim is approached and so we took the view after discussion with other assessors reviewing NS and Skagerrak plaice that it fails to achieve SG80 on issue (a).* *The Condition requires managers to make this explicit, by clearly setting out what action would be taken as Blim was approached.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				would be better for the MAMP to clearly state that at Blim the F would be zero, I think that this could be addressed via a recommendation in relation to the revision of the wording of the MAMP	
1.2.3	*Yes*	*Yes*	*N/A*	*No comments*	
1.2.4	*Yes*	*Yes*	*N/A*	*No comments*	
2.1.1	*Yes*	*Yes*	*N/A*	*The score is well supported by the scoring comments, relevant sections of the report and the references. It is obvious that the assessment team put in a considerable amount of effort to get this and the two subsequent related PI's exactly right.*	*Comment noted; no response required.*
2.1.2	*Yes*	*Yes*	*N/A*	*The score is well supported by the scoring comments, relevant sections of the report and the references..*	*Comment noted; no response required.*
2.1.3	*Yes*	*Yes*	*N/A*	*The score is well supported by the scoring comments, relevant sections of the report and the references*	*Comment noted; no response required.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
2.2.1	*Yes*	*Yes*	*N/A*	*Again the report shows the considerable effort on the part of the assessment team in clarifying this delicate issue in relation to this fishery. They have clearly and correctly identified Dab (Limanda limanda) as the only species relevant to this PI as defined by the requirements of CR V1.3*	*Comment noted; no response required.*
2.2.2	*Yes*	*Yes*	*N/A*	*See above*	*Comment noted; no response required.*
2.2.3	*Yes*	*Yes*	*N/A*	*See above*	*Comment noted; no response required.*
2.3.1	*Yes*	*Yes*	*Yes*	*Once again the team have been meticulous in their investigation of the potential ETP species affected by this fishery. They have consulted widely and taken those views together with all of the published reports and the crew and observer at sea sampling into consideration in concluding that the only ETP species impacted by this fishery is the Starry ray. Because of the lack of enough relevant information a Condition has been rightly placed on this PI and at PI 2.3.3*	*Comment noted; no response required.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
2.3.2	*Yes*	*Yes*	*N/A*	*No Comments*	*Comment noted; no response required.*
2.3.3	*Yes*	*Yes*	*Yes*	*See 2.3.1 above*	*Comment noted; no response required.*
2.4.1	*Yes*	*Yes*	*N/A*	*It is clear from the report that the client has, over time, been proactive in modifying the gear to minimise sea bed contact. Whether the driving force for this was economic or environmental matters not: the end result is positive in terms of the potential for sea bed habitat impacts..*	*Comment noted; no response required.*
2.4.2	*Yes*	*Yes*	*N/A*	*Evidence in the report and scoring comments clearly support this score*	*Comment noted; no response required.*
2.4.3	*Yes*	*Yes*	*N/A*	*The two weak areas, in terms of adequate information, at scoring issue (b) and (c) have been correctly highlighted.*	*Comment noted; no response required.*
2.5.1	*Yes*	*Yes*	*N/A*	*Firm evidence in relation to this PI is always difficult and a partial score at SG 100 is reasonable. Section 3.4 of the*	*Comment noted; no response required.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
				report has extensive detail.	
2.5.2	*Yes*	*Yes*	*N/A*	*Section 3.4 of the report is full of relevant information in support of this score. The information is well summarised in these scoring comments.*	*Comment noted; no response required.*
2.5.3	*Yes*	*Yes*	*N/A*	*As above*	*Comment noted; no response required.*
3.1.1	*Yes*	*No*	*N/A*	*The information in support of the score is fine but the Y/N indicators have not been completed. The scoring comments suggest that scoring issue (a) is met at SG 100 and scoring issues (b) and (d) are only met at SG80 which is a score of 85 not 95. NB there is no scoring issue (c)*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*
3.1.2	*No*	*No*	*N/A*	*As above this PI has not been completed properly and it is not possible from the comments to conclude whether the score is correct*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*
3.1.3	*Yes*	*Yes*	*N/A*	*As above the Y/N Partial needs completing properly*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
					now consistent with the score awarded.
3.1.4	*Yes*	*Yes*	*N/A*	*As above at 3.1.3*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*
3.2.1	*Yes*	*Yes*	*N/A*	*As above at 3.1.3*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*
3.2.2	*Yes*	*Probably?*	*N/A*	*As above at 3.1.3*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*
3.2.3	*Yes*	*Yes*	*N/A*	*As above at 3.1.3*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*
3.2.4	*Yes*	*Yes*	*N/A*	*As above at 3.1.3*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Conformity Assessment Body Response
3.2.5	*Yes*	*Yes*	*N/A*	*As above at 3.1.3*	*This was a version control error, and both the scoring comments and Y/N indicators have been corrected and are now consistent with the score awarded.*

11 Appendix 4: Stakeholder Submissions

11.1 Written Submissions Made by Stakeholders

11.1.1 Comments on entry into assessment

No comments were received on the entry of this fishery into assessment.

11.1.2 Comments on modifications proposed to default assessment tree

The default assessment tree has been used for this fishery. No comments were received on this.

11.1.3 Comments on Public Comment Draft Report

The only comments received by Acoura Marine on the PCDR were from the MSC. These are reproduced overleaf.

11.1.3.1 MSC Technical Oversight Comments

www.msc.org

Marine House
1 Snow Hill
London EC1A 2DH
United Kingdom
Tel: +44 (0)20 7246 8900
Fax: +44 (0)20 7246 8901

Date: 23/12/2015

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

Dear Jim Andrews

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

CAB	Acoura Marine
Lead Auditor	Jim Andrews
Fishery Name	Osprey Trawlers North Sea twin-rigged plaice
Document Reviewed	Public Comment Draft Report

Ref	Type	Page	Requirement	Reference	Details	PI
18441	Minor	22-23, 92	CR-27.12.1.2 v.1.3	27.12.1 The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: 27.12.1.2 The possibility of vessels fishing outside of the unit of certification.	Do vessels within the UoC also catch plaice and/ or similar-looking species outside the UoC area, and do they land such catch at the same points of landing? If so, what systems are in place to prevent substitution of certified fish with non-certified fish?	

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www.msc.org

18442	Minor	18-19, 92-94	CR-27.12.1.3 v.1.3	27.12.1 The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: 27.12.1.3 The opportunity of substitution of certified with non-certified fish prior to or at landing fraudulent claims from within and outside ther certified fishery.	The report does not provide enough information on potential opportunities for substitution in the fishery, such as: - The report should clarify if other vessels not part of the UoC client group (such as Other Eligible Fishers) are currently fishing plaice from within the UoC ICES Sub-Area IV, and are they landing at the same points of landing as the vessels in the UoC? If so, what systems are in place to ensure substitution of certified fish with non-certified fish does not occur? - How are species other than plaice, especially similar-looking species such as dab, flounder, sole etc, segregated onboard and at landing? What systems are in place to ensure non-certified species caught in the fishery do not enter certified chains of custody? - Are vessels fishing plaice outside of the 1st March to 15th December season? If so, where are catches made outside of the season landed, and what systems are in place to ensure product caught outside the season does not enter certified chains of custody?	

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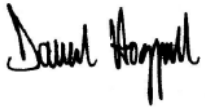
18443	Minor	93-94	CR-27.12.2.1 v.1.3	27.12.2 If the CAB determines the systems are sufficient, fish and fish products from the fishery may enter into further certified chains of custody and be eligible to carry the MSC ecolabel. The CAB shall determine:27.12.2.1 The scope of the fishery certificate, including the parties and categories of parties eligible to use the certificate and the point (s) at which chain of custody is needed. a. Chain of custody certification shall always be required following a change of ownership of the product to any party not covered by the fishery certificate. b. Chain of custody certification may be required at an earlier stage than change of ownership if the team determines that the systems within the fishery are not sufficient to make sure all fish and fish products identified as such by the fishery originate from the certified fishery. c. If the point where chain of custody certification is required is covered by the fishery certificate, the team shall determine the parties or category of parties covered by the fishery certificate that require chain of custody certification.	The report must clarify the circumstances regarding point of landing, auctions, and where CoC begins. The report states on page 93 that landings will be made primarily at Harlingen and on occasion to other Dutch, German and Danish designated ports, but all certified fish ultimately pass through Urk fish market. What happens between landing at Harlingen at sale at Urk, for example, and how is CoC maintained during transport and storage after landing but before sale? Importantly, the report must clarify whether the auctions such as Urk require CoC. If not, how are certified and non-certified products identified and segregated at auction prior to sale?	

This report is provided for action by the CAB and ASI in order to improve consistency with the MSC scheme requirements; MSC does not review all work products submitted by Conformity Assessment Bodies and this review should not be considered a checking service. If any clarification is required, please contact Stephanie Good on +44(0)20 7246 8926 for more information.

Best regards,
Fisheries Oversight Director
Dan Hoggarth
Marine Stewardship Council



cc: Accreditation Services International

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11.1.3.2 Response from Acoura Marine to MSC comments

Ref: 18441
We have amended the text to explain the systems in place to avoid mixing of certified and non-certified plaice at the points of landing.

Ref: 18442
We have clarified the relevant sections of the report to address the risk of mixing of certified and non-certified plaice at the points of landing; catch sorting procedures to separate plaice from other flatfish species; and with respect to the closed season observed by Osprey vessels.

Ref: 18443
We have clarified the text to explain the procedures in place for the transport of plaice from the points of landing to the auction in Urk.

11.1.4 Response from client fishery

After the end of the consultation period on the Public Comment Draft Report, the client wrote to Acoura Fisheries to indicate that the Code of Conduct for the Osprey Trawler Group had been revised in response to some comments that had been made by WWF-Netherlands directly to Osprey Trawlers, and outside the MSC process.

Osprey Trawlers wrote formally to Acoura Marine about these changes. The letter received from Osprey Trawler is reproduced overleaf, followed by the response from the assessment team.

11.1.4.1 E-mail to Acoura Marine from Osprey Trawlers Group

Jim Andrews

From:	Leendert Hakvoort | Osprey Group <leendert@ospreygroup.nl>
Sent:	29 January 2016 16:34
To:	Jim Andrews
Cc:	Cees de Boer | Osprey Group; 'bert.keus@gmail.com'
Subject:	MSC report
Attachments:	Code of Conduct Osprey Trawlers LTD 2015 29-1-2016.doc

Dear Jim,

Herewith we inform you that Osprey Trawlers have agreed with WWF that Osprey Trawlers vessels will continue to avoid the voluntary closed areas as agreed in 2010 with WWF for the first MSC certification period. This agreement stands until the end of the indicated period, or until changes are implemented in agreement with WWF Netherlands. These changes include the replacement of these voluntary closures by the new Natura 2000 and MSFD measures in these areas, as soon as these are being implemented.

In order to implement the voluntary closures Osprey Trawlers has included these closures in Osprey Trawlers Code of Conduct.

Please find the amended Code of Conduct attached,

Best regards,

Leendert Hakvoort/Kees de Boer
Osprey Group

Best regards / Mit freundlichen Grüβen,

Leendert Hakvoort
Osprey Group BV

Tel : +31 527 681800
Fax : +31 527 681378
Mob: +31 622 497252
www.ospreygroup.nl

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Note: The amended code of conduct is included at Appendix 7 of this report.

11.1.4.2 Acoura Marine response to Osprey communication

The Acoura Marine response to the Osprey request is appended below. The resumption of the the voluntary closed areas from the previous period of certification was not considered to affect the scoring of the fishery.

Jim Andrews

From: Jim Andrews
Sent: 29 January 2016 16:56
To: 'Leendert Hakvoort | Osprey Group'
Cc: Cees de Boer | Osprey Group; 'bert.keus@gmail.com'; Acoura Fisheries
Subject: RE: MSC report

Dear Leendert & Cees

Many thanks indeed for this correspondence. We will amend the report in accordance with your instruction and issue the Final Report at the earliest opportunity.

If we have any further queries we will be in touch.

Kind regards

Jim

From: Leendert Hakvoort | Osprey Group [mailto:leendert@ospreygroup.nl]
Sent: 29 January 2016 16:34
To: Jim Andrews
Cc: Cees de Boer | Osprey Group; 'bert.keus@gmail.com'
Subject: MSC report

Dear Jim,

Herewith we inform you that Osprey Trawlers have agreed with WWF that Osprey Trawlers vessels will continue to avoid the voluntary closed areas as agreed in 2010 with WWF for the first MSC certification period. This agreement stands until the end of the indicated period, or until changes are implemented in agreement with WWF Netherlands. These changes include the replacement of these voluntary closures by the new Natura 2000 and MSFD measures in these areas, as soon as these are being implemented.

In order to implement the voluntary closures Osprey Trawlers has included these closures in Osprey Trawlers Code of Conduct.

Please find the amended Code of Conduct attached,

Best regards,

Leendert Hakvoort/Kees de Boer
Osprey Group

Best regards / Mit freundlichen Grüβen,

Leendert Hakvoort
Osprey Group BV

Tel : +31 527 681800
Fax : +31 527 681378
Mob: +31 622 497252
www.ospreygroup.nl

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11.2 Verbal Submissions Made by Stakeholders

At all meetings with stakeholders the assessment team followed a CAB procedure to ensure that key aspects of the MSC process were explained. This procedure is omitted from the records below, but is reproduced in section 11.3 of this report.

The records below were compiled and agreed by the assessment team following each interview, and then sent to each stakeholder for comment within a specified timescale. Reminders about the opportunity to comment on the record of the meeting were sent to stakeholders if they did not respond in the specified time. The accounts below include stakeholder corrections and additions to the assessment team's initial account, where these were provided.

11.2.1 North Sea Foundation

MSC Fishery Assessment Stakeholder Interview Record

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Richard Millner
P2 Team Member	Jim Andrews
P3 Team Member	Rod Cappell

Meeting Location	Utrecht, Netherlands
Date	22nd June 2015
Stakeholders Name	Affiliation
Christine Absil	North Sea Foundation
Anne Doeksen	North Sea Foundation

Comments:

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO, etc)

North Sea Foundation is an eNGO

3. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery? (P1 – P2 – P3) and what information is available to allow us to determine the status of the fishery in relation to each issue?

Principle 1

- No specific issues of concern.

Principle 2

- **Retained non-target species**
  - No specific issues of concern.
- **Discarded non-target species**
  - NSF had placed an observer aboard a trawler for 3 weeks during September-October 2014. The findings of this observer trip had been published in the document "Fishing for Knowledge" as part of a programme for improving fishery-dependent CPUE studies of turbot, brill and lemon sole in the North Sea.
  - During the course of this observer trip it became apparent that at time significant quantities of elasmobranchs (notably spurdog and ray species) were caught in plaice trawls.
  - NSF consider that the information about the catches of elasmobranchs in the fishery need to be carefully scrutinized to ensure that they provide an accurate picture of capture and discarding rates.
  - NSF also feel that the development of protocols for the handling and return of non-target elasmobranchs to the sea could improve post-capture survival and benefit stocks.
  - It was suggested that independently verifiable and consistent catch monitoring (for instance using CCTV) could provide better quality data to inform management of discarding.
  - It was noted that discard rates were much lower using the 120mm mesh size under assessment.
- **ETP species**
  - Notwithstanding the concerns about spurdog capture in the fishery (which are not an ETP species under the MSC scheme), NSF were not aware of any adverse impacts of the fishery on ETP species.
- **Habitats**
  - There was concern that the agreement of a management plan for the Dogger Bank Natura 2000 site was taking a long time, and that discussions were now taking place about permitting some fishing methods (such as fly shooting) within areas that had initially been intended to be free from fishing activity.
  - NSF had been pleased that the industry had adopted its own voluntary closed areas as part of its commitment to attaining MSC certification.
  - NSF felt that the present level of statutory habitat protection in the North Sea was lower than would be expected under the MSC standard.
  - It was suggested that the EU BENTHIS project (www.benthis.eu) could inform the assessment of impacts of benthic trawls on marine habitats in the assessment area.
- **Ecosystems**
  - No specific concerns were raised about ecosystem impacts.

Principle 3

- Concern was raised that because of the introduction of new legislation in the Netherlands, it was no longer possible for the control authorities to share

information about instances of non-compliance with third parties such as an MSC assessment team, unless this was authorized by the client fishery. It was felt that this could undermine the effective implementation of the MSC standard.

Chain of Custody

- NSF noted that many fish restaurants and retailers in the Netherlands reported difficulty obtaining sufficient MSC product for their needs, even though it was known that their suppliers had ready access to ample supplies.

4. IFC Assessment Team Questions

Assessment team questions for stakeholders

Principle 1 – stakeholder views on stock status.

Principle 2 – stakeholder views on impacts on P2 components.

Principle 3 – stakeholder views on fishery governance.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

NSF suggested that the team should contact staff at other NGOs (particularly WWF) during the re-assessment process. NSF agreed to provide details of the best people to contact.

Action: CA

NSF offered to provide details of recent catch and discard monitoring work to the assessment team.

Action: AD

11.2.1.1 IFC Response

Following this interview, IFC contacted the WWF to seek their input to the assessment process (see section 11.2.5). The comments made by NSF have been taken into account in this assessment.

11.2.2 Osprey Group

MSC Fishery Assessment Stakeholder Interview Record

Assessment Team	Names
Lead Assessor	Jim Andrews

P1 Team Member	Richard Millner
P2 Team Member	Jim Andrews
P3 Team Member	Rod Cappell

Meeting Location	Urk, Netherlands
Date	23rd June 2015
Stakeholders Name	Affiliation
Cees de Boer	Osprey Group
Bert Keus	Consultant

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO, etc)

Osprey Group are the client for this fishery assessment.

3. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery? (P1 – P2 – P3) and what information is available to allow us to determine the status of the fishery in relation to each issue?

Unit of Certification

- **Fishing Gear**
  - Most of the catch (~95%) is taken in trawls with a 115-119mm cod end. Nets smaller than 99mm are not currently used.
  - In the Norwegian sector, nets bigger than 120mm have to be used.
  - Osprey are now trialing the use of a larger cod end with a 142mm mesh in response to the high abundance of plaice in the Norwegian sector and to avoid the risk of retaining any undersized plaice in this part of the fishery. There was concern that the use of a mesh of this size would be permissible within the UoC; this was addressed during the discussion
  - Osprey are also consulting with net manufacturers over the use of new mesh materials to create a square mesh cod-end that will maintain a higher level of selectivity in areas where plaice are abundant.
  - In addition to this, Osprey are increasing the mesh size of the tunnel of their trawls to improve selectivity.
- Areas fished

- The Osprey vessels fish in areas IVa & IVb.
- Fishing takes place in both EU and Norwegian waters (the latter requiring the use of trawl nets with a >120mm cod end).

Principle 1

- The status of the stock was discussed; it was understood to be considered by ICES to be in good condtion and SSB was increasing.

Principle 2

- **Retained non-target species**
  - Osprey provided landings data from the vessels in the fishery for the past few years.
  - The only species consistently making up more than 5% of landings are lemon sole.
  - Osprey vessels deliberately fish in areas where lemon sole are known to be abundant to ensure that there is a commercially viable quantity of lemon sole in the catch (~40-50 boxes per trip).

- **Discarded non-target species**
  - Osprey monitor catch composition through their own self-sampling scheme which uses the same sampling protocols as the IMARES scheme. Vessel crews are trained in this procedure and in the identification of non-target species. Initially 3 samples were taken per vessel per week; this has been reduced to 2 per vessel per week, and is due to be reduced to 1 per vessel per week (i.e. 4 samples for the fleet per week)
  - In 2012 Agonus Consulting were commissioned by Osprey to monitor catches independent of the crew sampling on fishing trip, and these data were reported.
  - Cefas have been commissioned by the client to investigate gear selectivity, comparing trawls of different mesh sizes when fished side-by-side behind an Osprey twin-rig vessel.
  - IMARES conducted self-sampling trips aboard Osprey vessels in 2012, 13 & 14.
  - Osprey report that the catch of non-target species was generally low. Skippers favour fishing grounds where they catch predominantly plaice. Vulnerable non-target species such as spurdog are avoided by fishing further north of the Dogger Bank than before; if spurdogs are caught, vessels move on from the area where they are abundant.
  - The EU Landings Obligation was discussed.
    - From the 1st January 2016 the discarding of the target species will be prohibited
    - By 2019 there will be a discard ban for all quota species caught in the fishery.
    - Osprey are keen to investigate alternative approaches, such as improved catch handling prior to discarding as an alternative to landing all of the catch.
  - In the Norwegian sector the catch of non-target species has been managed through the use of real time closures to protect areas where juvenile fish are abundant.

- Real time closures can now be used throughout the North Sea if necessary.

- **ETP species**
  - The client reported no catches of ETP species in the fishery; only occasional catches of dead dolphins following periods of time when there has been a lot of set net fishing around the Dogger Bank.

- **Habitats**
  - Osprey vessels fish principally on sandy seabed areas. VMS vessel tracks for the past few years demonstrate that the areas fished are limited to this type of seabed.
  - It was noted that management measures are being discussed for the Dogger Bank Natura 2000 site and that these may include restrictions on fishing activity.
  - Osprey consider that with the proposed introduction of statutory habitat protection which will apply to all potentially damaging fishing operations, there is no logical rationale for maintaining a voluntary network of protected areas that only apply to Osprey vessels – since these voluntary areas can be fished by other vessels with impunity.
  - Osprey have in the past documented the catch of benthic species in their trawls.
  - Osprey have worked to reduce the ground contact of their gear through the use of pelagic trawl doors & Dyneema sweeps with balls in an effort to both reduce habitat impacts and make the gear more fuel-efficient.
- **Ecosystems**
  - No specific concerns were raised about ecosystem impacts.

Principle 3

- Representation and communication: 1 vessel in Lowestoft & 3 in Fife POs, also members of VisNED and get newsletter from Urk PO
- Good linkages with the North Sea AC
- Not wishing to be dictated on fishing days and weekly catch limits with all others under Urk PO as fishing to different customer orders
- NOR control v difficult as interpret rules differently (e.g. in relation to starry ray – one Nor inspector said discard, another said don't). Only impounded once in Norway and appealed as due to minor discarding infringement
- Get inspected every week at Urk – check mesh size, fish sizes and corroborate e-log books
- BK to provide control contacts (done)

4. IFC Assessment Team Questions

Assessment team questions for stakeholders

Principle 1 – client views on stock status.

Principle 2 – client actions to minimise impacts of the fishery on Principle 2 components.

Principle 3 – client views on fishery governance, participate in management regime, and level of compliance with regulations.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

Several actions were agreed:-

- Check that all of the historical data relating to the fishery has been placed in the DropBox folder being used by the assessment team.
- Provide maps to the assessment team showing:-
  - Trawl tracks vs seabed character
  - Natura 2000 sites in the North Sea and the Plaice Box
- Contact names at the control agencies in the Netherlands and Scotland.
- Send a copy of the updated code of conduct for vessels in the fishery to the assessment team.
- Provide a copy of the ETP protocol used in the fishery to the assessment team.
- Gear selectivity – Osprey will gather catch samples from the >120mm Norwegian fishery for comparison to the 100-119mm EU fishery and provide these to the assessment team.
- Catch composition – Osprey would examine landings & sales data to see if it can provide:-
  - Information about the size classes of place and lemon sole in the landings.
  - Information about the landings resulting from the use of different trawl mesh sizes.

Action: Osprey

11.2.3 IMARES

MSC Fishery Assessment Stakeholder Interview Record

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Richard Millner
P2 Team Member	Jim Andrews
P3 Team Member	Rod Cappell

Meeting Location	IJmuiden, Netherlands
Date	24th June 2015
Stakeholders Name	Affiliation
David Miller	IMARES
Karin van der Reijden	IMARES

Comments:

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO, etc)

IMARES is a scientific institution that provides advice on fish stock status to the Netherlands Government. Scientists from IMARES also participate in ICES working groups in volved in gathering data for plaice, producing stock assessments and drafting scientific advice. Next to that, IMARES is the executor of the obliged EU discard monitoring.

3. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery? (P1 – P2 – P3) and what information is available to allow us to determine the status of the fishery in relation to each issue?

Principle 1

- The client noted that the ICES WG responsible for the plaice assessment (WGSSK) had met in June and new advice on the status of the stock would become available on 29 June. A benchmark assessment which will examine a wide range of inputs in detail will be carried out in 2016.
- The stock remains at a high level and the SSB is continuing to increase. This is on top of continuing average recruitment.
- One clear change in the assessment from previous years, is the inclusion of plaice from IIIa (the Skagerrak) into the assessment of North Sea plaice. At present only the landings data have been used which results in a small scaling increase in stock biomass.
- There was some evidence that the large stock size is resulting in poorer growth rates.
- There was some discussion on the Long Term Management Plan and MSY. The EU confirmed that transitional arrangements for management of plaice in stage two of the plan would no longer apply and the full implementation of stage two should be adopted. This implies fishing at MSY but until agreement on a point estimate for MSY, the ICES advice for 2015 was to continue to fish at 0.3. Plaice will be included in the North Sea demersal fisheries Multi-Annual Plan (MAP) currently being developed by DG-MARE. This will replace the current NS flatfish management plan in the near future.

- WKMSYref3 reviewed advice on reference points for fishing at MSY. The WG estimated Fmsy for plaice at 0.19. Bmsy was estimated at approximately 1.3m tonnes. Despite the MP target F being larger than this new estimate, underutilization of the TAc in recent years has led to the current level of F being regarded as well within acceptable boundaries for MSY.
- Sampling for discards has improved over recent years and is now more robust in the assessment. The assumption of 100% discard mortality may not be correct however, and some exploratory survivability experiments are being conducted to examine this. The impact of these results on the assessment of the stock will be analyzed during the benchmark.
- As human consumption mortality has decreased the assumption on natural mortality could have greater influence on the assessment and this may need to be reviewed in future.

Principle 2

- **Retained non-target species**
  - **Lemon sole** – ICES are presently looking at the quality of the data available to inform the advice for lemon sole. IBTS data have been used in the past. IMARES have worked with Ekofish to explore the prospects for establishing an industry survey, specifically aiming for associated species. The main results for lemon sole was that such an industry survey should have a low priority as the scientific Beam Trawl Survey (BTS) was already catching high numbers over a large range of ages. This results in a relative higher need to gather all data available and merge this in a stock assessment model. All results of this industry survey pilot are reported in the document “Fishing for knowledge”.
- **Discarded non-target species**
  - **Self-sampling**
    - Karin explained the sampling procedure for the IMARES discard self-sampling programme. This monitoring programme is designed mainly to estimate discards of plaice & sole. Reports on the level of discards are available for fishing activity between 2011 and 2013.
    - In brief, a reference fleet of vessels has been selected, and each vessel in this fleet is asked to take discard samples once every 5 weeks from 2 hauls on a trip. The discard samples are retained aboard the vessel, landed and submitted to IMARES for analysis. IMARES then record the identity of all of the species in the sample, and measure all of the fish, for which a length-weight relationship (from literature or for plaice, from own data) is used to calculate weight.
    - The self sampling programme is not considered to sample rare species effectively.
    - IMARES have estimated catch composition for vessels by raising the sample results (kg per hour) to the level of each trip sampled (hours of towing) and then comparing the raised estimate to the actual landings records for that trip. Catch and discard composition has been published, and gives a full account of number of trips sampled for different gear types over recent years.
    - It was noted that most of the data relating to the twin-rig trawl plaice fishery is for nets with a cod-end mesh size of 100-119mm although some trips have been sampled with >120mm mesh.

        - IMARES agreed to provide the team with an estimate of the discard rates as a proportion of estimated total catch (before sorting).
    - **Mesh size** – the effect of mesh size on catch composition was examined in the "Fishing for knowledge" study by using different mesh sizes in each net used on all hauls and analyzing the discards from each net separately.
    - **Cod** - prior to 2014 all vessels were required to record all catches and discards of cod. The discard atlas and STECF data have been used subsequently.
    - **Landings obligation** – the implementation of this requirement was discussed. IMARES noted that the industry is carrying out research into catch handling methods that could increase survival of non-target species that might result in discarding being permissible if results are favorable.
    - **Discard survival** - IMARES are working with ICES to consider the effect of different discard survival estimates on stock assessments. Also, IMARES is working with the fishing industry to estimate current survival rates for discarded plaice, sole and dab onboard of pulse vessels and a twinrig vessel. This is still work in progress, with limited data on the twinrig fisheries.
    - **Spurdog** – catches were reported to be hit & miss. In general very few were caught, but occasionally a large number would be caught in a haul. It was noted that skippers try to avoid areas where spurdog may be caught, and move on to other areas if this should occur.
- **ETP species**
    - No significant interactions with ETP species had been noted by IMARES staff.
- **Habitats**
    - No comments were made on habitat impacts.
- **Ecosystems**
    - No specific concerns were raised about ecosystem impacts.
    - It was noted that plaice have not been incorporated in multi-species models of the North Sea, and that no modelling had been conducted.

Principle 3

- DM would advocate some more spatial separation on the quota as vessels can catch plaice without sole further North, but can't catch sole without plaice.
- LTMP is likely to be superseded by mixed fishery plans

4. IFC Assessment Team Questions

Assessment team questions for stakeholders

Principle 1 – stakeholder views on stock status.

Principle 2 – stakeholder views on impacts on P2 components.

Principle 3 – stakeholder views on fishery governance.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

The following actions were agreed at the end of the meeting:- • Recent ICES discussions on MSY will be provided to the assessment team. • Trip data will be analyzed to provide an estimate of the proportion of each species caught that is discarded (as a proportion of total catch).

11.2.3.1 Assessment team response

The information presented during this interview has been taken into account in the assessment of this fishery.

11.2.4 Ministry for Economic Affairs

MSC Fishery Assessment Stakeholder Interview Record

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Richard Millner
P2 Team Member	Jim Andrews
P3 Team Member	Rod Cappell

Meeting Location	Den Haag, Netherlands
Date	24th June 2015
Stakeholders Name	Affiliation
Henk Offringa	Ministry for Economic Affairs

Comments:

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO, etc)

The Ministry for Economic Affairs is a Government department.

3. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery? (P1 – P2 – P3) and what information is available to allow us to determine the status of the fishery in relation to each issue?

Principle 1

- It was noted that since the publication of the ICES advice in Nov 2014, the EU had confirmed that transitional arrangements for management of plaice in stage two of the plan would no longer apply and the full implementation of stage two should be adopted. This implies fishing at MSY.

Principle 2

- **Retained non-target species**
  - No specific issues of concern.
  - It was noted that real time closures are implemented by the Netherlands and UK Governments in ICES sub-areas IVb-IVc & VIId to minimise cod catches. These closures are altered each month, and protect 1/16th of the 9-10 ICES rectangles where past catches of juvenile cod have been highest.
- **Discarded non-target species**
  - The landings obligation is due to be implemented on 1st January 2016. In recognition of the challenges that this will pose, the full penalties for infringing the obligation will not be introduced until 2018. Prior to this date, non-compliance will be remedied through a fine; after 2018 both a fine and penalty points will apply.
  - A draft joint recommendation on implementation of the landings obligation is being prepared for the Commission, outlining:-
    - Definitions of the fisheries affected by the obligation
    - The "*de minimis*" requirements for each fishery (which allow for a "soft start" to the landings obligation – it was noted that no discarding would be permissible for the plaice fishery, but for the sole fishery up to 3.2% of the target species may be discarded from the BT2 fishery in the first year of implementation of the obligation).
    - How "high survival" fisheries will be identified and managed.
  - Plaice will be considered a target species for vessels using BT1 and TR1 gear. The landings obligation shall apply to plaice caught with these métiers from 1st January 2016. Non-target species caught in these métiers will be subject to the landings obligation from 1st January 2018.
  - The survival of plaice in the sole fishery is presently being investigated by the industry under an EMFF funded project.
  - Elasmobranchs –
    - a national action plan for elasmobranchs is being developed and is due to be published in summer 2015. This will build upon the 2009 EU action plan and will propose actions such as working on ID skills; raising awareness of ray species status; proposing the use of technical measures (such as escape panels / grids) that may reduce catch rates; investigating catch handling procedures that will improve discard survival; improving understanding of the species' biology to inform management.
    - The government is liaising with the industry to improve ray species recording in catch and landings declarations. ID courses have been organized to assist this.

        - It was noted that some additional protection to rays has been provided by Article 12 of the 2015 TAC Regulation.
        - Spurdogs are still subject to a 0TAC. The current EC TAC Regulation specifies that in fisheries not yet subject to the landings obligation, this species should be returned to the sea immediately.
    - The fishing plans submitted by POs to the Government may need to be revised in response to the landings obligation, as these may set a MLS that is larger than the EC MLS, creating a risk of highgrading.
- **ETP species**
    - No concerns were raised about ETP species capture in the plaice trawl fisheries under assessment.
- **Habitats**
    - The Minister for the Environment has recently announced that definite progress will be made with the designation of Natura 2000 sites and the implementation of Marine Spatial Planning measures.
    - The Netherlands Government has been working on the creation of protected areas using the procedure set out in Article 11 of the CFP Regulation (354/2013). These were being developed for the Dogger Bank, Friesian Bank and he Central Oyster Grounds in the North Sea.
- **Ecosystems**
    - No comments were made on this Component of Principle 2.

Principle 3

- No information of concern specific to the vessels in each UoC – RC to check with control authorities.
- Clarification on the landing obligation implications and current plans – a North Sea discard plan developed by the Schevenigen Group involving NL and other North Sea authorities has been submitted to the Commission for approval.
- From 2016 these vessels targeting plaice will not be permitted to discard plaice.
- Following European Parliament ruling, in first 2 years there may still be fines, but would not be treated as a serious infringement where penalty points are applied.
- Research is ongoing to explore survivability of plaice with the view to seeking exemption when evidence is provided.
- De minimis exemption appears less likely as discarding is not already identified as an issue in the plaice fishery.
- Further management of elasmobranchs planned under a national strategy to be consulted on and finalized in 2015.

4. IFC Assessment Team Questions

Assessment team questions for stakeholders

Principle 1 – stakeholder views on stock status.

Principle 2 – stakeholder views on impacts on P2 components.

Principle 3 – stakeholder views on fishery governance.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

It was agreed that the following items would be provided to the assessment team:-

- A map of the proposed closed areas in the Dogger Bank Natura 2000
- A map of the Natura 2000 sites due to be designated

11.2.4.1 Assessment team response

The information presented during this interview has been taken into account in the assessment of this fishery.

11.2.5 WWF-Netherlands

MSC Fishery Assessment Stakeholder Interview Record

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Richard Millner (not present during interview)
P2 Team Member	Jim Andrews
P3 Team Member	Rod Cappell (not present during interview)

Meeting Location	Skype interview	
Date	26th June 2015	
Stakeholders Name		Affiliation
Emilie Reuchlin-Hugenholtz		WWF – Netherlands

Comments:

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO, etc)

WWF is an environmental NGO.

3. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery? (P1 – P2 – P3) and what information is available to allow us to determine the status of the fishery in relation to each issue?

Units of Certification

- WWF had supported the adoption of voluntary closed areas by Ekofish Group and subsequently Osprey Group when these fisheries were first certified.
- There are still no formally protected areas, and WWF feel that the voluntary closed areas remain an important feature of the Units of Certification.

Principle 1

- No specific comments were made about stock status.

Principle 2

- **Non-target species (both retained & discarded**
  - WWF are concerned about the potential impact of the fishery on vulnerable non-target species, in particular cod and elasmobranch species.
  - The abundance of these non-target species is considered to be low, which is why catches are low – so it will be important to adopt more selective fishing methods both to encourage recovery and to avoid adverse impacts when these species are more abundant.
  - The Netherlands is working on a recovery plan for sharks and rays and this should be taken into consideration.
- **ETP species**
  - It was felt that a handling protocol for ETP species should be adopted to maximize post-capture survival.
  - Gear selectivity was felt to be important in minimizing impacts on ETP species, particularly if their abundance increases.
  - WWF note that shark and ray species are listed as indicators of Good Environmental Status in the EU Marine Strategy Framework Directive.
- **Habitats**
  - WWF were concerned about the possible impacts of fishing in either marine protected areas or areas scheduled for protection (such as the Dogger Bank, Cleaver Bank, Friesian Front and Central Oyster Ground).
  - Progress with management of MPAs has taken a long time due to protracted negotiations between Member States and the wide range of stakeholders involved.
  - WWF are hoping for progress with a Fishery Management Plan for the Cleaver Bank and Dogger Bank areas. Proposals have been drafted and after approval by the Scheveningen Group these are due to be sent to the European Commission.
  - WWF would be concerned about the certification of a trawl fishery without closed areas.
- **Ecosystems**
  - No specific concerns were raised about ecosystem impacts.

Principle 3

- WWF were concerned that some regulations are slow to implement.
- WWF would favour precautionary action to protect seabed areas and vulnerable habitats.

4. IFC Assessment Team Questions

Assessment team questions for stakeholders

Principle 1 – stakeholder views on stock status.

Principle 2 – stakeholder views on impacts on P2 components.

Principle 3 – stakeholder views on fishery governance.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

WWF recommended that the assessment team should contact Irene Kingma at the Netherlands Elasmobranch Society (NEV).

11.2.5.1 Assessment team response

The comments made during this interview have been taken into account in this assessment.

We have contacted the Netherlands Elasmobranch Society as recommended by WWF (see interview record below).

11.2.6 Netherlands Elasmobranch Society

MSC Fishery Assessment Stakeholder Interview Record

Assessment Team	Names
Lead Assessor	Jim Andrews
P1 Team Member	Richard Millner (not present during interview)
P2 Team Member	Jim Andrews
P3 Team Member	Rod Cappell (not present during interview)

Meeting Location	Skype
Date	3rd July 2015
Stakeholders Name	Affiliation

Irene Kingma	Nederlandse Elasmobranchen Vereniging

Comments:

2. Status

What is the nature of the organisations interest in the fishery (e.g. client / science / management / industry / eNGO, etc)

NEV is an environmental NGO….

3. Stakeholder Key Issues

What, if any, specific substantive issues or concerns are identified regarding the fishery? (P1 – P2 – P3) and what information is available to allow us to determine the status of the fishery in relation to each issue?

Current Certification

- IK noted that under the current certification, both Osprey and Ekofish are required to report skate bycatch, and enquired about progress with this. JA referred to the updates given in the recent surveillance reports for these fisheries.

Principle 1

- No specific comments were made about stock status.

Principle 2

- N**on-target species (both retained & discarded)**
    - NEV are concerned about the potential impact of the fishery on vulnerable non-target species, in particular elasmobranch species.
    - The Netherlands is working on a recovery plan for sharks and rays and this should be taken into consideration.
    - Several skate and ray species are addressed through the EU landings obligation and recent TAC regulation; these should not be caught or landed.
    - It was felt that a handling protocol for elasmobranch species should be adopted to maximize post-capture survival. NEV are working on a handling protocol for Ekofish Group.
    - A research plan is being developed to help reduce the catch of non-target elasmobranch species in the plaice fishery.
    - In September, NEV are due to be starting an ID project with the fishing industry to improve accuracy of species identification.
    - NEV were concerned that there was limited information about the species caught in the twin-rig trawl fishery and that species ID & recording were poor. Species that NEV mentioned as non-target catches in the twin rig trawl fishery were:-
        - Lesser spotted dogfish (*Scyliorhinus canicula*)
        - Bull huss (*Scyliorhinus stellaris*)

    - Starry smooth hound (*Mustelus asterias*)
- **ETP species**
    - It was noted that some elasmobranch species are listed in Article 12 of the EU TAC regulation. There was some discussion about whether this meant that these species should be regarded as ETPs. [JA reported that clarification on this matter was being sought from the MSC].
    - Survival of elasmobranchs are felt to be generally low. A handling protocol for ETP elasmobranch species should be adopted to maximize post-capture survival.
    - Concerns were raised about several species:-
        - **Spurdog** – these are caught, but there is 0 TAC. Catches are acknowledged to be hit & miss. Mortality can be high, but can be improved by better catch handling.
        - **Common skate** – one individual had been caught in a beam trawl and had been sold at auction in the Netherlands.
        - **Porbeagle** – one individual was presented for auction in the Netherlands (again, not from the twin-rig trawl fishery).
    - NEV note that shark and ray species are listed as indicators of Good Environmental Status in the EU Marine Strategy Framework Directive.
- **Habitats**
    - NEV had no specific information about habitat impacts associated with the twin rig trawl fishery in the North Sea.
    - NEV would like to see elasmobranch nursery areas protected in the North Sea, but there was still some uncertainty about where these areas are located.
- **Ecosystems**
    - NEV were concerned that if the bycatch of elasmobranchs (particularly starry rays) in the fishery is as thought, then there is a significant removal of long-lived predators from the North Sea, which could have an impact on ecosystem function. Fishing, even with a large trawl mesh, would still catch these species (and in particular the adults that are important for reproductive success of elasmobranch populations).
    - It was noted that skate and ray are “indicator species” under the EU Marine Strategy Framework Directive and thus the status of these species can affect the attainment of “Good Environmental Status”; however this was felt to provide limited legal protection.

- **Principle 3**
    - Concern was raised that reporting of non-target species IDs is not adequate.
    - Concern was also raised that the EU Plan of Acton for sharks should by now have led to the widespread adoption of bycatch protocols but that this has not yet happened.
    - The incidents involving the auction of a common skate and the presentation of a porbeagle shark for auction, although not associated with the fisheries under assessment, raise general concern about awareness of the elasmobranch conservation rules in place, and also the level of supervision and monitoring of vessels and supply chains.

4. IFC Assessment Team Questions

Assessment team questions for stakeholders

Principle 1 – stakeholder views on stock status.
Principle 2 – stakeholder views on impacts on P2 components.
Principle 3 – stakeholder views on fishery governance.

5. Other issues

(e.g. any other stakeholders we should contact, any written submissions to follow?)

NEV agreed to provide a list of ETP species in the Netherlands to the assessment team.

11.2.6.1 Assessment team response

The information presented during this interview has been taken into account in the assessment of this fishery.

11.3 Note: Interview opening and closing

The opening and closing information provided by the assessment team during stakeholder interviews is presented below.

11.3.1 Opening information

Lead Assessor to introduce MSC assessment to stakeholders, including:

- ✓ Purpose of meeting – information collection and identification of issues relevant to fishery assessment.
- ✓ Introduce or have the Assessment Team introduce themselves and their backgrounds.
- ✓ Provide either a written or verbal summary of MSC Principles & Criteria.
- ✓ Describe the Assessment Process being followed; Default Assessment Tree / Amended Assessment Tree / RBF.
- ✓ Confirm the Unit of Certification (and also explanation of the client /client group).
- ✓ Affirm that Intertek Fisheries Certification is an independent CAB accredited to carry out MSC assessments.
- ✓ State that information that stakeholders provide will be taken into account in the assessment.
- ✓ Stakeholder comments should, where possible, be substantiated with evidence.
- ✓ MSC require a record of the meeting to be kept (CR 27.15.3.2) and explicit responses from the team to stakeholder verbal and written submissions to be sent to stakeholders prior to publication of the Public Comment Draft Report (CR 27.15.3.3).
- ✓ Confidentiality of information is restricted to:
    - ✓ Financial transactions about certification; the financial affairs of individual companies or information that may lead to this information being known; Information that is the subject of relevant national privacy or data protection legislation in the client‘s country.
    - ✓ Information that stakeholders cannot share, shall not be used in the assessment.
    - ✓ If the CAB wishes to use information that the owner requires to be kept confidential, the CAB shall: Apply to the MSC for approval to keep the information confidential to the client, the CAB and the MSC.
- ✓ Access to information:
    - ✓ The CAB shall ensure that un-published key information necessary to enable a stakeholder who is not party to this information to be able to properly review the

logic used by the team in their conclusion about a particular PI score is made available electronically, in printed form or otherwise for viewing by stakeholders.

- ✓ The CAB shall make un-published (non confidential) key information available before the posting of the Public Comment Draft Report, and shall ensure that the information is available throughout the subsequent stages of the assessment process.

✓ Provide an estimate of the timescale for completion of the assessment, including further opportunities for stakeholder input.

11.3.2 Closing information

Lead Assessor:

- ✓ Summary of key points – stakeholder to confirm in writing (sign if hard copy)
- ✓ Are comments to be attributed?
- ✓ Timescale for completion, including further opportunities for stakeholder input

11.4 Written information submitted to the assessment team

11.4.1 Osprey Group ETP species protocol

Protocol bijvangst ETP soorten.

ETP soorten zijn bedreigde en beschermde soorten. Voor de Osprey group gelden in de eerste plaats alle zeezoogdieren en vogels als ETP soorten. Ten tweede worden soorten die beschermd worden door Nederlandse wetgeving of internationale overeenkomsten beschouwd als ETP soorten. Ten slotte worden ook soorten die opgenomen zijn in Appendix 1 van het CITES verdrag als ETP soort aangemerkt.

No.	Nederlandse naam	Engelse naam	Wetenschappelijke naam
1	**Alle zeezoogdieren**	**All marine mammals**	
2	**Alle vogels**	**All birds**	
	Zeezoogdieren		
3	Bruinvis	Harbour porpoise	*Phocoena phocoena*
4	Gewone zeehond	Harbour seal	*Phoca vitulina*
5	Grijze zeehond	Grey seal	*Halichoerus grypus*
	Haaien		
6	Doornhaai	Spurdog	*Squalus acanthias*
7	Reuzenhaai	Basking shark	*Cetorhinas maximus*
8	Haringhaai	Mackerel shark, Porbeagle	*Lamna nasus*
9	Witte haai	White shark	*Carcharodon carcharias*
10	Zee-engel	Angelshark	*Squatina squatina*
	Roggen		
11	Vleet	Flapper or Common skate	*Dipturus batis*
12	Grote Manta	Giant Manta ray	*Manta birostris*
	Vissen		
13	Steur	Sturgeon	*Acipenser sturio*
14	Elft	Allis shad	*Alosa Alosa*
15	Guitaarvissen	Guitarfishes	*Rhinobatidae*

Procedure bij de vangst van ETP soorten:

Voor de bijvangst van **zeezoogdieren** (zeehonden, walvissen en dolfijnen)

Stap 1: Bepaal de soort

Stap 2: Stel lengte en gewicht vast

Stap 3: Maak een aantal foto's van verschillende kanten en sla die op.

Stap 4: Zet het dier zo snel mogelijk en onbeschadigd weer terug.

Stap 5: Vul de bijvangst in op het ETP registratie Formulier

Stap 6: Geef de bijvangst door aan het kantoor van Osprey group.

Stap 7: Stuur de foto's bij thuiskomst door aan kantoor Osprey group

Voor de bijvangst van **vogels**:

Stap 1: Bepaal de soort

Stap 2: Bij onbekende soort of twijfel, maak een aantal foto's van verschillende kanten.

Stap 3: Zet het dier zo snel mogelijk en onbeschadigd weer terug.*

Stap 4: Vul de bijvangst altijd in op het ETP registratie Formulier

Stap 5: Stuur de foto's bij thuiskomst door aan kantoor Osprey group

Voor de bijvangst van **overige ETP soorten** uit de tabel.

Stap 1: Bepaal de soort

Stap 2: Bij onbekende soort of twijfel, maak een aantal foto's van verschillende kanten.

Stap 3: Zet het dier zo snel mogelijk en onbeschadigd weer terug.*

Stap 4: Vul de bijvangst altijd in op het ETP registratie Formulier

Stap 5: Stuur de foto's bij thuiskomst door aan kantoor Osprey group

12 Appendix 5: MSC Correspondence

12.1 Advice from MSC on Determination of ETP species

12.1.1 Query posted on MSC Interpretation log by IFC

From: MSC Interpretation Log [mailto:alison.roel@msc.org]
Sent: 14 July 2015 12:20
To: Stephanie Good
Subject: [MSC Interpretation Log] New Question for

Dear stephanie.good,

Tim posted a new question for :

> Should species that are listed under the prohibitions set out in EU Fisheries Regulations be regarded as ETP species?
>
> This is a request for guidance on whether (and to what extent) species that are recognised in EU legislation (either Regulations or under certain circumstances Directives) should be considered ETP species under the MSC Certification Requirements.

This question has arisen from (but is not limited to) the wording of Article 12 of EC Regulation 104/2015. This Article prohibits EU vessels "to fish for, to retain on board, to tranship or to land the following species" and then goes on to list various species which are either rare or in decline.

NGOs within Europe consider that listing here should make the species "ETP" in MSC assessments.

The following information is relevant to this query:-

MSC CR Context
The MSC CR (both v1.3 and v2.0) defines ETP species in a similar way (at CB3.11.1 and SA3.1.5 respectively):-

> *"2The team shall define ETP (endangered, threatened or protected species) as follows:*
> *a. Species that are recognised by national ETP legislation….."*

The CR does not specify what is meant by the following terms, and this lies at the heart of this query:-

- "***recognised***" – what does this mean?
- "***national***" – does that mean legislation that is made by a national body or that which is enforceable within a nation?
- "***ETP legislation***" – does this mean, for instance that a species that is a rare species and is protected in the UK under (say) the Wildlife & Countryside Act should be considered an ETP species, but one that is protected for the same reasons under the Salmon & Freshwater Fisheries Act should not? Or does "ETP legislation" simply mean legislation that has been put in place to protect species because they are endangered, threatened or protected?

Legal context – "direct applicability"

Within the European Union, certain EU legislation is "directly applicable". This means that the EU legislation applies within Member States as if it was national law, with no need for national laws to transpose the EU legislation. This "directly applicable" legislation includes the EU Treaties, EU Regulations (and also Directives or parts of such that have passed their transposition deadline without Member State action).

To all intents and purposes, therefore, "directly applicable" legislation is equivalent to national law.

Legal context – territorial waters and Member State lethargy
An added dimension to consider here is that legislation made by an EU Member State can only apply either to all vessels operating in its Territorial Waters or to its own national vessels wherever they are. By contrast, EU Regulations apply throughout the EU, and are enforceable (by Member State authorities) against any vessel working in the EC EEZ. This means that EU legislation is a more effective way of providing ETP protection than Member State legislation.

Further to this, the principle of "direct applicability" of Directives was established in order to address the issue of Member State lethargy. Many years ago, several Member States tried to get out of implementing EU Directives simply by failing to make the national legislation required to transpose the Directive in question. The ECJ ruled that this didn't get them off the hook, and that if a Directive was not transposed before the deadline set out in the Directive, its provisions would become "directly applicable".

The combination of uncertainty about the ETP definition in the CR, coupled with the action that the EC has recently taken to protect certain species has brought this matter to the fore.

Consequences
The MSC's view on this matter is important to ensure harmony between MSC assessments within the EU. Whether it is considered that "directly applicable" EU legislation does or does not meet the qualifying criteria for identifying ETP species, there are some far-reach consequences for the MSC standard, including:-

If it is considered that EU legislation that is "directly applicable" does not meet the qualifying criteria for identifying ETP species, then this means that the ETP regime within a UoC/UoA is that made up of the patchwork of Member State provisions. It also means that any MS lethargy would constrain the list of ETP species (potentially rewarding such lethargy).

On the other hand, if it is considered that "directly applicable" EU legislation does meet the ETP criteria, then all MSC fisheries within the EU will need to keep a close eye on changes to such legislation, including to the prohibitions set out in the annual TAC Regulation.

Guidance on this matter is therefore important to ensure harmony and to maintain the MSC Standard.

If you wish to answer it please go to http://msc-info.accreditation-services.com/?post_type=question&p=1901.

Thanks,
MSC Interpretation Log

12.1.2 Response from MSC

From: Stephanie Good [mailto:stephanie.good@msc.org]
Sent: 03 August 2015 16:35
To: Tim Anderton-Tyers Intertek; James Andrews Intertek
Cc: Dan Hoggarth
Subject: RE: ETP interpretation query

Dear Tim & Jim,
Below is MSC's official response to your interpretation query, also on the interpretations website here: http://msc-info.accreditation-services.com/questions/should-species-that-are-listed-under-the-prohibitions-set-out-in-eu-fisheries-regulations-be-regarded-as-etp-species/#answer-1987

The MSC recognise that there is currently lack of clarity in CR v1.3/FCR v2.0 on designating ETP species, including interpretation of the terms: "recognised", "national" and "ETP legislation" and are currently undertaking a review of ETP instruments and current requirements, which will be presented to the Technical Advisory Board (TAB) in December 2015 so further clarifications on these terms and examples of interpretation may be provided after this point.

With regard to your query on whether species that are recognised in EU legislation should be considered ETP species under the MSC Certification Requirements, the MSC notes that EC Regulations are binding so all Member States are required to implement them. However, Directives and Decisions, such as the EU Marine Strategy Framework Directive, first need to be transposed by Member States into national law before they are considered binding. On this basis, MSC suggests that legal obligations established by EC Regulations be considered by assessment teams as equivalent to a species being recognised by national ETP legislation, and that species included on these Regulations should be scored as ETP.

As ETP species include 'protected' species (not just endangered/threatened), there may be instruments other than those created specifically for protection of wildlife/endangered species where this protection is provided. For example EC Regulation 104/2015 setting fishing opportunities for 2015 lists "prohibited species" such as certain sharks, skates and rays (Article 12). The intent of prohibiting these species (or setting a '0' TAC for them as done prior to 2015) is clarified in the introduction to this document as being particularly because these species have a poor conservation status and that discarding will be beneficial for them due to their high survivability, see point 6:

For some years, certain TACs for stocks of elasmobranchs (skates, sharks, rays) have been set at 0, with a linked provision establishing an obligation to immediately release accidental catches. The reason for this specific treatment is that those stocks are in a poor conservation status and, because of their high survival rates, discards will not raise fishing mortality rates for them; discards are deemed as beneficial for the conservation of these species. As of 1 January 2015, however, catches of these species in pelagic fisheries will have to be landed, unless they are covered by any of the derogations from the landing obligation foreseen in Article 15 of Regulation (EU) No 1380/2013. Article 15(4)(a) of that Regulation allows such derogations for species in respect of which fishing is prohibited and which are identified as such in a Union legal act adopted in the area of the Common Fisheries Policy. Therefore, it is appropriate to prohibit the fishing of these species in the areas concerned (emphasis mine).

This being the case, the MSC recommends that the assessment team consider the listing of species as prohibited in Article 12 of EC Regulation 104/2015 as equivalent to being recognised by national ETP legislation. However, the MSC recognises that not all species that have a 0 TAC set for a given year (e.g. in other instruments) should normally be considered as ETP, unless the intent of doing so

is stated in the instrument as being to specifically to protect the species because of its poor conservation status.

As mentioned above, other instruments (EU Directives and Decisions) and national legislation that may not have been designed specifically for ETP species will be considered as part of the review of ETP instruments. This review will feed into the development of interim interpretations that will be used to create clearer requirements, definitions and examples of when species should be designated as ETP in the next Fishery Standard Review process (2018-19).

Best regards,
Stephanie

Stephanie Good

Senior Fisheries Certification Manager

Marine House | 1 Snow Hill | London | EC1A 2DH | United Kingdom

Direct: + 44 (0)20 7246 8926 | Main: + 44 (0)20 7246 8900 | Fax: + 44 (0)20 7246 8901 | Email: stephanie.good@msc.org

13 Appendix 6: Surveillance Frequency

The MSC Fisheries Certification Requirements v2.0 specify that after each certification, surveillance and re-certification the Certified Accreditation Body (CAB) shall determine the level at which subsequent surveillance of the fishery shall be undertaken.

The surveillance levels available under the MSC Fisheries Certification Requirements are reproduced below in Table 13.1 of this report.

The MSC require that surveillance audits should be conducted the default level, unless the team decides on a reduced programme (for instance because there has been good progress towards meeting the conditions; there is confidence that the CAB can verify information remotely; and/or that there are few (or no) conditions).

Table 13.1: Surveillance levels (table reproduced from MSC FCR, Table 5)

Surveillance level	Surveillance requirements
Level 6 *Default Surveillance*	4 on-site surveillance audits
Level 5	3 on-site surveillance audits 1 off-site surveillance audit
Level 4	2 on-site surveillance audits 2 off-site surveillance audits
Level 3	1 on-site surveillance audits 3 off-site surveillance audits
Level 2	1 on-site surveillance audits 2 off-site surveillance audits 1 review of information
Level 1 *Minimum Surveillance*	1 on-site surveillance audit 1 off-site surveillance audit 2 review of information

The assessment team has concluded that a **Default (Level 6) Surveillance level** is appropriate for this fishery, with annual on-site surveillance audits throughout the period of certification.

14 Appendix 7: Code of Conduct Osprey Trawlers Services

Introduction

This Code of Conduct states the rules, schemes and operational practices that MFV in the Osprey Trawlers Ltd must operate to. All ships must comply to these demands in order to maintain their North Sea plaice MSC (sub)certification inside the Group. This Code has been signed by all skippers and owners of the vessels that are member of the Osprey Trawlers Group.

14.1 Objectives

14.1.1 The objectives of this Code are to:

Objective 1 promote the ecologically sustainable development of the North Sea plaice fishery and the sustainable use of living aquatic resources and their environments;
Objective 2 establish practices, in accordance with the relevant regulations, for responsible fishing, taking into account relevant biological, technological, social, environmental and commercial factors;
Objective 3 provide standards of conduct for all persons involved in the Osprey Trawlers Group;
Objective 4 promote best practice in the Osprey Trawlers twin-rigged plaice fishery through appropriate and relevant training

14.2 General principles

The Osprey Trawlers Group will:
Principal 1 strive to conserve and protect aquatic ecosystems;
Principal 2 minimize the catch of non-target species, the incidental catch of non-utilised species, marine mammals and seabirds;
Principal 3 will comply with all applicable laws and regulations governing their harvest and post-harvest activities;
Principal 4 will strive to implement clean production principles including minimizing any wastage of resource;
Principal 5 will participate in the development and application of selective fishing gear and methods, including those that reduce unwanted by-catch and discards;
Principal 6 will strive to resolve disputes in a timely and cooperative manner;
Principal 7 will plan, prepare and implement appropriate and relevant training packages for those who work on board of vessels of the Osprey Trawlers Group.

14.3 Specific principles and measures

The signatories of this Code undertake that:

OTMG 1. they will establish a procedure for the training of crewmen in the code of conduct, the management system and legal and administrative requirements. Records will to be kept of training;

OTMG 2. their vessel participates in the fishing for litter scheme (retain material such as derelict fishing gear and other garbage recovered during routine operations for disposal on shore);

OTMG 3. their vessel participates in the SFAV scheme (This scheme of the "Stichting Afvalstoffen Visserij" covers the disposal of bilge water, paint, waste diesel, fuel oil, engine oil etc);

OTMG 4. their vessel will fish only in ICES subdivision IVa and IVb and will stay outside 12 nautical mile limits;

OTMG 5. they will respect closed areas in the framework of Natura 2000 when they are implemented (become law), until closed areas are implemented in the framework of Natura 2000 they will not fish in the voluntary closed areas as agreed in 2010 with WWF for the first MSC certification period (see attached map).

OTMG 6. their vessel will not fish on plaice during the spawning season of plaice and therefore will operate a fishing season that opens on 1 March and closes on 15 December;

OTMG 7. their vessel will only fish from Monday to Friday. This means that they will not fish (no nets in the water) from Saturday 06:00 AM to Monday 06:00 AM. Other MFV operations are permitted during 06:00 Sat – 06:00 Mon, i.e. steaming to and from fishing grounds.

OTMG 8. they will comply with all applicable laws and regulations governing their fishery;

OTMG 9. their vessel belongs to a PO and operates under PO rules;

OTMG 10. they will only use the prescribed fishing gear needed for the MSC standard as described in this Code (see below);

OTMG 11. they will comply with all measures to avoid catches of undersized cod (eg cod avoidance scheme, real time closures (RTC) already operational in England and Scotland):

OTMG 12. they will comply with (voluntary) measures to avoid catches of juvenile plaice when operational (Dutch PO plaice RTC scheme)

OTMG 13. they if requested will participate, with researchers and managers, in the collection of timely and reliable statistics needed for the conservation and management of fish stocks;

OTMG 14. they will conduct trial modifications to the fishing gear to minimize discards;

OTMG 15. they will train a crew member on the recognition of PET species;

OTMG 16. they will record all interactions with protected, endangered or threatened (PET) species. Where significant impacts are identified they will make a clear plan of action to improve the situation and accordingly amend to this Code;

OTMG 17. all their landings will be registered at a fish auction in the Netherlands or the United Kingdom

OTMG 18. No member/vessel will be accepted into the group without signing this Code;

OTMG 19. they will pay a fine of 2.500 Euro to Osprey Group Ltd in case of a first violation of the measures in this Code;

OTMG 20. they will, in case of a second violation of the measures in this Code, lose the right to land MSC certified plaice for a period of one month;

OTMG 21. they will, in case of a third violation of the measures in this Code, lose their membership of the Osprey Group and their product can no more be landed as MSC certified fish.

OTMG 22. they will annually review the code of conduct to ensure its continued use, applicability and relevance and additional measures may be evoked as the Osprey Trawlers Group deems necessary

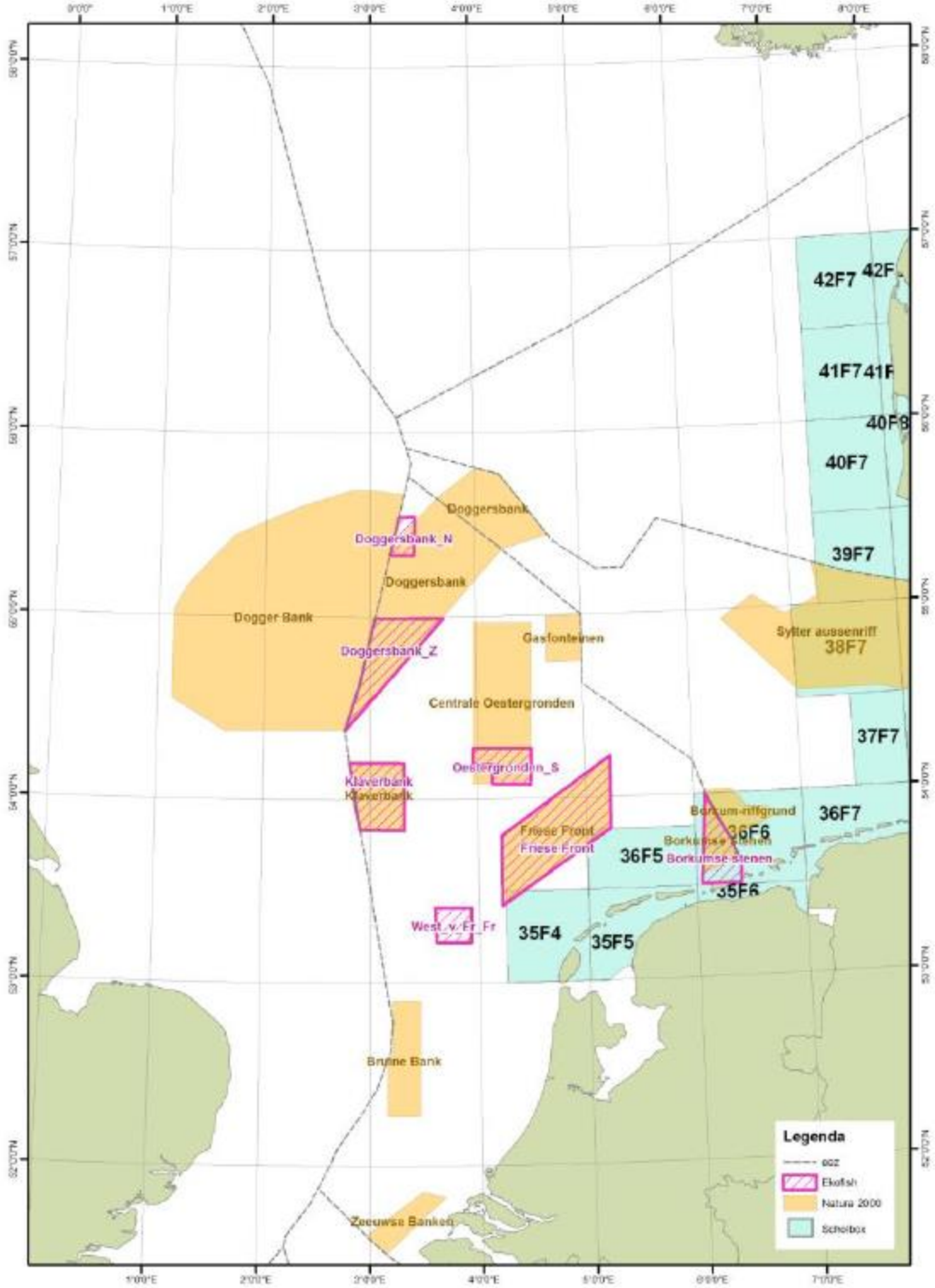
OTMG 23. amendments and acceptance of new members will be decided on by majority vote.

OTMG 24. this Code will be signed by all vessels skippers and owners;

Prescribed fishing gear

Gear description:	Twin rigged otter trawl
Sweeps:	250-300 m steel wire sweeps with 70 mm rubbers and a larger 150 mm rubber every 50m
Footrope:	between 55 and 70 m covered with 200 mm rubbers:
Mesh size:	Either minimum of 95 mm mesh side or minimum of 115 mm mesh size in cod end
Tickler chains:	Maximum of 4 tickler chains (max 13 mm chain material)
Clump:	weight maximum 1300 kg.
Doors:	weight maximum 900 kg each

Vessel nr and name	Signature Skipper	Signature owner
E104 Ansgar		
PW447 Louwe Senior		
H426 Neeltje		
H357 Good Hope		



Map 1. Areas that will be avoided by the Osprey Group. (cross-hatched pink “Ekofish” areas)

15 Appendix 8: Client Agreement

Acoura confirm that the client has reviewed the Draft Report and is in full agreement with the terms of certification detailed therein.

16 Appendix 9: Objections Process

(Decisions arising from an objection to be included here following objections process - if there is no objection, remove this section entirely)

17 Appendix 10: Consultancy

ISO/IEC 17065 defines consultancy as:

3.2 Consultancy

participation in:

a) the designing, manufacturing, installing, maintaining or distributing of a certified product or a product to be certified, or

b) the designing, implementing, operating or maintaining of a certified process or a process to be certified, or

c) the designing, implementing, providing or maintaining of a certified service or a service to be certified

NOTE In (ISO/IEC 17065), the term "consultancy" is used in relation to activities of certification bodies, personnel of certification bodies and organizations related or linked to certification bodies.

If any stakeholder reviewing this report believes that consultancy has been offered by Acoura representatives to this fishery client in the course of this assessment (as defined in ISO/IEC 17065:3.2 above), please advise Acoura head office directly using the contact details below (please include details of any evidence that consultancy has been provided):

Acoura Ltd

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6 Redheughs Rigg
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