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MSC SUSTAINABLE FISHERIES CERTIFICATION

Northern Ireland Pelagic Sustainability Group (NIPSG) Mackerel Fishery

Final Report

October 2016

Prepared For: **Anglo North Irish Fish Producers Organisation Ltd**

Prepared By: **Acoura Marine Ltd.**

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Final Report

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Glossary

ASCOBANS	(Bonn Convention's) Agreement on the Conservation of Small Cetaceans in the Atlanto-Scandian and Baltic.
ACOM	ICES Advisory Committee
ACFA	ICES Advisory Committee on Fisheries and Aquaculture
ANIFPO	Anglo North Irish Fish Producers' Organisation
Bpa	Precautionary reference point for spawning stock biomass
Blim	Limit biomass reference point, below which recruitment is expected to be impaired.
CEFAS	Centre for Environment, Fisheries and Aquaculture Science (UK)
CFCA	EU Community Fisheries Control Agency
CFP	EU Common Fisheries Policy
CR	Council Regulation
DEFRA	Department for Environment, Food and Rural Affairs
EC	European Commission
EEZ	Exclusive Economic Zone
EFF	European Fisheries Fund
ETP	Endangered, threatened and protected species
EU	European Union
F	Fishing Mortality
Flim	Limit reference point for fishing mortality that is expected to drive the stock to the biomass limit
Fpa	Precautionary reference point of fishing mortality expected to maintain the SSB at the precautionary reference point
FAM	MSC's Fisheries Assessment Methodology
FAO	United Nations Food and Agriculture Organisation
HAWG	ICES Herring Assessment Working Group
HCR	Harvest Control Rule
ICES	International Council for the Exploration of the Sea
ITQ	Individual Transferable Quota
IUU	Illegal, unreported and unregulated fishing
LOA	Length Over All
MCS	Monitoring, Control and Surveillance
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield
NEAFC	The North East Atlantic Fisheries Commission
NEA	North East Atlantic
NGO	Non-Governmental Organisation
OSPAR	Oslo-Paris Convention (Convention for the Protection of the Marine Environment of the North-East Atlantic)
P1	MSC Principle 1
P2	MSC Principle 2
P3	MSC Principle 3
PI	MSC Performance Indicator
PO	Producer Organisation
RAC	Regional Advisory Council
RCT3	Software for recruitment prediction
RSW	Refrigerated Sea Water
SAWG	ICES Stock Assessment Working Group
SFPA	Irish Sea Fisheries Protection Agency
SFO	Scottish Fisherman's Organisation Ltd.
SI	Scoring Issue (MSC)
SONAR	Sound navigation and ranging
SSB	Spawning Stock Biomass
TAC	Total Allowable Catch
UK	United Kingdom
UoC	Unit of Certification
UNCLOS	United Nations Convention on the Law of the Sea
VMS	Vessel Monitoring System

VPA	Virtual Population Analysis
WWF	World Wide Fund For Nature
WGECO	ICES Working Group on the ecosystem effects of Fishing Activities
WGRED	ICES Working Group on Ecosystem Description
WGWIDE	ICES Working Group on Widely Distributed Stocks

1 Executive Summary

» This report provides details of the MSC assessment process for the Northern Ireland Pelagic Sustainability Group (NIPSG) Irish Sea Atlantic Mackerel, WOS & NS Herring Fishery (Mackerel component) fishery for Anglo North Irish Fish Producers Organisation Ltd . The assessment process began in July 2014 and was concluded (to be determined at a later date).

» 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 **Eligibility Date** for this assessment is set at the certification date.

» Due to the time elapsed between site visit and the completion of this Public Comment Draft Report, a consultation period was opened for submission of new relevant information from stakeholders (as per CR2.0 7.3.4). No new information was submitted. The team reviewed the various elements of the fishery and changes were made to the report in regards to Principle 1 while Principles 2 and 3 remained unaffected.

» Following a variation approved by the MSC, Principle 1 was rescored using the CR1.3 assessment tree. The new scoring for Principle 1 is contained within the report while the original scoring and a side by side showing the changes in scoring can be found in Appendix 7. Furthermore, this new scoring was peer reviewed, by one peer reviewer, as indicated in Appendix 2. This peer reviewer's table was updated in relation to the new comments on those rescored P1 - PIs.

The assessment team for this fishery assessment comprised of Andy Hough, who acted as team leader and primary Principle 2 specialist; John Nichols who was primarily responsible for evaluation of Principle 1 and Crick Carleton who was primarily responsible for evaluation of Principle 3.

Client strengths

» The NIPSG fishery is well managed and there is close cooperation between NIPSG members and DARD in managing the fishery.

» The fishery has very limited ecosystem effects

» NIPSG actively engage in the scientific process.

Client weaknesses

» The meeting of conditions of certification entails significant international cooperation. NIPSG must add their lobbying to meet conditions with that of other clients, particularly MINSA. Intensive lobbying has not yet resulted in fishing for mackerel within specified limits.

Determination

On completion of the assessment and scoring process, the assessment team concluded that the fishery achieved a score of 80 or more for each of the three MSC Principles, and did not score under 60 for any of the set MSC Criteria. The assessment team therefore recommends the certification of the NIPSG North-East Atlantic Mackerel fishery.

Rationale

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

› It is a clean fishery, with little or no bycatch;

› NIPSG may join with other mackerel clients to achieve sustainable fishing

› EU, UK and Northern Ireland management shows strong regulations and compliance

Conditions & Recommendations

However, a number of criteria which contribute to the overall assessment score scored less than the unconditional pass mark, and therefore triggered two binding conditions, 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 1.3 of the report, but in brief, the areas covered by these conditions are:

- PI 1.2.2 Harvest Control Rules and Tools
- PI 3.1.1 The management system should exist 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
  - Incorporates an appropriate dispute resolution framework.

For interested readers, the report also provides background on 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

All team members listed below have completed all requisite training and signed all relevant forms for assessment team membership on this fishery.

Assessment team leader: Andy Hough

Primarily responsible for assessment under Principle 2

Dr Andrew Hough: Marine Environmental Consultant. Andrew has PhD in marine ecology from the University of Wales, Bangor (1987-90). He has been involved in marine, coastal and freshwater environmental management since 1991, including management of fishery impacts on ecosystems and marine conservation biology, principally in European inshore waters. He was manager of Moody Marine operations within Moody International Certification from 1999 to 2011 with particular responsibility for the implementation of MSC Certification procedures and development of MSC methodologies. He has acted as lead assessor on a large proportion of MSC pre assessments and main assessments during this time, and subsequently as team member and/or lead auditor for various assessments. This has involved stock assessment analysis, evaluation of ecosystem effects and management effectiveness of groundfish, pelagic and shellfish fisheries in various administrations around the world. He now works as a freelance environmental/fishery management consultant and auditor consultancy projects include certification-related policy advice to the Association of Sustainable Fisheries.

Expert team member: John Nichols

Primarily responsible for assessment under Principle 1

Mr John Nichols is a retired UK government fisheries biologist with 42 years' research experience in plankton ecosystems in the North Atlantic specializing in the taxonomy of North Atlantic & NW European plankton including phytoplankton, micro and meso-plankton, ichythoplankton and young fish. He has been a member of ICES working groups on herring, mackerel, horse mackerel, sardine and anchovy assessments; and mackerel and horse mackerel egg surveys. He was also a member of ICES study groups on herring larval surveys and plankton sampling.

He was scientist in charge of numerous research vessel surveys for fish stock assessment purposes and directly involved in the assessment of pelagic and western demersal fish stocks from 1994 to 2000. He has been involved in the publication of over fifty scientific papers and reports more than half of which have been in peer reviewed journals, and the publication of two fish egg and larvae identification keys.

Since retirement from his government post he has participated in a total of 27 different fisheries MSC assessments as the Principle 1 expert plus the re-assessments of many of those fisheries Those assessments include the Thames estuary herring, PFA North Sea Herring, NEA mackerel and Atlanto-Scandian herring, Hastings Fleet Dover sole, the north –east coast of England bass fishery, the SW mackerel hand line fishery, Portuguese sardine, a Newfoundland herring fishery, Canadian Pacific sablefish, various Norwegian and Swedish pelagic fisheries, Faroese and Norwegian saithe fisheries, Faroese, Russian and Norwegian Arctic cod and haddock fisheries and a North Sea plaice and sole fishery,. He has also been a peer reviewer for numerous MSC certification reports by various Certification bodies and has also carried out two MSC pre-assessments and numerous annual audits.

In 2010 he delivered a lecture on The Importance of a Fisheries Interaction with the Ecosystem in the MSC Certification Process' at an international Safe Seas conference in Portugal. In 2014 he successfully completed the four module MSC on line training course, passed the exam and was certified in the role of an MSC Fishery Assessment Team Leader. Elected as a Fellow of the Society of Biology in July 2014.

Expert team member: Crick Carleton

Primarily responsible for assessment under Principle 3

Crick Carleton has over thirty years' experience in fisheries management, policy and development, drawing on academic qualifications in both natural sciences and economics (zoology and technological economics), and work as a fishery officer and full-time fisheries consultant. He is the founder and Chief Executive of Nautilus Consultants. He has advised at senior levels in national government, has worked

with the senior management teams of public sector bodies, and advised corporate managers on various aspects of policy, reform, development and improved decision-making.

Crick has regularly contributed to the formulation of policy in the matter of fishery sector management, sustainable development, international trade, the rules governing public agency operation and support to private sector development, and the rules governing competition between public and private bodies. He balances an increasing workload within Europe with restructuring and privatisation work in emerging and transition economies in both temperate and tropical locations around the world. He is an experienced facilitator, works extensively with fishing communities and businesses, and regularly mediates in a range of sensitive management and development situations. He is based in the Scottish borders.

He has actively supported the evolution of the MSC standard, and participated in the Airlie House revision of the MSC's Principles and Criteria to the current standard. He has contributed to debate on the application of the MSC Ps & Cs to small-scale fisheries and aquaculture (including participation, at the invitation of WWF, as a consultant in its Seattle workshop on certification of small-scale fisheries).

2.1.1 Peer Reviewers

Peer reviewers used for this report were Stephen Lockwood and Mike Pawson.

Mike Pawson retired as senior fisheries advisor at Cefas, Lowestoft, after 39 years carrying out biological research and providing scientific advice to Defra, the EC and other national and international organisations on fish stock abundance, technical conservation measures and fisheries management regulations, and on related monitoring, sampling, survey and research programmes. Between 1974 and 1980 he initiated and led acoustic surveys for blue whiting and mackerel, and trawl surveys in the North Sea and, from 1980 to 1990, designed and managed MAFF's coastal fisheries programme, implementing biological sampling, trawl surveys, a fishermen's logbook scheme and socio-economic evaluation of sea bass fisheries. Between 1990 and 2002 Mike led the Cefas Western demersal team, providing analytical assessments and management advice for 12 finfish stocks including hake and, since 2002, directed and managed the assessment of salmon and eel stocks in England and Wales and provided scientific advice on their conservation.

During this time he was co-ordinator of the Anglo-French English Channel Fisheries Study Group (1989-1997), and chaired the ICES Southern Shelf Demersal Stock Assessment Working Group (1996-98), Seabass Study Group (2000-04) and Elasmobranch Study Group (2001-02), and scientific and technical meetings for the EC's hake recovery plan (2000). He initiated and managed EU-funded multi-national projects on methods for egg-production stock biomass estimation, bio-geographical identity of English Channel fish stocks, bio-economic modelling of Channel fisheries, development of assessment methods for elasmobranchs and eels, and on marine recreational fishing. Since his retirement from Cefas in 2007, Mike has taken part in six Marine Stewardship Council fishery assessments. Mike has provided scientific evaluation, quality assurance and advice to several national and EC funded projects on fisheries biology, monitoring and assessment, and one of his major roles over the last 15 years has been peer-reviewing scientific papers, project proposals, reports and manuscripts in preparation, and 35+ MSC assessments. All of Mike's work has been published in refereed Journals, in ICES and EC working group reports, and in contract reports.

Dr Stephen Lockwood is an independent marine environment consultant with over 40 years' experience of marine fishery and environmental research and management. From 1967 to 1999 he was a government fishery scientist at the Fishery Laboratory (now Cefas) Lowestoft and then Conwy, North Wales. His research covered fishery coastal ecology, stock assessment and management, and fishery interests in coastal zone management. As a consultant he has prepared environmental impact assessments for a variety of coastal and offshore developments and contributed as a peer reviewer, assessment team member and annual surveillance auditor for numerous UK, European and North American fisheries seeking MSC certification.

2.1.2 RBF Training

Andrew Hough has been fully trained in the use of the MSC's Risk Based Framework (RBF).

RBF was not used for this fishery assessment.

3 Description of the Fishery

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

Acoura Marine 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 unit of certification for the fishery under consideration is as set out below.

The fishery assessed for MSC certification is defined as:

UoC 1

Species:	Mackerel (*Scomber scombrus*)
Stock:	Northeast Atlantic mackerel
Geographical area:	ICES Areas VI, VII, IVa.
Harvest method:	Mid-water Pelagic Trawl
Management System:	Cooperative management between EU member states and Norway, advised by ICES
Client Group:	NIPSG
Other Eligible fishers	Member of NIPSG and any other UK producer organisations, fisheries organisations, or individual fishers who have not yet signed the Certification sharing mechanism

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

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

3.1.1 Scope of Assessment in Relation to Enhanced Fisheries

No enhancement activities take place in relation to the North East Atlantic mackerel stock.

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

Mackerel is native to the North East Atlantic.

3.2 Overview of the fishery

3.2.1 Anglo North Irish Fish Producers Organisation Ltd

Fishery Ownership

The Northern Ireland Pelagic Sustainability Group (NIPSG) is a group established to develop and promote sustainable practices within the Northern Ireland pelagic fleet. It is represented by the Anglo North Irish Fish Producers Organisation (ANIFPO), based in Kilkeel, Northern Ireland. The Northern Ireland fishing industry is based principally around the ports of Kilkeel, Ardglass and Portavogie along the eastern coast between Belfast and the border with the Irish Republic.

The fleet currently forming the UoC comprises the Voyager, a large (75m) RSW pelagic trawler, and a pair team, the Havilah and the Stefanie-M (50m). These vessels are Northern Ireland owned and registered. Because of the size of these vessels in relation to available harbour and landing facilities, the Voyager is based at Lerwick in the Shetland Isles, and the pair team at Bangor Marina to the east of Belfast. The Voyager forms an integral component of the UK large vessel pelagic fleet operating primarily out of Lerwick and Fraserburgh. Its main ports of call are Lerwick (Scotland), Killybegs (Republic of Ireland), and Lissahally (by Londonderry, Northern Ireland), and ports in Denmark and Norway. The pair team operates more locally – in the Irish Sea, and to the west of Scotland and west of Ireland. Landings are made mostly to Northern Ireland through Bangor, Warren Point (Carlingford Lough) and Kilkeel.

The Anglo-North Irish Fish Producers Organisation (ANIFPO) was founded in 1984 as a non-profit making co-operative and has its headquarters located alongside the harbour in Kilkeel, Co. Down. ANIFPO provide a range of services to Northern Ireland fishermen, especially focused on the area of quota management and representation but increasingly also in relation to marketing. ANIFPO member vessels are based in Annalong, Ardglass, Kilkeel and Portavogie, the main fishing harbours along the County Down coast in Northern Ireland. Members' vessels range in size from over 70 metres to under 10 metres in length and actively fish in waters all around the UK and Ireland, using a variety of fishing methods such as trawling and crab/lobster potting, to target a wide range of species. The most important catch for the majority of ANIFPO member vessels is Nephrops or Dublin Bay Prawns, which are landed on a daily basis into local ports. ANIFPO is committed to promoting sustainable fishing methods and is involved in a variety of projects including the Sea Fish Industry Authority's Responsible Fishing Scheme.

ANIFPO is managed by a Board consisting of eight Directors, who are elected on an annual basis by the membership of the PO. The Board is headed by a Chairman who serves a two year term. The Board meets on a regular basis and is charged with making all policy and management decisions relating to both the day-to-day operations of the PO and the Organisation's Fish Sales Division. ANIFPO is a constituent organisation within the UK's National Federation of Fishermen's Organisations (NFFO) and holds two seats on the NFFO's Executive Committee. Through the NFFO, ANIFPO is involved in a range of national and European forums. Mr Alan McCulla is Chief Executive Officer with responsibility for overseeing and implementing the decisions of the ANIFPO board as well as for representing ANIFPO member's interests at National and European level. Further details about ANIFPO are available at http://www.anifpo.com.

The Northern Ireland Fish Producers' Organisation Limited was formed in 1977. It currently has 120 members all of whom are active fishing vessel owners. Member vessels range in size from 60 metre purse seiners to under 10 metre vessels. The majority of the membership is based in County Down in Bangor, Portavogie, Ardglass and Kilkeel but individual members are also based in Cumbria, Scotland, Isle of Man and on the English East coast. Mr. Dick James is the Secretary/Chief Executive to the Organisation having been involved for some 40 years in fisheries. Mr James actively represents his members' interests in many committees and groups at EU, UK national and regional levels. In its role, NIFPO actively represents its members at national and European level and participates in fisheries management processes and initiatives that are of relevance to its members

History of the Fishery

Mackerel is fished by a variety of fleets ranging from open boats using hand lines on the Iberian coasts to large freezer trawlers and Refrigerated Sea Water (RSW) vessels in the Northern Area. Annual

fishing is typically conducted in quarters. Quarter 1 season starts in January, while the quarter 3 fishery starts in mid-September.

Historically the NE Atlantic mackerel fishery has been exploited by the EU Member States, Norway, the Faroe Islands, and to a lesser extent Russia. Scientific advice on stock management has been provided by ICES, and the setting of annual TACs and quota allocations has been negotiated between the EU, Norway and the Faroe Islands through the Coastal States Agreement under the purview of the NEAFC.

Until a few years ago Iceland conducted a small mackerel fishery within its EEZ, but in recent years this has increased, and it now takes a significant proportion of the overall catch. Multi-lateral discussions between the EU, Norway, Iceland and the Faroe Islands have taken place since 2010, to reach agreement on the apportionment of mackerel quota which includes non-Coastal States countries (i.e. Russia, Iceland and Greenland), but no agreement has been forthcoming. Both Greenland and Russia are also involved in fishing this stock, without a designated quota allocation. A recent meeting (Oct 2014) of delegations representing Norway, the EU and Faroe Islands, Greenland, Iceland and the Russian Federation, consulted on the management of NE Atlantic mackerel for 2015. A consensus could not be found allowing for the accession of other parties to the fisheries arrangement between the EU, Norway and the Faroes on the management of mackerel in the NE Atlantic between 2014-2018.

Subsequently, delegations from Norway, the EU and the Faroes met in Nov 2014 to consult on the management of NE Atlantic mackerel for 2015. As part of the Agreed Record[1], the delegations urged Greenland, Iceland and the Russian Federation to exercise restraint when setting their own mackerel quotas for 2015. Quota shares for 2015 were agreed at this meeting, although these still need to be finalised at the EU Council of Ministers meeting in Dec 2014.

Figure 3-1 Suggested TAC for 2015

Suggested TAC for 2015: 1,054,000 t[2]	Allocation (t)	% of TAC
EU	519,512	49.3
Norway	237,250	22.5
Faroe Islands	132,814	12.6
Sub - total	**889,576**	**84.4**
15.6% of TAC set aside as Coastal State and Fishing Party reserve	164,424	15.6
Total	**1,054,000**	**100**

However, these quota shares assume a TAC of 1,054,000 t, yet ICES advises on the basis of the Norway, Faroe Islands, and EU management plan that catch in 2015 should be between 831,000 tonnes and 906,000 tonnes (ICES Advice September 2014). There is no mention of an allocation of quota for Russia, Greenland and Iceland, although all 3 states caught substantial amounts of mackerel in 2013 (latest [ICES Advice Sept 2014] available complete figures: Russia 80,817t; Greenland 52,783t; Iceland 151,235t; a total of 284,835 t).

[1] CSA 2014b Agreed Record of Conclusions of Fisheries Consultations between Norway, the European Union and the Faroe Islands on the management of mackerel in the NE Atlantic for 2015, Bergen 21st November 2014.

[2] Based on Fpa in ICES 2014 – precautionary approach, as given in: 'Agreed Record of Conclusions of Fisheries Consultations between Norway, the European Union and the Faroe Islands on the management of mackerel in the NE Atlantic for 2015, Bergen 21st November 2014.

Area Under Evaluation

The Units of Certification for the fishery – which clearly detail the limits of the fishery scope in terms of stock, geographic range and fishing method are detailed in section 3.1. The mackerel fisheries evaluated in this report take place in ICES areas VI, VII, IVa.

Figure 3-2 ICES Fishing areas

3.2.2 Species and Fishing Practice

Species type/s

The target species for the fishery under certification is mackerel (*Scomber scombrus*). 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. These include:

- Fishbase: http://www.fishbase.org/Summary/SpeciesSummary.php?id=118
- ICES Fishmap: http://www.ices.dk/marineworld/fishmap/ices/default.asp?id=Mackerel
- Lockwood, S.J. (1988). The Mackerel. Its biology, assessment and the management of a fishery. Fishing News Books Ltd. Farnham, Surrey, England
- Descriptions provided by national scientific bodies, such as:
  - Scottish FRS: http://www.frs-scotland.gov.uk/Delivery/standalone.aspx?contentid=765
  - UK CEFAS: http://www.cefas.co.uk/media/31692/neamackerel.pdf

Northeast Atlantic mackerel (*Scomber scombrus*) is one of the most valuable stocks exploited mainly in a directed fishery for human consumption by the EU as well as Norway, Iceland, Faroe Islands and

Russia. Mackerel in the Northeast Atlantic is a widely distributed pelagic fish that forms dense schools near the surface and plays an important role in the ecosystem, both as predator and prey. It feeds on zooplankton as well as larval and juvenile stages of small fish and molluscs while at the same time being predated upon by whales and larger fish (ICES 2013a).

The stock is distributed over the entire ICES area and consists of three spawning components: a North Sea, a western and a southern component. However, it is assessed by ICES as a single stock since spawning areas are widespread and only the North Sea component is clearly distinct. During the second half of the year the southern and western components migrate to feed in the Nordic Sea and the North Sea where they mix with the North Sea component. In recent years the stock has expanded north-westwards during spawning and summer feedings which seems related to increased stock size, it is yet to be seen whether this is only temporary. On the other hand, high surface temperature in the Nordic seas resulted in a larger feeding habitat for mackerel, and it is probably this, combined with a large stock size, which is responsible for the north-west expansion during summer (ICES 2013a).

More detailed information on the target species is also presented in Section 3.3 of this report, concentrating on those aspects most relevant to this assessment.

Management History

Management aimed at a fishing mortality in the range of 0.15—0.20 in the period 1998—2008. The current management plan aims at a fishing mortality in the range 0.20—0.22. The fishing mortality realised during 1998—2008 was in the range of 0.27 to 0.46. Implementation of the management plan resulted in reduced fishing mortality and increased biomass. Since 2008 catches have greatly exceeded those given by the plan (ICES WGWIDE 2014g).

From 2001 to 2007 the internationally agreed TACs covered most of the distribution area of the northeast Atlantic mackerel. Despite the existence of a management plan agreed upon by the EU, Norway and Faroe Islands in 2008, no Coastal States Agreement/ NEAFC Agreement on the sharing of the stock quotas was in place between 2010 and 2013, when Faroe Islands decided to step out of the international agreement and set quotas unilaterally. In 2014 an *ad hoc* agreement was reached but only involving the EU, Faroes and Norway. In recent years Iceland unilaterally set mackerel quotas which, from 2011 to 2013, amounted to 23% of the scientifically advised fishing opportunity while there was virtually no Icelandic mackerel fishery prior to 2005. Nevertheless there are strong indications that SSB has been increasing and that the stock is at its full reproductive capacity. Current catch levels do not pose a threat to the stock (ICES 2013a).

An overview of the declared quotas and transfers for 2014, (ICES WGWIDE 2014g), is given in Table 3-1 Total removals of mackerel are expected to be approximately 1.4 Mt in 2014, exceeding the recommended upper catch limit for 2014 by about 390 kt. The quota figures and transfers in the table were based on various national regulations, official press releases, and discard estimates.

Table 3-1 Declared mackerel quotas and transfers for 2014

2014 quota component	Expected catch amount (t)
EU (incl. Swedish quota) - Spanish payback - - Other EU payback -	611,205 -9,747 -6,568
Norway	279,115
Russia	116,700
Iceland - Iceland transfer from 2013 -> 2014	147,721 6,908
Faroes	156,240
Greenland	90,000
Discards	4,664
Total	1,396,238

Various international and national measures to protect mackerel are in operation throughout the mackerel catching countries. These include catch limitation (quota), Management plan, area closure (North Sea), area limitation, minimum size, high grading ban, discard prohibition and as of 1st Jan 2015 landings obligation.

Organisational Structure

Until recently Northern Ireland vessels in membership of the NIFPO and ANIFPO Producer Organisations formed a part of the Scottish Pelagic Sustainability Group (SPSG), and as such participated fully in the SPSG MSC assessments for North East Atlantic mackerel, North Sea herring and West of Scotland herring. These fisheries were certified respectively in January 2009, July 2013, April 2012. The Northern Ireland pelagic vessel owners have parted ways with SPSG, and have set up their own grouping, the NIPSG.

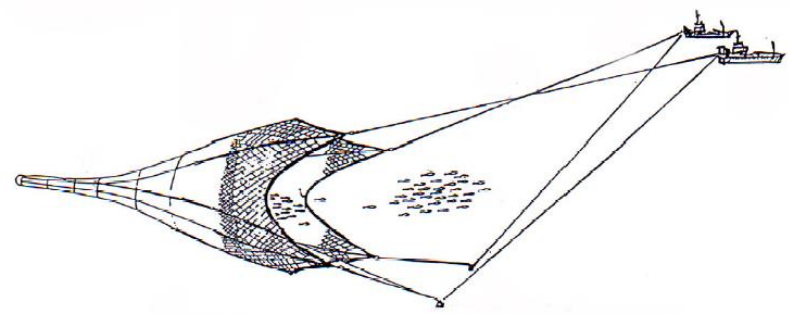
The SPSG mackerel certificate was suspended, along with all other certificates relating to this fishery, in March 2012. The SPSG mackerel certificate has remained in place, subject to development and agreement to an appropriate Action Plan. Since the same issues applied to all the suspended certificates, a grouping of the affected fisheries was formed as MINSA – the Mackerel Industry Northern Sustainability Alliance. The Action Plan is in the name of MINSA and is being taken forward by its members – which until recently included the three vessels that form the client group for this current assessment.

Fishing Practices

The NIPSG fleet comprises pelagic trawlers. These vessels operate both individually and as pairs. The largest of the pelagic trawlers use RSW tanks for storage.

Pelagic Pair Trawl

Figure 3-3 Pelagic pair trawl



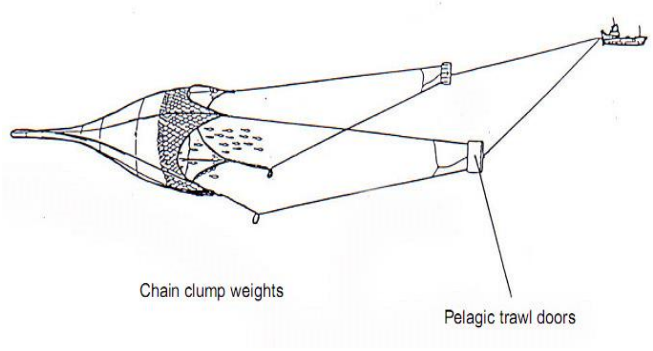
Source: Seafish basic fishing methods handbook

The trawl is designed and rigged to fish in mid-water. The large net consists of a cone shaped body, ending in a cod end with lateral wings extending forward from the opening. The horizontal opening is maintained by two vessels operating a net's width apart whilst the vertical opening is maintained by a weighted ground line and floats on the headline – although these are not always required – depending on the way the net is rigged.

Once fishing, the paired fishing vessels use sonar to locate the mackerel shoal ahead and position the vessels to funnel the fish into the opening of the net. The paired vessels move ahead at speed (around 5 knots) and funnel the fish back into the cod-end of the net. Highly sensitive catch sensors and headline sensors monitor the amount of fish entering the cod-end of the pelagic pair trawl. Once the desired amount of fish is retained in the cod-end the catch sensors 'trigger' and communicate with the vessels; the vessels now move together and haul the net together. During hauling the net wing 'ends' are passed back from one vessel to the other and the net is winched aboard by just one of the vessels. The cod end is hauled alongside the vessel and the fish are pumped aboard into the fish hold by way of a fish pump and water separator.

Pelagic Pair Trawl

Figure 3-4 Pelagic Single Trawl



Source: Seafish basic fishing methods handbook

The vessels are modern and technologically advanced with on-going investment in state of the art technology and modern electronic equipment such as sonar, net and catch monitors, which have greatly improved the precision of this method of fishing. Pelagic trawls are towed at the appropriate level in the water column to intercept target shoals, with gear depth being controlled by altering towing speed and/or warp length. The horizontal opening is maintained by mid-water pelagic trawl doors (or by pair trawling) whilst the vertical opening is maintained by chain on the groundline and floats on the headline – although these are not always required – depending on the way the net is rigged. The midwater trawl used by the Scottish pelagic fleet is designed and rigged to fish in midwater, including in the surface water and is therefore not designed to come in contact with the seabed, and any inadvertent contact is extremely rare – and would risk causing damage to the net. The large net (considerably larger than a demersal trawl net) consists of a cone shaped body, ending in a codend with lateral wings extending forward from the opening. Large mesh in the wings herd the fish before tapering to finer meshes in the square, belly and eventually the cod end.

Larger mesh near the start of the net is designed to facilitate the escape of escape of small fish and also pelagic invertebrates such as jellyfish which have the potential to be impacted by pelagic fisheries.

Table 3-2 List of member vessels

Name	Vessel Reg. No.
Havilah	N200
Stephanie M	N718
Voyager	To be replaced August 2017

Source: client

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

MSC Fisheries Department

Contact Email: fisheries@Acoura.com

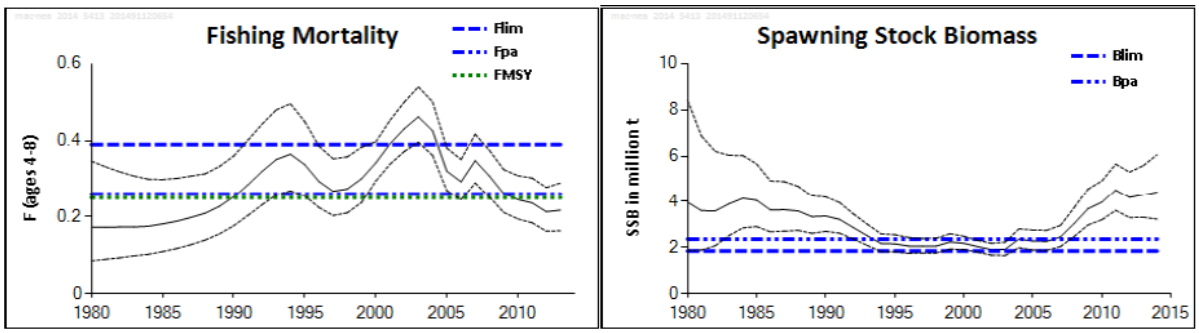
Contact Tel: +44(0)131 335 6662

Historical Fishing Levels

Traditionally, the fishing areas with higher catches of mackerel have been in the northern North Sea (along the border of Divisions IVa and IIa), around the Shetland Islands, and off the west coast of

Scotland and Ireland. The southern fishery off Spain's northern coast has also accounted for significant catches. In recent years, significant catches have also been taken in Icelandic and Faroese waters, areas where almost no catches were reported prior to 2008. In 2013, catches in this area constituted approximately half of the total reported landings. Catches from Greenland were reported for the first time in 2011, and have been increasing since then. In the Icelandic and Faroese fisheries, in the northwestern part of the distribution area, mackerel are sometimes caught together with herring (ICES Advice 2014d).

Figure 3-5 Fishing mortality and spawning stock biomass relative to reference points.



Source: ICES (2014d)

3.2.3 Administrative Framework

User Rights (Legal and Customary Framework)

Rights are clearly codified in legislation concerning participation in fisheries. The UK has enacted relevant European policy, including the Common Fisheries Policy in its own legislation. In drafting legislation, comprehensive consultation is conducted and the results taken into consideration, before the new legislation is submitted to Parliament for adoption. The review of new legislation in parliamentary committees can result in changes to that proposed by the government, but must remain consistent with the CFP. There is no customary fishery based on mackerel.

Legal / Administrative Status

The UK has a well-established system for fisheries management, which over more than 40 years have developed in a consistent manner under the CFP. UK legislation is compliant with the CFP, which itself is in compliance with relevant international agreements, such as the 1982 Law of the Sea Convention and the 1995 Fish Stocks Agreement.

The fishery is also subject to international cooperation for management of the stock. The North East Atlantic Fisheries Commission (NEAFC) exists as a framework for cooperation involving all participants in the fishery. The fishery has been managed recently under a Coastal States agreement between EU, Norway and Faroe Islands.

Involvement of Other Entities

The North East Atlantic mackerel fishery involves a number of traditional coastal states (EU, Norway, Faroe Islands), coastal states which have appreciable mackerel resource due to recent stock expansion (Iceland, Greenland) and others (principally Russia). The mechanisms of attaining agreement on catches between these parties is discussed above.

3.3 Principle One: Target Species Background

Principle 1 of the Marine Stewardship Council standard states that:

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

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

In the following section the key factors which are relevant to Principle 1 are outlined. The primary sources of information on this section are:

a) Life history, stock distribution and stock structure.

The mackerel is a member of the Scombridae family, which includes a large number of species, distributed widely throughout the world. Mackerel (*Scomber scombrus*. L) occurs on both sides of the North Atlantic but there is no evidence of any cross Atlantic migration and mixing of spawning components (Jansen and Gislason, 2011;2013; Jansen et al 2012). In the North-East Atlantic mackerel are widely distributed from the Mediterranean Sea and Iberian Peninsula in the south to Iceland and the Norwegian Sea in the north, from the Porcupine and Hatton banks and Greenland in the west to the Kattegat in the east. (ICES, 2014a). Over this wide area they may be found from over the deep waters off the shelf edge right up to the coastal waters of the whole area, including the English Channel and Irish Sea. At the southern end of their range, from the Mediterranean Sea and Bay of Biscay south, they may be found together with the Spanish mackerel (*Scomber colias*, Gemelin). The two species are quite different in appearance, can be easily identified (Wheeler, 1969) and are landed and recorded separately by Spain and Portugal.

A comprehensive account of the biology of the NEA mackerel is given by Lockwood (1988). The mackerel is an ectothermic fish, meaning that its body temperature does not remain constant, but varies between 1^{o}C and 2^{o} C above the ambient temperature. The mackerel has the most northerly distribution of the family and one of its main distinguishing features is the lack of a swim bladder, which enables it to change depth rapidly. The absence of a swim bladder inevitably renders acoustic surveys difficult to carry out. It is a pelagic fish spending most of its time in mid-water traveling in large dense, shoals, often at great speed and making very long migrations. It is a voracious, opportunistic feeder. Whilst it feeds mainly on the rich supply of zooplankton, in spring and summer, it does also take small pelagic fish including myctophids which migrate up to the near surface waters at night (Greer-Walker and Nichols, 1993). As a result of its diet it is a very oily fish, building up high energy reserves during the spring and summer which it needs both for migration and subsequent gonad development during the following winter. Over this period the oil content of a large mature mackerel may fall from 25% to 30% of the total body weight to less than 10% (Lockwood, 1988).

The stock structure of mackerel occurring in the northeast Atlantic is complex but is well described and understood. It has been the subject of considerable research and debate over the past forty years. Tagging for an example has shown them to be highly migratory with fish tagged off the Iberian Peninsula occurring in the northern North Sea and off the Norwegian coast. The stock is distributed over the whole area from the Iberian Peninsula in the south to Iceland, and the Norwegian Sea in the north. This excludes the less well known Mediterranean spawners. In recent years their distribution has been gradually spreading to the North and West and they are now found in fishable quantities in Icelandic, Faroese and Greenland waters and have been recorded as far north as Svalbard. In spite of their widespread distribution there are clearly defined spawning areas, with southern, western and North Sea spawning components (ICES, 1977, 2013a). However because at certain times of the year these components may mix, they have to be managed as a single stock unit comprised of these three spawning components. Molloy (2004) describes it as '*being a bit like God in a way, being composed of three divine persons – the Father, Son and Holy Ghost, but only one God!*'; three stock components but only one stock. The development of these three components can be separately followed through the triennial egg surveys. These surveys, which began in 1977, have made a major contribution to the large fund of knowledge on the life history, spawning behaviour, physiology and the changes in the distribution of spawning. The spawning areas of the southern and western components form a continuum along and over the shelf edge from the Iberian Peninsula to north-west of Scotland and

Iceland. Of the three components only the North Sea component has a geographically separate spawning area. The Western component is defined as mackerel spawning in the western area (ICES Divisions and Subareas VI, VII, and VIII a,b,d,e). This component currently accounts for about 75% of the entire Northeast Atlantic stock. The Southern component, which comprises about 22% of the stock, is defined as mackerel spawning in the southern area (ICES Divisions VIIIc and IXa). The North Sea component spawns in the North Sea and Skagerrak (ICES Subarea IV and Division IIIaN. It has been severely depleted since the early 1970's but it is still considered to be a discreet unit comprising about 3% of the total NEA stock. The EC sets separate TACs for each of these spawning components. Although the catches of Southern and Western spawners cannot be allocated to spawning components on biological grounds, for administrative purposes, they are separated according to the area in which they are taken. In that context a proportion of Western spawners and some southern spawners are taken in the northern North Sea. All the relevant ICES Sub-areas and Divisions are shown in Figure 3-6. Jansen and Gislason (2013) have recently proposed a new model where the population structure of mackerel is described as a dynamic cline, rather than as connected contingents. Temporal changes in hydrography and mackerel behaviour may affect the steepness of the cline at various locations.

The pattern of migration of the southern and western mackerel components is complex but basically begins in the late winter and early spring when shoals which have been over-wintering in deep water begin their spawning migration back to the continental shelf. Spawning occurs over a very wide area beginning off the Iberian Peninsula in January, progressing northwards and ending up to the north of Scotland and in the North Sea in July. In the southern area and to the west of the British Isles and west of Ireland, spawning tends to be strongly concentrated initially along the continental shelf edge eventually spreading to the shallower waters across the shelf. In the North Sea, the spawning area is discrete and clearly separate from those of the southern and western components. After spawning they move northwards to reach the rich summer feeding grounds in the northern North Sea, Norwegian Sea and in recent years to the waters off Iceland and Greenland. Most of these mackerel will make their way up to the west of the British Isles and Ireland but some will move into the southern and central North Sea via the English Channel. In the autumn the reverse migration occurs. However in recent years it has been observed that many of these fish remain in the northern North Sea until January or February and only then move back to the western area to spawn. The North Sea component, which over-winters in the deep water of the Norwegian trench moves south to the western part of the central North Sea to spawn. It is clear from this pattern of migration why the three components may at times be found together, in particular during summer and autumn in the northern North Sea.

Observed changes in the distribution of the mackerel fisheries led the ICES assessment working group (ICES, 2007a) to the hypothesis that there had been an overall shift to the north over the period 2005-2007. In 2007 ICES held a Working Group to study the integration of environmental information into fisheries management strategies and advice (ICES, 2007b). The Norwegian pelagic ecosystem survey carried out in the Norwegian Sea in summer has also been examining the role of environmental variables in relation to distributional changes and migration of all pelagic species. This survey has been ongoing since 2003 (ICES, 2014a) The distributional changes of mackerel have more recently been investigated by an ad hoc Group on the Distribution and Migration of Northeast Atlantic Mackerel (ICES, 2013b, AGDMM). They found that there has been a substantial geographical expansion of the western spawning component to the north and northwest since 2007 although egg production in the new areas is low. There has also been an extension of the spawning season in the western and southern areas with spawning now beginning earlier and peak spawning occurring about one month earlier (April instead of May). A north and westwards geographical expansion of the summer feeding distribution has also been reported from summer surveys in the Nordic seas (ICES, 2014a). Together with observed changes in the distribution of mackerel, changes in the physical environment have also been recorded on these surveys. Record high summer sea surface temperatures in recent years in the Nordic seas have resulted in a larger potential feeding habitat for mackerel. It is not clear whether these environmental changes, and the resultant distributional changes, are temporary or are likely to persist. These are important factors in relation to the ongoing problems of the equitable international management of the shares in the exploitation of this resource.

The NEA mackerel may begin to mature as one year old fish and about 55% are generally mature by age two, 92% at age three and by age four there is virtually 100% maturity (ICES, 2014a). They are highly fecund producing between 200,000 and 800,000 eggs dependent on fish weight. The eggs are released in batches and the spawning of an individual female may be spread over a few weeks. Nevertheless they are determinate spawners, in that there is a point, during oocyte maturation and

before spawning begins, when all the potentially mature oocytes are present in the ovary and can be counted. This is an important concept in relation to the estimation of SSB from the egg surveys. There has been much research, over the past thirty years, on the biology of spawning in mackerel as a result of the triennial egg surveys. This has been targeted at the estimation of fecundity in relation to the estimation of spawning stock biomass from the plankton egg surveys. As a result there is now considerable knowledge on all aspects of their spawning biology including atresia in the ovaries and seasonal, annual and latitudinal variations in oocyte production. All these studies can be traced back through reference to the most recent egg survey working group report, WGMEGS (ICES, 2014b) or in the extensive bibliography by Molloy (2004). The most recent egg survey workshop (ICES, 2014b) reviewed the earlier work of Lockwood et al (1977, 1981) on the temperature dependent development rates of mackerel eggs. This review was the result of recent studies carried out by Mendiola et al (2006) which reported differences in the rate of development of the important first stage (stage I). The age of stage I eggs in the survey data is an important factor in calculating daily egg production from abundance. Mendiola et al found that stage I duration was generally shorter throughout the temperature range than in the observations made by Lockwood et al which had been used for the calculation of stage I egg production since the triennial egg surveys began in 1977. After careful evaluation of the new development data the historic series of egg production estimates was revised in line with the revised stage I egg duration observed by Mendiola et al (2006).

The mackerel egg is planktonic, spherical, about 1.2mm in diameter with a single round oil globule about 0.3mm in diameter and can be easily identified (Russell, 1976). In the early part of the season they may be distributed down to 200 metres depth, but once a strong thermocline has developed over the spawning areas, by late May, the eggs are found concentrated above the thermocline (Coombs et al, 1981). At 10ºC the larvae hatch in ten days, at a length of 2.5 mm to 3 mm. The larvae develop rapidly in the plankton and eventually arrive as young fish in the shallower near shore areas (Lockwood, 1988). Specific nursery areas are not clearly identified although there are areas, for an example off the south-west coast of Britain and off north-west Ireland where the concentrations of juvenile fish are greatest.

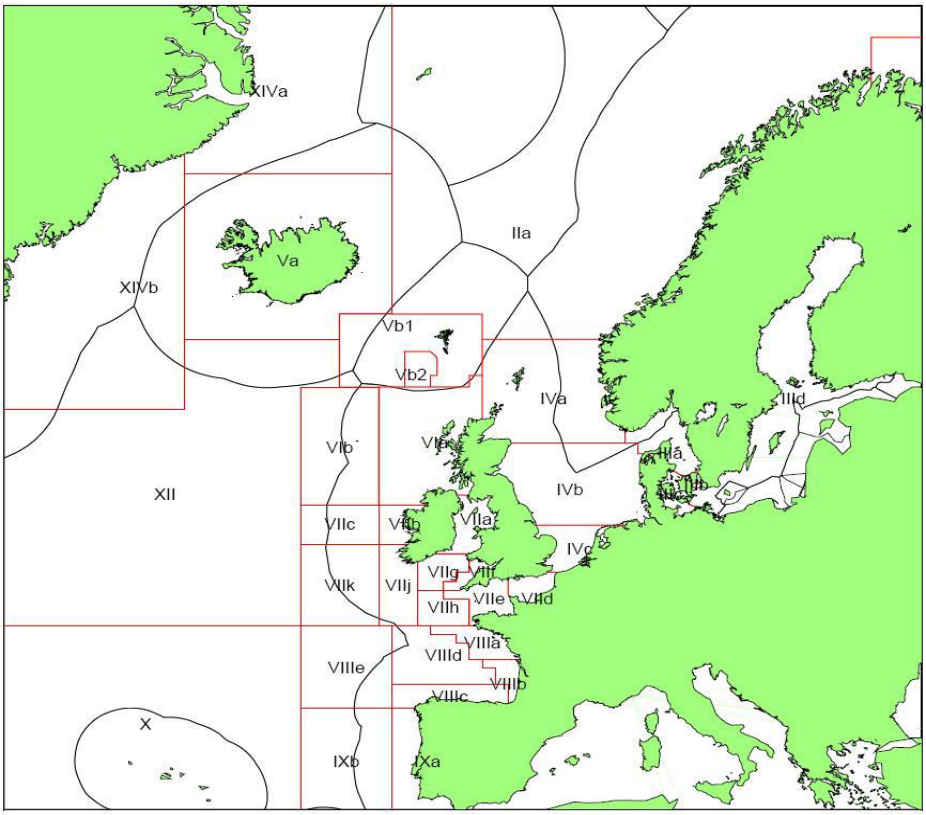
Mean weight at age varies over the whole area of distribution of the NEA mackerel and there is also some seasonal variation in particular related to spawning condition. There has been a decreasing trend in weight at age in the catches since 2005, at 3yrs and older (ICES, 2014a). This trend has continued in 2014. This could be a density dependent effect linked to the big increase in stock size over that period. Table 3.5 shows the weighted mean weight at age of mackerel for the whole distribution area combined from biological sampling in 2014.

Table 3-3 The weighted mean weight (kg) at age for North East Atlantic mackerel, in 2014, from biological sampling of the catch over the whole area of distribution (ICES, 2015a).

Age in years	Weight kg	Age in years	Weight kg
1	0.104	**7**	0.341
2	0.165	**8**	0.388
3	0.199	**9**	0.416
4	0.238	**10**	0.466
5	0.291	**11**	0.458
6	0.390	**12+**	0.506

Source ICES, 2015a

Figure 3-6 ICES Sub-areas and Divisions, and the extent of national Exclusive Economic Zones (EEZs) in the unit of certification area.



b) Stock assessment and stock status

From 1993 to 2012 an Integrated Catch Assessment (ICA) model (Patterson and Melvin, 1996) was used to assess the status of the Northeast Atlantic mackerel stock. This model was widely used for other pelagic stocks within the ICES area. Over recent years concerns have been expressed, within the assessment working group, regarding the ability of this model to take into account the quality of the input data, in particular the unreliability of the catch data. Confidential information made available by working group members suggests that there has been substantial under-reporting of catch data (ICES, 2014a). Simmonds et al (2010) studied the magnitude and precision of unaccounted mortality and suggested that for the period prior to 2007 total catch removals were equivalent to 1.7 to 3.6 times the officially reported landings. Although the situation has improved since 2007 the assessment working group still consider that total removals are likely to be underestimated because of incomplete discards data and unquantified slippage (ICES, 2014a). As a direct consequence the assessment working group in 2013 (ICES, 2013a) concluded that the ICA model was no longer appropriate and did not carry out an analytical assessment. Instead the initial advice for the fishery in 2014 was based on the ICES data limited catch approach.

In the absence of an acceptable analytical assessment model for this important stock, ICES convened a benchmark workshop WKPELA in February 2014 (ICES, 2014c) to address this issue. An important element in the terms of reference for this workshop was '*to agree and document the preferred method for evaluating stock status and (where applicable) short-term forecasts and update the stock annexe as appropriate. Knowledge of environmental drivers, including multispecies interactions and ecosystem impacts should be integrated in the methodology'*

The State Space Assessment model (SAM) was identified early in the process of model exploration as an ideal candidate to replace the ICA model and it was readily available to use (Neilsen and Berg, 2014) This model is now being widely used for the assessment of pelagic species throughout the ICES area and was considered to be entirely suitable for the Northeast Atlantic mackerel assessment. SAM is an age based, fully statistical model in which all the data are treated as observations. The model then estimates observation variances for each data source (catch and survey data) which can

describe how well each data source is fitted in the model and the influence it has on the final outcome. One of the shortcomings of the ICA model was that the only fishery independent data source which could be used was the triennial egg survey data, used as an SSB index from 1992. The SAM model was also able to use two other fishery independent data sources as abundance tuning indices. They were the International bottom trawl survey (IBTS) recruitment index (age '0') from 1998; the International ecosystem summer survey of the Nordic seas (IESSNS) (ages 6-11) from the 2007, and 2010-2014 surveys. Furthermore the basic SAM model was modified, by the benchmark workshop, in order for it to be able to incorporate tagging data from the Norwegian tagging programme (age 2yrs +) for the recapture years 1980 to 2006. The output from the model is presented with a high and low value for the final estimates of SSB, F and Recruitment representing the 95% confidence interval on those estimates (ICES, 2014d).

The listed main features of the SAM model of importance are:

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

Although SAM is now being increasingly used as the preferred assessment modelling framework within ICES, the model is still in its infancy and there are a number of shortcomings. Although the model has been published in a peer reviewed paper (Nelisen and Berg 2014), there is currently no manual on its use. It is recognised that a high degree of knowledge of both statistics and programming is required to run it. These issues make SAM difficult to understand and implement for non-experts. ICES recognise that there is currently a limited pool of experts available as a knowledge resource. Furthermore the labelling of the model outputs by ICES, in their advice documents, is not clear and easy to understand. This is an issue which could and should be simply resolved.

Using the SAM model, the benchmark workshop carried out an exploratory assessment of the NEA mackerel stock using data from the 2012 fishery. Official catch data for the 2013 fishery was not available at that time. The benchmark workshop (ICES, 2014c) also provided updated advice, in May 2014, for the fishery in 2014.

As a result of that exploratory assessment process the new model, together with modifications made by the workshop, was recommended to the assessment working group for the assessment of the stock status of NEA mackerel in 2014. The assessment working group met in August 2014 (ICES, 2014a) and the recommendations of the benchmark workshop, to use the SAM model, were accepted. As a result they carried out an updated the assessment, using revised and new data available to them. The new data used in the updated assessment compared to the benchmark assessment were:

- the addition of the 2013 catch at age, weights at age in the catch and in the stock, the maturity ogive and proportion of fishing mortality occurring before spawning.
- the addition of the 2013 data for the IBTS recruitment index.
- the addition of the 2014 data for the IESSNS indices.
- revision of the entire egg survey SSB time series index (the benchmark workshop had only revised the 2013 survey data)

The 2015 assessment working group met in August (ICES, 2015a) and followed the same revised procedure as the 2014 assessment working group. The revised estimates of SSB dating back to 1980 are shown in Fig. 3.9. SSB in 2015 was estimated at 3.62 million t with a variance range from a low of 2.69 million t to a high of 4.87 million t (Figure 3.10). The revised estimate of SSB in 2012 was 3.45 million t compared with the last ICA assessment of 2.68 million t. The 2015 assessment of stock status at spawning time in 2015 showed a decrease of 540,000t compared with the previous year.

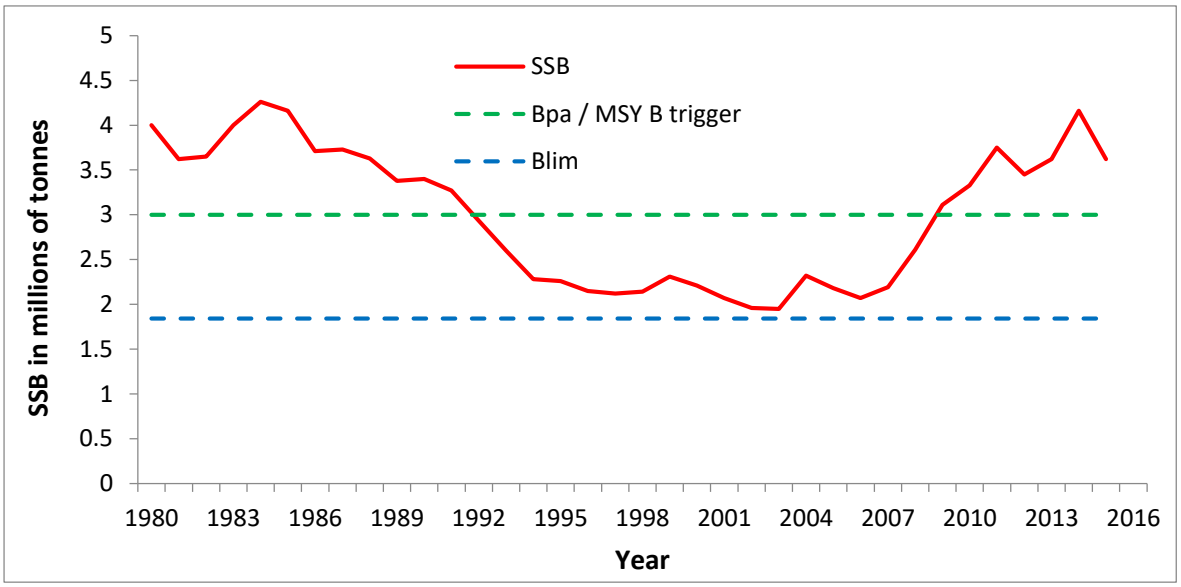
Spawning stock biomass

The spawning stock biomass, in relation to the revised biomass reference points, is shown in Figure 3-7 The spawning stock biomass (SSB) of the northeast Atlantic mackerel stock, in millions of tonnes, over the period 1980 to 2015 from the latest assessment, in August 2015, from the SAM model. The biomass precautionary and limit reference points and the management plan and MSY biomass trigger points are also shown. The SSB has clearly been well above the current biomass limit level over the whole time series dating back to 1980. The SSB was below the precautionary approach level when that reference point was first established at 2.36 million t in 1998 and remained below that level until 2007. That status remains the same with the revised Bpa reference point at 3.0 million t. SSB has subsequently increased and has been above the revised precautionary approach and the MSY biomass trigger level since 2008.

The historical perception of SSB has changed considerably since the final ICA assessment in 2012.

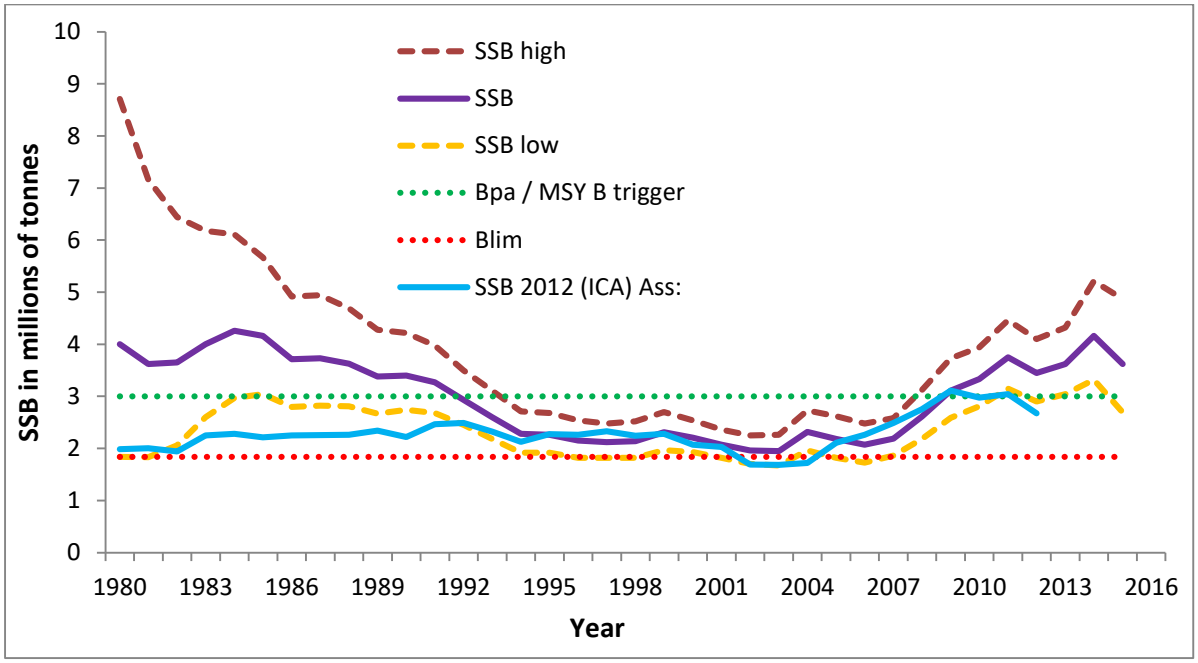
Figure 3-8 The spawning stock biomass (SSB) of the northeast Atlantic mackerel stock, in millions of tonnes, from 1980 as estimated in 2012 using the ICA model and in 2015 using the SAM model. The variance on the estimates of SSB from the SAM model is shown as high and low values. The biomass precautionary and limit reference points are also shown shows the different perception of the spawning stock biomass, dating back to 1980, as estimated in 2012 using the ICA model (Patterson and Melvin, 1996) compared with the 2015 updated estimates using the SAM model (Neilsen and Berg, 2014). The estimates from ICA are mainly lower over the whole period back to 1980. The differences are most marked during the period prior to 1992 and after 2008. In 2005 the ICA and SAM estimates were similar 2.11mt and 2.18mt respectively. The estimates subsequently diverged to 3.04mt and 3.75mt respectively in 2011 and 2.68mt and 3.45mt respectively in 2012. The SSB has been consistently above the biomass precautionary level since 2009 and well above the biomass limit level. The variance on the estimates of SSB from the SAM model is shown as high and low values. The revised biomass precautionary and limit reference points are also shown.

Figure 3-7 The spawning stock biomass (SSB) of the northeast Atlantic mackerel stock, in millions of tonnes, over the period 1980 to 2015 from the latest assessment, in August 2015, from the SAM model. The biomass precautionary and limit reference points and the management plan and MSY biomass trigger points are also shown



Source: ICES, 2015b; 2014d

Figure 3-8 The spawning stock biomass (SSB) of the northeast Atlantic mackerel stock, in millions of tonnes, from 1980 as estimated in 2012 using the ICA model and in 2015 using the SAM model. The variance on the estimates of SSB from the SAM model is shown as high and low values. The biomass precautionary and limit reference points are also shown



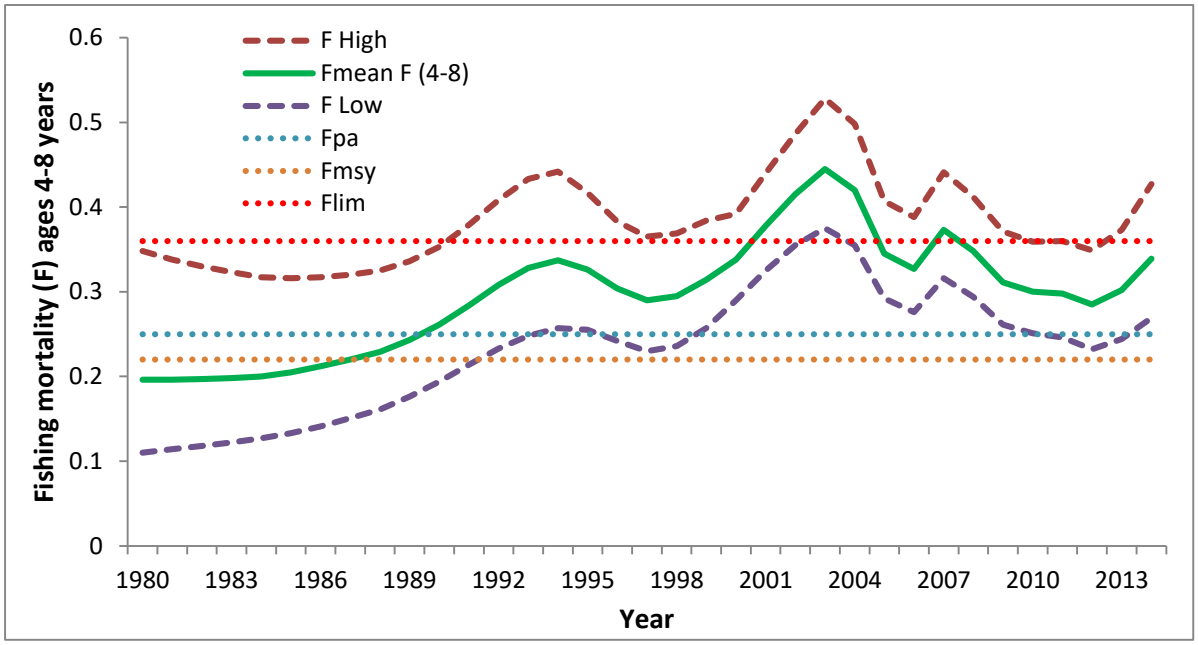
Source: ICES, 2014d; 2015b

Fishing mortality

The perception of fishing mortality (F) has changed in line with the changed perception of SSB. Figure 3-9 shows the revised fishing mortality over the period 1980 to 2014 together with the revised limit, precautionary and MSY reference point levels. The variance on the estimates of F is shown as high and low values from the SAM assessment model. The performance of F should be viewed from the perspective of the 2015 revised fishing mortality reference points for F pa, F MSY and F lim. The mean fishing mortality (ages 4-8 years) increased to above the current F pa and FMSY levels in 1989 and

then increased to above F lim in 2001 for a short period until 2005. Since then it has remained below F lim but is still above both F pa and F MSY.

Figure 3-9 Annual fishing mortality (F) on northeast Atlantic mackerel, ages 4-8 years, over the period 1980 to 2014. The variance on the estimates of F is shown as high and low values from the SAM assessment model. The fishing mortality limit, precautionary and MSY reference point levels are also shown



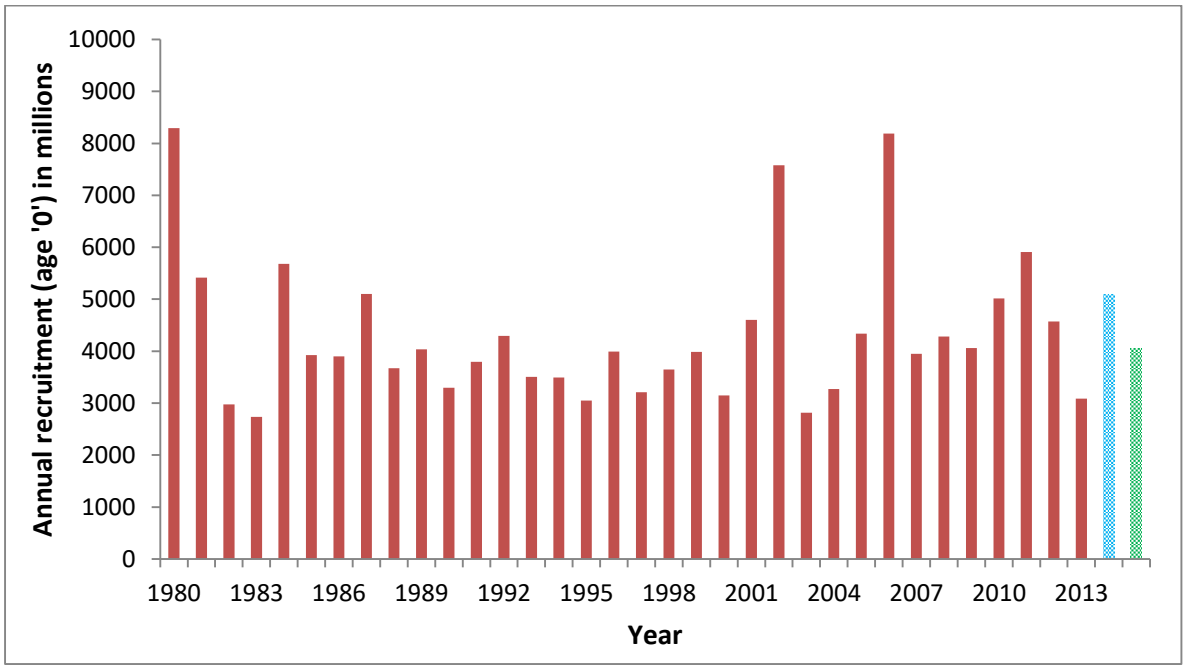
Source: ICES, 2015b

Annual recruitment

An annual recruitment index has now been derived from catch data from the International bottom trawl surveys (IBTS) in the fourth quarter of the year. Extensive investigations of different modelling approaches were carried out at the 2014 benchmark workshop (ICES, 2014c) which included the potential use of data from the IBTS survey in the first quarter of the year. The assessment working group (ICES, 2014a) eventually decided to use only the fourth quarter data in a geostatistical log-Gaussian Cox (LGC) process to produce indices for the 2014 assessment. This was the first time that this recruitment data series had been used in support of the annual stock assessment. The index was again used for the 2015 assessment

Figure 3-10 shows the annual recruitment of '0' group mackerel over the period 1980 to 2014 from the assessment in 2015. The 2015 value is a prediction based on the geometric mean of the time series from 1990 to 2013. The 2014 value is derived from the RCT 3 estimate and is classed as preliminary because there is insufficient information to estimate it accurately. The time series clearly indicates a typical annual variability in recruitment with no detectable pattern on which useful predictions could be made. On average recruitment has improved over the past fifteen years with two very large year classes (2002 and 2006) contributing to that trend. The 2010 year class is also well above average and the model also indicates that the 2011 recruitment is very large.

Figure 3-10 The annual recruitment of mackerel age'0' years, as millions of fish, over the period 1980 to 2013. The 2014 value (blue) is the RCT3 index estimate and the 2015 value (green) is the geometric mean estimate from 1990 to 2013



Source: ICES, 2015b.

Management plan harvest control rule. (ICES, 2014d) (no longer in place)

A management plan agreed by the EU, Norway and the Faroe Islands in October 2008 is no longer considered appropriate and is no longer used for the advice and management of the fishery. That plan was evaluated by ICES (ICES, 2008a, 2014d) who concluded that it was precautionary. The plan is reproduced below to provide an historical perspective for comparison with an interim strategy and any subsequent agreed strategy.

1. For the purpose of this long-term management plan, "SSB" means the estimate according to ICES of the spawning stock biomass at spawning time in the year in which the TAC applies, taking account of the expected catch.

2. When the SSB is above 2,200,000 tonnes, the TAC shall be fixed according to the expected landings, as advised by ICES, on fishing the stock consistent with a fishing mortality rate in the range of 0.20 to 0.22 for appropriate age groups as defined by ICES.

3. When the SSB is lower than 2,200,000 tonnes, the TAC shall be fixed according to the expected landings as advised by ICES, on fishing the stock at a fishing mortality rate determined by the following:

Fishing mortality F = 0.22 SSB/ 2,200,000*

4. Notwithstanding paragraph 2, the TAC shall not be changed by more than 20% from one year to the next, including from 2009 to 2010.

5. In the event that the ICES estimate of SSB is less than 1,670,000 tonnes, the Parties shall decide on a TAC which is less than that arising from the application of paragraphs 2 to 4.

6. The Parties may decide on a TAC that is lower than that determined by paragraphs 2 to 4.

7. The Parties shall, as appropriate, review and revise these management measures and strategies on the basis of any new advice provided by ICES

Since 2009, there has been no international agreement on the allocation of the advised TAC. Nevertheless, ICES continued to consider that the above plan was precautionary under the assumption that the advised TAC equal the total removals from the stock.

In 2015 the EU, Norway, and the Faroe Islands (the Coastal States) made a request to ICES on the management of mackerel (*Scomber scombrus*) in the Northeast Atlantic. The request (ICES, 2015c) is reproduced in italics below.

In order for the Parties to develop a revised management plan for mackerel on which to base the appropriate fishing levels in the years 2015 to 2018, ICES is requested to:
1. Evaluate new biological reference points for the North East Atlantic mackerel stock based on the revised (WKPELA 2014) mackerel assessment method.
2. Evaluate the alternative fishing mortalities corresponding to Fmsy, 0.20, 0.25, 0.30 and 0.35 for appropriate age groups as defined by ICES.
3. Each alternative should be assessed in relation to how it performs with respect to stock development in the short, medium and the long term and the level of uncertainty in the stock assessment, inter annual TAC variability, long term yield, as well as in relation to the precautionary approach.
4. Each alternative shall be evaluated with an annual quota flexibility of 10%.
5. Each alternative shall also be assessed with a stability clause where the TAC shall not deviate by more than 20% from the TAC of the preceding year, but the F shall not deviate by more than 10% from the target F.

The initial ICES response to the request is provided in summary form below and includes the revised reference points (Table 3.6). The ICES advice summary:
ICES advises on revised reference points for Northeast Atlantic (NEA) mackerel (point 1 in the request): Blim should remain unchanged at 1.84 million t, FMSY should be revised to 0.22, MSY Btrigger and Bpa revised to 3.0 million t, Flim revised to 0.36, and Fpa revised to 0.25.

ICES also advises that the proposed management plan is considered precautionary (points 2 and 3 in the request) if Ftarget is equal to or less than 0.22, assuming a Btrigger of 2.2 million t. This would also ensure high long-term yield. Other options with higher target Fs and a higher trigger biomass are considered precautionary and would maximize short-term yields, ensure high long-term yields, but would also increase the interannual variations of the TACs and result in a smaller stock.
ICES advises that the inclusion of a 10% interannual quota flexibility (point 4 in the request) would have insignificant effects on precautionary considerations.

ICES advises that the implementation of a TAC variation limit of 20% is precautionary, but that its effectiveness is greatly reduced if a 10% deviation constraint on Fbar is applied simultaneously (point 5 in the request).
Further clarification of the request was provided in a second advisory document (ICES, 2015d) which also included a statement of intent from the Coastal States on the management of the fishery pending the introduction of a new management strategy. The further clarification is reproduced in italics below.

The Coastal States are preparing a new long-term management strategy for the stock of mackerel in the North East Atlantic. This strategy would include target fishing mortalities expressed as a range rather than a single reference point.

ICES is requested to provide a plausible range of values around Fmsy for the mackerel stock in the North East Atlantic, based on the stock biology (including possible density-dependent growth), fishery characteristics and environmental conditions.

ICES is also requested to update other reference points, including Btrigger, in light of the change from Fmsy as a single reference point to Fmsy as a range.
Given the uncertainty in stock level, growth patterns and recruitment, and taking into account the growing time series on tagging information (RFID), ICES is requested to perform the next (intermediate) benchmark in 2017. The Coastal States would also like to inform ICES that they no longer consider that the existing management plan is appropriate and that ICES should therefore give

its advice based on the following objectives and timelines approach until a new management strategy is in place:

1. The Parties agree to limit their fishing on the basis of a TAC corresponding to a fishing mortality rate within the range of fishing mortalities defined by ICES as being consistent with fishing at maximum sustainable yield, provided that the SSB at the end of the TAC year is forecast to be above the value of Btrigger.

2. Where the SSB is forecast to be below Btrigger, but above Blim, the Parties agree to reduce the upper and lower bounds of the range of fishing mortality referred to in paragraph 1 by the proportion of SSB at the start of the TAC year to Btrigger.

3. Every effort shall be made to maintain a minimum level of SSB greater than Blim. Where the SSB at the start of the TAC year is estimated to be below Blim the TAC shall be set at a level corresponding to a fishing mortality rate consistent with the objective of rebuilding the SSB to above Blim the following year. The Parties may also take additional management measures that are deemed necessary in order to achieve this objective.

Prior to the initial Coastal States request an EU Workshop meeting in June and November 2014 (ICES, 2015e) had already addressed some of these issues in their examination of a long term management plan for NEA mackerel. The management strategy evaluation, carried out at the Workshops resulted in a revision of the reference points for the NEA mackerel stock. These reference points were re-examined as a result of the Coastal States request in 2015 and some changes made including the removal of the Management Plan reference points. The revised reference points together with the previous values are listed in Table 3.6 below. The biomass limit points remained the same.

Table 3-4 Reference points for spawning stock biomass and fishing mortality

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY B trigger	3 million t (2.36)	B_{pa}	ICES (2015b)
	F_{MSY}	0.22 (0.25)	Stochastic simulation	ICES (2015b)
Precautionary approach	B I_{im}	1.84 million t	B_{loss} (in 2002 / 2014 assess:	
	B $_{pa}$	3 million t (2.36)	exp(1.654xo~) xBlim o~= 0.3	ICES (2015b)
	F $_{lim}$	0.36 (0.39)	F that on average leads to B_{lim}	ICES (2015b)
	F $_{pa}$	0.25 (0.26)	F that on average leads to B_{pa}	ICES (2015b)

Source ICES, 2015 a,b

c) History of the fishery and management

The fishery in 2014

The catch and survey data in recent years has all pointed to significant changes in the distribution of the northeast Atlantic mackerel stock. The stock has expanded north-westwards in particular during the spawning and summer feeding migrations. The reasons for the changes are not fully understood but may be related to changes in the distribution of prey, increased water temperature and / or increased stock size. The distributional changes have resulted in significant catches being taken in Icelandic Faroese and Greenland waters in recent years. Significant increases in the catches were first noted in 2007 in Icelandic waters, in 2010 in Faroese waters and in 2012/2013 in Greenland. These distributional changes, and the resultant availability of fishable quantities of mackerel to nations who were not previously party to agreed quota sharing arrangements, has led to a current impasse in the sustainable management of the stock.

The total catch in 2014, estimated by the ICES Working Group (ICES, 2015a) was 1,394,456t an increase of 461,360t on the estimated catch in 2013 but marginally lower than the ICES predicted catch based on the declared intentions of the Coastal States. The catch was 384,000t above the upper level of the ICES predicted catch based on the management plan. Table 3.7 shows the ICES estimated annual catches of NEA mackerel from all areas over the period 2007 to 2014 and the ICES predicted catch corresponding to their advice. (ICES, 2015b).

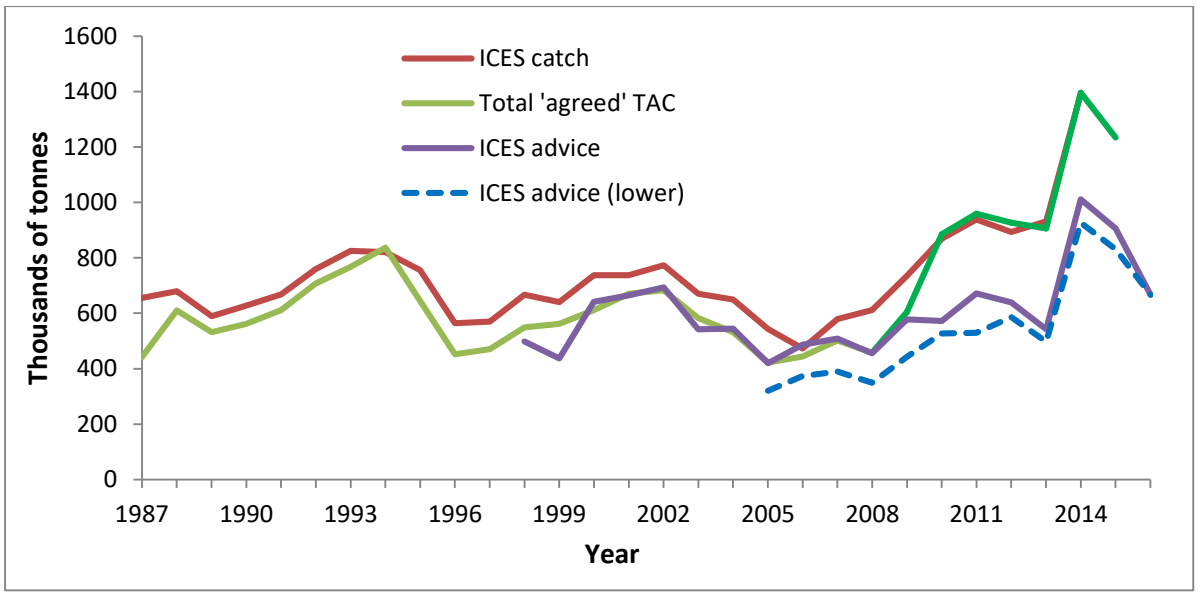
Table 3-5 ICES estimated annual catches of NEA mackerel from all areas over the period 2007 to 2013

Year	2007	2008	2009	2010	2011	2012	2013	2014
Annual catch (t)	586,206	623,165	737,969	875,515	946,661	894,684	933,165	1,394,456
ICES Advice (Kt)	390-509	349-456	443-578	527-572	529-672	586-639	497-542	927-1011

Source (ICES, 2014a).

Figure 3-11 shows the performance of the fishery as the ICES estimate of annual catch compared with the predicted catch corresponding to ICES advice over the period 1987 to 2014. The TACs either agreed or unilaterally declared for the period 1998 to 2015. This clearly illustrates the dramatic departure from, and failure to comply with, the ICES advised catch limits since 2008. Since 2005 the ICES advice has been in the form of two values according to the management plan fishing mortality range of F0.15 to F0.2. The Figure shows the ICES advice based on F0.2 and a minimum level based on the lower F.0.15 The TAC values from 2009 are not internationally agreed quotas but the sum of all the allocations and autonomous declarations of intent (ICES 2015a)

Figure 3-11 The ICES annual advice, including the minimum level, the agreed annual TAC up to 2008 and the sum of the unilaterally declared quotas from 2009 (dark green). The ICES estimated annual catch, in thousands of tonnes, over the period 1987 to 2014, is also shown



Source: ICES, 2015b

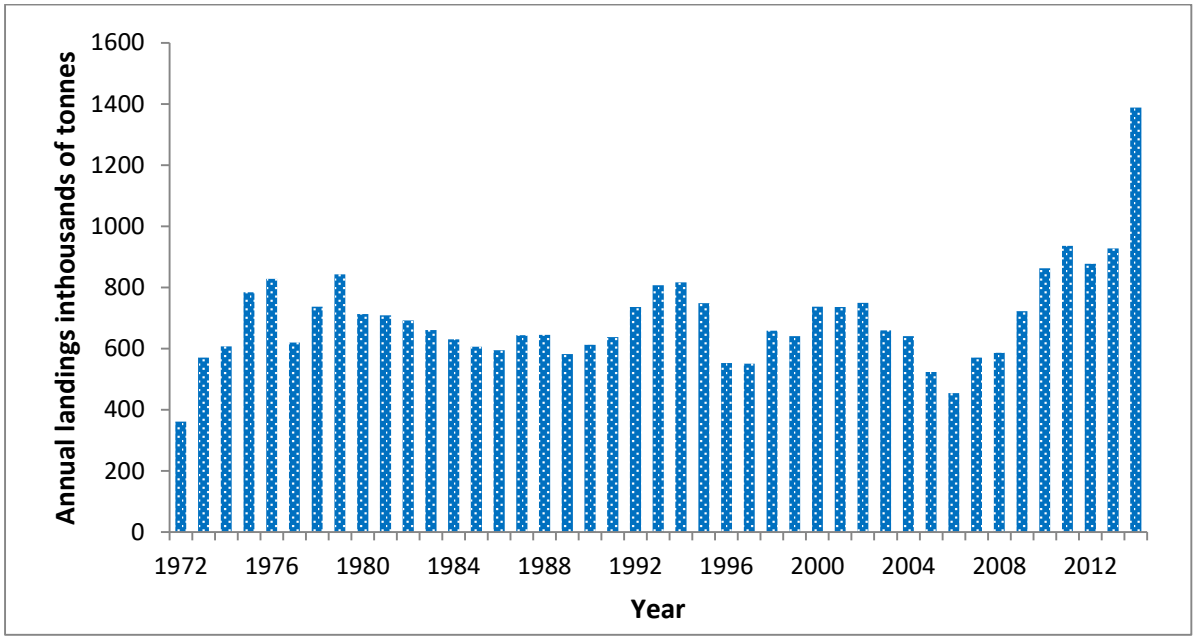
Annual catches

Figure 3-12 shows the total annual catch of North-east Atlantic mackerel, as estimated by the ICES assessment working group, over the period 1972 to 2014. The total estimated catch in the 2014 fishery was 1,394,456t, an increase of 461,360t over the previous year. Catches have increased substantially since 2006 and since 2010 they have averaged almost 1 million t. The expected catch in 2014, arising from the Coastal States agreement and the autonomous declared intentions of other parties, was 1,396,238t. The working group's estimate of actual catch is based on information provided by working

group members and does include, where available, estimates of discarding and slippage. Some estimates of discarding were available in 2014 from limited observer coverage of the fleets of Denmark, Germany, Netherlands, Ireland, Spain, Portugal and Greenland, but none are available from the UK, or France. Discarding is illegal in Icelandic, Faroese, Norwegian and Russian waters. Anecdotal information suggests that discarding can occur for a number of reasons including high grading (to attract a better price) lack of quota and in non-targeted fisheries a lack of mackerel quota or storage and processing capacity.

Simmonds et al (2010) have suggested that underreporting estimates for the period prior to 2007 generated differences of 1.7 and 3.6 times between the reported catch and the actual catch. Although the major problems of underreporting and misreporting prior to 2007 have been addressed the working group still consider their own figures to be underestimates of the total removals from the stock. For an example reliance on EU vessel log book data alone can generate differences of up to 11% and if there is no inspection of the landing then errors as high as 56% of under reporting can occur without obvious illegal log book records (ICES, 2014a). The accuracy of log book data for non-EU countries has not been evaluated by the assessment working group. The precision of the estimates of total annual removals from the stock continues to be the major source of uncertainty to be taken into account in the assessment of stock status.

Figure 3-12 The annual landings of North East Atlantic mackerel, in thousands of tonnes, from all areas, over the period 1972 to 2014.

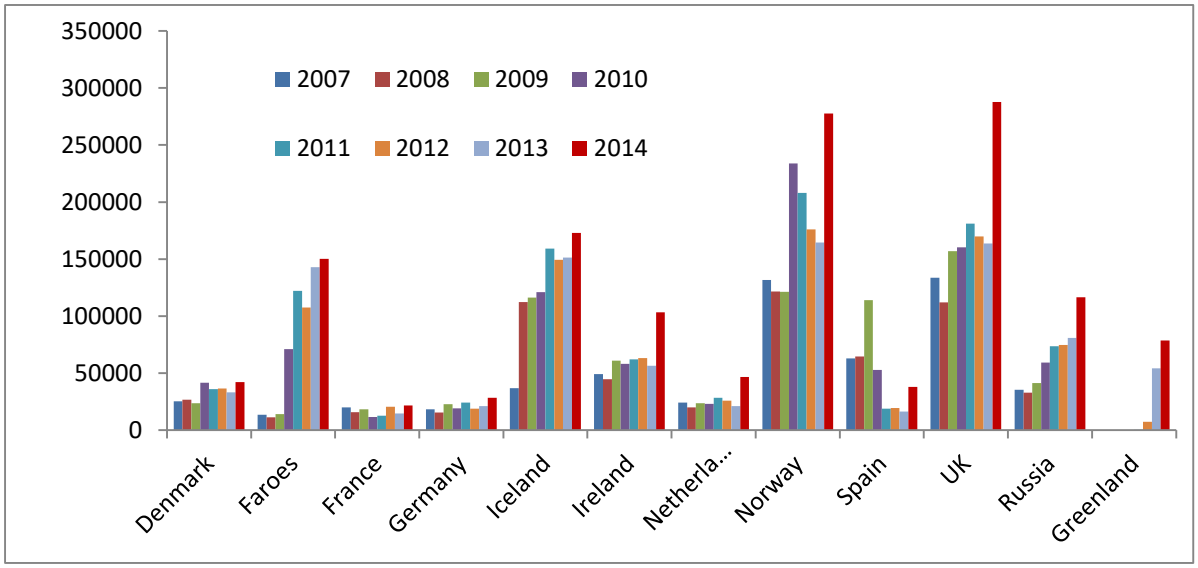


Source: ICES, 2015b

Source: ICES, 2014d.

The fishery has changed significantly in recent years in line with the changes in the distribution of mackerel. Figure 3-13 shows the catches of the major fishing countries from 2007 to 2014. This clearly shows the dramatic increase in the catches by the Faroes, Iceland and Russia over that period and the appearance of Greenland in 2012 with a catch of 7,402t increasing to 54,148t in 2013 and 78,581t in 2014. The Spanish catches have shown a dramatic decrease from an historical high of 114,000t in 2009 to just 16,400t in 2013 but increasing to 37,806t in 2014.

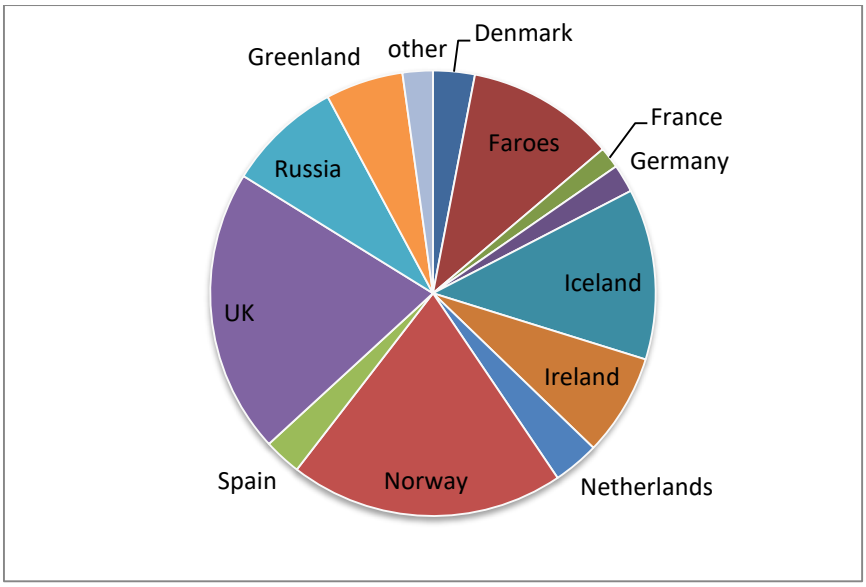
Figure 3-13 Annual catches (tonnes) of North-east Atlantic mackerel, in tonnes, by the major fishing countries for each of the years 2007 to 2014



Source: ICES, 2015b

The percentage of the total catch taken by each country in the 2014 fishery is shown in Figure 3-14. This shows that the major players in that fishery are now Norway, the UK, Iceland, The Faroes and Russia who between them took over 70% of the total catch in 2014. The 2014 catch by all EU countries combined represented 40% of the total catch.

Figure 3-14 The percentage of the total catch taken by the major participants in the North-east Atlantic mackerel fishery in 2014



Source: ICES, 2015b

The geographical distribution of the catches over recent years has also changed in line with the observed changes in the overall distribution and migration of the stock. A summary of the catches, including discards, in the various ICES Divisions and sub-Areas (**Error! Reference source not found.**), from 2009 to 2014 is shown in the Table 3.8 below. The Table clearly shows that up to the 2013 fishery there was a significant reduction in the proportion of the catch taken in the southern area ICES Divisions VIIIc and IXa and a significant increase in the north in ICES Sub-areas I,II, V and XIV. Catches in the western area and in the North Sea remained relatively stable. With the large increase in the total catch in 2014 there has been an increase in the catches in all areas.

Table 3-6 Summary of the catches, including discards, in the various ICES Divisions and sub-Areas

Year	*Sub-area: VI*	*Sub-area VII, & Div: VIIIa,b,d,e*	*Sub-area IV & Div:IIIa*	*Sub-areas I,II,V, XIV*	*Div: VIIIc & IXa*
	Western	**area**			**Southern**
2009	139,395	91,208t	235,049t	163,604t	108,713t
2010	109,636t	108,741t	247,700t	355,729t	53,708
2011	162,592t	56,415t	303,652t	398,160t	25,843t
2012	122,067t	75,261t	219,446t	447,207	28,372t
2013	132,335t	51,523t	261,258t	465,729t	22,188t
2014	180,408	95,111	384,221	684,173	50,541

Source: ICES, 2015a

Regulations and their effects

The major regulation currently in place is the raft of measures to protect the North Sea spawning component. Prior to the late 1960's the spawning stock biomass of North Sea mackerel was estimated to be over 3 million tonnes with annual catches of around 200,000t. After 1964 North Sea landings increased rapidly to over 1 million tonnes in 1967. This increase in catches was due to the expansion and increased efficiency of the Norwegian purse seine fleet. The overexploitation of this stock component rapidly led to recruitment failure since 1969 and the subsequent marked decline in the spawning stock biomass, now estimated to be around 165,000t. The measures in place, which are aimed at promoting the recovery of this stock component, are:

- There should be no fishing for mackerel in Divisions IIIa and IVb,c at any time of the year.
- There should be no fishing for mackerel in Division IVa during the period 15th February to 31st July.
- The 30cm minimum landing size currently in force in Sub-area IV should be maintained.

Other notable regulations are in force in the southern area by Spain to regulate the uptake of their quota by gear, season and area. EU enforcement of quota regulations have resulted in a new regulation to enforce the payback by Spain of overfished quota in 2010. Spain have responded by introducing much stricter control of their landings. A similar payback regulation applied to Scottish and Irish vessels which expired in 2012.

ICES advice for the 2014 fishery

The ICES advice, in September 2013 (ICES, 2013c), for the fishery in 2014 was updated in May 2014 (ICES 2014e), following the benchmark assessment and following the advice of an ICES subgroup set up to update the mackerel advice for 2014 (ICES, 2014f). That new advice was firmly based on the 2008 management plan and an estimated catch in 2013 of 895,000t based on the Coastal states allocations and the declared intentions of other parties outside that agreement. The advice recommended that catches in 2014 should be between 927,000t (F0.2) and 1,011,000t (F0.22). This would lead to a SSB at spawning time in 2015 of 4.459mt and 4.378mt respectively.

ICES advice and declared quotas for the 2015 fishery

There is currently no agreement on the international allocation of shares in the advised TAC. Negotiations continue to be held involving all affected parties through the Coastal States Agreement. Delegations from the EU, Norway, Faroe Islands, Greenland, Iceland and the Russian federation met in London in October 2014 to consult on the management of NEA mackerel in 2015. Unfortunately, they were unable to reach a consensus on allowing the accession of other parties to the Fisheries arrangement, between the EU, Norway and the Faroe Islands, which they had agreed in March 2014. The EU, Norway and the Faroe Islands subsequently agreed to recommend to their respective authorities that the management of NEA mackerel in 2015 should be on the basis of that Coastal States agreement of March 2014 (the 2014 Mackerel Arrangement). The arrangement was firmly based on a TAC in line with the advice from ICES and in accordance with the long term management plan. The arrangement allows for 15.6% of the advised TAC to be set aside for a 'Coastal State and Fishing Party reserve'. The remaining 84.4% of the TAC would be allocated; 58.4% to the EU; 14.9% to the Faroe Islands and 26.7% to Norway. The arrangement states that these are the same relative shares as agreed for the 2014 fishery[3] and they are set to remain in place for the fishery in 2016, 2017 and 2018. The arrangement also allows for an inter-annual transfer option of up to 10% of the allocation. The arrangement now in place until 2018 means that the ICES advised TAC will be allocated, 49.3% to the EU, 22.5% to Norway, 12.6% to the Faroe Islands and 15.6% for the 'Coastal State and Fishing Party reserve[1].

[1] The actual figures show that this assertion is incorrect. For the three parties in the Coastal States agreement in March 2014 their allocations represent 104% of the upper ICES advised catch of 1,011,000t: 60.5% to the EU, 27.6% to Norway and 15.5% to the Faroe Islands

In September 2014 ICES provided the outlook and advice for the fishery in 2015 (ICES, 2014d) based on the stock assessment carried out in August 2014 (ICES, 2014a). The advice again strictly follows the 2008 management plan. It was based on the expected catch of 1,396,238t in 2014 (Table 3.9) and the resultant F of 0.32. The advised catch for 2015 should be between 831,000t (F0.2) and 906,000t (F0.22). This would lead to a SSB of between 4.375mt and 4.304mt at spawning time (early April) 2016.

The ICES advisory committee also provides managers with alternative options to consider based on the ICES MSY framework and the precautionary approach. The MSY framework (F0.25) would generate a catch of 1,017mt in 2015 and lead to a SSB in 2016 of 4.197mt. Following the precautionary approach (F0.26) would lead to a catch of 1,054mt in 2015 and a SSB of 4,163mt in 2016.

Table 3-9 ICES estimated NEA mackerel catch in 2014

EU quota	**611,205**	**Coastal States March 2014**
Spanish payback	-9747	EC Regulation
EU quota deductions	-6568	EC Press release
Norwegian quota	279,115	Coastal States March 2014
Russian quota	116,700	WGWIDE estimation
Estimated discards	4664	WGWIDE estimation
Icelandic quota	147,721	Press release April 2014
Inter-annual quota transfer	6908	Fisheries Directorate web page
Faroese quota	156,240	Coastal States March 2014
Greenland quota	90,000	Estimate from Greenland
Total	**1,396,238**	

Source: ICES, 2014d

ICES advice for the 2016 fishery

In September 2015 ICES provided the outlook and advice for the fishery in 2016 (ICES, 2015b) based on the stock assessment carried out by the ICES assessment Working Group in August 2015 (ICES, 2015a). The advice also took into account the ICES estimate of the expected catch in the 2015 fishery based on the declared intentions of the participants. The expected catch in 2015 is 1,235,608t (Table 3.10). The advice was provided on the basis of MSY framework in the absence of an agreed management plan. The advised catch in 2016 based on F_{MSY} (0.22) is 667,385t which would lead to an estimated SSB at spawning time in 2016 of 3,131,490t reducing to 3,038,633t in 2017. The precautionary approach fishing mortality of F 0.25 would generate a catch of 748,576t in 2016. The expected catch in 2015 is 568,000t above the ICES advised catch.

Table 3-10 ICES have estimated the expected catch of NEA mackerel in the 2015 fishery

Estimation of 2015 catch	Tonnes	Reference
EU Quota	521,689	European Council Regulation 2015/104
Spanish payback	-9747	European Council Regulation 2011/165
Norwegian quota	242 078	Nærings- og fiskeridepartementet 23 Dec 2014 (Regjeringen.no)
Inter-annual quota transfer 2014->2015 (NO)	16,380	Directorate of Fisheries in Norway
Russian quota	114,143	Estimate from PINRO (Russia)
Discards	6,451	Previous years estimate
Icelandic quota	173,000	Icelandic regulation No. 532/2015
Inter-annual quota transfer 2014->2015 (IS)	6,800	Icelandic regulation No. 532/2015
Faroese quota	132,814	Faroese regulation No. 141/2014
Greenland quota	32,000	Estimate from Greenland institute of Natural Resources
Total expected catch (incl. discard) 1,2	1,235,608	

1 No guesstimates of banking from 2015 to 2016
2 Quotas include amounts exchanged to other parties

Trophic status of mackerel

The genus Scomber is one of the default low trophic level species defined by MSC. However, the North East Atlantic Mackerel does not exhibit any of the LTL species characteristics required by MSC (CB2.3.13) (ICES 2008b):

- The stock does not comprise a large proportion of trophic connections which lead to predator dependency
- There is not a large volume of energy passing from lower to higher trophic levels via this stock
- Crucially in all of these considerations, there are several other (large) pelagic stocks at this trophic level through which energy is transmitted from lower to higher trophic levels, namely North Sea herring, Atlantoscandian herring, horse mackerel, blue whiting, Norway pout, sprat, sandeel

Mackerel is therefore not considered a key LTL species.

3.4 Principle Two: Ecosystem Background

Principle 2 of the Marine Stewardship Council standard states that:

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

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

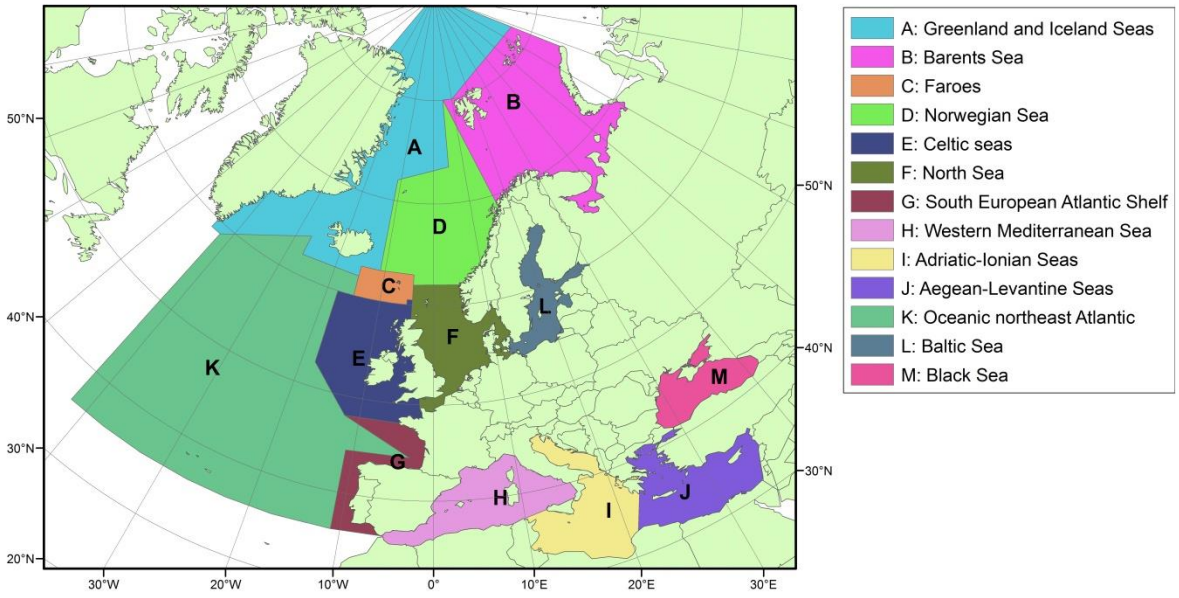
3.4.1 Ecosystem characteristics and general features of fishery

Mackerel is a pelagic, mostly mid-water species, feeding mostly on zooplankton and, as adults, other small pelagic fish; there are no obvious dependant predators. Spawning is pelagic and eggs rise in the water column (Lockwood, 1988). The species therefore has no critical benthic habitat associations.

The North East Atlantic stock is distributed from the Bay of Biscay in the south to waters around North Norway, Iceland and Greenland in the north. This area is subject to the North Atlantic Drift which brings warmer and nutrient-rich waters into the North Sea, Norwegian Sea and waters west and south of the British Isles.

A large spatial expansion of the mackerel stock has been measured by systematic and standardized pelagic trawling in the Nordic Seas in summers from 2007—2014 (Nøttestad *et al.*2014 WD to WGWIDE). Simultaneously to this expansion, the summer surface temperatures have been high in the Nordic Seas (Hughes *et al.*2011; Nøttestad *et al*., 2012; 2013; 2014 WDs to WGWIDE). The sea surface temperature anomaly (SSTA) for July 2014 showed that the temperatures in the Nordic Seas were about 1—3°C above long-term mean over the last 20 years. More or less the entire Northeast Atlantic Ocean including the Norwegian Sea was significantly warmer compared to the long term average. The high surface temperatures observed in the Nordic Seas during summer in recent years, especially in 2014, have largely increased the potential feeding habitat for mackerel within their preferred “comfort” zone of above 6-7°C.

Figure 3-15 Eco-Regions as delineated by ICES



Source: ices.dk/SiteCollectionImages/advice/Ecoregions_incl_legend_WEB

For the purpose of this assessment, those eco-regions (Figure 3-15) which cover ICES fisheries areas as listed in the UoC above include the North Sea and Celtic seas

North Sea. The North Sea lies on the European continental shelf with a mean depth of 90m. The only exception is the Norwegian trench (20-30km wide), which extends parallel to the Norwegian shoreline from Oslo to an area north of Bergen and has a maximum depth of 725m. Extensive multispecies and ecosystem research has been performed in the North Sea in the past 30 years. ICES, together with several institutes around the North Sea, has invested substantially in the research on multispecies interactions, ecosystem functioning, and integrated assessment. Currently, several multispecies and ecosystem models exist for the North Sea. There is considerable knowledge of the habitats and ecoregions of the North Sea, drawing on more than one hundred years of regular monitoring and research, the intensity of which has accelerated in recent decades.

Celtic seas the ICES Working Group for Regional ecosystem description provides a comprehensive summary of the Celtic Sea ecosystem where the fishery takes place (WGRED 2008[4]). There is considerable knowledge of the habitats and ecosystem of both the southern and northern Celtic Seas, drawing on more than sixty years of monitoring and research, the intensity of which has accelerated in recent decades in tandem with the increasing recognition of the importance of the fisheries of the area. The food web and trophic relationships within the Celtic Sea has also been studied more intensively in recent years, although overall the area has received considerably less attention in the past than has the North Sea or Irish Sea. There are a number of studies ongoing that are addressing questions of predator/prey relationships, changes in fish abundance on population structure as well as fish community species composition. These studies are all expected to enhance overall management of the Celtic Sea and will provide necessary additional information to underpin future management using the ecosystem approach to fisheries management.

A major component of the ecosystem is the spring migration into the area of a large abundance of migratory small pelagic fish, including mackerel, horse mackerel and blue whiting. All three species spawn and feed extensively in the area, prior to migrating north out of the eco-region in the summer.

Coldwater coral structures have been identified in many areas, including the Porcupine Bank, Rockall, the slope areas west of Scotland and Ireland, and on the seamounts. The Darwin mounds are found at depths of about 1000 m northwest of Cape Wrath, Scotland.

The fishery under assessment for mackerel is entirely pelagic and, to prevent damage to fishing gear, fishers will avoid contact with the seabed. The fishery is also highly selective with fishers targeting what are mainly single species mackerel shoals; developments in acoustic technologies increasingly improve this selectivity.

3.4.2 Retained and bycatch species

The fisheries for mackerel (all gears) are highly selective – specifically targeting what are predominantly single-species mackerel shoals. Ongoing developments in gear technology (especially discrimination of acoustic signals) further increase selectivity. As a result, bycatch of any non-target species are extremely low in relation to overall mackerel catches.

The commercially important non-target species taken in the fisheries that have been recorded are herring and horse mackerel. These are consistent with species, and more importantly quantities, reported in other MSC assessments of mackerel and other pelagic fisheries.

4 http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2005/oct/Celtic%20Sea%20and%20SW%20Ireland%20Irish%20Sea%20and%20West%20of%20Scotland.pdf

Table 3-7 Catch data 2012 - 2014

	2012	2013	2014	% Total
NEA Mackerel	12009	12538	19238	
Herring	110	63	0	0.40
Horse mackerel	0	76	0	0.17

Horse mackerel – northern stock: the species is subject of an international fishery in the North Sea and southern Norwegian Sea, although most catches have been Danish. No reference levels have been specified for the stock affected, but ICES qualitative estimation is that fishing pressure is likely to be above an Fmsy target and the stock size is likely to be below a Bmsy target. Latest advice is for a catch of 99 304 mt (http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/hom-nsea.pdf).

Horse mackerel – western stock: A revise management plan is currently under development, the previous one being based on the triennial egg survey, but evaluation concluded that it was not in accordance with the precautionary approach (ICES, 2013e). ICES advises on the basis of the MSY approach that catches in 2015 should be no more than 99 304 t.
http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/hom-west.pdf

North Sea Herring: the fishery is managed under an EU-Norway management plan. The latest assessment indicates a stock above Bpa and Blim, with full reproductive capacity. Latest advice is for catches of no more than 461 664 mt. The stock is currently MSC certified.

(http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/her-47d3.pdf).

Atlantoscandian (Norwegian Spring Spawning) Herring: The fishery is managed under a coastal states agreement and management plan, the stock has recently been declining and is currently considered to be below Bpa in 2013. Fishing pressure is at Fmsy and the stock, although below Bpa remains some way above Blim. The stock has recently been MSC recertified. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/her-noss.pdf.

West of Scotland herring: this fishery is managed under an EU management plan ((EC) 1300/2008, Annex 5.3.12); The biomass limit level has been set at 250,000t, based on the breakpoint in the segmented regression stock and recruitment relationship. This provides a reliable calculation of the point below which impaired recruitment could be expected. The estimate of SSB at spawning time in 2014 was 230,000t with a 95% confidence interval of 189,000t – 445,000t. The SSB has been steadily falling over recent years and is predicted to have fallen further to 194,194t at spawning time in 2015. Therefore it is not likely (70% probability) that the stock is currently above a point where recruitment would be impaired. ICES, 2014a; ICES, 2014b; ICES 2014c

Recording of landings is controlled through inspections and sales documentation, and there is high confidence in the records provided.

The only other source of mortality would be any bycatch which is 'slipped' along with unwanted mackerel catches. The incidence of slipping is considered low, and would always be a very small proportion of total catches. Given that bycatch represent a further small proportion of mackerel catches anyway, this would not represent a significant additional issue for any of the stocks involved. As from 1st January 2015 EU vessels are required by law to retain and land all commercial species caught (Landings Obligation- EU 1380/2013), which are then set against quota. All catches (including undersized fish) above 50 kg must be registered in the log-book. All catches (including undersized fish) must also be registered in the landing declaration, the transport document and the sales note.

3.4.3 Endangered, threatened or protected (ETP) species

ETP species are those protected under nature conservation legislation of UK, EU or other relevant state (e.g. Norway) or listed in Appendix 1 of CITES. As described above, the stock and the fishery are pelagic and so no protected benthic species would therefore be affected. Protected species potentially affected may therefore be of fish (notably basking shark), marine mammals (most north Atlantic species would occur throughout the area of the fishery) or seabirds at sea (again, large numbers of all North

East Atlantic species would be present throughout the area of the fishery, including nesting colonies along the coast).

The UK has legislation protecting such species (and habitats) through, among others, enactment of the Bern Convention (Convention on the conservation of European wildlife and natural habitats), the Bonn Convention (Convention on the conservation of migratory species of wild animals), CITES and domestically through the implementation of EU Directives (namely Habitat Directive 92/43/EEC, and the Bird Directive 2009/147/EC).

Of the ETP groups identified as potentially affected (mammals, birds, fish), there is no evidence available showing any significant interactions with any of these. This is consistent with MSC assessments of other trawl fisheries for small pelagic species in the area.

3.4.4 Habitat

The principal habitat related to mackerel is pelagic, the species is pelagic throughout its life history. The pelagic habitat can be characterised by the nature of (i) the physico-chemical (i.e. water movement, mixing, temperature, salinity and nutrient content), the (ii) non-motile plankton component and (iii) the nekton component (i.e. free-swimming organisms). Of these, (i) and (ii) are highly variable and their dynamics across the NE Atlantic area is much studied and fairly well understood through physical measurement and oceanographic modelling (see also descriptions of ecosystem characteristics). The impacts of fishing activities on these components on pelagic habitat are negligible and transient. Accordingly, the fishery is also pelagic, and fishermen will avoid bottom contact - having the strong incentive of avoiding damage to fishing gear. There is good knowledge of sensitive benthic habitat locations, such as coral mounts, and seamounts, as mapping information is compiled through surveys and fishers comments (see ecosystem characteristics in Section 3.4.1).

3.5 Principle Three: Management System Background

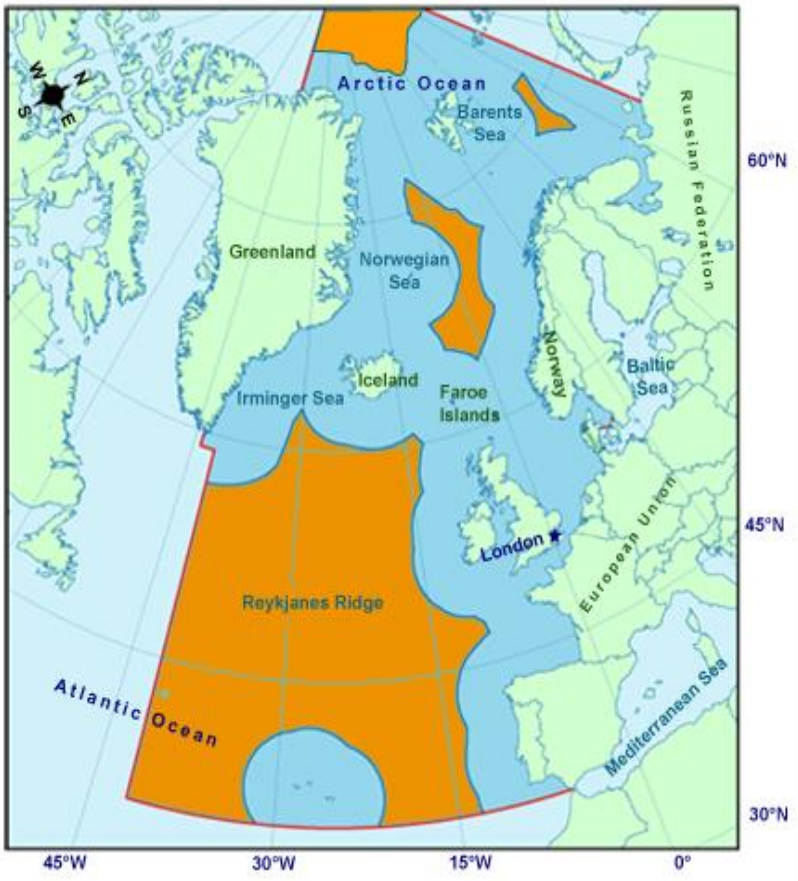
Principle 3 of the Marine Stewardship Council standard states that:

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

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

North East Atlantic (NEA) Mackerel is a shared stock of a Highly Migratory Species (HMS) fished by the client group within the EEZs of European Union Member States, non-EU states and on the high seas in the regulatory area of the North East Atlantic Fisheries Commission (NEAFC). The NEAFC regulatory area is that area of the North East Atlantic beyond defined EEZs of coastal states (see Figure 3-16).

Figure 3-16 NEAFC area



Source: http://neafc.org/page/27

EU management

The NIPSG vessels within this UoC are regulated under the European Union's Common Fishery Policy (CFP). The CFP sets common long term objectives for all EU Member States and requires them to regulate fishing capacity, technical measures (permitted gears etc.), the allocation of quotas, data reporting and minimum MCS requirements. The CFP is regularly reviewed and revised (every 10 years) with the latest CFP reform package introduced in 2013 (EU Regulation 1380/2013). The reformed CFP includes a landing obligation (discard ban) to be phased in over the coming years. From 1st January 2015 EU pelagic vessels are not permitted to discard target species, including mackerel. ICES notes

that while discards data are incomplete, the level of discarding (estimated at 0.5%) can be considered negligible in terms of impact on the stock. CFP regulations are applied under a Control Regulation (EU Regulation 1224/2009), which entered into force in 2010.

EU vessels are given a licence to fish by their national authorities and the European Commission. The NEAFC Secretariat keeps a central list of vessels licensed by all the Contracting Parties, but does not issue licenses. Conditions of license include compliance with the CFP and associated regulations.

Most management measures are determined at EU level and then implemented under a member states' national legislation. Some existing EU mackerel management measures to protect the North Sea spawning component are:

- There should be no fishing for mackerel in Divisions IIIa and IVb,c at any time of the year;
- There should be no fishing for mackerel in Division IVa during the period 15 February–31 July;
- The 30 cm minimum landing size at present in force in Subarea IV should be maintained.

There is also the opportunity for member states to apply further management measures if these are considered to not be contradictory to the EU level measures. For example, in the southern area, a Spanish national regulation affecting mackerel catches of Spanish fisheries was implemented in 2010, distributing the Spanish catch quota by gear, half-year, and area. Additionally, a stricter control on mackerel landings was enforced by the Spanish fishery administration. In 2011 the EU introduced a new regulation scheduling payback until 2015 due to overfishing of the mackerel quota allocated to Spain in 2010 (EU Regulation 165/2011). A similar regulation applied to Scottish and Irish vessels expired in 2012.

The EU share of the mackerel Total Allowable Catch (TAC) is allocated to the Member States based on historic shares. These are then allocated to individual quota holders, enabling each to determine how much of that quota is available to specific vessels and when and where they should catch it. This may be in the waters of other EU member states, the NEAFC area or Norway. Quota held by NIPSG vessels forms a part of the UK quota allocation, and these vessels operate as a part of the overall UK pelagic fleet, rather than as a separate or regional component of that fleet.

Insofar as the UK fleet, and the NISPG fleet, may land fish to Norwegian ports and undertake some fishing activity in Norwegian waters, it is required to comply with both NEAFC Port State Controls measures and Norwegian fishery management rules[5]. These include compliance with the Norwegian "no discards" rules (in place since 1987), move-on rules, and specific reporting and inspections rules (which are equivalent to and sometimes exceed EU requirements).

International Management

As a result of its widely dispersed and migratory nature, the NEA mackerel fishery is managed via agreements between the EU (representing the individual EU Member States) and other coastal states that are contracting parties of the NEAFC[6]. NEAFC contributes to the general fisheries management framework, but the management of key fisheries such as mackerel are determined by the coastal states through multi-lateral agreements (see section on the Coastal States Agreement below).

All coastal states participating in the fishery (the EU Member States mentioned above, Norway, Iceland,) and the other participants in the fishery (Greenland and Russia) are signatories of NEAFC. NEAFC decides upon conservation and/or management measures for the regulatory area, which can cover different things, for example stocks or individual species and or a specific area or time period, depending on what policy makers want to achieve.

A new convention was agreed by NEAFC signatories in 2007 (NEAFC, 2007), but is still to be ratified by Russia as it objects to some elements of the text on dispute settlement process. As Article 2 states:

[5] Described in Chapter 5 of the NEAFC Scheme of Control and Enforcement 2015 (July to December) - Port State Control of Foreign Fishing Vessels; http://www.neafc.org/scheme/2015/julytodecember/Chapter5 (accessed Sept 2016)

[6] EU, Norway, Iceland, Russian Federation; Denmark is a signatory in respect of the Faroe Islands and Greenland

"The objective of this Convention is to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits."

It also notes (Article 3) that "the Commission shall have legal personality and shall enjoy in its relations with other international organisations and in the territories of the Contracting Parties such legal capacity as may be necessary to perform its functions and achieve its ends."

When making recommendations…the Commission shall in particular:

a) *ensure that such recommendations are based on the best scientific evidence available;*

b) *apply the precautionary approach;*

c) *take due account of the impact of fisheries on other species and marine ecosystems, and in doing so adopt, where necessary, conservation and management measures that address the need to minimise harmful impacts on living marine resources and marine ecosystems; and*

d) *take due account of the need to conserve marine biological diversity.*

Measures are decided by the Parties, which make up the Commission, on the basis of scientific advice from an independent scientific body, The International Council for the Exploration of the Sea (ICES). NEAFC has a Memorandum of Understanding (MoU) with ICES on the provision of scientific information. This advice is then considered by the Permanent Committee on Management and Science (PECMAS). The majority of management measures are then decided at the Annual Meeting of the Commission held in November, but decisions can also be taken by postal vote throughout the year should the need arise.

ICES stated in its most recent advice that "advising according to the new assessment using the management plan is still considered precautionary, even though the plan may no longer result in a long-term maximization of the yield. EU, Norway, and the Faroes have approached ICES with a draft request on a revised long-term management plan evaluation. ICES is currently carrying out analyses to answer this request draft." (ICES Advice Book 9, 2014d) – [scheduled for February 2015].

Monitoring Control and Surveillance

MCS is undertaken by each member states' fisheries protection agency within its own waters with data sharing and reporting arrangements agreed with the other EU Member States and non-EU members countries – for example with Norway. Thus, Scottish vessels are monitored using a variety of methods from Electronic logbook submissions to VMS while fishing both in and out of national waters. National Fisheries Compliance and Control agencies work closely with other member states and control agencies sharing information required for effective control of the fisheries. The control of fisheries outwith Scottish waters, for example, is the responsibility of the nation whose waters the fishery is taking place in (including, for example, Norway). Joint Deployment opportunities regularly take place with other member states, and between both EU member states and other 3rd Country control agencies. These joint operations are managed through the European Fisheries Control Agency (EFCA). On occasions member states allow other member states to operate their patrol vessels in their waters to board their own nations' vessels.

In the NEAFC regulatory area, fishing vessels must abide by both the Current Management Measures and the NEAFC Scheme of Control and Enforcement[7]. The NEAFC Scheme describes the procedures for Monitoring Control and Surveillance (MCS) of fishing activities within the NEAFC regulatory area. It is the responsibility of the flag-state that licenses the vessel to fish to ensure that it complies with all the regulations.

The most recent CSA meeting outlined the scope of work for an MCS working group to commence in 2015 to establish best practice and secure a 'level playing field' in MCS across the signatories (currently the EU, Norway and the Faroes).

Overall, control agencies reported compliance to be good with the limited number of large vessels all with VMS, e-logbooks and prior notification of landing enabling effective monitoring of the small number of large volume landings being made. Skipper decisions on discarding when observers are on board

[7] http://neafc.org/mcs/scheme

may be expected to differ from when observers are absent. Along with the introduction of the EU landing obligation for the pelagic fleet from 2015, there is a move to fully documented fisheries (FDF). The method to achieve FDF is left to the individual member states, e.g. CCTV or full observer coverage. Not withstanding the above, a "no discards" policy has been in place in Norwegian waters since 1987.

Stakeholder Participation

Key EU stakeholders are members of the Pelagic Advisory Council (PELAC) and include representatives of the European fisheries sector and other interest groups. The fisheries sector includes the catching sub-sector (ship owners, small-scale fishermen, employed fishermen and producer organisations), as well as processors and traders. Other stakeholders represented are environmental NGOs, aquaculture producers, and recreational fishermen. The Pelagic AC also works closely with NEAFC. Participants meet regularly to discuss issues and make recommendations to the European Commission.

The Pelagic AC prepares and provides advice on the management of pelagic fish stocks on behalf of the fisheries sector and other stakeholders. It covers the pelagic stocks of all the areas, excluding the stocks in the Baltic Sea and Mediterranean Sea. The Pelagic AC (as a foundation under Dutch law) was inaugurated on 16 August 2005, and consists of a General Assembly, an Executive Committee and two Working Groups [WG 2 concerns mackerel]. The work is done in collaboration with observers, for example, from non-EU countries that have an interest in particular stocks or regions covered by the Pelagic AC.

The Pelagic AC has extensive engagement and consultation with the EU parties involved in the coastal states agreements determining the management of the mackerel fishery. With the regionalization of the CFP under the recent CFP reform, the influence of Advisory Councils on policy and management is expected to increase.

Dispute Resolution

The NEAFC has a comprehensive dispute settlement process drafted in 2004 (NEAFC, 2004) and ratified in the new convention in 2007. However Russia has not ratified the new convention due to ongoing issues with dispute settlement process. The dispute settlement process is exemplified by the recent extraordinary meeting held on the 22nd October in London following the arrest by Russian authorities of an EU vessel fishing in the Barents Sea[8].

As stated in NEAFC's press release following its 32nd annual meeting in 2013, management measures for several fisheries are determined by NEAFC. These build on agreements established by coastal States.

Coastal States Agreement

The specific management arrangements for key fisheries, including mackerel, across the NEAFC area are determined through separate agreements by the coastal states involved in the fishery. The March 2014 Coastal States Agreement (CSA) established a management agreement between signatories (the EU, Norway and the Faroe Islands) from 2014 to 2018. This multi-annual agreement is considered an *ad hoc* arrangement for five years. The CSA agreed to establish a long-term management plan (LTMP) for mackerel and requested ICES draft such as plan (to be provided in 2015). The CSA signatories agreed that they would develop, on an annual basis, a joint proposal for NEAFC regulatory measures for the mackerel stock applicable to the NEAFC Regulatory Area (CSA, 2014a).

The coastal state of Iceland and other interested parties currently participating in the fishery (Greenland and Russia) were part of discussions, but these states are not signatories to the CSA. Consequently, while the CSA makes provision for 'other parties' in its allocation of mackerel total allowable catch (TAC), there is no agreement from those other parties on that provision. The most recent CSA on NEA mackerel at the time of assessment (21st November 2014) continues as an agreement between the EU, Norway and the Faroe Islands (CSA, 2014b).

If consultations among coastal States and other interested parties are ongoing (as has been the case for NEA mackerel in recent years), no proposals for management measures are presented to the NEAFC Annual Meeting. Therefore, while the EU vessels within the UoC continue to be regulated under

[8] Meeting report available at: http://www.neafc.org/system/files/EM-2014-report%28final%29.pdf

the CFP and abide by conditions established under the CSA, including provision for a long-term management plan for NEA mackerel, comprehensive agreement on that management by all parties participating in the fishery is currently absent.

As the ICES advice for 2015 states, “A management plan was agreed by Norway, Faroe Islands, and the EU in October 2008. ICES has evaluated the plan and concluded that it was precautionary. However, since 2009, there has been no international agreement on TAC. The plan is currently not being implemented and the quotas being set do not correspond to the advised TAC. In 2014, as in all years since 2008, a lack of agreement on the Management Plan has led to unilateral quotas being set which together are higher than the TAC indicated by the Management Plan. (ICES Advice Book 9, 2014)

4 Evaluation Procedure

4.1 Harmonised Fishery Assessment

Seven previous fisheries were certified for North East Atlantic mackerel: Danish Pelagic Producers Organisation, Irish Pelagic Sustainability Association (IPSA) Western mackerel fishery, Irish Pelagic Sustainability Group (IPSG) western mackerel pelagic trawl fishery, Pelagic Freezer-Trawler Association North East Atlantic mackerel pelagic trawl fishery, SPFPO North East Atlantic mackerel fishery, Scottish Pelagic Sustainability Group Ltd western component of north east Atlantic mackerel fishery and Norwegian mackerel fisheries. The Hastings Fleet mackerel fishery is not currently active.

These clients have recently formed a single collective under the Mackerel Industry Northern Sustainability Alliance (MINSA), assessed for fisheries undertaken by EU clients and separately for Norwegian clients.

The MINSA assessment was underway at the time of writing; however the CAB for both fisheries is Acoura, and A Hough and J Nichols are members of both assessment teams. Outcomes have therefore been harmonised between the MINSA and NIPSG fisheries – this harmonisation process has led to the delay in publishing this report.

4.1.1 Harmonisation Details

Harmonisation meeting/s

The CAB for both fisheries is Acoura Marine, and A Hough and J Nichols are members of both assessment teams.

Meeting Outcomes

Outcomes have been harmonised between the MINSA and NIPSG fisheries.

4.2 Previous assessments

This is the first assessment of the NIPSG mackerel fishery.

4.3 Assessment Methodologies

This fishery was assessed using version 1.3 of the MSC Certification Requirements and version 1.3 of the MSC Full Assessment Reporting Template.

4.3.1 Assessment Tree

The Default Assessment tree was used without any adjustments.

4.4 Evaluation Processes and Techniques

During week commencing 2 February 2015, all 3 members of the assessment team undertook a site visit to Belfast, Northern Ireland. This enabled a scheduled programme of consultations to take place with key stakeholders in the fishery and fishery managers. Prior notification of this site visit was issued on the MSC website in order that all relevant stakeholders were aware of the opportunity to meet with the assessment team.

Itinerary of field activities

Day 1 – 3 February 2015 - Belfast

On day 1, the assessment team held an opening meeting with NIPSG to discuss the fishery under assessment and provide an opportunity for the client to submit comments, additional information or ask questions of the assessment team.

Day 2 – 5 February 2015 - Belfast

» On day 2, the assessment team met with officers of the Sea Fisheries Inspectorate, Department of Agriculture and Rural Development 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 – 7 February 2015 - Belfast

» On day 3, the assessment team held a closing meeting with NIPSG. This was to provide further detail on the fishing methods and practice in use under this fishery assessment and to give the client an opportunity to provide any feedback or comments they wished in an open and transparent manner.

4.4.1 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 4-1 Interview Programme

Name	Organisation
Alan McCulla	ANIFPO
P Campbell	DARD
G Griffiths	DARD
S McComiskey	DARD
J Campbell	DARD
Pieter Jan Schoen	Marine Fisheries Section, AFBI

Source: Acoura assessment team

Summary of Information Obtained

Short summary of important points raised and information gathered during interviews are presented as an annex to this report. Discussions centred on the operation of the fishery, information on catches, landing inspections and scientific information relating to the fishery. Information gathered is referenced in the scoring table where appropriate.

4.4.2 Evaluation Techniques

Public Consultation

A total of 292 stakeholder individuals and organisations having relevant interest in the assessment were identified and consulted during this assessment. The interest of others not appearing on this list was solicited through the postings on the MSC website, and by advertising in The Skipper dated December 2015. These were felt to be the most appropriate media for making these public announcements as The Skipper has significant readership / uptake in the primary stakeholder locations for this fishery and the processes used on the MSC website for tracking and announcing the various stages of the assessment as it progresses - from Full Announcement through to Certification - form an ideal tool through which to channel stakeholder interest and keep them abreast of the important stages of the assessment as a whole.

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

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

Process

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

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

» **MSC Principle 1** - Resource Sustainability

» **MSC Principle 2** - Ecosystem Sustainability

» **MSC Principle 3** - Management Systems

A fuller description of the MSC Principles and Criteria and a graphical representation of the assessment tree 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 Northern Ireland Pelagic Sustainability Group (NIPSG) Irish Sea Atlantic Mackerel, WOS & NS Herring Fishery (Mackerel component) 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 4-2 Scoring Elements

Component	Scoring elements	Main/not main	Data-deficient or not
Mackerel	1.1.1	Main	Not data deficient
Herring	2.1.1	Not main	Not data deficient
Horse mackerel	2.1.1	Not main	Not data deficient

5 Traceability

5.1 Eligibility Date

The **Eligibility Date** for this fishery will be the certification date. This means that any fish caught by the certified fleet following that date will be eligible to enter the chain of custody as certified product if and when certification is ultimately granted.

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

5.2 Traceability within the Fishery

5.2.1 Description of Tracking, Tracing and Segregation Systems within the Fishery and Management systems in place relating to Traceability

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

» no transhipment;

» the fishery is highly restricted spatially and seasonally

» accurate reporting – log books and sales notes (regularly inspected and cross-checked);

» verified landings data (including data on other retained species) are used for official monitoring of quota up-take and national statistics;

» a high level and sophisticated system of at-sea monitoring, control and surveillance, including boarding and inspection, surveillance aircraft planes, VMS; and electronic logbooks.

» Good cooperation between EU and Norwegian regulatory and enforcement authorities

» reporting prior to landing with limited tolerance;

» an appropriate level of inspection of landings prior to unloading. Officially calibrated weighing systems of landing. Periodic inspection of the entire unloading process.

It is noted that the above requirements apply, as a minimum, to landings in Northern Ireland, other EU states and Norway. The above is considered sufficient to ensure fish and fish products invoiced as such by the fishery originate from within the evaluated fishery and no specific risk factors have been identified.

5.2.2 Evaluation of Risk of Vessels Fishing Outside of UoC

There is no significant risk of vessels fishing outside the UoC. The fishery is spatially restricted and occurs in a restricted season, according to the controls discussed above. There is the possibility of area misreporting between Areas IV and VI, but both NIPSG fisheries are undergoing MSC assessment and adjustments are made for estimated misreporting in the stock assessment process. If it occurred, this would not compromise traceability.

5.2.3 Risk of Substitution of Mixing Certified / Non-Certified Catch prior to point of landing

There is a low risk of substitution of mixing of certified and non-certified catch. Other mackerel fisheries such as MINSA are also already certified. The area of capture for all landed fish can be verified through VMS. Landing controls are such that the veracity of the stated species and origin of the landed catch can be assured. The Chain of Custody audit and surveillance process will address risks of substitution taking place later in the supply chain.

5.2.4 At-Sea Processing

No at sea processing takes place in this fishery.

5.2.5 Trans-Shipment

No transhipment takes place in this fishery.

5.2.6 Robustness of management systems relating to traceability

The management system supporting traceability comprises:

- mandatory use of tamper proof VMS on all vessels that can be queried retrospectively
- use of electronic log books for reporting
- in port verification of volumes of fish held in RSW tanks prior to switching to any other fishery
- mandatory use of sales notes to verify purchase of catch
- mandatory factory recording allow for cross checking of delivery intake and declared landings
- prior notification of landings
- well-developed MCS in Northern Ireland, other EU and Norwegian waters

The systems in place are comprehensive and mandatory. They are subject to periodic scrutiny and have been found to be enforced consistently leading to robust system that supports full traceability for landed product.

5.3 Eligibility to Enter Further Chains of Custody

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

5.3.1 Eligible points of landing

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

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

5.3.2 Parties eligible to use the fishery certificate

Only UK registered pelagic RSW trawlers who are members of NIPSG, or which have direct authorisation from NIPSG, may use this certificate

6 Evaluation Results

6.1 Principle Level Scores

Table 6-1 Final Principle Scores

Principle	Score
Principle 1 – Target Species	83.8
Principle 2 - Ecosystem	96.0
Principle 3 – Management System	83.1

Source: Acoura assessment team

6.2 Summary of Scores

Prin-ciple	Component	Wt (L2)	PI No.	Performance Indicator (PI)	Wt (L3)	Weight in Principle	Score
One	Outcome	0.5	1.1.1	Stock status	0.5	0.25	80
			1.1.2	Reference points	0.5	0.25	80
			1.1.3	Stock rebuilding			
	Management	0.5	1.2.1	Harvest strategy	0.25	0.125	90
			1.2.2	Harvest control rules & tools	0.25	0.125	75
			1.2.3	Information & monitoring	0.25	0.125	90
			1.2.4	Assessment of stock status	0.25	0.125	95
Two	Retained species	0.2	2.1.1	Outcome	0.333	0.0667	85
			2.1.2	Management	0.333	0.0667	100
			2.1.3	Information	0.333	0.0667	100
	Bycatch species	0.2	2.2.1	Outcome	0.333	0.0667	100
			2.2.2	Management	0.333	0.0667	100
			2.2.3	Information	0.333	0.0667	100
	ETP species	0.2	2.3.1	Outcome	0.333	0.0667	100
			2.3.2	Management	0.333	0.0667	90
			2.3.3	Information	0.333	0.0667	95
	Habitats	0.2	2.4.1	Outcome	0.333	0.0667	100
			2.4.2	Management	0.333	0.0667	80
			2.4.3	Information	0.333	0.0667	95
	Ecosystem	0.2	2.5.1	Outcome	0.333	0.0667	100
			2.5.2	Management	0.333	0.0667	100
			2.5.3	Information	0.333	0.0667	95
Three	Governance and policy	0.5	3.1.1	Legal & customary framework	0.25	0.125	65
			3.1.2	Consultation, roles & responsibilities	0.25	0.125	90
			3.1.3	Long term objectives	0.25	0.125	90
			3.1.4	Incentives for sustainable fishing	0.25	0.125	80
	Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.2	0.1	90
			3.2.2	Decision making processes	0.2	0.1	80
			3.2.3	Compliance & enforcement	0.2	0.1	85
			3.2.4	Research plan	0.2	0.1	80
			3.2.5	Management performance evaluation	0.2	0.1	90

6.3 Summary of Conditions

Table 6-2 Summary of Conditions

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/ N/A)
1	Harvest Control Rules and Tools – allocations and catches within TAC	1.2.2	Y
2	Cooperation among coastal states	3.1.1	Y

Source: Acoura assessment team

6.3.1 Recommendations

There are no recommendations for this fishery.

6.4 Determination, Formal Conclusion and Agreement

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

It is therefore determined that the **Northern Ireland Pelagic Sustainability Group (NIPSG) Irish Sea Atlantic Mackerel, WOS & NS Herring Fishery (Mackerel component) 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.

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Appendix 1. Scoring & Rationale

Appendix 1a – MSC Principles & Criteria

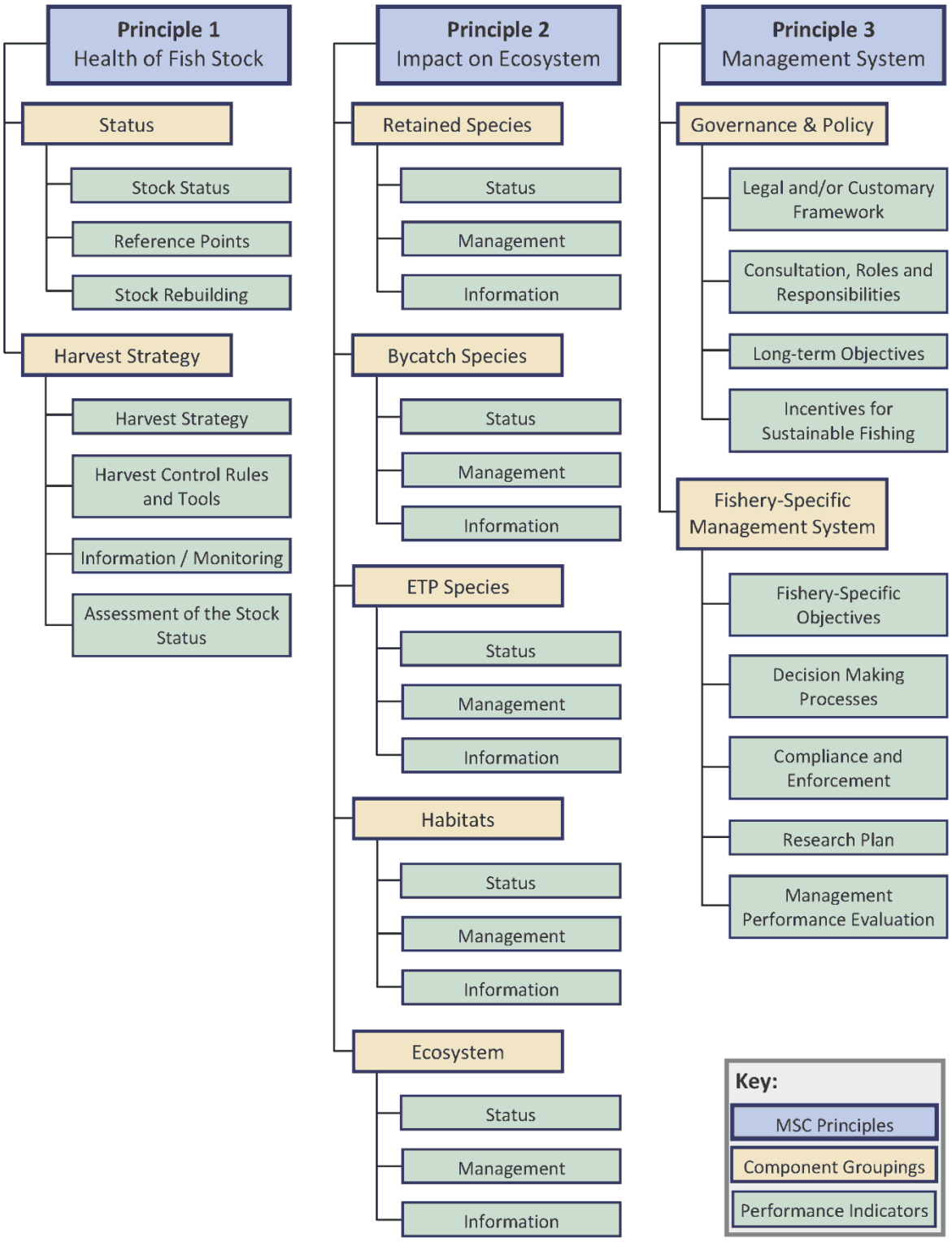

Figure A1 – Graphic of MSC Principles and Criteria

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

Principle 1

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

Intent:

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

Status

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

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

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

Harvest strategy / management

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

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

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

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

Principle 2

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

Intent:

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

Retained species / Bycatch / ETP species

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

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

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

Habitat & Ecosystem

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

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

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

Principle 3

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

Intent:

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

Governance and policy

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

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

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

Fishery specific management system

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

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

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

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

Appendix 1.1 Performance Indicator Scores and Rationale

Evaluation Table 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	**Guidepost**	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)	(N)
	Justification	There is no evidence of a significant reduction in recruitment at low SSB within the time series. The most recent re-examination of reference points concluded that the previous basis for the biomass limit level, Bloss, the lowest SSB in the time series, remained valid. Based on the 2014 benchmarked assessment and subsequent update, this lowest level was estimated to have occurred in 2002: Bloss 1.84mt. As a consequence of the changed perception of SSB the biomass limit level (Blim) has been increased from 1.67mt to 1.84mt (*in the 2014 Update assessment SSB/2002 is 1.89mt and in the 2015 assessment the 2002 SSB was 1.96mt. It is therefore likely that Blim will reviewed when a revised management plan is developed)* The estimate of SSB at spawning time in 2015 from the 2015 update assessment was 3.62mt. This is well above the biomass limit level, Blim, and above the revised biomass precautionary approach, Bpa, reference point (3.0mt). This Bpa reference point is set at a level with a high probability of the stock being above Blim. The lower variance estimate of SSB in 2015 was 2.69mt. Therefore it is highly likely (80% probability) that the SSB is currently above the point where recruitment might be impaired.		
b	**Guidepost**		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)

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing
	Justification	The SSB in 2015 was estimated to be above the MSY B trigger level of 3.0mt. The revised update assessments in 2015 show that the SSB has been above 3mt since 2009 and in 2014 was above 4mt. Between 1992 and 2008, SSB was below the revised MSY Biomass trigger level of 3.0mt Our comments below on PI 1.1.2 supports our contention that the MSY biomass trigger is set at a level consistent with BMSY and that in terms of evaluating the status of the stock it is a more reliable measure than FMSY. We have also justified quoting FMSY as an important target because it does provide a valuable guide to action to prevent SSB falling to the biomass limit level should the SSB fall below the MSY biomass trigger level,. Having established MSY biomass trigger as an acceptable target it is reasonable to conclude that current SSB is well above that level, indeed it has been above 3.0mt since 2009. Therefore the stock is at or has been fluctuating around its target reference point over recent years. Because of the changing situation regarding advice on appropriate reference points we have based our conclusions on the reference points in use for the most recent management advice on the fishery in 2016. That approach is more precautionary on our part than using the 2014 value of 2.36mt compared with the 2015 value of 3.0mt.
References		ICES, 2013a,c; ICES, 2014a,c,d, ICES 2015a,b,

Stock Status relative to Reference Points			
	Type of reference point	**Value of reference point**	**Current stock status relative to reference point**
Target reference point	MSY $SSB_{trigger}$ B_{pa} FMSY	3.0mt 3.0mt 0.22	3.62mt (range 2.69mt – 4.87mt) 0.339
Limit reference point	Blim Flim Fpa	1.84mt 0.36 0.25	3.62mt (range 2.69mt – 4.87mt) 0.339

OVERALL PERFORMANCE INDICATOR SCORE:	**80**
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	**Guidepost**	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	A raft of appropriate biological reference points, for biomass and fishing mortality have been defined and in operation since 2008. Some of these points were re-evaluated in 2014 following a benchmark assessment of stock status based on a new assessment model. The reference points were again reviewed again in 2015 as part of a management strategy evaluation The reference points meet internationally agreed standards and have been endorsed by ICES as consistent with the MSY plan and Precautionary approaches.		
b	**Guidepost**		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)	(N)
	Justification	The biomass limit point (Blim) is set at the lowest SSB in the time series at which there has been no evidence of a significant reduction in recruitment. This is a point below which impaired recruitment might be expected but at and above which there have been no clear signs of impaired recruitment. However there is no strong evidence, for example from a well-established stock and recruitment relationship, that appropriate precautionary issues have been taken into account in setting the limit level at B_{loss}. The biomass limit level was raised from 1.67mt to 1.84mt in 2014 simply in line with the revised benchmark assessment of the SSB in 2002 which remains the lowest SSB in the time series dating back to 1980. It should be noted in relation to precautionary issues that the retrospective estimate of SSB in 2002 in the 2015 assessment of the stock was 1.96 mt.		
c	**Guidepost**		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?		(Y)	(N)

PI 1.1.2		Limit and target reference points are appropriate for the stock
	Justification	Precautionary approach maximum sustainable yield reference points for biomass and fishing mortality were established in 2008. In 2014 the benchmark assessment of the stock opted to change the assessment model which changed the perception of stock status historically. As a consequence, and following established ICES procedures and set guidelines, the reference points were re-examined and changed. They were reviewed again as part of the management strategy evaluation process in 2015 and changes were made to both fishing mortality reference points and to the MSY B trigger and Bpa values.

Reference point	**2008 value**	**2014 value**	**2015 value**
MSY B trigger	2.2mt	2.36mt	3.0mt
F MSY	0.22	0.25	0.22
Precautionary approach B lim	1.67mt	1.84mt	1.84mt
:: B pa	2.3mt	2.36mt	3.0mt
:: F lim	0.42	0.39	0.36
:: F pa	0.23	0.26	0.25

Reference point	**Technical basis**	**Source**
MSY B trigger	Bpa	ICES (2015c)
F MSY	Stochastic simulation	ICES (2015c)
Blim	Bloss 2002 from 2014 Benchmark Ass:	ICES (2015c)
Bpa	$\exp(1.654 \times \sigma) \times$ Blim, $\sigma = 0.30$	ICES (2015c)
Flim	F that on average leads to Blim	ICES (2015c)
Fpa	F that on average leads to Bpa	ICES (2015c)

Following a review of the management plan in 2015. The management plan agreed between the EU, Faroe Islands and Norway (the Coastal States) in October 2008 is no longer considered appropriate and ICES no longer provides advice on the basis of that plan.

Until a new strategy is agreed ICES provide advice on the basis of the MSY approach

Whilst the current position satisfies the requirements at SG 80 as being consistent with BMSY it does not fully satisfy the requirement at SG 100. Until a new management plan has been agreed and implemented, there is insufficient evidence that relevant precautionary issues, such as the ecological role of the stock, and also the changed perception of stock status, have been taken into account with a high degree of certainty (95% probability).

Although mackerel is not a key low trophic level species it does play an important role in the Northeast Atlantic ecosystem as a predator and also a prey item. There is currently no evidence that its role as a prey item in the North-east Atlantic ecosystem is a consideration in setting the natural mortality in the stock assessment process. Natural mortality is assumed, by the ICES assessment working group, to be 0.15 for all age groups and constant over time.

Additional background

It is a well-established fact that the management of NEA mackerel has been a complex issue over recent years. There have been underlying ecosystem regime changes, contributing to that complexity, which have resulted in significant

PI 1.1.2		Limit and target reference points are appropriate for the stock		
		distributional changes for the NEA mackerel stock. These changes have, for a variety of political reasons, resulted in increased fishing opportunities which have generated increased fishing pressure (F) on the stock. However this increased fishing pressure has not resulted in falling SSB. On the contrary there has been a steady increase in SSB since 2008 and only a slight fall at spawning time in 2015. Therefore we are now faced with a situation where, in spite of the annual catch exceeding the ICES advised level based on the management plan fishing mortality range (F 0.2-0.22), the SSB has remained well above the management plan SSB trigger level (2.2mt) and MSY B trigger level of 2.36mt*. The management plan formed the basis for the advice on the 2015 fishery and the results of that advice, in terms of the catch and resultant F, are not yet known. It is worth noting that a predicted catch based on FMSY would have resulted in an increase of over 1000t in the advised TAC for 2015. Problems with the estimation of F in some stocks, in particular a stock being subjected to major regime change, are well known. F is estimated over a selected age range (4-8 years for NEA mackerel). As a consequence its consistency is highly dependent on recent stock biology, fishery characteristics and environmental conditions. These can affect growth rates, age of maturity, natural mortality, recruitment and availability and selectivity in the fishery. ICES have noted significant changes in some of these parameters over recent years. When FMSY is used as the basis for the advice it generates an expected catch. However the actual yield can be modulated by changes in the parameters listed above. Our conclusion, in the current complex management and environmental situation, is that the SSB is a more reliable indicator of the maximum sustainable yield of the stock than the fishing mortality. In that context the 2014 MSY B trigger (2.36mt*) is a very precautionary and a very reasonable proxy for BMSY. Indeed we maintain that this is the declared intent of the ICES advisory committee who describe MSY B trigger as being consistent with the ICES MSY approach. As a consequence we feel that this fully satisfies the requirements at SG 80 and the CR v1.3 CB 2.3.2.2 Nevertheless the FMSY target remains as a valuable action point, should the SSB fall below the MSY target, to prevent the stock from falling to the biomass limit level.		
d	**Guidepost**		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		(Not relevant)	
	Justification	Northeast Atlantic mackerel are not considered to be a key LTL species. ICES reports clearly note that mackerel play an important role in the North East Atlantic ecosystem as prey species for birds and marine mammals and as a predator on small fish and zooplankton. This provides clear evidence of their role as a lower trophic level species. However in the North East Atlantic ecosystem mackerel cannot be considered to be a key LTL species because it does not meet at least two of the three sub- criteria in CB2.3.13 in Certification requirements v1.3 as cited in italics below. i)A large proportion of the trophic connections in the ecosystem involve this stock, leading to significant predator dependency.		

PI 1.1.2		Limit and target reference points are appropriate for the stock
		In the North East Atlantic there are numerous other species which form important sources of prey for piscivorous sea birds and mammals. There are herring, horse mackerel, Norway pout, sprat, sandeels, blue whiting, Argentines, Myctophids and juvenile saithe. ii) A large volume of energy passing between lower and higher trophic levels passes through this stock. There are numerous other species of planktivores, most of which are listed above, through which energy passes from primary production through zooplankton to fish. In the North East Atlantic ecosystem. iii) There are few other species at this trophic level through which energy can be transmitted from lower to higher trophic levels, such that a high proportion of the total energy passing between lower and higher trophic levels passes through this stock (ie the ecosystem is 'wasp waisted' As noted above there are numerous other prey species of planktivores which are abundant in the North East Atlantic ecosystem through which energy is passed to the top predators. Quite clearly these ecosystems are not 'wasp waisted' Within the North East Atlantic fish ecosystem there is no evidence that any species of fish bird or mammal is entirely dependent on mackerel as a source of food
References		ICES 2013a,c; ICES 2014a,d. ICES, 2015a,b
OVERALL PERFORMANCE INDICATOR SCORE:		**80**
CONDITION NUMBER (if relevant):		**-**

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	**Guidepost**	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?	(Y/N)		(Y/N)
	Justification	The stock is not considered to be depleted, and this this PI is not scored.		
b	**Guidepost**	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?	(Y/N)	(Y/N)	(Y/N)
	Justification			
c	**Guidepost**	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?	(Y/N)	(Y/N)	

PI 1.1.3		**Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe**
	Justification	
References		
OVERALL PERFORMANCE INDICATOR SCORE:		**-**
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	**Guidepost**	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)	(N)
	Justification	Up to 2014 there was a Management Plan in place which formed the foundations of the Harvest Strategy. The plan was agreed between the EU, Faroe Islands and Norway (the Coastal States) in October 2008. The plan was firmly based on the Precautionary approach and MSY reference points and was evaluated and endorsed by ICES. Because of the changed perception of stock status in 2014 the Coastal States asked ICES for advice on a multi-annual management strategy. The results of that special request were published in February 2015. After consideration of the ICES advice by the Coastal States they requested that a new multi-annual strategy should be developed from the advice and be available for the management of the fishery from 2016 to 2018. For the 2015 fishery ICES continued to provide advice on the basis of the existing plan. That advice to the Coastal States formed the basis on which to set the total TAC. The strategy was therefore expected to achieve stock management objectives reflected in the target and limit reference points (SG60). <u>The 2008 Long term Management plan</u> ***1.*** *For the purpose of this long-term management plan, "SSB" means the estimate according to ICES of the spawning stock biomass at spawning time in the year in which the TAC applies, taking account of the expected catch.*		

PI 1.2.1		There is a robust and precautionary harvest strategy in place
		***2**. When the SSB is above 2,200,000 tonnes, the TAC shall be fixed according to the expected landings, as advised by ICES, on fishing the stock consistent with a fishing mortality rate in the range of 0.20 to 0.22 for appropriate age groups as defined by ICES.* ***3**. When the SSB is lower than 2,200,000 tonnes, the TAC shall be fixed according to the expected landings as advised by ICES, on fishing the stock at a fishing mortality rate determined by the following:* *Fishing mortality F = 0.22* SSB/ 2,200,000* ***4**. Notwithstanding paragraph 2, the TAC shall not be changed by more than 20% from one year to the next, including from 2009 to 2010.* ***5.** In the event that the ICES estimate of SSB is less than 1,670,000 tonnes, the Parties shall decide on a TAC which is less than that arising from the application of paragraphs 2 to 4.* ***6.** The Parties may decide on a TAC that is lower than that determined by paragraphs 2 to 4.* ***7**. The Parties shall, as appropriate, review and revise these management measures and strategies on the basis of any new advice provided by ICES* That harvest strategy is clearly responsive to the status of the stock irrespective of the degree of compliance with scientific advice on annual catches. The strategy is firmly based on an annual analytical assessment of the spawning stock biomass in relation to reference points. The results of the rigorous assessment process then clearly dictate the tactics for the following year in terms of a fishing mortality. This then translates directly into an advised catch for the following year. That advised catch takes into account the catch levels of the previous year. This clearly meets the requirements at SG 80. The seven elements of the long term management plan, which was the basis of the harvest strategy up to the 2015 fishery, not only worked together towards achieving management objectives reflected in the target and limit reference points but are also clearly designed to achieve those objectives. This also met the requirements at SG100. However for the 2016 fishery the Coastal States members informed ICES that they no longer considered that the existing management plan is appropriate and that ICES should therefore give its advice based on the following objectives and timelines approach until a new management strategy is in place: *1. The Parties agree to limit their fishing on the basis of a TAC corresponding to a fishing mortality rate within the range of fishing mortalities defined by ICES as being consistent with fishing at maximum sustainable yield, provided that the SSB at the end of the TAC year is forecast to be above the value of Btrigger.* *2. Where the SSB is forecast to be below Btrigger, but above Blim, the Parties agree to reduce the upper and lower bounds of the range of fishing mortality referred to in paragraph 1 by the proportion of SSB at the start of the TAC year to Btrigger.* *3. Every effort shall be made to maintain a minimum level of SSB greater than Blim. Where the SSB at the start of the TAC year is estimated to be below Blim the TAC shall be set at a level corresponding to a fishing mortality rate consistent with the objective of rebuilding the SSB to above Blim the following year. The Parties may also take additional management measures that are deemed necessary in order to achieve this objective.*

<table>
<tr><td colspan="2">PI 1.2.1</td><td colspan="3">There is a robust and precautionary harvest strategy in place</td></tr>
<tr><td></td><td></td><td colspan="3">The Coastal States had already made an explicit request to ICES to develop a revised management plan on which to base fishing levels in the years 2015 to 2018. They asked ICES to:
1. Evaluate new biological reference points for the North East Atlantic mackerel stock based on the revised (WKPELA 2014) mackerel assessment method.
2. Evaluate the alternative fishing mortalities corresponding to Fmsy, 0.20, 0.25, 0.30 and 0.35 for appropriate age groups as defined by ICES.
3. Each alternative should be assessed in relation to how it performs with respect to stock development in the short, medium and the long term and the level of uncertainty in the stock assessment, inter annual TAC variability, long term yield, as well as in relation to the precautionary approach.
4. Each alternative shall be evaluated with an annual quota flexibility of 10%.
5. Each alternative shall also be assessed with a stability clause where the TAC shall not deviate by more than 20% from the TAC of the preceding year, but the F shall not deviate by more than 10% from the target F.

ICES responded positively to the request and in the meantime provided advice for the 2016 fishery on the basis of the MSY approach. The team considered that changes in the strategy for the 2016 fishery

In view of the change in the status of the management strategy and the fact that the 2008 Management plan no longer forms the basis of the advice for the 2016 fishery, the team no longer consider that the fishery achieves the more rigorous requirements at SG 100</td></tr>
<tr><td rowspan="3">b</td><td>Guidepost</td><td>The harvest strategy is likely to work based on prior experience or plausible argument.</td><td>The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.</td><td>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.</td></tr>
<tr><td>Met?</td><td>(Y)</td><td>(Y)</td><td>(N)</td></tr>
<tr><td>Justification</td><td colspan="3">The harvest strategy has worked well in the past as evidenced by the recovery of the stock since the implementation of the management plan in October 2008. Similar strategies, based on reducing F in line with reductions in SSB linked to specific management reference points, have worked well for numerous other stocks. Such plans are generally endorsed by ICES as being consistent with the Precautionary approach. The replacement strategy for the management of the fishery in 2016 is firmly based on the MSY approach which is linked to the precautionary approach for biomass but imposes a lower fishing mortality. This replacement harvest strategy for this stock is therefore likely to work based on prior experience and plausible argument (SG 60)

The evidence of whether or not the harvest strategy is working to achieve sustainable exploitation of the stock lies in the current stock status in relation to the MSY reference points for SSB and F. SSB steadily increased from around 2 million tonnes in 2003 to over 4 million tonnes in 2014 although it did decrease to 3.6 million tonnes in 2015. With good recruitment over recent years the SSB has been maintained at above the MSY B trigger level and is predicted to remain above that level in 2016 and 2017. In spite of recent catch levels in excess of the ICES advised levels, fishing mortality has been maintained at around F 0.3 since 2009 which is below Flim but not in keeping with Fmsy or Fpa. The evidence clearly satisfies the requirements at SG80. However the performance of the current ICES interim strategy and the new Coastal States interim strategy has not been fully evaluated in terms of whether or</td></tr>
</table>

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		not it will be able to continue to maintain the stock at target levels if the current situation of catches in excess of the advised level continues. Therefore the requirements at SG 100 are not met.		
c	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	(Y)		
	Justification	There is a well-established and comprehensive international monitoring control and surveillance programme in place to ascertain the total catch of NEA mackerel from the whole area of its distribution. The resultant catch data are used by ICES to assess the status of the stock and to provide annual advice based on the agreed harvest strategy. This comprehensive stock monitoring and assessment programme involves scientists from all the countries involved in the fishery. They meet annually at the ICES working group for widely distributed and migratory stocks (WGWIDE). The resultant assessment is based not only on the official landings statistics but also uses data, provided by working group members, on discarding, slippage and possible under-reporting of catch. The new State Space assessment model (SAM) provides reliable estimates of both SSB and F with 95% confidence intervals. The outputs from the annual stock assessment are well able to determine whether or not the harvest strategy is working.		
d	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			(Y)
	Justification	Reference points which underpin both the old harvest strategy and the interim strategy are kept under regular review by the ICES working group. Some reference points were updated in 2014 following a benchmarked assessment of stock status and further reviewed in 2014. This follows a well-established procedure for all ICES assessment working groups. Following the 2014 benchmark assessment and the resultant change in the perception of stock status there was a request from the Coastal States for advice on a multi-annual management strategy. The results of that special request were published in February 2015.The advice included a re-evaluation of all the reference points with some changes which are listed, together with the 2008 and 2014 values, in the Table in PI 1.1.2 scoring issue (c). The evaluation provided options for consideration of different combinations of fishing mortality with biomass trigger levels. This has not yet resulted in a new and agreed management plan but does represent an interim strategy pending the establishment of a new revised and agreed management plan for the NEA mackerel stock. The Coastal States have provided their own interim strategy which could form the basis of a new multi-annual strategy. The Coastal States proposals are currently being reviewed by ICES. The procedures outlined above and which are ongoing, clearly constitute periodic reviews and improvements to the harvest strategy thus meeting the requirements at SG 100.		

PI 1.2.1		**There is a robust and precautionary harvest strategy in place**		
e	**Guidepost**	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	This scoring issue is not scored as sharks are not a target species		
References		ICES, 2008a,b; ICES, 2013c; ICES 2014a,d. ICES, 2015a,b,c,d		
OVERALL PERFORMANCE INDICATOR SCORE:				**85**
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	**Guidepost**	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 rules and tools necessary to successfully implement the harvest strategy are those which control the fishing effort on the whole stock and which were explicitly and well defined in the 2008 Management Plan. The Plan was agreed by the Coastal States Group, consisting of Norway, the Faroe Islands and the EU, in October 2008 and remained in place as the basis for the ICES advice until 2015 ICES concluded that the Plan was precautionary under the assumption that the TAC equals the total removals from the stock. The annual implementation of the harvest strategy is the responsibility of the Coastal States group, who meet at least annually to agree on the national quota shares in the fishery. In 2015 the Coastal States informed ICES that they no longer considered the plan as appropriate and requested ICES to consider and investigate their proposals for a revised management plan. In the meantime, they made a clear statement on the interim measures which they would be introducing pending an agreement on a revised plan. ICES responded positively to the proposals and for the 2016 fishery they provided advice on the basis of an MSY and precautionary approach rather than the management plan. The current approach is clearly designed to ensure that the stock remains above the limit reference points for SSB and below Flim. The harvest strategy is also strongly supported by the strict rules appertaining to a raft of technical measures. These include minimum landing size of 30cm in the North Sea and 20cm elsewhere, closed areas and closed seasons in the North Sea to protect the severely depleted North Sea spawning component, a restricted fishing area (SW Mackerel Box) off the SW coast of the UK where juvenile mackerel are abundant, a ban on high grading and a discarding ban for all Norwegian, Faroese and Icelandic vessels (soon to be extended to all EU vessels) These additional rules and tools are all well-defined The TAC rules, and the technical measures and general basis on which they are established, do have a commonality throughout the ICES area and those rules are well defined and are generally understood by both managers and fishers. The rules governing the subsequent allocation of the TAC in this fishery, both nationally and by area, through the Coastal States Agreement, are also well defined and generally understood. Similarly, the rules allocating shares in the quota to individual fishing enterprises at the national level are generally understood. As a consequence, the management of the fishery does meet the requirements at SG 60 in having generally understood harvest control rules which are consistent with the harvest strategy and act to reduce the exploitation rate in stages from an upper trigger level to effectively zero if the biomass limit level is reached. However, whilst the interim arrangements clearly satisfy the requirements at SG 60 the interim nature of the current strategy and the failure of the Coastal States to agree in full to the ICES advice, the more rigorous requirements at SG80 are not met.		

PI 1.2.2		There are well defined and effective harvest control rules in place		
b	Guidepost		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 overarching harvest control rule is the level of annual TAC. This is heavily dependent on a reliable estimate of current stock status and predicted future recruitment to the fishable stock biomass. The main uncertainties in that context are the reliability of the catch data. This is affected by unrecorded catches through discarding and slippage which are known to occur. The assessment working group are aware of the problem and wherever possible include reliable estimates in the catch data used for stock assessment and subsequent advice on the annual TAC. There was a problem in 2013 when the assessment working group were unable to carry out an analytical assessment of stock status because of internal problems which had developed with the Integrated catch assessment (ICA) model. The new stock assessment model, first used in 2014, is able to address the periods of unreliable catch data satisfactorily. This was the major driving force in the decision to abandon the use if the ICA assessment model in favour of the new age based, fully statistical, state space (SAM) model. The model was set up so that it does take into account the large uncertainty in historical catches prior to 2000. The new model presents the SSB, Fishing mortality and Recruitment estimates with 95% confidence intervals which reflect the level of uncertainty in those estimates. This provides the opportunity for managers to take a more cautious approach to the management of the stock taking the main uncertainties into account. The requirements at SG 80 are fully met. In recent years there has been a problem of catches in excess of the annual scientific advice. The reasons for this and the implications for the sustainable exploitation of the stock are specifically addressed in detail at scoring issue c) below. In the context of this scoring issue the problem has generated a major source of uncertainty for the future sustainable exploitation of this stock. It is not clear how the design of the existing harvest control rules can possibly continue to deliver sustainable exploitation if the annual TAC is regularly exceeded. Furthermore, the interim arrangements noted in scoring issue a) above, whilst being accepted by ICES, do nevertheless introduce a further element of uncertainty. As a consequence the rigorous requirement, at SG 100, that the design of the rules satisfactorily addresses a wide range of uncertainty, is not met.		
c	Guidepost	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)	(N)	(N)
	Justification	At the generic level, setting an annual TAC, based on a reliable annual estimate of stock status, backed by a Management strategy, together with an appropriate raft of technical measures (listed in a) above), does have a reliable track record for many stocks in the Northeast Atlantic. The management of the NEA mackerel stock has all these elements in place supported by rigorous surveillance, monitoring and enforcement of the national quotas and technical measures. This provides some evidence from past performance, that the harvest control rules and tools, currently in place, are able to provide effective and appropriate methods to control exploitation satisfying the requirements at SG60.		

PI 1.2.2	There are well defined and effective harvest control rules in place

It is accepted that the overarching TAC rule, which underpins the Management of the fishery, has been effective and has worked successfully in the past to control exploitation. Responsibility for the allocation of the annual TAC is administered by a Coastal States Agreement which for this fishery involves Norway, the Faroe Islands the EU and Iceland. Iceland was not accepted as a Coastal State member until 2010. There are currently internal issues in relation to that agreement which have caused major problems for the successful implementation of the harvest control rules. Since 2008 there has been a lack of agreement internationally on implementation of the rules which has led to unilateral quotas being set outside the ICES advice.

This breakdown in the management of the fishery since 2008 has been the result of major changes in the distribution and abundance of NEA mackerel which has taken fishable quantities into the waters of countries that were not previously involved in the fishery in particular Iceland, and Greenland. The changes in distribution have also resulted in increased abundance of mackerel in Faroese waters. It became apparent that the quota sharing arrangement, within the Coastal States agreement, was an ad hoc arrangement with no legally backed mechanism which could address the legitimate claims of other countries to a share in the advised annual TAC. (see also PI 3.1.1). This has resulted in annual catches grossly in excess of the advised catches based on the original management plan. As a consequence, the strategy has been unable to respond to the status of the stock and the predicted catch levels, corresponding to the ICES advice, have been heavily exceeded since 2009.

To illustrate the magnitude of the problem the Table below shows the performance of the harvest strategy and associated harvest control rules for the fishery in 2011, 2012, 2013 and 2014 and the ICES advice and declared intentions for the 2015 fishery and advice for 2016.

Year	2011	2012	2013	2014	2015	2016
ICES advice In Kt	592-646	586-639	497-542	927-1011	831-906	667,385
Declared intentions (t)	927,245	930,135	895,336	1,396,238	1,235,608	
Actual Catch (t)	946,661	894,684	933,165	1,394,454		

The Coastal States did reach an agreement in March 2014 on sharing the ICES advised quota closely corresponding to the management plan (927-1011kt) for the 2014 fishery. That agreement continued to be based on an ad hoc arrangement of TAC sharing resulting in shares of: EU -611,205t: Faroe Islands – 156,240t: Norway – 279,115t: NEAFC – 42,577t (Total: 1,089,137t).

However the arrangement did not involve Iceland, Greenland or Russia who took catches of 151,235t, 52,783t and 80,812t respectively in the 2013 fishery increasing to 172,960t, 78,581t and 116,433t respectively in the 2014 fishery. Those three countries are predicted to reduce their catches to a total of around 320,000t in the 2015 fishery based on declared intentions and estimated catches (see Table below) The strategy to harvest in line with the management plan clearly did not work in the 2013 and 2014 fisheries, where the catch grossly exceeded the ICES advised TAC, and is unlikely to have worked in the 2015 fishery where the predicted catch is likely to be an overshoot of around 300,000t of the advised TAC..

In their advice for the fishery in 2016 the advisory committee of ICES took into account the likely catch in 2015 based on the declared intentions of countries outside the Coastal States Agreement.

Details of those predictions, and the basis on which they were made, are listed in the Table below.

PI 1.2.2	There are well defined and effective harvest control rules in place

ICES used all available information and estimated the likely total catch of NEA mackerel, in tonnes, from all areas in 2015 as follows:

Estimation of 2015 catch	Tonnes	Reference
EU Quota	521,689	European Council Regulation 2015/
Spanish payback	-9747	European Council Regulation 2011/1
Norwegian quota	242 078	Nærings- og fiskeridepartementet 23 (Regjeringen.no)
Inter-annual quota transfer 2014->2015 (NO)	16,380	Directorate of Fisheries in Norway
Russian quota	114,143	Estimate from PINRO (Russia)
Discards	6,451	Previous years estimate
Icelandic quota	173,000	Icelandic regulation No. 532/2015
Inter-annual quota transfer 2014->2015 (IS)	6,800	Icelandic regulation No. 532/2015
Faroese quota	132,814	Faroese regulation No. 141/2014
Greenland quota	32,000	Estimate from Greenland institute o Resources
Total expected catch (incl. discard) 1,2	1,235,608	

1 No guesstimates of banking from 2015 to 2016
2 Quotas include amounts exchanged to other parties

This would be an overshoot of 329kt compared with the ICES advised catch, based on the 2008 Management Plan of 831 – 906kt.(F 0.2 - 0.22).

All the evidence over recent years clearly shows that current management actions (tools in use) used to share the scientifically advised annual TAC are not wholly effective in achieving the exploitation levels required under the harvest control rules. As a consequence the fishery does not meet the SG 80 scoring guideposts.

References	ICES, 2008a,b; ICES, 2013c; ICES 2014a,d,e,f; Simmonds et al, 2010. ICES, 2015a,b,c,d,e

PI 1.2.2	There are well defined and effective harvest control rules in place
OVERALL PERFORMANCE INDICATOR SCORE:	**65**
CONDITION NUMBER (if relevant):	**1**

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	**Guidepost**	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	The stock structure of mackerel occurring in the northeast Atlantic is complex but is well described and understood. It has been the subject of considerable research and debate over the past forty years. Tagging for an example has shown them to be highly migratory with fish tagged off the Iberian peninsula occurring in the northern North Sea and off the Norwegian coast. In recent years their distribution has been gradually spreading to the North and West and they are now found in fishable quantities in Icelandic, Faroese and Greenland waters and have been recorded as far north as Svalbard. In spite of their widespread distribution there is a definable structure at spawning time, with a southern, western and North Sea component. The development of these three components can be separately followed through the triennial egg surveys. However, because at certain times of the year the components may mix, they have to be managed as a single stock unit. The triennial egg survey, begun in 1977, has provided valuable knowledge on the life history, spawning behaviour and the changes in the distribution of spawning, over that period. Information on stock productivity and stock abundance is routinely collected as part of the scientific sampling programmes of landings by all participating countries in the fishery. This includes length, age, weight at age and maturity data. These data are also observed and recorded during the triennial egg surveys. The record of scientific sampling of the landings in this fishery is good. Overall sampling coverage in 2013 was 89% and has been over 80% over the past ten years. Seven countries achieved a 95% sampling coverage in 2013. These data are vital in support of the annual stock assessment. A wide range of relevant supporting information, including environmental data is obtained from related scientific surveys. These surveys include the triennial egg surveys; the international bottom trawl surveys (IBTS); the international ecosystem survey of the Nordic seas (IESSNS) and the Norwegian tagging programme. These four surveys are now used as tuning indices in the new stock assessment model The structure of the fleets in the directed fisheries for NEA mackerel are exceptionally well known and well described in the annual reports of the ICES assessment working group. This includes knowledge of gear types and gear configurations in use throughout the fishery and numbers of vessels. Information on national fleet size and structure is updated annually by the working group in the stock annexe to their annual assessment report. Fleets which may take mackerel as a by-catch, in for example the horse mackerel and blue whiting fisheries, are also well known and described. The evidence shows that there is a wide 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. This raft data, with some time series		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
		dating back over forty years is clearly comprehensive and provides a relevant range of information which strongly supports the current harvest strategy. The requirements at SG 80 and SG 100 are fully met.		
b	Guidepost	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	All the relevant information required for carrying out an annual stock assessment in support of the harvest control rule is appropriately monitored. There are now three fishery independent tuning data series providing indices of stock abundance plus tagging data in support of the stock assessment. Some uncertainty has now been introduced in relation to the triennial egg survey index. This index has been recalculated back to 1992 based on new information on the rate of egg development. Monitoring of landings in support of the TAC control is carried out contemporaneously with the fishery and enforcement action can be introduced quickly. This fully supports the modest requirements at SG60. The ICES assessment working group now consider that the estimates of total removals are much more reliable than in the period before 2000. Discarding and slippage were known to occur in this fishery in the past but discarding is now illegal in most countries and will become illegal in EU waters in 2015. The new assessment model is able to take into consideration the uncertainty in the earlier catch data and the estimates of the state of the stock after 1992 are much more reliable. The new assessment model now has three fishery independent data series with which to tune the assessment whereas with the previous model only had the triennial egg survey to provide a fishery independent view of the status of the stock. The requirements at SG 80 are fully met. In spite of the recent improvements in the reliability of the catch data, ICES still considers that the total removals from the stock are expected to be under estimates because of incomplete discards data and un-quantified slippage. Whilst the period of very uncertain catch rates due to massive under-reporting prior to 2000 is taken into account in the new model it nevertheless continues to generate very high uncertainty on the estimates of stock size and fishing mortality until the early 1990's. There are other sources of uncertainty which affect the robustness of the assessment and resultant forecasts on which the harvest strategy is based. These include the estimate of the likely catch in 2014, fish weights at age, the proportion mature and the fishery selection at age. These factors all affect the reliability of the short and long term forecasts. Because of these factors in cannot be stated that 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		

PI 1.2.3		**Relevant information is collected to support the harvest strategy**		
		the information [data] and the robustness of assessment and management to this uncertainty. Therefore SG 100 is not fully met.		
	Guidepost		There is good information on all other fishery removals from the stock.	
	Met?		(Y)	
	Justification	Mackerel are known to occur in the catches in other pelagic fisheries over the whole area for example in the horse mackerel and blue whiting fisheries and in demersal fisheries in the North Sea and English Channel. Where quota is available, or discarding is banned, they are retained, landed and recorded. There is adequate monitoring and surveillance of these fisheries which ensures that the information is available. Generally with targeted fisheries on shoaling fish unwanted by-catch is avoided. The level of unrecorded by-catch in other fisheries is considered to be small		
References		Jansen & Gislason, 2011; Jansen & Gislason, 2013; ICES, 1977; ICES, 2007a,b; ICES, 2013a,b; ICES, 2014a; ICES 2015a; Lockwood et al, 1977; Lockwood et al, 1981; Lockwood et al, 1988; Mendiola et al, 2006; Molloy, 2004; Russell, 1976; Simmonds *et al*, 2010.		
OVERALL PERFORMANCE INDICATOR SCORE:				**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	**Guidepost**		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	From 1993 to 2012 an Integrated Catch Assessment (ICA) model was used to assess the status of the Northeast Atlantic mackerel stock. This model was widely used for other pelagic stocks within the ICES area. Over recent years concerns have been expressed, within the assessment working group, regarding the ability of this model to take into account the quality of the input data, in particular the unreliability of the catch data. The assessment working group in 2013 concluded that the ICA model was no longer appropriate and did not carry out an assessment. Instead the advice for the fishery in 2014 was based on the ICES data limited catch approach. The assessment was then benchmarked in February 2014 (WKPELA). An important element of the terms of reference for the ICES benchmark workshop was the requirement to evaluate potential new assessment models which could take into account and handle the uncertainty in the actual catch data particularly for the period prior to 2000. The State Space Assessment model (SAM) was identified early in the process of model exploration as an ideal candidate to replace the ICA model. SAM is an age based, fully statistical model in which all the data are treated as observations. The model then estimates observation variances for each data source (catch and survey data) which can describe how well each data source is fitted in the model and the influence it has on the final outcome. One of the shortcomings of the ICA model was that the only fishery independent data source which could be used was the triennial egg survey data, used as an SSB index from 1992. The SAM model was also able to use two other fishery independent data sources as abundance tuning indices. They were the International bottom trawl survey (IBTS) recruitment index (age '0') from 1998; the (IESSNS) International ecosystem summer survey of the Nordic seas (ages 6-11) from 2007, 2010-2013. The basic SAM model was modified, by the benchmark workshop, in order for it to be able to incorporate tagging data from the Norwegian tagging programme (age 2yrs +) for the recapture years 1980 to 2006. The output from the model is presented with a high and low value for the final estimates of SSB, F and Recruitment representing the variance on those estimates. The rigorous exploration, evaluation and subsequent modification of this assessment model took into account all the major features of the biology of mackerel and the nature of this bulk catch and bulk landing pelagic fishery. Although SAM is now being increasingly used as the preferred assessment modelling framework within ICES, the model is still in its infancy and there are a number of shortcomings. Although the model has been published in a peer reviewed paper, there is currently no manual on its use. It is recognised that a high degree of knowledge of both statistics and programming is required to run it. These issues make SAM difficult to understand and implement for non-experts. ICES recognises that there is currently a limited pool of experts available as a knowledge resource. The labelling of the model outputs is still unsatisfactory.		

PI 1.2.4		There is an adequate assessment of the stock status		
b	Guidepost	The assessment estimates stock status relative to reference points.		
	Met?	(Y)		
	Justification	The new model provides estimates of SSB, F and recruitment in the same way that the previous ICA model did. These can be easily related to the MSY Management plan and Precautionary approach biological reference points agreed by ICES. The major difference in the output from the new model is that these estimates are provided with a high and low range representing the variance, a measure of the confidence in the final estimate. This should prove to be an invaluable tool for the management of this fishery.		
c	Guidepost	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)	(Y)
	Justification	The major source of uncertainty in the assessment of NEA mackerel is the reliability of the catch data in particular the serious problems of misreporting, underreporting and discarding particularly prevalent in the period prior to 2000. Another source of uncertainty in the past has been the availability of just one single source of fishery independent data with which to tune the assessment. This is the triennial egg survey now used as an SSB index although it has been used as an absolute estimate in the past. The influence of this single index reduces as the survey year recedes. The new assessment model (SAM) satisfactorily addresses both these areas of uncertainty as detailed in a) above. This fully statistical model is able to down weight the influence of observed parameters according to estimated variances on those observations. The uncertainties in the assessment are expressed as variances on the final estimates of SSB, F and Recruitment thus fully satisfying the requirement to evaluate stock status relative to reference points in a probabilistic way. For an example the precision of the estimates of F, SSB and R in the most recent year in the assessment (2013) were 25%, 33% and 63% respectively.		
d	Guidepost			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			(N)
	Justification	Exploration of alternative hypotheses and assessment approaches normally forms a routine element of most of the ICES assessment working groups when time permits. It is also a major part of the regular benchmark assessments of each stock. For the NEA mackerel in 2014 there was an urgent requirement to do this because the previous assessment model had been abandoned by the working group in the previous year. As a consequence a benchmark workshop was convened in February 2014 (WKPELA) specifically to address this problem (and the assessment of herring in the Celtic Sea). As detailed in the workshop report the process of evaluation and consideration of other models to replace the abandoned ICA model for NEA mackerel was not rigorous. Because of the urgent need to provide an assessment of stock status the SAM model		

PI 1.2.4		**There is an adequate assessment of the stock status**		
		was selected early in the deliberations of the benchmark workshop. This relatively new model had been used for other assessments by ICES and could be adapted and used quickly for NEA mackerel. In that context it is inevitable that there will be some teething problems with the application of the model. Indeed in the 2015 assessment ICES have commented that the assessment is currently unstable and more uncertain than in the first year. This is in part related to the new time series of fishery independent data being used in the assessment for the first time and also the two year time elapse since the robust egg survey index was updated. A new benchmark assessment is planned for 2017, during which all data input, alternative hypotheses and assessment approaches will be rigorously explored, It is clear from the evidence presented above that the current assessment process does not yet meet the *'rigorously explored'* criterion of this scoring issue.		
e	**Guidepost**		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?		(Y)	(Y)
	Justification	All ICES assessments are rigorously peer reviewed by the ICES advisory committee on fisheries management (ACOM) before being released into the public domain and before being used to present advice on the management of the fishery. In addition to this review the assessment reports are reviewed by the scientists and administrators from the EU, Norway and the Faroe Islands through the Coastal States meetings. Furthermore the 2014 benchmark assessment was subject to external peer review. The reviewers comments are included the report as 'General observations of the benchmark process' and 'Specific observations on the assessment'. This fully satisfies the requirements at SG 100		
References		ICES, 2013a,c; ICES, 2014a,c,d,e,f; ICES, 2015a,b,c,d,e; Neilsen and Berg, 2014; Pattersen and Melvin, 1996; Simmonds *et al*, 2010.		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	Main retained species are likely to be within biologically based limits (if not, go to scoring issue c below).	Main retained species are highly likely to be within biologically based limits (if not, go to scoring issue c below).	There is a high degree of certainty that retained species are within biologically based limits and fluctuating around their target reference points.
	Met?	Y	Y	Partial
	Justification	The fishery is highly selective with low levels of bycatch, and catch levels of non-target species which are extremely low in relation to total catches of each species concerned. None of the retained species/stocks which may be affected by the fishery is of high value or vulnerability and all are significantly less than 5% of the total catch. There are, therefore, no main species and so SG60 and SG80 are met. The only retained species recorded are herring and horse mackerel taken as a bycatch in the mackerel directed fishery. This only amounts to 0.4 and 0.17% respectively of the total catch over the period 2012-1014. North Sea and Atlanto-Scandian herring are well above their biologically based limit (currently above Bmsy); both herring stocks therefore meet the SG100 level. West of Scotland herring and horse mackerel are below reference points and so one species (element) scores at 100, two at 80, leading to an overall score of 85 for this Scoring Issue (SI).		
b	**Guidepost**			Target reference points are defined for retained species.
	Met?			Y (Partial)
	Justification	Target reference points are defined for NS and Atlanto-Scandian herring – Bpa and West of Scotland herring – SSB management plan. For horse mackerel, the ICES qualitative estimation is that fishing pressure is likely to be above an Fmsy target and the stock size is likely to be below a Bmsy target. There is no SG80 defined and most species achieve the SG100 level but some do not, leading to a score of 95 for this Scoring Issue (SI).		
c	**Guidepost**	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?	Y	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	There are no main retained species in any of the fisheries.		
d	**Guidepost**	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?	Y		
	Justification	The only species for which the status may be poorly known is horse mackerel; this is subject to qualitative only assessment by ICES. Nevertheless, ICES specify a TAC of 99 304 mt. The highest retained species bycatch in the NIPSG fisheries is around 26 mt in the purse-seine fishery, due to the high (and improving) selectivity of the fisheries. Operational practices within all of the fisheries are therefore sufficient to prevent the fisheries causing this species to be outside any appropriate biologically based limits, nor to hinder recovery. Overall for this PI, all SG60 and SG80 SIs are met, and both SG100 SIs are met for most, but not all, species. The score is therefore modified to 85.		
References		Meeting NIPSG Meeting DARD DARD 2015. NIPSG landing figures http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/hom-nsea.pdf http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/her-noss.pdf ICES, 2014a. ICES. 2014b. ICES. 2014c. Acoura 2015. NIPSG North Sea Herring MSC Assessment.		
OVERALL PERFORMANCE INDICATOR SCORE:				**85**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	There are measures in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a partial strategy in place, if necessary, that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.	There is a strategy in place for managing retained species.
	Met?	Y	Y	Y
	Justification	Each of the retained species other than horse mackerel has an associated management strategy involving mechanisms for determining or estimating stock status and setting catch limits; thus allowing for the modification of fishing practices on identification of unacceptable impacts. Most importantly, operationally, fishing is undertaken such that bycatches are minimised, this represents the key strategy for managing retained species in this fishery and meets SG100.		
b	**Guidepost**	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	Y
	Justification	Most importantly, the low levels of non-target catch show the effectiveness of the operational measures to minimise bycatches. In addition, most stock assessments of retained species are carried out by ICES and involve internal and occasional external review and testing. Each species is quantitatively (and for horse mackerel qualitatively) evaluated against biomass and/or fishing reference levels. Whilst species such as horse mackerel and now West of Scotland herring are likely to be below Bmsy, any overfishing would not be caused by the UoC under assessment here. Information on the effectiveness of strategies is therefore based on both the fishery and each of the species involved.		

PI 2.1.2		**There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species**		
c	**Guidepost**		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	Y
	Justification	Evidence of recording of bycatches in the NIPSG fishery is provided by the comprehensive data available and the inspections of landings. The low levels of non-target species demonstrate the selectivity of the fisheries.		
d	**Guidepost**			There is some evidence that the strategy is achieving its overall objective.
	Met?			Y
	Justification	The evidence of the effectiveness of management of the retained species is demonstrated in the healthy condition of herring stocks, and avoidance of limit reference points. The low levels of non-target species demonstrate the selectivity of the fisheries.		
e	**Guidepost**	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	Sharks are not caught in this fishery.		
References		Meeting client Meeting DARD DARD 2015. Landings by NIPSG vessels. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/hom-nsea.pdf http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/her-noss.pdf Acoura 2015. NIPSG North Sea Herring MSC Assessment. Acoura 2015.		

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**
	NIPSG West of Scotland Herring MSC Assessment
OVERALL PERFORMANCE INDICATOR SCORE:	**100**
CONDITION NUMBER (if relevant):	**-**

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	**Guidepost**	Qualitative information is available on the amount of main retained species taken by the fishery.	Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.	Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.
	Met?	Y	Y	N
	Justification	With the exception of slippages for safety reasons etc (which are reported to be uncommon in the NIPSG fleet, but the scale of slippage/discarding is not quantified), it is understood that all catches are landed. Accurate data is available on landings of all retained species from electronic logbooks and landing reports, verified by inspections (including on exiting the Norwegian zone if fishing is undertaken there). The consequence of catches for the status of affected populations is determined through ICES assessments for all species.		
b	**Guidepost**	Information is adequate to qualitatively assess outcome status with respect to biologically based limits.	Information is sufficient to estimate outcome status with respect to biologically based limits.	Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.
	Met?	Y	Y	Y
	Justification	Accurate data is available on landings. This is entirely sufficient to quantitatively determine, with a high degree of certainty, the effect of catches on the status of all affected stocks.		
c	**Guidepost**	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?	Y	Y	Y
	Justification	With the exception of slippage, which is considered under SIa, information on catches/landings is comprehensive and fully quantified. There is a significant time-series of data for comparison. Information is therefore fully adequate to support a strategy within the NIPSG fleet or, in combination with other data, to manage the stocks affected for each of the retained species and to determine the efficacy of such strategies.		

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**		
d	**Guidepost**		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?		Y	Y
	Justification	The current recording and monitoring programmes, considered sufficient to quantitatively evaluate effects of the fishery on stock status are ongoing. Recording of landings is more than sufficient to assess ongoing mortalities of all retained species.		
References		Meeting NIPSG Meeting DARD Meeting AFBI DARD 2015. NIPSG landing figures		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	Main bycatch species are likely to be within biologically based limits (if not, go to scoring issue b below).	Main bycatch species are highly likely to be within biologically based limits (if not, go to scoring issue b below).	There is a high degree of certainty that bycatch species are within biologically based limits.
	Met?	Y	Y	Y
	Justification	Other than those retained species discussed above, there are no bycatch species taken in the fishery (or if there were the occasional incidental catch, this would be exceptionally rare and negligible in its impact). The fishery therefore meets SG100.		
b	**Guidepost**	If main bycatch species are outside biologically based limits there are mitigation measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding.	If main bycatch species are outside biologically based limits there is a partial strategy of demonstrably effective mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	
	Met?	Y	Y	
	Justification	There are no main bycatch species in this fishery.		
c	**Guidepost**	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?	Y		

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**
	Justification	The extremely high selectivity of the NIPSG fishery, akin to other small pelagic fisheries, avoids capture of non-retained bycatch species; the fishery would not, therefore, cause any bycatch species to be outside biologically based limits nor hinder their recovery.
References		Meeting NIPSG Meeting DARD DARD 2015. NIPSG landing figures
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
CONDITION NUMBER (if relevant):		**-**

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	**Guidepost**	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	Y
	Justification	The strategies described above relating to retained species, most particularly the operational strategy to minimise non-target catches through selective fishing apply also to bycatch species. This is extremely effective in minimising bycatch such that additional management is not required.		
b	**Guidepost**	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	Y
	Justification	Recording of catches is undertaken on vessels, and can be verified by at-sea inspections. Studies have been undertaken on other similar vessels, such as the Scottish fleet, with results supporting the conclusions here.		
c	**Guidepost**		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	Y

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**		
	Justification	All evidence from the client, DARD, and other mackerel fisheries support there being a high level of selectivity.		
d	**Guidepost**			There is some evidence that the strategy is achieving its overall objective.
	Met?			Y
	Justification	All evidence from the client, DARD, and other mackerel fisheries corroborate the success of the objective to avoid bycatch within the mackerel fisheries.		
References		Meeting NIPSG Meeting DARD DARD 2015. NIPSG landing figures		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	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?	Y	Y	Y
	Justification	Accurate data on catches is obtained from electronic logbooks and landing reports. Landings are verified by DARD inspections, and inspections of landings into other ports outside Northern Ireland by national authorities. Catches of non-commercial (retained) species have consistently been shown to be zero or *de minimis* and so consequences for any affected populations will be clear. Scientific observations support this.		
b	**Guidepost**	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	Y
	Justification	As described above, information on catches is quantitative. This is more than adequate to confirm that the consequence of the *de minimis* catches of bycatch will be negligible.		
c	**Guidepost**	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	Y
	Justification	Current and historical information on the fisheries is considered adequate to support any strategies considered appropriate to manage bycatches (although the requirement for such strategies appears very remote).		

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**		
d	**Guidepost**		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	Y
	Justification	There is considered sufficient ongoing surveillance of the fisheries through recording of catches, inspections and other scientific programmes, to determine any increase in risk – should a species reach such levels of catch that it approaches being a 'main' species.		
References		Meeting NIPSG Meeting DARD Meeting AFBI DARD 2015. NIPSG landing figures		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	Known effects of the fishery are likely to be within limits of national and international requirements for protection of ETP species.	The effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species.	There is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of ETP species.
	Met?	Y	Y	Y
	Justification	Probabilistically, a high degree of certainty means a 90% chance that the effects of the fishery are within relevant protection requirements. There is no indication from any source of direct harm. Although statistical data on interactions is not available, all evidence suggests, with a high degree of certainty that the effects of the fishery on ETP species are within any national or international requirements and that there are negligible mortalities arising.		
b	**Guidepost**	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?	Y	Y	Y
	Justification	As detailed above, all evidence suggests, with a high degree of certainty, that there are no significant detrimental direct effects of the fishery on any ETP species.		
c	**Guidepost**		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	Y

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**
	Justification	As mackerel, and the fisheries, are pelagic (avoiding indirect impacts through habitat disturbance), and as discussed earlier, bycatches are extremely low and are taken from relatively abundant stocks (so removal of this additional biomass will have negligible effects) indirect effects would arise from trophic disturbances caused by the removal of mackerel biomass. Trophic models have been produced in the North Sea (Ecopath with Ecosim, Mackinson and Daskalov, 2007). In relation to mackerel the expansion in range and size of the stock is the factor most likely to exert an ecosystem effect. This may be through reduction in plankton and predation affecting other small pelagic species (sandeels, clupeids) which may have important ecosystem roles as food for birds and mammals (Furness, 2003; Fauchald et al, 2011). The indirect effect of the fisheries then, in removing mackerel from the Norwegian Sea, North Sea and waters west of the British Isles, can be considered with a high degree of confidence not to significantly detrimentally affect ETP species.
References		Meeting NIPSG Meeting DARD Mackinson and Daskalov, 2007 Furness, 2003 Fauchald et al, 2011
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
CONDITION NUMBER (if relevant):		

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	**Guidepost**	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

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.**		
	Justification	The fishery is subject to the national legislation of the UK, EU (Norway if fishing in Norwegian waters) and International legislations and Conventions. The UK (and EU states and Norway) has ratified CITES and relevant EU Directives have been ratified (namely Habitat Directive 92/43/EEC, and the Bird Directive 2009/147/EC). Council Regulation (EC) 1380/2013 on the Common Fisheries Policy is to ensure exploitation of living aquatic resources in such a way so as to provide sustainable economic, environmental and social conditions. To this end, the Community should, among other things, minimise the impact of fishing activities on marine ecosystems, and the Common Fisheries Policy should be consistent with other Community policies, in particular with environmental policy. Council Regulation No. 812/2004 adopted on 26 April 2004 obliged Member States to use acoustic deterrent devices or ADDs (notably pingers) in particular gillnet fisheries, and to implement at-sea observer schemes with annual reports of incidental catch estimates. This regulation has been transposed into relevant national fisheries regulations. Under Article 6, Member States are required to report annually on the implementation of the Regulation, and the annual report must include estimates of the overall incidental catches of cetaceans in each of the fisheries concerned. There is sufficient knowledge in relation to the fishery and the ETP species affected by it. Reported levels of marine mammal interaction are very low, and therefore do not present a threat to affected populations. Accordingly, the management response to the potential issue of ETP bycatch is appropriate both in scope and in the measures that it implements in order to avoid impacts. Based on knowledge on ETPs that may be affected by this fishery, as well as the low level of interaction and comparisons with other pelagic trawl fisheries, there is an objective basis for stating that the measures in place are likely to avoid unacceptable impacts to ETPs. The fishery is achieving national and international requirements for the protection of ETPs These comprise a strategy for managing the impact of all fisheries on ETP species, with measures to minimise mortality where appropriate. These are considered likely to achieve, but not necessarily exceed, national and international requirements for protection of ETP species.		
b	**Guidepost**	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

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.**		
	Justification	Ongoing information on bycatches is collected under EC 812/2004, which supports measures to manage potential impacts on ETP species. Stakeholder comments and information on compliance confirms that mackerel quota are carefully monitored and enforced. Fishing practices will naturally avoid ETP interactions. All available information on both the fishery and the species involved points to an operational and legislative strategy producing a low risk of the mackerel fishery affecting ETPs.		
c	**Guidepost**		There is evidence that the strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Met?		Y	Y
	Justification	All available information, on the development and implementation of regulations, the compliance with regulations, fishing practices etc all provide clear evidence that the ETP conservation strategy is implemented successfully in relation to the mackerel fisheries.		
d	**Guidepost**			There is evidence that the strategy is achieving its objective.
	Met?			Y
	Justification	As above, the management strategy is clearly successful with regard to the mackerel fisheries as all available evidence suggests interactions with ETP species to be minimal, and to be no threat to populations of ETP species in the area of the fisheries.		
References		ICES 2014i; ICES. 2014j. EC 812/2004; Habitat Directive 92/43/EEC; Bird Directive 2009/147/EC http://www.scotland.gov.uk/Topics/marine/seamanagement/national http://www.irishseamaritimeforum.org/wp-content/uploads/2013/06/North-Ireland-ISMF-Conference-Glasgow.pdf http://www.marine.ie/Home/site-area/areas-activity/marine-environment		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	Information is sufficient to qualitatively estimate the fishery related mortality of ETP species.	Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.	Information is sufficient to quantitatively estimate outcome status of ETP species with a high degree of certainty.
	Met?	Y	Y	Y
	Justification	Good and quantitative information on seabird populations is collected by national agencies across Europe, including, for UK waters, by the JNCC seabirds at sea team. Similar information on marine mammals and other aquatic species is collected and collated by these institutes. The Sea Mammal Research Unit, based in Scotland, also collates information on marine mammals as well as conducts specific surveys. These feed into international programmes, for example those initiated by ratifying the OSPAR convention. Information is sufficient to estimate outcome status of all affected species with a relatively high degree of certainty. There are several recent large scale abundance estimates for small cetaceans and pinnipeds for the NE Atlantic: a study conducted in 1996 (e.g. Hammond et al 2002 - SCANS) covered the waters to the East and SW of England, plus Skagerrak and Western Baltic, with a further study in 2005 including the NE Atlantic (SCANS-II; Evans and Hintner 2010). The number of seals in Division VIaN is thought to have increased over the last 10 years (ICES 2011). The level of risk that this fishery presents to potentially affect ETP species populations in the region is low.		
b	**Guidepost**	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	All information on the fishery (e.g. ICES 2014 and other information sources such as gear types used) is sufficient to determine that the fishery is not a threat to protection or recovery of populations of ETP species in the area of the fishery. There is not, however, sufficient information to determine the magnitude of all impacts on such species.		

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.**		
c	**Guidepost**	Information is adequate to support measures to manage the impacts on ETP species.	Information is sufficient to measure trends and support a full strategy to manage impacts on ETP species.	Information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.
	Met?	Y	Y	Y
	Justification	In relation to general ecosystem functioning, the key elements of the ecosystem (those features most crucial to giving, in this case, the pelagic ecosystem its characteristic nature and dynamics) are primary and secondary productivity and the predator-prey relationships of zooplankton – small pelagic fish - larger predators (fish, birds and mammals). Information is available to reasonably well understand each of these and the linkages between them – most notably through Ecopath-Ecosim models in the North Sea and NORWECOM models in the Norwegian Sea. In relation to the mackerel fishery, there is: a) Reliable information available from all stakeholders consulted, and from general ecosystem studies, on the nature and extent of interactions of the fishery with ETP species, this includes direct and indirect linkages. b) Good information available on the status and trends of ETP species which may be affected combined with ongoing monitoring. This is considered sufficient to support a comprehensive strategy to manage impacts on ETP species, and evaluate with a high degree of certainty whether such a strategy is achieving its objectives.		
References		https://www.gov.uk/government/publications/protected-marine-species http://www.smru.st-andrews.ac.uk/ ICES 2014d Hammond, PS, etal, 2002 Meeting AFBI Utne et al, 2012a, b Mackinson and Daskalov, 2007 http://www.ncof.co.uk/Ecosystem-Modelling.html Evans, PGH, Hintner, K, 2010 SCANS - II– see www.smru.st-andrews.ac.uk and biology.st-andrews.ac.uk/scans2/documents/issue9_Dec06.pdf Council Regulation No. 812/2004.		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**

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.**
CONDITION NUMBER (if relevant):	**-**

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	**Guidepost**	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	Y
	Justification	Only pelagic gear is used. All informed viewpoints, including assessment teams and stakeholders engaged in this and other MSC assessments for mackerel and other pelagic fisheries are clear that such gear would not normally come into contact with the seabed –pelagic gear being prone to substantial damage from such contact. It is therefore highly unlikely that the fishery would significantly encounter, let alone affect, benthic habitat. The mackerel fisheries considered here occur in open oceanic waters, the effect on oceanic waters would be negligible. The pelagic habitat is further monitored through remote sensing and oceanographic studies of currents and water temperatures. Because there is evidence that this mackerel fishery is limited to open waters and the impact of fishing on this habitat is negligible, SG100 is met.		
References		Meeting DARD Meeting NIPSG		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	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	N
	Justification	A strategy would be designed to specifically manage the effects of the fishery on habitats and contain mechanisms to modify fishing practice in light of unacceptable effects. Such measures are adopted for demersal fisheries, such as for the protection of sensitive habitats, but do not include pelagic fisheries. Nevertheless, there is a partial strategy in that targeted fishing for mackerel is only conducted with pelagic gear: fishermen using pelagic gear then utilise an operational strategy to target mackerel shoals in the water column and avoid contact with the seabed. Sufficient monitoring and surveillance is in place to detect any significant change in this fishing pattern.		
b	**Guidepost**	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	There is sufficient objective information on the operation of the fishery to provide a high level of confidence that the partial strategy described above will work. There is not a strategy and so it cannot be tested – SG100 is not met.		
c	**Guidepost**		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

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**		
	Justification	All evidence is that compliance with fishing regulations is good. Only pelagic gear is used. Again, all evidence is that fishers using pelagic gear will avoid contact with the seabed. SG80 is therefore met but the absence of a strategy means that SG100 is not met.		
d	**Guidepost**			There is some evidence that the strategy is achieving its objective.
	Met?			N
	Justification	There is not a strategy, *per se*, in place.		
References		Meeting DARD Meeting NIPSG		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	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	For the pelagic habitat, the general circulation patterns, water temperatures, nutrient levels, plankton blooms etc. are known throughout the NE Atlantic. This is of principal concern for mackerel. Benthic habitats are also well known over the waters West of the British Isles, North Sea and Norwegian Sea, particularly in relation to vulnerable habitats.		
b	**Guidepost**	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.	The physical impacts of the gear on the habitat types have been quantified fully.
	Met?	Y	Y	N
	Justification	Sufficient information is available to a) determine the effect on pelagic habitat, which will be negligible and b) to determine that the gear used will not come into contact with benthic habitats to any significant extent. There is excellent information on the timing and location of fishing activities through electronic logbook and VMS records. Impacts of gear on habitat types has not been quantified – resources being directed towards more important investigations.		
c	**Guidepost**		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.

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**		
	Met?		Y	Y
	Justification	The principal concern in relation to effects on benthic habitat would be a change in the operation of the fishery. This is closely monitored by DARD and POs. SG80 is therefore met. The principal habitat change of concern for mackerel is the increase in water temperatures, linked to the expansion of the mackerel stock. Long-term data sets are available on various oceanic parameters in the North east Atlantic and these continue to be monitored, along with zooplankton and mackerel distributions. SG100 is therefore met.		
References		MESH, at www.searchmesh.net OSPAR Commission 2010. Quality Status Report 2010. OSPAR Commission, London. 108 + vii pp. At www.ospar.org Scotland's Marine Atlas www.scotland.gov.uk/Publications UK Sea Map 2010 http://jncc.defra.gov.uk/page-2117 MAREANO habitat maps at http://mareano.no/en/maps/mareano_en.html Norwegian Institute for Nature Research at http://www.nina.no/ninaenglish/AboutNINA/Organisation.aspx		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	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	Y
	Justification	There has been recent expansion of the mackerel stock in range and size. This reflects significant historic variation in the stock size, e.g. from over 8 to less than 2 M mt SSB over 20 years. There is no evidence that this variability has caused serious or irreversible harm to ecosystem structure and function. Trophic models have been produced in the North Sea (Ecopath with Ecosim, Mackinson and Daskalov, 2007), the Norwegian Sea (Hjollo et al, 2012; Utne et al, 2012) and developed for Faroese waters (Zeller and Freire, 1997). In relation to mackerel the expansion in range and size of the stock is the factor most likely to exert an ecosystem effect. This may be through reduction in plankton and predation affecting other small pelagic species (sandeels, clupeids) which may have important ecosystem roles as food for birds and mammals (Furness, 2003; Fauchald et al, 2011). So, the mackerel stock is maintained at high levels and the fishery will serve to limit its ongoing expansion and the adverse effects the stock has on other ecosystem components. Indeed, the most likely effect of the size of the mackerel stock may be to adversely affect other small pelagic species through competition and predation. There is, therefore, 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. SG100 is met.		
References		Meeting DARD Meeting NIPSG Mackinson and Daskalov, 2007 Hjollo et al, 2012 Utne et al, 2012 Zeller and Freire. 1997 Furness, 2003 ICES, 2008.		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				

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	**Guidepost**	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	Y
	Justification	Regulatory measures are in place which limit adverse effects of fishing on the marine ecosystem include EC2371/2002, EC92/43/EEC, EC2008/56/EC and EC1380/2013 Under the ICES Strategic Plan (and as described under Principle 1), there is a single-species assessment and management plan for mackerel (currently being revised and appraised by ICES) and assessments of the other retained species considered above, together with consideration of wider ecosystem effects. Other ecosystem risks that may be associated with this fishery, such as bycatch (retained and discards) and habitat impacts, are managed effectively by a range of measures (see under 2.2, 2.3 and 2.4 above). The fishery is subject to effective MCS (monitoring, control and surveillance) to ensure all landings are recorded and there is good compliance in the fishery.		
b	**Guidepost**	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	Y

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		
	Justification	The UK is a signatory to the OSPAR Convention and has thus ratified and adopted agreements which are designed to, amongst other things, assess the quality of the marine environment. This information feeds into fisheries management and advice. Management plans for the ecosystems under consideration are developed under individual jurisdictions adjoining these seas. The Barents Sea, Norwegian Sea and the Norwegian sector of the North Sea is addressed in the Norwegian management plans which include for measures to address all main impacts of the fisheries on the ecosystem, including primary and secondary production, seabed habitats, fish stocks, sea birds and marine mammals. Similarly, the Celtic Sea Long-term Management Plan continues to collect and collate information on the marine ecosystem which feeds into fisheries advice. A long term management plan for the North Sea was outlined in 2005, addressing such issues as interactions between fisheries and ecosystem components. An ecosystem assessment of the Western European shelf seas and the North Sea was conducted by ICES, the results of which inform management advice via the relevant ICES fisheries for example. The changes in mackerel distribution and migration have been investigated in an Ad hoc Group on the Distribution and Migration of Northeast Atlantic Mackerel (ICES, 2013b). The aim of the plans is to ensure human activities, including the mackerel fishery, do not cause serious or irreversible harm.		
c	Guidepost	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	The most relevant measures are the stock assessments and management in place for the target species and retained bycatch species. While management of some species, such as mackerel and Atlantoscandian herring may currently face some problems, the measures are considered entirely appropriate to avoid serious or irreversible harm to ecosystem structure and function. Appropriate measures are also in place to deal with other ecosystem components such as protection of ETP species and areas of sensitive habitat. Information on efficacy of measures derived directly from the fishery and ecosystem concerned.		
d	Guidepost		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

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
	Justification	There is evidence from the NE Atlantic mackerel management system that quotas for commercial species are successfully implemented, enforcement is effective and all stocks are above limit reference points.
References		ICES, 2013b; ICES. 2013f; ICES 2014h; ICES 2014k; EC (1992) Council Directive (EC) 92/43/EEC Council Regulation (EC) 2371/2002 Council Directive (EC) 2008/56/EC Council Regulation EC1380/2013 http://gepetoproject.eu/case-study/celtic-sea-area-ciem-vii-f-and-g http://assets.panda.org/downloads/longtermmanagementplan2005.pdf OSPAR 1992 The Convention for the Protection of the marine Environment of the North-East Atlantic; Annex IV http://qsr2010.ospar.org/en/index.html ICES horse mackerel stock assessment, at: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/hom-nsea.pdf ICES North Sea herring stock assessment, at: http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/her-47d3.pdf Norwegian Ministry of the Environment 2009
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
CONDITION NUMBER (if relevant):		

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	**Guidepost**	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 key elements of the ecosystem (those features most crucial to giving, in this case, the pelagic ecosystem its characteristic nature and dynamics) are primary and secondary productivity and the predator-prey relationships of zooplankton – small pelagic fish - larger predators (fish, birds and mammals). Information is available to reasonably well understand each of these and the linkages between them – most notably through Ecopath-Ecosim models in the North Sea and NORWECOM models in the Norwegian Sea. General nutrient/plankton modelling of the NE Atlantic is also available (http://www.ncof.co.uk/Ecosystem-Modelling.html)		
b	**Guidepost**	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 main interactions between the fishery and populations of mackerel and other pelagic species taken as retained bycatch have been investigated in detail (i.e. the extent and consequence of catches). It is not apparent that the interactions of the mackerel fisheries and top predators have been investigated in detail, although sufficient information is available to support a conclusion of no significant effect.		
c	**Guidepost**		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	Y

PI 2.5.3		**There is adequate knowledge of the impacts of the fishery on the ecosystem**		
	Justification	The impacts of the fishery on target and retained species are fully quantified and evaluated in annual stock assessments. The impacts on bycatch and ETP species have been identified and some quantification of the level of impacts is available through the reference fleet programme. The main functions of each component, and the main element within, are understood and are again quantified through Ecopath-Ecosim models in the North Sea, NORWECOM models in the Norwegian Sea and general nutrient/plankton modelling of the NE Atlantic.		
d	**Guidepost**		Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.	Sufficient information is available on the impacts of the fishery on the Components and elements to allow the main consequences for the ecosystem to be inferred.
	Met?		Y	Y
	Justification	As outlined above, information on target and retained species is adequate to allow consequences to be determined. Information on bycatch and ETP species is sufficient to allow consequences for populations to be determined, albeit with a lesser degree of accuracy. No effects on habitat are anticipated. Wider ecosystem effects may be determined or inferred through ecosystem modelling outputs.		
e	**Guidepost**		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	The level of information available, as outlined above, is sufficient to support the development of strategies to manage ecosystem effects. This is currently demonstrated through the development of management plans for Barents Sea, Norwegian Sea, Celtic Seas and North Sea.		
References		ICES. 2014 Utne et al, 2012a, b Mackinson and Daskalov, 2007 http://www.ncof.co.uk/Ecosystem-Modelling.html Norwegian Ministry of the Environment 2009,		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				**-**

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	**Guidepost**	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)	(N)	(N)

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.**
	Justification	The Northern Ireland administration interprets its fisheries management obligations in binding Statutory Instruments, which are aligned with UK legislation, and with CFP and other EU Regulations. The UK and Northern Ireland national legislations implement all aspects of the reformed EU Common Fisheries Policy and establish licensing, MCS and penalty procedures and as such aim at achieving sustainable fisheries in accordance to MSC P1 and P2. The management of western mackerel is in line with best scientific advice as provided through ICES (the International Council on the Exploration of the Seas), and exercised through the setting of an annual TAC (Total Allowable Catch). The TAC is allocated between fishing nations via the Coastal States Agreement. The quota allocation to the EU is then sub-divided between Member States according to the binding EU principle of "relative stability", meaning that the quota is consistently shared between member states according to a fixed ratio informed by historical track record in the fishery. There are also clear and binding rules governing the allocation of quota within the UK between the devolved administrations of England, Wales, Scotland and Northern Ireland. As the level of exploitation of the stock by other coastal states has increased (notably with respect to Iceland and the Faroe Islands) these have been invited to participate in negotiation of the Coastal States Agreement. For each of the last four years these four parties have participated in these negotiations, but have failed to reach agreement. Norway, the EU and the Faroes have reached agreement on quota allocations, but Iceland has each year unilaterally set its own quota. Since the combined quotas exceed the recommended TAC (a TAC level that is agreed by all parties), combined extraction exceeds the agreed exploitation level. As a result, there is not "effective cooperation" between the parties, and so SG80 is not met. Further, overall, North East Atlantic mackerel, as a straddling stock, falls under the jurisdiction of the RFMO NEAFC. NEAFC is empowered, under its Convention, to regulate stock exploitation levels and fishing effort in accordance with best scientific advice, and where appropriate to institute dispute resolution procedures. In the context of this stock, NEAFC has shown itself unable to exercise this mandate, and also unable to bind its members to resolution of the current impasse. CBA4.2.1.2 states that for a fishery subject to international cooperation for management of the stock (e.g.: shared, straddling, HMS, high seas non-HMS) this means the existence of: a. national and international laws, arrangements, agreements and policies governing the actions of the authorities and actors involved in managing the fishery, and b. a framework for cooperation with other territories, sub-regional or regional fisheries management organizations or, c. other bilateral/multilateral arrangements, that create the cooperation required to deliver sustainable management under the obligations of UNCLOS Articles 63(2), 64, 118, 119, and UNFSA Article 8 [States to join or at least apply conservation and management measures of a competent RFMO if it exists].

<table>
<tr><td colspan="2">PI 3.1.1</td><td colspan="3">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.</td></tr>
<tr><td></td><td></td><td colspan="3">In this instance, all three exist: there are national and international laws in relation to each of the actors involved in managing the fishery; the NEAFC exists as a framework for co-operation involving all participants in the fishery; and the operators within the UoCs are subject to a multi-lateral agreement under the Coastal States Agreement from 2014-2018.

Specifically, CBA4.2.1.3 states “Cooperation shall at least deliver the intent of UNFSA Article 10 paragraphs relating to:

a. the collection and sharing of scientific data,
b. the scientific assessment of stock status, and
c. development of scientific advice.”

Co-operation currently does cover the collection and sharing of scientific data along with the assessment and development of scientific advice. Accordingly, SG60a is met. SG80a is not met, however, as the CR v1.3 (CBB4.2.1.2) states:

“c. Cooperation shall at least deliver the intent of UNFSA Article 10 paragraphs relating to the collection, sharing and dissemination of scientific data, the scientific assessment of stock status and development of management advice, the agreement and delivery of management actions consistent with this sustainable management advice, and on monitoring and control.”

While NEAFC (involving all parties participating in the fishery) results in some conservation and management measures addressing P2 issues, the management arrangements do not extend to delivering management outcomes consistent with P1 as the management plan is under the Coastal States Agreement, which currently only involves three of the parties (EU, Norway and the Faroe Islands). Other states operating in the fishery do not accept the management plan, resulting in the quota being exceeded.

Currently international co-operation does not extend to an ‘agreement and delivery of management actions consistent with this sustainable management advice’ and therefore SG80 is not met.</td></tr>
<tr><td rowspan="2">b</td><td>Guidepost</td><td>The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.</td><td>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.</td><td>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.</td></tr>
<tr><td>Met?</td><td>(Y)</td><td>(N)</td><td>(N)</td></tr>
</table>

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.**
	Justification	As a member state of the European Union, mechanisms exist through the Council of Ministers (Fishery Council), and the European Commission for the airing, debate and settlement of disputes. At an international level, relevant bilateral and multi-lateral negotiations are undertaken between those coastal states engaged in any particular fishery, including the EU. In this context bilateral meetings regularly take place between the EU and Norway on exploitation of North Sea stocks, and annual multilateral negotiations take place between various coastal states exploiting wider area North Atlantic stocks (for example herring, mackerel, horse mackerel and blue whiting). Amongst EU member states negotiation outcomes are supported in law through the CFP. Negotiations with non-EU coastal states are not specifically supported in law, but are subject to political and economic sanction. Fishing in non-EU waters is subject to the laws and controls of the relevant coastal state(s). For the North East Atlantic any such negotiations also fall within the ambit of the North East Atlantic Fisheries Commission (NEAFC), a Regional Fishery Management Organisation established "*to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits*", and supports and is in conformity with UNCLOS (the UN Convention on the Law of the Sea). In support of this it is empowered to make recommendations for: *"(e) the establishment of total allowable catches and their allocation to Contracting Parties,* *"(f) the regulation of the amount of fishing effort and its allocation to Contracting Parties."* All parties exploiting fisheries in the North East Atlantic recognise the work undertaken by national marine science institutions consolidated through ICES (the International Council for the Exploration of the Seas). ICES facilitates formal assessment of stocks, establishment of stock management levels, and provides advice on what might constitute appropriate and precautionary Total Allowable Catches (TAC). These recommended TACs are increasingly recognised by management authorities as upper exploitation levels. The management system applying to the exploitation of mackerel [western mackerel] has a good record of facilitating and ensuring effective resolution of legal disputes at an appropriate level, with the recent well-publicised exception of a failure to reach agreement on allocation of mackerel quota under the Coastal States Agreement – a situation that has not been resolved despite four annual rounds of negotiation, and a range of direct and indirect sanctions have been implemented). It is, nonetheless, recognised that the management systems in place do include appropriate and transparent dispute resolution procedures that are and have been tested and proven to be effective, with this one ongoing exception (where the system continues to be applied with a view to achieving resolution). All the above mechanisms are transparent, and outcomes made available to the public through institution websites and publications. In the case of North East Atlantic mackerel, however, the failure to resolve the ongoing dispute over quota allocations is such that these systems cannot be "considered to be effective in dealing with most issues and that is appropriate to the context of the fishery". On the above basis **SG60 is met**, but SG80 is not met.

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.**		
d	**Guidepost**	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	(Y)	(Y)	(Y)
	Justification	The EU CFP sets out a formal commitment to the legal and customary rights of people dependent on fishing, through a commitment to relative stability (meaning Member States are consistently allocated the same proportion of particular stocks) - "*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*." How the allocation is divided within member states is then laid out at national level in the National Strategic Plan (in accordance with EC no 1198/2006). The UK National Strategic Plan for the European Marine and Fisheries Fund (2014-2020) explicitly considers fishing communities and includes a number of socio-economic objectives, which can be achieved whilst remaining consistent with P1 & 2 (stock management & ecosystem) objectives. These are primarily included under Axis 4, where "*The sustainable development of fisheries communities is an important element of the UK's overarching objectives to be achieved within the context of the EFF and the delivery of the national fisheries policy; support under this axis will target these communities as a priority*." In the context of UK and NI fisheries the management system clearly recognises the interests of the inshore sector, including ring fencing some quota for smaller vessels, and provision of development assistance to strengthen fishery dependent communities through improved operation and/or diversification within or out of fisheries. In the context of UK and NI fisheries one such target area is the fishery dependent communities of Kilkeel, Ardglass and Portavogie, Northern Ireland. This national strategy was developed by both UK and devolved administrations (including NI). Further detail on how these broad objectives will be achieved is contained within the UK Operational Programme for the EMFF (2014-2020). Commitments under the CFP, supported at UK and NI levels, provide a formal commitment to the legal rights of people dependent on fishing for food and livelihood consistent with the objectives of MSC Principles 1 & 2, and are appropriate to the context and circumstances found in the UK and Northern Ireland. **SG100 is met**.		
References		North East Atlantic Fisheries Commission "New" Convention, 2007		

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.**	
	Annex K – Amendment of the Convention on Dispute Settlement (Adopted at 2004 meeting) REGULATION (EU) No 1380/2013 – reformed CFP Basic Regulation EMFF UK Operational Programme 20014-2020	
OVERALL PERFORMANCE INDICATOR SCORE:		**65**
CONDITION NUMBER (if relevant):		**2**

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	**Guidepost**	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	Vessels under assessment operate under a flag of an EU Member State within which the organisations and roles associated with the fisheries management process are well defined and understood. Exploitation of this stock by these and other vessels takes place in the North East Atlantic in areas within the NEAFC regulatory area. Control, including within the NEAFC regulatory area, ultimately remains at the national level (incorporating devolved administrations), with co-ordination between EU Member State authorities when vessels fish in the waters of other MS, and between the EU and other jurisdictions when vessels fish in waters outside, in compliance with UNCLOS and exercised through NEAFC. SG60 is met. The relationship between the NEAFC signatories is explicitly defined in the NEAFC Convention and well understood for all areas of responsibility and interaction. SG80 is met. The provision of scientific information by ICES and the involvement of industry and wider stakeholders (such as NGOs and post-harvest operators) via the non-governmental Pelagic Advisory Council are well understood within the management process. **SG 100 is met**.		
b	**Guidepost**	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)

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**		
	Justification	The Pelagic Advisory Council (PAC) is the main consultation mechanism through which industry engages with management authorities. It includes European industry and NGO representatives ensuring local knowledge is considered within the management system. The PAC **actively** develops policy and advises the European Commission, and is considered as part of the EC's management system. Industry organisations are permitted some involvement as observers at NEAFC meetings and Coastal State meetings. New fishing nations (Greenland and Russia) are also invited to participate in Coastal State meetings. The agendas and minutes of the above meetings demonstrate consideration of the information provided by the various parties (**SG 80 is met**) even though agreement is not always reached. NEAFC has a commitment to share information including catch data. It is not, however, always apparent how the information obtained is considered. The mechanism by which the Coastal States seek and accept information may also not be considered regularly and explanation of how this is used is not always evident. Therefore SG 100 is not met.		
c	**Guidepost**		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	The management system in EU and other coastal state waters, as well as the NEAFC regulatory area, does provide the opportunity for all interested parties to be involved in management. Consultations with stakeholders revealed satisfaction with the opportunities for engagement and this is encouraged, even though these opportunities may not always be taken up. Member States regularly undertake wide consultation on proposed policy and legislative changes, including those at EU and regional levels. Regular and wide consultation is undertaken at both UK and Northern Ireland levels. A good recent example of the consultation process has been on the reform of the Common Fisheries Policy (which itself closely mirrors the consultation process that preceded the drafting of the reformed CFP in 2002). The 2009 Green paper on the reform of the CFP expressly states that its purpose is "*to trigger and encourage public debate and to elicit views on the future CFP. The Commission invites all interested parties to comment on the questions set out in this Green Paper*". Clear guidelines were provided on how, where and when to respond. The UK Government, industry interests and other interested parties have actively taken up the opportunity to respond, as has the Pelagic RAC (now Advisory Council). These have all gone towards formulation of the reformed CFP which entered into effect on 1st January 2014. **SG100 is met**.		
References		Pelagic Advisory Council: http://www.pelagic-ac.org North East Atlantic Fisheries Commission "New" Convention, 2007		

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**
OVERALL PERFORMANCE INDICATOR SCORE:	**90**
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	**Guidepost**	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)	(partial)
	Justification	Each EU Member State operates under the CFP, which has clear long-term objectives that guide decision-making and are consistent with MSC principles and criteria (EC Reg 1308/2013). The EU's Marine Strategy Framework Directive (MSFD) adopted in 2008 sets clear objectives for the marine environment, i.e. Good Environmental Status for the marine environment by 2020. There are also clear long-term objectives governing the NEAFC Regulatory Area. Article 4 of the NEAFC Convention states: *"1. The Commission shall perform its functions in order to fulfil the objective set out in Article 2 [The objective of this Convention is to ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits],* *"2. When making recommendations in accordance with Article 5 or 6 of this Convention the Commission shall in particular:* *a) ensure that such recommendations are based on the best scientific evidence available;* *b) apply the precautionary approach;"* The United Kingdom Operational Programme for the European Marine and Fisheries Fund (2015-2020) (currently in draft form, awaiting ratification by the EC) sets out clear long term objectives to guide decision making [*The overarching aim of fisheries management in the UK is a fisheries industry that is sustainable, profitable, well managed, internationally competitive and helps support thriving, diverse, and sustainable local communities, managed effectively as an integral part of coherent policies for the marine and freshwater environment.*] This long term objective is supported by detailed explanation, instruments and targets. These commitments also cover the devolved administrations of the UK (including Northern Ireland). These objectives are explicit and are consistent with the MSC Principles and Criteria and clearly stipulate the precautionary approach. These are required by overarching EU management policy (Article 15 of Council Regulation (EC) No 1198/2006). In **principle SG 100 is met, but a partial score at SG100 is proposed** as NEAFC signatories can object to recommendations (article 12), thus making the above management policy requirement less robust than it could be.		
References		North East Atlantic Fisheries Commission "New" Convention, 2007 Regulation (EU) No 1380/2013		

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**
	Marine Strategy Framework Directive: http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm
OVERALL PERFORMANCE INDICATOR SCORE:	**90**
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	**Guidepost**	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)	(N)
	Justification	The CFP seeks to ensure perverse incentives do not arise (was a key element of the 2002 reform of the CFP, and has been developed further in the more radical reform of the CFP that entered into force on 1st January 2014). The introduction of the Landing Obligation under the reformed CFP (from January 2015 in pelagic fisheries such as for herring and mackerel) takes a results-based approach requiring vessel operators to find ways to avoid or minimise by-catch for which they have no quota. There are also within the reformed CFP increased incentives to better balance fishing capacity and resources, and harvests with market requirements. At the national level, the allocation of fixed quota allocations per vessel, often under an Individual Transferrable Quota (ITQ) system, has defined fishing rights to enable longer term planning by vessel operators, which is consistent with better ensuring sustainable outcomes. This is further supported by a tight and comprehensive inspection and data capture and integration regime. There is therefore a clear incentive for operators to fish sustainably. Many aspects of the CFP and national management aim for sustainable behaviour, and this has been supported by more market-based instruments and incentives introduced within the reformed CFP. These are also evident in the management systems of relevant countries outside the EU (such as Norway, which has operated a “no discards” policy since 1987). On the above basis, **SG80 is met**. The main area of concern remains the issue of slippage. Incidences of slippage are the exception – but nevertheless they are known to occur. More could be done to demonstrate compliance – and this has now been given greater weight under the no discards rule of the reformed CFP and the agreed pelagic discards plan (though Norway has had more onerous requirements in place for some time). In this context it is considered that **SG100 is not met**.		
References		Regulation (EU) No 1380/2013		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
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	**Guidepost**	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	This is a straddling stock, and as such is managed by international agreement under NEAFC. The specific management system for NEA mackerel is a combination of national and European measures along with international management of this shared stock. International management is to be agreed by the Coastal States (the EU, Norway, Faroes and Iceland). In recent years the nations operating in the fishery has extended to include Russia and Greenland. Scientific advice is provided by ICES drawing on the combined professional input and data provided by the scientific research centres and laboratories of EU member countries, and countries exploiting this stock. This includes clear objectives and management plan for this stock. The scientific advice is used as the basis for negotiation between the principal coastal states exploiting this stock – the EU, Norway, Faroes and Iceland, and recently extended to include Russia and Greenland. The Coastal States Agreement process provides the core basis for management of this stock, adopting the advice provided by ICES, including the stock management system advocated by ICES, and utilising the annual Total Allowable Catch (TAC) levels set by ICES which are apportioned between fishing nations as quota. National and EU systems have well-defined and measurable objectives consistent with achieving P1 and P2 outcomes. For the EU this is encapsulated within the principal objective of the CFP that it "*should ensure that fishing and aquaculture activities contribute to long-term environmental, economic, and social sustainability*" – which is interpreted in EU, national and regional legislation. The reformed CFP, which entered into force on 1st January 2014, requires that the practice of discarding is eliminated over time. A landing obligation has been introduced for all EU small pelagic fisheries as from 1st January 2015, which prohibits the slippage of mackerel, and requires the recording and landing of all mackerel catches against quota (with very few exemptions). This new obligation is compliant with many of the requirements of P1 and P2. The Coastal States Agreement 2014 seeks management to be "*in a sustainable manner*" and proposes clear short and long-term objectives for the mackerel stock, which is explicit within the management system. A new Long Term Management Plan (LTMP) for mackerel embracing these requirements is being developed by ICES (expected Feb/March 2015). But, discussions around the Coastal States Agreement have identified wider issues, some relating to P2 criteria, but more specific objectives relating to P2 are not explicit in the previous LTMP or the current ICES request. Therefore **SG100 is only partially met**.		
References		CSA 2014a Regulation (EU) No 1380/2013		

PI 3.2.1	The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2
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	**Guidepost**	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	The Coastal States Agreement (CSA) on North East Atlantic mackerel shows that decision-making **processes** are in place that result in measures and strategies to achieve fishery-specific objectives. Independent scientific advice is sought each year and there is a commitment given within the CSA to adhere to the ICES advice provided. These decision-making processes are now well-established. **SG80 is met.**		
b	**Guidepost**	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	ICES advice and the HCR agreed by the main fishing nations exploiting this stock respond to catches and stock status. Management systems (MCS, etc.) respond to most issues, and authorities have been shown to respond to issues raised by the Pelagic AC. The Coastal States are shown to respond to developments in the fishery e.g. the extension of meeting involvement to Russia and Greenland, despite the CSA not being accepted and agreed by all parties. On the above basis Thus SG80 is met. It is not evident that all issues are taken into account – for example, relevant research is not always recognised and responded to in a timely and adaptive way by the Coastal States. Therefore SG100 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.**		
c	**Guidepost**		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		(Y)	
	Justification	The latest ICES advice maintains that the management plan remains precautionary (ICES, 2014). The CSA for NEA mackerel agrees that the best available information (ICES advice) should be the basis for decisions and these concepts are also explicit in the NEAFC convention: "*When making recommendations in accordance with Article 5 or 6 of the Convention the Commission shall in particular:* *a) ensure that such recommendations are based on the best scientific evidence available;* *b) apply the precautionary approach;* *c) take due account of the impact of fisheries on other species and marine ecosystems, and in doing so adopt, where necessary, conservation and management measures that address the need to minimise harmful impacts on living marine resources and marine ecosystems; and* d) *take due account of the need to conserve marine biological diversity*." **SG80 is met**.		
d	**Guidepost**	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	Information on fishery performance is available from ICES and NEAFC. Control agencies have provided information on fishing activities and compliance. Management Authorities provide explanations in feedback to the Pelagic AC, along with minutes of meetings being available. **SG80 is met**. Formal reporting on all these matters is, however, not available to all interested stakeholders and so SG100 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	**Guidepost**	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)	(N)
	Justification	EU and National systems do not permit parties to disrespect or defy the law with repeated violation of laws. The ongoing dispute and lack of consensus on the CSA shows no evidence that the management system is attempting to comply with challenges in a timely fashion, however these issues have not been taken down a legal route and no judicial decision has been made. Accordingly, **SG80 can be considered to be met** but SG100, requiring proactive avoidance, is not met.		
References		NEAFC (2007) North East Atlantic Fisheries Commission New Convention, 2007		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
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	**Guidepost**	Monitoring, control and surveillance mechanisms exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	(Y)	(Y)	(Y)
	Justification	A comprehensive MCS system is applied across the UoC fleet in compliance with the legal requirements encapsulated within the CFP (and, as appropriate, under Norwegian regulations). The various Member State control agencies involved (with international co-ordination by the European Fisheries Control Agency, EFCA) have demonstrated a consistent ability to enforce the management measures and rules applied to the fleet, as has that of Norway (where UoC vessels occasionally land, and in whose waters occasional fishing is undertaken). **SG100 is met**.		
b	**Guidepost**	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	Sanctions are consistently applied across the UoC fleet and are thought by control agencies consulted to provide effective deterrence. SG80 is met. The reformed CFP, which entered into force on 1st January 2014, requires that the practice of discarding is eliminated over time – a requirement that also extends to slippage. A landing obligation has been introduced for all EU small pelagic fisheries as from 1st January 2015, which prohibits the discarding and slippage of mackerel, and requires the recording and landing of all mackerel catches against quota (with very few exemptions) – similar conditions have applied for some time when operating in Norwegian waters. This is compliant with many of the requirements of P1 and P2. Whilst prior to this change it was considered that the issue of slipping was effectively controlled (to the extent that ICES estimates this accounts for just 0.5% of the TAC), there is no objective evidence from control agencies to illustrate this. This remains the case under the new legislation. **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	**Guidepost**	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)	(N)
	Justification	An extensive system of position and catch reporting is in place for all UoC vessels operating in the fishery, including e-logbooks and real-time activity through VMS data, supported by a coherent data chain including landing and on-shore inspections. Therefore extensive evidence is available to control agencies (within the EU, and of other coastal states in whose waters fishing is undertaken and/or landings made) and this is used to inform the management of the fishery, **SG80 is met**. Whilst control agencies consider that the issue of slipping is effectively controlled (to the extent that ICES estimates this accounts for just 0.5% of the TAC), within this fishery slippage is known to occur. Whilst there is nothing to suggest that the vessels within this UoC engage in slipping, control agencies are unable to provide objective evidence that slippage does not take place. Given the responses from control agencies on the issue of slipping and the difficulties encountered in catching vessels in the act of slipping catches, there is not a high degree of confidence that fishers comply with the management system and SG100 is not met.		
d	**Guidepost**		There is no evidence of systematic non-compliance.	
	Met?		(Y)	
	Justification	No concerns have been raised in relation to the UoC vessels, and overall the considerable control systems applied to these pelagic fisheries and these vessels provides no evidence of systematic non-compliance and **SG80 is met**.		
References		MMO (2016) Statutory Guidance on fishing in Norwegian Waters – presented by the UK Marine Management Organisation - https://www.gov.uk/government/organisations/marine-management-organisation (accessed Sept 2016) Government of Norway (2009) note on Norwegian support for implementation of EU Council Regulation (EC) No 1005/2008 of 29 September 2008 on IUU fishing and Norwegian catch reporting requirements - https://www.regjeringen.no/globalassets/upload/fkd/vedlegg/diverse/2009/fangstsertifikat/09-12-22-pm-fangstsertifikat.pdf (accessed Sept 2016) Gullestad Peter (2015) The "Discard Ban Package" – Norwegian experiences in efforts to improve fisheries exploitation patterns -		

PI 3.2.3	**Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with**
	http://www.fiskeridir.no/English/Fisheries/Reports/Norwegian-efforts-to-improve-fisheries-exploitation-patterns (accessed Sept 2016)
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	**Guidepost**	Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.	A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.	A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.
	Met?	(Y)	(Y)	(N)
	Justification	The ICES stock assessment process shows that a comprehensive research plan exists with a strategic approach to P1 aspects (e.g. exploring reduction in weight and maturity at age). ICES also has WGWIDE exploring ecosystem aspects such as changes to mackerel distribution. Further research on P2 does exist at EU and MS level; for example the Pelagic Advisory Council identifies research needs. The work of ICES and WGWIDE is informed by work and inputs from scientific laboratories, other research institutions, and national management and MCS authorities from all countries participating in this fishery. With respect to the UK, inputs derive from the work of institutions in each of the devolved administrations, including Northern Ireland. These mechanisms illustrate that P1 & P2 aspects are addressed in a strategic manner in what equates to a research plan. That plan does provide the management system with timely information in order to achieve P1 & 2 objectives and **SG80 is met**. The research plan may not, however, be considered comprehensive with a coherent approach to research as it is delivered via several mechanisms.		
b	**Guidepost**	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	ICES advice is publicly available and other materials are published either in peer review journals or by the management authorities and research institutes themselves. **SG80 is met**. As the 'research plan' is derived from several different sources (NEAFC requests to ICES, and research planning from ICES working groups, coastal state and the Pelagic AC) it cannot be stated the research plan and results are widely and publicly available. Accordingly SG 100 is not met.		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				**80**

PI 3.2.4	The fishery has a research plan that addresses the information needs of management
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	**Guidepost**	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)	(Y)
	Justification	All parts of the management system are regularly evaluated through established mechanisms. The CFP and its component parts are reviewed internally and externally by independent evaluators via a statutory system of impact assessments and evaluations. On occasion, specific aspects of the CFP are independently evaluated by the European Court of Auditors (ECA). The scientific component is delivered by ICES. Its outputs are subject to peer review and assessments subject to periodic benchmarking. ICES itself has been subject to evaluation and recently restructured to better ensure management needs could be addressed. The member states also evaluate their own management systems on a regular basis internally and with occasional external independent evaluation. NEAFC is evaluated internally at the annual meetings of signatories. It is also subject to occasional external review, in 2006 and most recently in 2014, by a Performance Review Panel of experts proposed by FAO and ICES (NEAFC, 2014). All parts of the EC and national fisheries management systems (policy, management and enforcement) are therefore subject to evaluation and **SG 100 is met**.		
b	**Guidepost**	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.
	Met?	(Y)	(Y)	(N)
	Justification	ICES advice and the Coastal States Agreement (CSA) are regularly evaluated internally with occasional external review. ICES advice is subject to regular external review (e.g. by STECF on behalf of the EU or directly by the Coastal States). **SG 80 is therefore met**. The management plan for mackerel was subject to recent external review by ICES, to determine the impact and precautionary nature of the plan. This was, however, an *ad hoc* request and so regular external review of the CSA is not evident and SG100 is not met.		
References		ECA (2011) Assessment of EU Fishing Fleet Capacity. Available via: http://ec.europa.eu/fisheries/news_and_events/press_releases/2011/20111212/index_en.htm		

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**	
	NEAFC (2014) Final Report of Performance Review Panel, 2014. Available at: http://www.neafc.org/node/11708	
OVERALL PERFORMANCE INDICATOR SCORE:		**90**
CONDITION NUMBER (if relevant):		

Appendix 1.2 Risk Based Framework (RBF) Outputs

RBF Not used for this assessment.

Appendix 1.3 Conditions

There are 2 conditions for this fishery.

The two conditions below relate to previous harmonised conditions across several fisheries, as detailed in section 4.2.1.

Condition 1

Performance Indicator	1.2.2
Score	65
Rationale	This PI scored below 80 on two scoring issues, a) and c): SI 1.2.2 a (60). Conclusion: Whilst the interim control rule arrangements in place clearly satisfy the requirements at SG 60, the interim nature of the current strategy and the failure of the Coastal States to agree in full to the management advice, means that the more rigorous requirements at SG80 are not met. SG80: 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. SI: 1.2.2 c (60). Conclusion: All the evidence over recent years clearly shows that current management actions (tools in use) used to allocate the scientifically advised annual TAC are not wholly effective in achieving the exploitation levels required under the harvest control rules. As a consequence the fishery does not meet the SG 80 scoring guideposts. SG80: Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.
Condition	The SG80 requirement for SI a) and c) above must be met. The root cause of both SIs failing to meet the SG80 requirements is the lack of an agreed quota allocation mechanism between Coastal States to achieve appropriate exploitation levels. For SI c, 'available evidence' may be any relevant evidence, provided through ICES or other verifiable means, that shows the implications of all available management actions (e.g. by coastal states and/or agreements with other relevant states in controlling fishing mortality) in achieving exploitation levels consistent with appropriate harvest control rules and the requirements of PI 1.1.1. This condition is closely aligned to Condition 2.
Milestones	Yr. 1. Communication should be begun or continued with Coastal State representatives to promote delivery of exploitation levels consistent with meeting the requirements of Principle 1. Evidence should also be provided of any other actions or analyses undertaken in relation to prevailing exploitation levels and/or

	the implications of these for the stock. The client shall provide documented evidence of all related correspondence, analyses, actions, meetings, representations etc. Expected score 65 Yr. 2 It is understood that the condition could be closed at any time during the certification. Year 2 should therefore provide updated information on the issues set out in Yr. 1. Expected score 65 Yr. 3. It is understood that the condition could be closed at any time during the certification. Year 3 should therefore provide updated information on the issues set out in Yr. 1. Expected score 65 Yr. 4. The SG80 requirements should be met. At the time this is achieved, this PI will be rescored at 80.
Client action plan	See Client action plan at appendix 1.3 following the two conditions
Consultation on condition	Refer to Appendix 8 for support from DEORA

Condition 2

Performance Indicator	**3.1.1**
Score	65
Rationale	This PI scored below 80 on two scoring issues, a) and b): SI: 3.1.1 a) 60. Currently international co-operation does not extend to an 'agreement and delivery of management actions consistent with … sustainable management advice' and therefore SG80 is not met. SG80: 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. 3.1.1 b) 60. The ongoing disputes in relation to NEA mackerel are a clear indication that the management system does not have a mechanism to address disputes that is 'effective in dealing with most issues' and so SG80 not met. SG 80: 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.
Condition	The SG80 requirements for SI a) and b) above must be met. There should be evidence of organised and effective cooperation between all affected parties which delivers outcomes consistent with meeting Principle 1 (As detailed in Condition 1). There should also be evidence of an effective and transparent mechanism for dispute resolution between the parties UNFSA Article 10 paragraphs a), h) and j) are particularly relevant to the meeting of this condition.
Milestones	Yr. 1. Communication should be begun or continued with relevant parties to promote cooperation on delivery of outcomes consistent with meeting the requirements of Principle 1 and achieving a suitable means of dispute resolution. NIPSG shall provide documented evidence of all correspondence, meetings, representations etc. Expected score 65

	Yr. 2 It is understood that the condition could be closed at any time. Year 2 should therefore provide information on all relevant correspondence, meetings, representations undertaken and the prevailing situation regarding cooperation between parties and dispute resolution. Expected score 65 Yr. 3. It is understood that the condition could be closed at any time. Year 3 should therefore provide information on all relevant correspondence, meetings, representations undertaken and the prevailing situation regarding cooperation between parties and dispute resolution. Expected score 65 Yr. 4. The SG80 requirements should be met. At the time this is achieved, this PI will be rescored at 80 or more.
Client action plan	See Client action plan at appendix 1.3 following the two conditions
Consultation on condition	Refer to Appendix 8 for support from DEORA

Client Action Plan

Northern Ireland Pelagic Sustainability Group (NIPSG)

November 2015

Client Action Plan

This client action plan addresses the two conditions raised in the NIPSG mackerel client report, namely performance indicators P1.2.2 and P3.1.1.

Condition 1: Available evidence' may be any relevant evidence, provided through ICES or other verifiable means, that shows the implications of all available management actions (e.g. by coastal states and/or agreements with other relevant states in controlling fishing mortality) in achieving exploitation levels consistent with appropriate harvest control rules and the requirements of PI 1.1.1.

Condition2: There should be evidence of organised and effective cooperation between all affected parties which delivers outcomes consistent with meeting Principle 1 (As detailed in Condition 1). There should also be evidence of an effective and transparent mechanism for dispute resolution between the parties (UNFSA Article 10 paragraphs a), h) and j) are particularly relevant to the meeting of this condition).

The NIPSG regard both conditions as being interlinked and the group will address these with a combined strategic action plan. The NIPSG has agreed to formulate this action plan setting out a mixture of new initiatives and existing activities to ensure an appropriate harvest control rule is established, effective international cooperation for the management of the NEA mackerel stock is agreed and a dispute resolution mechanism formalised.

The NIPSG advocates the principles of well managed and sustainable fisheries and have demonstrated their commitment to that by engaging themselves in the assessment and certification process for a number of their pelagic fisheries against MSC principles and criteria. This process

started with Irish Sea (VIIa) herring. The members of the NIPSG, together with other interested parties have worked diligently to address conditions and recommendations placed on Irish Sea herring and to date have made considerable progress. As past (and present) members of the SPSG they also recognise the efforts made there with stocks including mackerel, so it is therefore extremely disappointing and disheartening, through no fault of their own, to be in a position where conditions of acceptance has been placed on the mackerel fisheries.

The NIPSG consider that working jointly with bodies such as MINSA on the following plan is a real commitment to resolving mackerel management with a clear goal of establishing an international fisheries agreement.

The NIPSG recognises that tangible progress has been made to date through the contribution by members helping create momentum to re-establish the Coastal States Agreement for NEA mackerel between EU, Norway and the Faroe Islands. Part of this three party agreement is the reservation of a TAC share for Iceland and NEAFC. Iceland in the meantime is believed to have set an autonomous mackerel quota in line with the share reserved for them by the three Coastal States. Therefore, Iceland is de facto managing their mackerel fishery in accordance with the agreement. However, the NIPSG is aware of other mackerel fisheries outside the Coastal States agreement and shares concerns expressed by Coastal States in this regard. At this stage it's unclear whether the fishery in Greenland is a temporary feature but the NIPSG will continue with others to work towards the comprehensive management of the entire NEA mackerel stock.

NIPSG members will undertake the following specific tasks during the period of the certification, focused on lobbying, industry collaboration, science and management. However, the plan will remain an adaptive process in the event that new avenues or tools become available to help close out the conditions.

Mackerel consultations are ongoing and the NIPSG hopes that progress can be made on securing an international fisheries agreement for the stock.

Lobbying

Lobbying is arguably the NIPSG's greatest strength; collective pressure with other interested parties has provided a pathway to secure meetings with all key policy makers involved in mackerel management. The NIPSG will continue to lobby relevant bodies, to promote a message based on the necessity of sustainable and well managed fisheries. The NIPSG will encourage parties to continue with negotiations until a comprehensive and balanced solution is reached. In addition, the NIPSG with others will also advocate the creation of a transparent and effective mechanism for resolving the current dispute between parties. As they have done NIPSG members will provide factual evidence of engagement with the following parties.

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

Industry Collaboration

The NIPSG members regularly meet with industry colleagues from other Coastal States during the cycle of negotiation consultations. The NIPSG commit to continuing this process in a bid to find practical solutions and proposals that all parties can support. The NIPSG support proposed initiatives that aim to try and formalise these meetings with industry counterparts from Iceland, Greenland and Russia. However, the NIPSG is fully aware that this initiative can only progress with consent from the other industry parties. Evidence of engagement at industry level will be provided.

Science and Management

NIPSG members will continue to engage with the scientific community to assist in the production of the best possible data for the mackerel assessment. In particular the group members renew their offer to contribute to the triennial egg survey (Europe) and the mackerel tagging project.

In addition, members acknowledge that ICES advice should be used as the basis for the sustainable management of the stock.

NIPSG members will also engage in the process of establishing a long term strategy for managing the mackerel stock.

Over the last few years NIPSG members, through their membership of Pelagic Advisory Council, have been working diligently on a management strategy for the mackerel stock. Members will continue to work on this through engagement with managers and the scientific community. NIPSG members are more than willing to provide documented evidence of engagement on the following points.

- Engagement with ICES and the broader scientific community
- Involvement in the work of developing a long term management strategy
- Participation in mackerel scientific surveys
  Collation of additional scientific data on request of the scientific community

Milestones:

Milestone year 1

Lobby national administrations and the European Commission to continue negotiations on a comprehensive mackerel management agreement. In addition, lobby for the establishment of a dispute resolution mechanism. Initiate contact with other interested fishery parties to establish a pelagic industry group, try to formalise this group under the auspices of NEAFC. Engage actively in the production of scientific data for use in the mackerel assessment.

Action year1:

Encourage Coastal States to continue mackerel management negotiations in order to find a lasting solution. In addition, lobby parties to establish a dispute resolution mechanism. During autumn 2016 convene a meeting of a pelagic industry group and try to formalise the group under the auspices of NEAFC. As required participate in the mackerel egg survey and also the mackerel tagging programme. Document all activities and progress.

Outcome year 1:

By autumn 2016, all Coastal States should have formally agreed a mackerel management agreement for 2017 and beyond, in addition to creating a dispute resolution mechanism. A mackerel management strategy is agreed and implemented.

Milestone year 2:

If comprehensive management has not been agreed, continue to lobby. Encourage parties to establish a dispute resolution mechanism. Convene further meetings of the pelagic industry group. As required participate in the mackerel tagging project. Discuss other data initiatives with the scientific community. Participate in the 2017 ICES mackerel benchmark.

Action year 2:

Lobby Coastal States to continue negotiations on mackerel management for 2018 and beyond. In addition, encourage parties to establish a dispute resolution mechanism. During 2017 convene further meetings of the pelagic industry group and identify areas of common interest. Continue to participate as

required in scientific data collection and the mackerel tagging project. Discuss other industry scientific initiatives during the ICES mackerel benchmark meeting.

Outcome year 2:

By autumn 2017, all Coastal States should have formally agreed a mackerel management agreement for 2018 and beyond, in addition to, creating a dispute resolution mechanism. A mackerel management strategy is agreed and implemented.

Milestone year 3:

By autumn 2018, all Coastal States should have formally agreed a mackerel management agreement for 2019 and beyond, in addition to creating a dispute resolution mechanism. A mackerel management strategy is agreed and implemented. As part of the pelagic industry group continue to lobby on issues of common interest to aid the management negotiation process. Continue to participate in the collection of data as identified by the scientific community.

Action year 3:

Continue to lobby Coastal States to engage in negotiations on mackerel management for 2019, and beyond. In addition, encourage parties to establish a dispute resolution mechanism. During 2018 convene meetings of the pelagic industry group to agree common interest lobbying issues to aid the management negotiation process. Continue to participate in the collection of scientific data.

Outcome year 3:

By autumn 2018, all Coastal States should have formally agreed a mackerel management agreement for 2019 and beyond, in addition to creating a dispute resolution mechanism. A mackerel management strategy is agreed and implemented.

Milestone year 4:

Provide factual evidence that an effective international fisheries management arrangement has been agreed and implemented. In addition, parties have agreed a dispute resolution mechanism. A mackerel management strategy is agreed and implemented. As required participate in the mackerel egg survey, the mackerel tagging programme and other scientific projects identified by the scientific community.

Action year 4:

Continue to lobby Coastal States to engage in negotiations on mackerel management for 2020, and beyond. In addition, encourage parties to establish a dispute resolution mechanism. Pelagic industry group continue to develop and implement common lobbying positions to aid the negotiation process. Participate in the mackerel egg survey, the mackerel tagging programme and other scientific projects identified by the scientific community.

Outcome year 4:

A comprehensive multi annual mackerel management arrangement has been implemented and a dispute resolution mechanism agreed. A mackerel management strategy is agreed and implemented.

Alan McCulla
On behalf of The NIPSG

Appendix 2. Peer Review Reports

Due to the time elapsed between site visit and the completion of this Public Comment Draft Report, a consultation period was opened for submission of new relevant information from stakeholders (as per CR2.0 7.3.4). No new information was submitted. The team reviewed the various elements of the fishery and changes were made to the report in regards to Principle 1 while Principles 2 and 3 remained largely unaffected. Following a variation approved by the MSC, Principle 1 was rescored using the CR1.3 assessment tree. The new scoring for Principle 1 is contained within the report while the original scoring and a side by side showing the changes in scoring can be found in Appendix 7 Peer Reviewer 1 was asked to review the new scoring, where the scores are different from the initial scores. Three PIs were rescored – 1.1.1 (from SG100 to SG80), 1.2.1 (from SG90 to SG85), and 1.2.2 (from SG75 to SG65). The corresponding scoring comments have been updated in the table below.

Peer Reviewer 1

Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**No**	**Certification Body Response**
Justification: The principle issue here is whether the situation that led to suspension of the certificate in 2012 has been resolved, such that an operative and effective management plan (and strategy and HCR) is now in place that maintains the mackerel stock at sustainable levels (of SSB and F). The evidence for this is not convincing, chiefly because catch levels remain unchecked, they are not in line with ICES advice given against MSY or any management plan, and fishing mortality is estimated to be well above F_{MSY}. .		The assessment team agrees to a large extent with the concerns of the reviewer. The issue of whether there is effective management of shared pelagic stock in the NE Atlantic (involving affected Coastal States and other relevant states) has been the subject of considerable discussion between several assessment teams, not only for mackerel but also Norwegian spring-spawning herring and northern blue whiting fisheries. This issue has therefore involved extensive harmonisation discussions, facilitated by MSC. It is relevant that some of these fisheries (notably those now comprising MINSA) have been subject to the harmonised condition put in place in 2012, and others were not. The aim of the harmonisation discussions was therefore to achieve a consensus position on a) what scores and b) if appropriate what conditions, were relevant to all the fisheries affected. It is also pertinent, and has also been specifically pointed out by MSC, that several of the original mackerel fisheries were assessed using different assessment trees and the condition set against different PIs; MSC Certification Requirements v2.0 section 7.24.2.2. b. II. A allows "*If the SG80 level has not been achieved, such conditions shall be rewritten against the reassessment tree, with a timeline for completion of less than one certification period*". The scoring of particular PIs (1.2.1, 1.2.2 and 3.1.1.) is discussed below. As it was not logical, nor harmonised, that new entrant fisheries could pass the assessment, but MINSA fisheries fail, the previous harmonised condition was rewritten against a common assessment tree (v1.3 in this case). Fisheries affected by these conditions (which are essentially the same for different stocks) include EU, Norwegian, Faroese and Icelandic UoCs. The assessment teams therefore consider the likelihood of the conditions being achieved to be considerably greater now than was the case in 2012.

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 two conditions, both concerning management of the target species (mackerel). A harmonised condition across the NE Atlantic mackerel fisheries, relating to the ability of the Coastal States Agreement to control total catches of mackerel, was raised in 2011, requiring certified fisheries to implement a Corrective Action Plan (delivered and accepted in June 2012). This harmonised condition was extended (following a variation request to MSC) to 30 April 2015, to allow consideration of the outcome of the ongoing Coastal States negotiations, but this was not achieved. The first condition (against SI: 1.2.2 c) is designed to address the evidence that current management actions used to share the scientifically advised annual TAC cannot be considered appropriate nor effective in achieving the exploitation levels required under the current harvest control rules. As a consequence, the assessment team considers that the fishery does not meet the SG 80 scoring guideposts (I consider SG60 is not met). The condition requires that relevant evidence, provided through ICES or other verifiable means, shows the implications of all available management actions (e.g. by coastal states and/or agreements with other relevant states in controlling fishing mortality) in achieving exploitation levels consistent with appropriate harvest control rules and the requirements of PI 1.1.1. This merely asks for the type of information ICES already provides (on the consequences of different catch uptake and F levels), and does not satisfy the requirement that the mackerel fishery demonstrably achieves exploitation levels consistent with appropriate HCR (defined by condition 2) and the stock status requirements of PI 1.1.1. Condition 2 (against SI: 3.1.1a and b) is designed to address the lack of international co-operation and agreement and delivery of management actions consistent with sustainable management advice, and that ongoing disputes clearly indicate that the management system is not effective in dealing with most issues: the assessment team considers that SG80 is not met (I consider SG60 is not met). The condition requires evidence of organised and effective cooperation between all affected parties which delivers outcomes consistent with meeting Principle 1 (as detailed in Condition 1), and of an effective and transparent mechanism for dispute resolution between the parties. It is essentially a continuation of the harmonised condition raised in 2011. Given that this was not achieved by 30 April 2015, it is uncertain whether the SG80 outcome can be achieved within the specified timeframe.		The first point raised by the reviewer relates to the inability of (what are essentially now MINSA members – a different Unit of Certification) to achieve the original harmonised condition. This point is addressed above – particularly the rationale for rewriting the condition as specified in FCR v2.0 section 7.24.2.2. b. II. A. For the first condition, the scoring of PI 1.2.2 is discussed below. The key requirement of any condition is that the SG80 guideposts are met. In this case this means that "*Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules*". The key requirement is therefore that the tools are shown to be effective. The reviewer's concerns seem to be that this is merely an information requirement, but it is actually related more to appropriate stock management. For the second condition, the scoring of PI 3.1.1 is discussed below. The rationale for raising this condition, and the increased expectation of its being met following harmonisation is discussed above.

Do you think the client action plan is sufficient to close the conditions raised?	**Yes**	**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 team's response to PR comments.		The action plan is also considered appropriate by the assessment team. Following the discussions above, we do not see a requirement for changes to the Conditions as written.

Response to General Comments by Assessment Team: The comments and points raised by the reviewer have been addressed where appropriate in the relevant edits to the main body of the report and scoring tables.

General Comments on the Assessment Report (optional) – as of second peer review 19th Jan 2016

This peer review supplements that provided in November 2015, which covered the original assessment report, and deals with amendments to that report in response to Peer reviewers' comments. Specifically, it covers only the text and scoring comments (and scores) relating to Principle 1, which has been updated to 2014 following the latest ICES Advice (September 2015), and previous comments on Principles 2 and 3 remain as before. Nevertheless, I re-iterate that P2 should be scored by UoC (even if the evidence is that all score the same), and I draw attention to my comments against PI 3.1.1 since this raises a condition that is relevant to P1 scoring. It is assumed that the assessment team have taken note of the general comments on the report and of the review of performance indicators for P2 and P3, and amended the report accordingly (as necessary). I suggest that the new text (highlighted in yellow) is checked for typos/spelling before the PCDR is published.

Acoura comment: The NIPSG fishery is a single UoC – mackerel caught by mid-water pelagic trawl. It is acknowledged that the condition relating to PI 3.1.1 is relevant to the Condition on PI 1.2.2; however under MSC rules, conditions must be specified for each PI. The wording of the conditions reflects this.

Under **3.3 b Stock assessment**, when first mentioning revised reference points for SSB and F, it would be useful to briefly explain why this happened (at least refer to the later section that deals with the Coastal States' 2015 request to ICES). There is still no explanation of the scientific basis for this revision, nor an evaluation of the veracity of the new reference points in comparison with those used in the 2008 management plan (now obsolete). Is it correct that "ICES also advises that the proposed management plan is considered precautionary if Ftarget is equal to or less than 0.22, assuming a Btrigger of 2.2 million t" (3 million t in Table 3-5)?

Acoura comment: We have included details of the ICES evaluation of the Coastal States request to ICES on the long term management plan for mackerel. ICES were asked to evaluate a multi annual management strategy for mackerel. The proposed strategy has been included in the report and represents the way forward. Progress in this respect will be carefully evaluated at each surveillance audit.

I still cannot understand why the estimates from the ICA model (discontinued in 2013?) are included in this report or, if you consider that this is informative, why Fig. 3-8 is required in addition to Fig. 3-9, nor why F values from ICA are not also presented. Clearly, ICES regards the current stock assessment using the SAM model to provide a better current and historic perspective on the stock's dynamics, and you state that the performance of F should be viewed from the perspective of the 2015 revised fishing mortality reference points.

I suggested in my Nov. 2015 review that the Sept. 2015 ICES advice based on a new assessment, which shows F to be well above Fpa and F_{MSY} and gives new reference point values, needs to be presented and considered, together with the implications for stock status, the management plan and, consequently, scoring. Also that the assessment team should take account of the fact that the Coastal States no longer (as of Sept. 2015) consider that the existing management plan is appropriate, and that ICES should therefore give its advice based on a new approach. To a certain extent, this has now been done. An advisory document from ICES included a statement of intent from the Coastal States on the management of the fishery pending the introduction of a new management strategy for North East Atlantic mackerel. This indicated that ICES should give its advice based on agreed objectives and timelines (outlined in the report, and essentially managing against SSBtrigger and FMSY, and staying above Blim) until a new management strategy is in place. However, the Coastal States (EU, Norway and Faroe Islands) do not include Iceland, Russia and Greenland, who together accounted for nearly 400,000 t in 2014 and are, presumably, operating outside this agreement, which you note is currently (Jan. 2016) unchanged.

Acoura comment: This point is recognised and must be addressed in meeting the condition requirements.

Under c) **History of the fishery and management**, you note that, due to under-reporting of catches, estimates of total annual removals from the stock continues to be the major source of uncertainty in the assessment of stock status, which suggests that TAC setting should be extra precautionary.

Acoura comment: This is also a point to be addressed by scientists and managers, and will be considered by the assessment team in deciding whether conditions can be closed.

Under **Regulations and their effects**, you state that the major regulation currently in place are measures to protect the North Sea spawning component, and that other notable regulations are in the southern area to regulate the uptake of Spain's quota. If this really is the case, it highlights the paucity of regulation aimed at restricting exploitation of NE Atlantic mackerel by the fishery as whole, and may explain why F is currently close to Flim and that the total "agreed" TAC is so much higher than that advised by ICES (Fig. 3-12).

Acoura comment: All the regulations in place are clearly explained in the report and we have no evidence to suggest that they are not complied with. The issues surrounding the difference between the scientific advice and the total agreed TAC have been satisfactorily addressed elsewhere in the report in relation to the Coastal States agreement.

Note that ICES predicted an expected catch of around 1.4 million t in 2014 (resultant F of 0.32) and advised a catch for 2015 of between 831,000 t and 906,000 t (F2.0 - 0.22). In its September 2015 advice for the 2016 fishery, ICES expected the catch in 2015 to be1,235,608 t (including 319,000 t out with the "Coastal States"), and advised a catch of 667,385t in 2016 based on F_{MSY} (0.22), noting that SSB at spawning time in 2016 is estimated to have fallen below 4 million t and will reduce to around 3 million t in 2017. This does not suggest a well-managed fishery.

I reiterate that the **Coastal States Agreement** (2014 to 2018) was between the EU, Norway and the Faroe Islands, that Iceland, Greenland and Russia are not signatories to the CSA, since 2009 there has been no international agreement on the TAC, and unilateral quotas have been set which together are higher than the TAC advised by ICES (or indicated by a management plan, which is currently not being implemented). Therefore, comprehensive agreement on the management (including provision for a long-term management plan) of NEA mackerel by all parties participating in the fishery is currently absent.

Acoura comment: This point is addressed in the Conditions of Certification.

General Comments on the Assessment Report (optional) – as per first peer review in Nov. 2015
The main editing comment is that the background information for this report is not presented logically nor always under the relevant headings (indicated below, to some extent) and this needs to be rectified. In particular, information concerning the mackerel fishery management system, and its history (which is the most contentious issue) should be presented clearly in one place so that the reader might be able to understand a) why the mackerel fishery certificate was suspended and b) whether there is sufficient evidence that this has changed for the better (to allow re-certification).

Acoura comment: The team followed a standard template in preparing the report. We also consider it important to retain the historical perspective in the context of changes to assessment modelling procedures and their effect on the perception of stock status.

Executive Summary: Against **Client strengths** you state that lobbying of national administrations and policy makers has proved effective, and against client **weaknesses** that intensive lobbying has not yet resulted in fishing for mackerel within the overall TAC. This seems not to be a strength.

Acoura comment: The summary has been amended.

In **3.2 Overview of the fishery 3.2.1 Background to the MINSA assessment**: The October 2009 ICES advice on NE Atlantic mackerel is not the "most recent" and the following paragraph suggests that Acoura Marine was somehow implicated in the decision to suspend the mackerel fishery. This could be better phrased. The following section, down to **Fishery ownership**, could be considerably abridged, since these details are not relevant to this assessment, which is about the status of the mackerel stock, its impact on the ecosystem and management going forward. The reasons for the suspension and evolution of MINSA could be dealt with in one paragraph referring, as necessary, to **History of the Fishery**, which itself is lacking in any historical perspective on the evolution of the mackerel fishery.

Given the ongoing nature of the catch allocation dispute in this fishery, which has to be resolved to allow it to be certified, the information on quota shares and actual catches (including by Russia, Greenland and Iceland) could usefully be updated to 2014, and the latest ICES Advice (September 2015) presented. You later say that "current catch levels do not pose a threat to the stock, whereas the ICES (2013a) report deals only with F up to 2012, some 3 years out of date.

Table 3-3 provides a list of UoC member vessels, which might best be presented earlier after the details of the client groups, and could usefully show which gear (UoC) they operate.

It would also be useful to provide a chart indicating where the UoCs are actually operating, especially if there are area differences between them. Fig. 3-8 is much nicer that Fig. 3-1, and should replace it.

Under 3.2.2 Species and Fishing Practice you deal with **Management History**, which seems to be out of place. In fact, being the main concern for re-certification, management issues need to be concentrated in one focussed section so that the reader has a clear view of what has gone wrong and how it is being rectified (if it is).

Under **Fishing Practices**, you detail the components of the MINSA fleet, including Norwegian vessels that are not part of this assessment. Is this intentional? Also, is there a difference between Freezer trawlers and Pelagic trawlers, which both operate using a single mid-water pelagic trawl or may work as pair trawlers, such that they may be considered as separate UoCs? If Scottish vessels do use purse seine nets for mackerel, why are they not considered as part of this assessment (they could be a separate UoC)? If not, why mention them? Why are we not provided with a description of the Swedish handline operations, to allow us to understand potential ecosystem impacts?

Why, under **Historical Fishing Levels**, dealing with the geographical and national distribution of catches, is there a Figure showing the history F and SSB relative to reference points from the ICES 2014 assessment, with no explanation of its relevance?

Under **3.3 b Stock assessment**, you note that, though a peer reviewed paper on SAM has been published, there is currently no manual on its use, implying that this is an issue. I suggest that most assessment models are difficult to understand or implement by non-experts, for which this section of the report is written, and that we have to take ICES' advice on the utility and adequacy of this approach to estimating stock trends and status. Given the changed perception of stock status, and that reference points for SSB and F were revised in 2014, has there been any subsequent evaluation of their veracity (and that of the management plan reference points)? By including the estimates from ICA in Fig. 3-10

you are potentially raising an issue that does not now exist. The current stock assessment, and some evaluation from ICES of its reliability, is all that is required here. You, quite correctly, do not show the ICA estimates of F, but do not adequately explain why Film has been revised downwards and Fpa and FMSY revised upwards. The Sept. 2015 ICES advice is based on a new assessment that shows F to be well above Fpa and F_{MSY}, and gives new values for all reference points: this needs to be presented and considered in this report (and the implications for stock status, the management plan and, consequently, scoring). At the same time, the assessment team should take account of the fact that the Coastal States no longer (as of Sept. 2015) consider that the existing management plan is appropriate, and that ICES should therefore give its advice based on a new approach.

Under c) **History of the fishery and management** (again!), Figure 3-13 shows the performance of the fishery in terms of the estimated annual catch compared with the ICES advice and the TACs either agreed or unilaterally declared for 1998 - 2014. Although there may be a "dramatic departure from ICES advised catch limits since 2008", this is not a "failure to comply" with them, since ICES advice has no formal status and managers are free to set TACs as they see fit (especially as F_{MSY} is now estimated to be 0.3 compared to the management plan fishing mortality range of 0.15 to 0.2 shown here).

You suggest that the precision of the estimates of total annual removals from the stock continues to be the major source of uncertainty to be taken into account in the assessment of stock status. Is this dealt with in scoring?

It is not clear why **Table 3-8 ICES have estimated the expected catch of NEA mackerel** (presumably 2014) is presented here, since this is now history and has already been dealt with in this report (see Table 3-2). Better to present the most recent advice for the 2016 fishery.

Acoura comment: Comments above have been superseded by updated review.

Ecosystem Background - 3.4.2 Retained species: you claim that the commercially important non-target species recorded taken in the fisheries are herring and horse mackerel (Table 3-10), but provide no evidential sources for this. What observer coverage is there, or does species recognition in landings provide this information? The paragraph on slipping immediately under Table 3-10 is redundant. Nevertheless, any bycatch is not necessarily 'slipped' along with unwanted mackerel catches, but might represent catches that are mainly non-target species and could well be significant. What evidence is there for this, or does the ban on high grading and slipping through the Coastal States Agreement and in Norwegian fisheries generally effectively negate this possibility? What evidence is there that this fishery does not take salmon (a contentious issue for several years)?

Note that this section does not deal with the target species (mackerel), so research on mortality of mackerel slipped from pelagic trawls (Lockwood *et al* 1977, Pawson & Lockwood 1980, Lockwood *et al* 1983) is irrelevant.

Acoura comment: Evidence on bycatches is provided through post-capture analysis (catches are not sorted before transfer into RSW tanks. This is supported by ad hoc scientific observations.

3.4.3 Endangered, threatened or protected (ETP) species: it is usual to provide more evidence that there are no significant interactions with any of the ETP groups identified as potentially affected (mammals, birds, fish), such as the extent of observer coverage in recent years and which (and how many) of the species of various seabird and marine mammals recognised as being ETP have been recorded.

Acoura comment: There is universal agreement that no ETP species are affected, supported by observations in other similar fisheries which have been subject to MSC assessment.

Coastal States Agreement: note that the March 2014 CSA (2014 to 2018) was between the EU, Norway and the Faroe Islands, and that Iceland, Greenland and Russia are not signatories to the CSA, and there is no agreement from these other parties in its allocation of mackerel total allowable catch (TAC). Therefore, comprehensive agreement on the management (including provision for a long-term management plan) of NEA mackerel by all parties participating in the fishery is currently absent.

Since 2009, there has been no international agreement on the TAC, the plan is currently not being implemented and the quotas being set do not correspond to the advised TAC. In 2014, as in all years since 2008, a lack of agreement on the Management Plan has led to unilateral quotas being set which together are higher than the TAC indicated by the Management Plan' (ICES, 2014).

Acoura comment: This issue is addressed above

At **6.1 Principle Level Scores**, you do not make any distinction in scoring between UoCs. Is this correct?

Acoura comment: There is a single UoC in this fishery

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	Yes	NA	Management of the fishery (in so far as the "Coastal States" are concerned) is based on F scenarios in relation to SSB reference points, and these appear to satisfy this PI. However, the actual management regime is neither in line with ICES advice nor covers the whole fishery, and this shortcoming must be reflected in PI 1.2.	Noted
1.1.2	Yes	Yes	NA		
1.1.3	NA	NA	NA		
1.2.1	No	No	No condition imposed	It is difficult to agree that there is an agreed management strategy that is responsive to the state of the stock and achieves management objectives. The 2008 management plan was only agreed between the EU, Faroe Islands and Norway, has	Your comments here have captured much of the discussion and controversy surrounding the management of this fishery over the past six years. All the points which you rightly make have been well rehearsed during lengthy

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
				not been followed, and has been considered obsolete since 2014, and any reference to it here is redundant in terms of fishery certification. At least three nations are not party to this management regime, and it is clearly not restraining catches to match the TAC advised by ICES (the actual TAC for 2015 was 1235 kt compared to no more than 906 kt advised by ICES). You claim that the harvest strategy is responsive to the status of the stock irrespective of the degree of compliance with scientific advice on annual catches. How can the strategy be based on stock status in relation to reference points and dictate the tactics for the following year in terms of F, when there is no control over F, or catches, and ICES assessment indicates that SSB is reducing rapidly? This clearly does not meet the requirements at SG 80. In fact, it is unlikely to achieve stock management objectives reflected in	discussions as part of the harmonisation process between various CABs involved and the MSC.. As a result it has been generally accepted that the current management problems are basically generated by a failure to abide by the management 'rules and tools in place to achieve the requirements of the Harvest Strategy (ie PI 1.2.2). In that context the written comments and scores at this PI (1.2.1) are in accordance with the results of those harmonisation discussions. Furthermore it is a basic tenet of the certification process that one tries to avoid 'double jeopardy' by not reflecting the same issue in two or more performance indicators. It is generally accepted that PI 1.2.2 is the right place to reflect the current problems and to identify the requisite Condition. Therefore at PI 1.2.1 we are examining the basic management plan which underpinned the harvest strategy up to the advice and management of the fishery in 2015 the outcome of which will not become apparent until late 2016.The

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
				the target and limit reference points (SG60). The evidence does not show that the harvest strategy is working to achieve sustainable exploitation of the stock, and the latest ICES advice (2015) indicates that F has increased in 2013 and 2014 and now appears to have to be above F_{MSY} and close to Flim. For the 2016 fishery, the Coastal States agreed to limit their fishing mortality rate to be consistent with F_{MSY}, to reduce F should SSB be forecast to be below Btrigger, and to make every effort to maintain SSB above Blim. This does not take account of Iceland, Russia and Greenland which, between them, could account for an additional 3-400 thousand t. The request by the Coastal States to ICES to develop a revised management plan remains just that: it is not developed, and still does not	advice for the current fishery in 2016 is based on a satisfactory interim agreed measure of an FMSY based TAC of 667,385t which takes into account both the Coastal States agreed TACs and the declared intentions of others currently outside the Coastal States agreement. The FMSY based advice is also well below catch levels based on a Precautionary approach F (748,576t). We are confident that the text accompanying each of the scoring issues fully justifies the score. That score has been reduced at scoring issue (a) as a result of updating the report to the 2015 ICES advice to reflect the agreement to discontinue the 2008 management plan and work towards an agreed revision of the plan.in line with the Coastal States request to ICES in 2015 The three tier structure of the 2008 management plan does have an excellent track record in the management of many fisheries within the ICES area. The strategy is clearly linked to the status of the stock which is updated annually and is based on actual catches. In terms of achieving its objectives to date, the strategy has clearly been achieving its

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
				appear to involve Iceland, Russia or Greenland. Quite clearly, there is not "**a robust and precautionary harvest strategy in place",** and it is difficult to make a convincing argument that this PI is met**.**	objectives of maintaining SSB above the target level as evidenced by the SSB at spawning time in 2015 (3.62mt). The outcome of the interim FMSY based strategy will not be known until late 2016 and would be addressed at the first surveillance audit.
1.2.2	Yes	No	No	The key here is that, though harvest control rules are well defined, they are not in place. The management regime must apply to exploitation of the whole mackerel stock, and it clearly does not. Although the rules governing the allocation of the TAC in this fishery may be well defined and generally understood, they are not applied by all participating nations. Yes, setting an annual TAC based on an annual estimate of stock status, backed by a precautionary long-term management plan and appropriate technical measures, does have a good track record for	As noted in the comments on PI 1.2.1 above, this is the PI which, after lengthy harmonisation discussions between various CAB representatives and the MSC, has been identified as the appropriate place to address the current problems of the management of the stock. In revising the report to reflect the most up to date ICES advice (September 2015) we have reduced the score from 75 to 65. Scoring issue (a) now reflects the current positon where the managemnt plan was not used for the ICES advice on the fishery in 2016 although a generally understood rule of FMSY, designed to keep SSB above Blim, was activated. It is important to note that the 2008 management plan rules were in place for the advice and management of the fishery

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
				many stocks in the Northeast Atlantic, but this is not the case in managing the NEA mackerel, where the sum of national quotas (however well enforced) far exceeds the agreed TAC. I suggest that the tools used to implement harvest control rules are not effective in controlling exploitation as evidence by aggregate annual catches far exceeding ICES advice and correspondingly high F vales (approaching Flim)(SG60 not met). I suggest that evidence over recent years clearly shows that current management actions (tools in use) are **wholly ineffective** in controlling exploitation levels and the fishery does not meet the SG 60 scoring guideposts.	in 2015. The result of that interim agreed strategy will become apparent in late 2016. At scoring issue (c) we stand by our firm assertion that at the generic level, setting an annual TAC, based on a reliable annual estimate of stock status, backed by a Management strategy, together with an appropriate raft of technical measures does have a reliable track record for many stocks in the Northeast Atlantic. The management of the NEA mackerel stock has all these elements in place supported by rigorous surveillance, monitoring and enforcement of the national quotas and technical measures. This does provide **some evidence** from past performance, that the harvest control rules and tools, currently in place, are able to provide effective and appropriate methods to control exploitation satisfying the requirements at SG60. However and in spite of significant progress being made by the Coastal States, this PI does not reach the standard required at SG80 because of the ongoing problems of reaching an

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
					agreement between all the countries who currently wish to take part in the NEA mackerel fishery. We have accepted that the evidence over recent years shows that current management actions (tools in use) used to share the scientifically advised annual TAC are not wholly effective in achieving the exploitation levels required under the harvest control rules.
1.2.3	Yes	Yes	NA		
1.2.4	Yes	Yes	NA	In order to address SG100a/c, I suggest that the most recent ICES assessment and advice is at least mentioned in this report. In its comments on the quality of the assessment, ICES notes that it is unstable, and more uncertain than last year (2014). Also, Simmonds et al. (1010 sic) is probably out of date.	The ICES working group (WGWIDE) assessment of the status of the stock in 2014 indicated that the SSB had fallen from a retrospective value of 4.16mt in 2014 to 3.6mt at spawning time in 2015. Fishing mortlaity in 2014 had increased from a retrospective value of F 0.302 in 2013 to F 0.339 in 2014. The ICES advice in September 2015 for the 2016 fishery was based on the MSY approach because there is no longer an agreed long term management plan, for the stock, in place. Fmsy had been reduced from F0.25 in 2014 to F 0.22. On

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
					this basis the ICES advised catch for the fishery in 2016 was 667,385t. In their comments on the assessment the ICES advisory committee (ACOM) noted that 'The assessment is unstable, which is a source of concern. One major source of concern is the short time series for the IESSNS survey'. They also commented that 'The assessment this year is more uncertain than last year, because it is now two years after the last triennial eggs survey data point. A new preliminary survey value will be available for next year's (2016) assessment.
2.1.1	Yes	Yes	NA	This section should be scored by UoC (even if the evidence is that all score the same).	Only one UoC is relevant.
2.1.2	Yes	Yes	NA		

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
2.1.3	Yes	Yes	NA	If accurate data on catches of all retained species is obtained from electronic logbooks and landing reports, then provide a summary of these data for each UoC somewhere in this report.	See section 3.4.2.
2.2.1	Yes	Yes	NA	Having raised the possibility that a mixed catch would render the whole catch unmarketable and could therefore result in slippage at sea, you state that no slippage has been recorded. Where is the evidence for this?	The text actually states that the fishery is highly selective. This is supported by all stakeholders – fishers, managers and scientists.
2.2.2	Yes	Yes	NA		
2.2.3	Yes	Yes	NA		
2.3.1	No	No	NA	This section should be scored by UoC (even if the evidence is that all score the same). If there are no statistical data on interactions, then	Only one UoC is assessed. All information from stakeholders strongly indicates no interactions with ETP species. We would not require that resources be directed to proving a

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
				there is not a high degree of certainty that the effects of the fishery on ETP species are within any national or international requirements. To demonstrate that there are negligible mortalities arising from any of the gear types, some information on observer coverage and any ETP Interactions recorded must be presented.	negative when there is no indication of any issues of concern. MSC requiremnets stae that scores shall be 100 if no ETP species are affected.
2.3.2	Yes	Yes	NA		
2.3.3	No	No	**NA**	Either here, or at 2.3.1, it is necessary to present the actual species that are considered ETP under the MSC scheme. How is the information on seabird and on marine mammal species' populations, for example, quantitatively comparable to data collected/estimated for the UoCs? Is the mackerel fishery conducted in the same way as the herring (sic) fishery?	Additional information on ETP species was added into Section 3.4.3 of the report. The assessment team is assured that there is sufficient information to determine effects on potentially affected populations, as and where required. The team is also assured that interactions of the fishery with ETP species is extremely low. Without any evidence of any direct effects, we cannot know which ETP species may be affected.

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
2.4.1	Yes	Yes	NA	This section should be scored by UoC (even if the evidence is that all score the same).	Only one UoC is evaluated here.
2.4.2	Yes	Yes	NA		
2.4.3	Yes	Yes	NA		
2.5.1	Yes	Yes	NA		
2.5.2	Yes	No	NA	Although there is a single-species assessment for mackerel, the lack of an active management plan agreed by all exploiting nations, should be reflected in the scoring here.	As this is an assessment against MSC CR v1.3, the P2 assessment is concerned with the effects of the UoC evaluated. As this is an EU-based fishery, EU and UK management measures are evaluated.

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		
3.1.1	No	No	No	NB CBA4.2.1.2 For a fishery subject to international cooperation for management of the stock (which this is), this means the existence of national and international laws, arrangements, agreements and policies governing the actions of the authorities involved in managing the fishery, and a framework or other multilateral arrangement required to deliver sustainable management. In light of the failure of the management system to control exploitation of mackerel (through agreed shares of an aggregate TAC that follows ICES advice), it is difficult to argue that there is an effective national legal system and a framework - - - to deliver management outcomes consistent with MSC Principle 1, nor that it incorporates a	As stated in the rationale, for (a) at SG60 co-operation must extend to sharing of scientific data, advice and assessment, which does occur through the ICES process. This is set out in CBA4.2.1.3. It therefore clearly passes SG60, but a condition is set to deliver "organised and effective cooperation with other parties".

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
				mechanism for the resolution of legal disputes arising within the system. SG60 does not appear to be met.	
3.1.2	No	No	NA	Given the acknowledgement (at 3.1.1) that mackerel is a shared, straddling, high-seas stock subject to international cooperation for its management, it is insufficient to deal only with the system for manageing mackerel fishery activities within EU MS waters and the NEAFC Regulatory Area here.	CBA4.0.2 The performance of non-UoC management bodies where they are also subject to international cooperation to manage the stock shall not be individually assessed, except where they impact directly on P1 and P2 outcomes and/or P3 implementation. GCBA4.0.2 The intent of CB 4.0.2 is to limit the extent of responsibility of the fishery within the UoC for the actions of non-UoC management bodies, unless they impact directly on the delivery of P1 and P2 outcomes. In 3.1.2 reference is made to the roles and relationships between the NEAFC signatories, of which they are all well-aware. Text amended to: "The relationship between the NEAFC signatories is explicitly defined in the NEAFC Convention and well understood for all areas of responsibility and

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
					interaction. Therefore SG 100 is met." The roles are understood and the consultation processes exist. Ultimately it is the HCR that is proving to be ineffective. This should be supported by "effective co-operation", which is considered and addressed under 3.1.1 scoring and the condition set.
3.1.3	No	No	NA	Comment as for 3.1.2 above.	Response as above. The consideration under P3 of all other non-UoC fishing nations should only extend to those specific aspects affecting outcomes. As these are NEAFC signatories, the objectives of NEAFC should apply to those nations.
3.1.4	No	No	NA	It is difficult to argue that the management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principle 1, and seeks to ensure that perverse incentives do not arise, when it is clear that the recent increased availability of mackerel around Faeroes, Iceland	The general management system applying to UoC vessels (registered to European Member States) allocates individual quotas that are adaptive and in line with an HCR. The overall TAC is being exceeded, but it is not the case that vessels of other nations are contravening their national

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
				etc has incentivised those countries to fish outside existing management agreements and which may be contributing to unsustainable fishing practices.	fishing laws. Ultimately therefore, it comes down to a HCR that is not effective. Again we must ensure we are not double-scoring what amounts to the same issue that is addressed under 1.2.2. and 3.1.1.
3.2.1	Yes	Yes	NA		
3.2.2	Yes	No	NA	Having recognised that "fishery-specific" refers to the international NE Atlantic mackerel fishery, it seems that decision-making processes are currently not able to respond to serious issues (such as extra-TAC fishing) in a transparent, timely and adaptive manner, in that there has been no solution to the management problems that led to the mackerel fishery certification to be suspended.	Added text: "The Coastal States are shown to respond to developments in the fishery e.g. the extension of meeting involvement to Russia and Greenland, despite the CSA not being accepted and agreed by all parties." The decision-making processes have therefore been shown to respond as required at SG80, but decisions are not suitably binding (so a condition at 3.1.1) and the Harvest Control Rule is not effective (addressed in 1.2.2). As stated above, it is not the intention of

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
					the assessmnt team to double-score the same issue.
3.2.3	Yes	Yes	NA		
3.2.4	Yes	Yes	NA		
3.2.5	Yes	Yes	NA		

General Comments

None

Peer Reviewer 2

A reminder that the Principle 1 scores discussed below are the original scores found in Appendix 7

Overall Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes/No**	**Certification Body Response**
Justification: The principal omission from this assessment is a simple clear statement summarizing exactly what has changed for the better since the earlier mackerel certificates were suspended. There is a management plan (subject to review and revision) on the table. There is also a harvest strategy on the table. In the past both have been shown to be effective in delivering the desired effects. Currently, however, not all participants in the fishery are signatories to either the plan or strategy; consequently, it cannot be argued that either a management plan or harvest strategy is "in place". An agreed harvest strategy and management plan seems fundamental to the fishery meeting the minimum standard necessary for MSC certification. At present, we have the current version of the original coastal states' agreement (for a management plan and harvest strategy), an agreement that now includes an allocation for non-signatories, but the allocation is less than their (recent) catches and aspirations. Thus, we have a fishery in which the EU, Norway and the Faroe Islands (maybe) have an agreed plan, but to which two other significant parties, Iceland and Russia (plus Greenland) are not signatories, but continue to self-allocate an annual catch target. It is difficult to see how this set of circumstances differs from the circumstance pertaining when the original mackerel certificates were suspended. The only significant change was that, serendipitously, the stock was reassessed to be ~ twice the size previously thought, which meant that it was not in the dire state it might have been had the same level of exploitation been applied to the earlier assessment. The most recent ICES assessment, however, indicates that this brief respite will soon be over, if not already over, and we shall be in exactly the same situation we were when the previous certificates were suspended.		The summary has been extended to clarify the points raised here. As set out in response to the other reviewer, The assessment team agrees to a large extent with the concerns of the reviewer. The issue of whether there is effective management of shared pelagic stock in the NE Atlantic (involving affected Coastal States and other relevant states) has been the subject of considerable discussion between several assessment teams, not only for mackerel but also Norwegian spring-spawning herring and northern blue whiting fisheries. This issue has therefore involved extensive harmonisation discussions, facilitated by MSC. It is relevant that some of these fisheries (notably those now comprising MINSA) have been subject to the harmonised condition put in place in 2012, and others were not. The aim of the harmonisation discussions was therefore to achieve a consensus position on a) what scores and b) if appropriate what conditions, were relevant to all the fisheries affected. It is also pertinent, and has also been specifically pointed out by MSC, that several of the original mackerel fisheries were assessed using different assessment trees and the condition set against different PIs; MSC Certification Requirements v2.0 section 7.24.2.2. b. II. A allows "If the SG80 level has not been achieved, such conditions shall be rewritten against the reassessment tree, with a timeline for completion of less than one certification period". The scoring of particular PIs (1.2.1, 1.2.2 and 3.1.1.) is discussed below. As it was not logical, nor harmonised, that new entrant fisheries could pass the assessment, but MINSA fisheries fail, the previous harmonised condition was rewritten against a common assessment tree (v1.3 in this case). Fisheries affected

	by these conditions (which are essentially the same for different stocks) include EU, Norwegian, Faroese and Icelandic UoCs. The assessment teams therefore consider the likelihood of the conditions being achieved to be considerably greater now than was the case in 2012.

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?	**C 1: Yes** **C2: No**	**Certification Body Response**
Justification: If one accepts that the fishery does achieve the necessary level for certification, then Condition 1 is appropriate but Condition 2 is not sufficiently challenging.		The requirements of any condition are, ultimately, that the SG80 requirements are met. For this fishery, the relevant requirements are that a) 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 and b) that the management system incorporates … 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 condition is considered entirely consistent with these requirements.

If included:

Do you think the client action plan is sufficient to close the conditions raised?	**C 1: Yes** **C2: No**	**Certification Body Response**
Justification: If one accepts that the fishery does achieve the necessary level for certification, then the action plan for Condition 1 is appropriate but something more rigorous is required for Condition 2		Given the general nature of the lobbying response to the condition, the action plan as written is considered adequate.

For reports using the Risk-Based Framework please follow the link.

For reports assessing enhanced fisheries please follow the link.

General Comments on the Assessment Report (optional)

Client weaknesses

1 "*Intensive lobbying has not yet resulted in fishing for mackerel within the overall TAC*." This statement immediately calls into question the suitability of this fishery to achieve a P1 score of 80 or to receive MSC certification.

Unit of Certification

2 "*Cooperative management between EU member states and Norway, advised by ICES*." What about Faroe Islands? The current management arrangements include cross-border access between EU and FI waters.

Fishery ownership

3 "*Sea Fish Industry Authority's Responsible Fishing Scheme*." Non-British readers might appreciate a web address.
4 "*Northern Ireland Fish Producers' Organisation Limited*." It is not clear what the connection is between this organisation, the vessels named earlier, the NIPSG and this assessment.

History of the Fishery

5 "*Multi-lateral discussions between the EU, Norway, Iceland and the Faroe Islands ---- no agreement has been forthcoming. Both Greenland and Russia ---- A consensus could not be found ---- on the management of mackerel in the NE Atlantic between 2014-2018.*" This being the case it is difficult to see what has changed since original MSC certificates were suspended that warrants recertification now.
6 "*Quota shares for 2015 were agreed*," but Greenland, Iceland and Russia have not 'agreed' to anything.
7 "*The stock is distributed over the entire ICES area*." I doubt it is ever found in the Gulf of Bothnia.
8 "*Total removals of mackerel are expected to be approximately 1.4 Mt in 2014, exceeding the recommended upper catch limit for 2014 by about 390 kt*." A 40% excess of catch over recommended TAC is a strong indication of no effective management control measures on the international fishery.
9 Fig 3.1 (which is a table): What exactly is the 'Coastal States and Fishing Party Reserve'?

Species and Fishing Practice

10 What is the relevance of the figures, none are mentioned in the?
11 Neither the FRS nor CEFAS web links delivered a page on mackerel.
12 "---*migrate to feed in the Nordic Sea* ---". There is no 'Nordic Sea' but there are Nordic seas.

Management History

13 Table 3-2: what is 'payback'?
14 **"***Various international and national measures to protect mackerel are in operation throughout the mackerel catching countries. These include catch limitation (quota), Management plan, area closure (North Sea), area limitation, minimum size, high grading ban, discard prohibition and as of 1st Jan 2015 landings obligation*." This paragraph appears to contradict many of the things already described: e.g. Iceland and Faroe Islands have not limited their catches within a quota and the management plan has failed. What is the difference between an 'area closure' and an 'area limitation', and where are they? What are the differences between a ban on 'high grading', 'discard prohibition' and the 'landings obligation'?

Gears

15 Figure 3-2 &3: Incomplete reference given. Source: *Basic Fishing Methods: a comprehensive guide to commercial fishing methods. Seafish: Edinburgh & Grimsby*.
16 "*Larger mesh near the start of the net is designed to facilitate the escape of escape of small fish* ---". Is this the case? Why does it facilitate the escape of small fish but not the larger fish? Normally, it is the cod-end mesh or a panel in the square that is designed to aid the escape of small fish. I had always understood that large mesh (sometimes enough to allow a bus to drive through and certainly large enough to allow any mackerel to escape, irrespective of size) is part of the initial (low drag) herding system to move fish towards the centre-line of the trawl, just as the warps and doors herd the fish towards the centre.

Historical Fishing Levels

17 What is the relevance of Fig 3.5; it is neither cited nor discussed?

Principle One: Target Species Background

18 No mention of Fig 3.6
19 "*Over this period the oil content of a large mature mackerel may fall from 25% to 30% of the total body weight to less than 10% (Lockwood, 1988)*." Lockwood (1988) is a secondary source. The

correct reference is: Wallace, P. D. and Hulme, T. J., 1977. The fat/water relationship in the mackerel, *Scomber scombrus* L., pilchard, *Sardina pilchardus* (Walbaum), and sprat, *Sprattus sprattus* (L.), and the seasonal variation in fat content by size and maturity. Fisheries Research Technical Report 35. MAFF Directorate of Fisheries Research, Lowestoft. (Or: Wallace, P.D. (1991). Seasonal variation in fat content of mackerel *(Scomber scombrus* L.) caught in the western English Channel. Fisheries Research Technical Report No. 91. MAFF Directorate of Fisheries Research, Lowestoft.)

Stock assessment and stock status

20 "--- *unquantified slippage* ---". Slippage needs to be defined, either here or in the earlier section about fishing methods.

21 What are the "*the International bottom trawl survey (IBTS*)", "*the International ecosystem summer survey of the Nordic seas (IESSNS)*", "*the Norwegian tagging programme*" and the much cited triennial egg surveys? We are provided with a plethora (possibly even a surfeit) of detail on assessment methodology but there is precious little information given about the when, where, why, how much and how often collection of the underlying data. It might help both authors and readers if a consolidated section on the who, what, where and when of science supporting the assessment appeared earlier, possibly following the description of the fishing methods.

22 "--- *the labelling of the model outputs by ICES, in their advice documents, is not clear and easy to understand. This is an issue which could be simply resolved*." How?

Annual recruitment

23 "*An annual recruitment index has now been derived from catch data from the International bottom trawl surveys (IBTS) in the fourth quarter of the year*." Where does this take place? I am only aware of the North Sea IBTS, in which case, is it relevant to what happens west of Ireland or off Spain?

Management plan harvest control rule.

24 "*A management plan was agreed by the EU, Norway and the Faroe Islands in October 2008. That plan, which remains extant* ---". How can it be said to remain extant when the Faroe Islands walked away from it and Greenland, Iceland and Russia are not signatories supporting it?

Principle Two: Ecosystem Background

25 A general observation is that even allowing for this being a pelagic fishery with minimal fishing – seabed interaction, the description for P2 is fairly superficial. We are expected to accept unsubstantiated assurances that there are no interactions with birds or mammals, even though these have been recorded elsewhere; e.g. Norwegian reference fleet. There is no significant discussion or specific reference to any observer programmes in the fishery area or relevant conclusions drawn by appropriate ICES working groups.

26 As for habitats, if pelagic trawlers need to fish close to the seabed, they will put the foot-rope weights on long legs to hit the seabed before the footrope. Dragging weights across the seabed can wreck (e.g.) coral reefs. Do these vessels ever trawl in close proximity to the seabed?

North Sea

27 A reference for source material is given for the Celtic seas but not for the North Sea; a reference is required, not forgetting the Norwegian regional seas management plans.

Celtic seas

28 "*There are a number of studies ongoing that are addressing questions of predator/prey relationships*" Where are the supporting references for this statement?

29 "*Coldwater coral structures*" – Ditto.

30 On first mention, scientific species names (for fish) should be given.

Retained and bycatch species

31 As it stands, the legend for Table 3-7 is meaningless. A great deal of herring was caught in 2014, in the North Sea, the Norwegian Sea, west of Scotland -----. The table does not appear to be mentioned in the text.

32 North Sea Herring: "*The stock is MSC certified*." I thought that it was specific fisheries (fleets) that were certified, not fish stocks.
33 Atlantoscandian (Norwegian Spring Spawning) Herring: if there is any interaction of these vessels with these herring in this fishery, the fishery extends beyond the declared UoC. By definition, if not by biology, these fish do not enter ICES sub areas IV or VI. If the authors believe that there is an interaction with these vessels' fishery, the UoC must be changed and a summary of the ecosystem – environment given for*, inter alia*, the Norwegian Sea.
34 West of Scotland herring: "*The stock is MSC certified*." I thought that it was specific fisheries (fleets) that were certified, not fish stocks.
35 Why is there no mention of blue whiting here? The mackerel and blue whiting summer feeding ground show a very widespread overlap.
36 What is slipping; it has not been defined nor explained? It must not be overlooked that EU vessels fishing in Iva can fish in Norwegian waters and the management regime there is different to the EU – not least with the Norwegian approach to managing slipping. Either this must be included or the report must produce evidence that the vessels never fish in Norwegian waters.
37 Neither here (nor under ETP if you prefer) is there any mention of salmon bycatch, but the summer high-seas mackerel trawl fisheries have given concern to both NASCO and ICES. Indeed, in the past there have been observer trips specifically to assess this interaction. What is the current status on this issue; does the ICES salmon working group still feel cause for concern or have they concluded that any interaction was trivial?

Endangered, threatened or protected (ETP) species

38 What measures are in place to record fishery interactions with mammals, seabirds and large (endangered) fishes? If they are not recorded, how do we know they are not affected; are they monitored; have there been any observer programmes (and don't forget the Norwegian reference fleet); what do the appropriate ICES working groups say on this topic?

Habitat

39 "*There is good knowledge of sensitive benthic habitat locations, such as coral mounts, and seamounts, as mapping information is compiled through surveys and fishers' comments (see ecosystem characteristics in Section 3.4.1)*." If there is 'good knowledge' the statement should be supported by appropriate references.

Principle Three: Management System Background

40 A general observation is that the whole section is written as if the fishery is carried out entirely within EU, if not UK waters. There is little information on MCS arrangements with non-EU states, most particularly Norway, and, despite these vessels being from Northern Ireland, the Northern Irish management authorities do not get a mention in this text report. Do they not have a role?

EU management

41 The authors assume that all readers will understand what is meant by 'payback', its cause and purpose. I think a little greater explanation would not go amiss.
42 "*A similar regulation applied to Scottish and Irish vessels expired in 2012*." Did the regulation apply explicitly to 'Scottish' vessels or to UK vessels? Was the application of the regulation to Scottish registered vessels (excluding NIPSG vessels?) a UK management measure?
43 What are the management, control and surveillance measures in EU waters and how effective is each component? As these measures are fundamental to meeting the threshold certification criteria for P3 they should be given in more explicit detail, including how they are applied to non-EU vessels fishing in EU waters.

International management

44 The summary of NEAFC role is adequate but what about when EU (NIPSG) vessels fish in Norwegian (or Faroese) waters? This should not be ignored.

Monitoring Control and Surveillance

45 "*MCS is ---- agreed with the other EU Member States and Norway*" and Faroe Islands and Iceland (and Russia).
46 "*For example, Scottish vessels are monitored* ---" and NIPSG vessels?

47 "*The control of fisheries out with Scottish waters* ---". Many readers may reasonable wonder what is the significance of this statement. This assessment covers vessels registered in Northern Ireland where the regulatory authority is Dard. Whilst fishing in the UK sector of UK waters they may be subject to at-sea inspection by the Royal Navy or Scottish fishery patrol service. In this instance, their relationship with Northern Ireland (vessels) needs clarification. Even within the UK not everyone understands or appreciates the nuances of four nations comprising the UK and devolved administration responsibilities and powers.

48 "*On occasions member states allow other member states to operate their patrol vessels in their waters to board their own nations' vessels*". Is it not the case that any nation's patrol vessel when on a NEAFC patrol, i.e. flying the NEAFC pennant, can board any vessel? Also, it should not be overlooked that the Norwegian coastguard will board and inspect any vessel that is fishing within their waters (as well as requiring them to report when entering and leaving Norwegian waters).

49 "*Overall control agencies* ---". Nowhere are we told explicitly what these agencies are. In particular, at no point in this report is it explained what DARD is or what its (scientific, administrative, enforcement) role is even though the acronym appears in connection with references and meetings.

Stakeholder participation

50 Is stakeholder participation limited to the Pelagic RAC? What about stakeholder (industry) participation and engagement with ICES (assessments), the EU STECF, nationally?

Coastal States Agreement

51 "--- *since 2008, a lack of agreement on the Management Plan has led to unilateral quotas being set which together are higher than the TAC indicated by the Management Plan*." A state of affairs that suggest that nothing has changed since the earlier MSC certificates were suspended and nothing that has appeared in this report to this point has made either an explicit or convincing case for renewed certification.

Acoura comment: The above comments have been considered by the authors in relevant sections. Many are also reflected in comments below.

Performance Indicator Review

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

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	1.1.1	Yes	Yes	NA	
1.1.2	Yes	Yes	NA	Whilst I do not disagree with the overall conclusions and score, there is an apparent inconsistency in the argument in (c). On the one hand it says that ecological considerations have not been taken into account, but on the other it states that its ecological role is not critical; reinforced by the conclusion in (d) that the ecosystem is not wasp-waisted with respect to mackerel).	Our statement regarding a lack of evidence that the ecological role of the stock has not been taken into accountis is qualified by the requirement for a high probabaility (95%) and we felt that the evidence does not meet this robust requirment in full. We have re-enforced this conclusion by mentioning seting natural mortality levels in the stock assessment process to take account of the role of mackerel as a prey species.
1.1.3	NA	NA	NA	Agreed	
1.2.1	Yes	No	Condition required	NB: "As a consequence the strategy has been unable to respond to the status of the stock ---" (1.2.2c) – statement that contradicts a Y for	The points which ou make are rightly accepted by the team and they do capture most elements of the widespraed discussion, imterest and controversy surrouding these management

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
				SG 100a here. I struggle to reconcile the positive interpretation of this PI with what has been happening with the fishery in recent years. Undoubtedly there has been a management plan to which, in the first instance, relevant parties were signatories. Under this regime, there were signs that the harvest strategy etc was having the desired effect. We are now in the position, however, where ICES is formulating advice as the basis for a harvesting strategy that currently has little meaningful relationship with what is happening on the fishing grounds. Greenland, Iceland and Russia, between them, are taking a significant part of the toal catch but are neither signatories to the management plan not the harvest strategy. The fact that these nations' recent intervention has not sent the stock into a steep decline is a consequence of the serendipitous increase in SSB following re-evaluation of the stock (and	issues over recent years. All these issues have featured in the widespread consultations and discussions during a lengthy harmonisation process with other CABs and in which the MSC participated. The result of that comprehensive process of consultation was a general acceptance that the current management problems are generated by a failure to abide by the management 'rules and tools in place to achieve the requirements of the Harvest Strategy (ie PI 1.2.2). In that context the written comments and scores at this PI (1.2.1) are in accordance with the results of those harmonisation discussions. Furthermore it is an accepted part of best practice, in the certification process, to avoid reflecting and scoring the same issues in two or more performance indicators. During the harmonisation process it was eventually agreed that the correct place to identify and score the current problems and to apply a relevant Condition was PI 1.2.2 It was agreed that at PI 1.2.1 we are looking at the basic management plan which underpinned the harvest strategy up to the advice and management of the fishery in 2015 the outcome

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
				assessment methods). It has little, if anything, to do with a (currently theoretical) management plan or harvest strategy. I think the team need to have another hard look at this PI and make a stronger case that this fishery does meet the SG 60 level. Until such times that all (major) participants are signatories to and supporters of the management plan and harvest strategy I cannot see how it meets the SG 80 level.	of which will not become apparent until late 2016.The advice for the current fishery in 2016 is based on a satisfactory interim agreed measure of an FMSY based TAC of 667,385t which takes into account both the Coastal States agreed TACs and the declared intentions of others currently outside the Coastal States agreement. The FMSY based advice is also well below catch levels based on a Precautionary approach F (748,576t). We are confident that the text accompanying each of the scoring issues fully justifies the score. That score has been reduced at scoring issue (a) as a result of updating the report to the 2015 ICES advice to reflect the agreement to discontinue the 2008 management plan and work towards an agreed revision of the plan.in line with the Coastal States request to ICES in 2015 The three tier structure of the 2008 management plan does have an excellent track record in the management of many fisheries within the ICES area. The strategy is clearly linked to the status of the stock which is updated annually and is based on actual catches. In terms of achieving its objectives to date, the strategy has clearly been achieving its objectives of maintaining SSB above the target level as evidenced by the SSB at spawning time in 2015 (3.62mt).

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
					The outcome of the interim FMSY based strategy will not be known until late 2016 and would be addressed at the first surveillance audit.
1.2.2	Yes	No	If one accepts that SG 60 is met, then the condition and the client action plan are appropriate.	As above, I am unconvinced that if a significant part of the total catch is being taken by participants who are neither signatories to the management plan nor harvest strategy, it can be held that "Well defined harvest control rules are in place that --- ensure that the exploitation rate is reduced as limit reference points are approached". The entire rationale presented un (a) is based on what was 5–10 years ago; there is no mention of the three non-signatory nations and how their involvement renders the current plan etc meaningless. (See penultimate sentence under (b), which acknowledges this shortcoming.) The rationale presented under (c) is the most transparent analysis of the current (in)effectiveness of the management plan and strategy. It	As noted in the comments on PI 1.2.1 above, this is the PI which, after lengthy harmonisation discussions between various CAB representatives and the MSC, has been identified as the appropriate place to address the current problems of the management of the stock. In revising the report to reflect the most up to date ICES advice (September 2015) we have reduced the score from 75 to 65. Scoring issue (a) now reflects the current positon where the managemnt plan was not used for the ICES advice on the fishery in 2016 although a generally understood rule of FMSY, designed to keep SSB above Blim, was activated. It is important to note that the 2008 management plan rules were in place for the advice and management of the fishery in 2015. The result of that interim agreed strategy will become apparent in late 2016. In spite of significant progress being made by the Coastal States, this PI does not reach the standard required at SG80 because of the ongoing problems of reaching an agreement between all the countries who currently wish to

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
				highlights the fact that until all participants are singatories the management plan and strategy, they have little more relevance to stock conservation than did ICES advice in the first 15 years or so of the CFP; i.e. it will desccribe the current stock status but have no bearing on fishery management.	take part in the NEA mackerel fishery. We have accepted that the evidence over recent years shows that current management actions (tools in use) used to share the scientifically advised annual TAC are not wholly effective in achieving the exploitation levels required under the harvest control rules.
1.2.3	Yes	Yes	NA	Agreed	
1.2.4	Yes	Yes	NA	Agreed	
2.1.1	No	No	NA	Both in the descriptive text and here, the treatment of retained species is very superficial, even if they never attain 'main retained species' status. The most notable ommission is any reference to blue whiting, with which there is both stock and fishery overlap. Also, neither here nor in the text are we given a table showing what the reference points are and where the stock stands relative to these reference points. In this	Text has been added in the report clarifying the scoring, in particular in relation to the changed evaluation of the West of Scotland herring stock (the assessment having changed since the report was first drafted). However, the data shows extremely low levels of retained bycatch, and none of these are main species.

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
				context, contrary to what this report says, the West of Scotland herring stock is *well below* its biological reference points (ICES ACOM 2014 & 2015). This fishery is most likely to catch horse mackerel from the northern stock, about which virtually nothing is known, least of all stock status and exploitation levels. The stock to which the report's comments apply is the western stock, which this fleet is least likely to exploit. The fishery may clear the SG 80 standard but on the basis of what is presented here, it does not achive 90.	
2.1.2	No	No	NA	(a) "Each of the retained species has an associated management strategy ---". Is this true? What is the management strategy for the northern stock of horse mackerel? (b) "None of the species has approached its limit reference point ---", but the West of scotland herring	Noted and amendments made to scoring table text.

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
				is seriously below reference points and there is no meanigful assessment of the northern horse mackerel. it is difficult to see how the SG 100 standard is met with respect to 'testing'. Overall, the fishery may clear the SG 80 hurdle but it certainly does not achieve the gold standard 100.	
2.1.3	No	No	NA	We are told that ICES believes that a certain amount of slipping and discarding takes place. It is reasonable to assume that (in the hours of darkness) this is most likely to happen (albeit rarely) with non-target species. This being the (probable) case, the fishery falls short of 'accurate and verifiable information' required for SG100a. If we do not know the status of northern horse mackerel and WoS herring is below acceptable levels, how can we be certain that 'Information is sufficient to quantitatively estimate outcome	Noted. No evidence of slippage has been found and Enforcement and Compliance agencies certainly did not highlight this as an issue.The Landing Obligation will make it possible infuture to get this confirmatory data, which will be regular and more complete.

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
				status with a *high degree* of certainty'? SG 100b is not met.. (c) & (d) Ditto. Overall, the fishery may clear the SG 80 hurdle but it certainly does not achieve the gold standard 100.	
2.2.1	Yes	Yes	NA	Agreed	
2.2.2	Yes	Yes	NA	Agreed	
2.2.3	Yes	Yes	NA	Agreed	
2.3.1	No	Yes	NA	"As detailed above, all evidence suggests ---", but whatever evidence there is has certainly not been 'detailed'. What observer programs have been; what records are kept of interactions with seabirds and marine mammals. In	As mentioned prviously, consultations have been carried out with fishers, scientists and managers involved with the fishery. None report any interactions. Similar findings have arisen with other MSC assessments, including those with observer programmes, or the Norwegian

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
				the absence of fleet-secific records, what might be inferred from the Norwegian reference fleet data? The overall score of 100 can probably be justified but the background treatment here is too superficial to support it.	reference fleet.
2.3.2	No	Yes	NA	(a) "Under Article 6, Member States are required to report ---". If this is the case, there must be official figures (quite possibly 'zero') to demonstrate the extent to which the EU mackerel fishery interacts with ETP species. These data should be summarised here or an appropriate reference cited. (b) "Ongoing information on bycatches is collected ---". Where is this information? It does not appear in this report, even as a summary table. (c) "All available information ---	See comments above. Of course, it is the NIPSG fishery in particular which is being considered and all available information is that there are no interactions with this UoC/fishery.

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
				all provide clear evidence ---". If there is *clear evidence* we should be shown it. The score may be valid but the presentation of information to justify it is not given.	
2.3.3	No	Yes	NA	(a) Does the MMO really gather information on the status of seabird populations? I thought that this was a responsibility of the JNCC Seabirds at Sea team in Aberdeen. Also, as EU vessels are licensed to fish in Norwegian and Faroese waters, one should not ignore that population monitoring of seabirds and marine mammals undertaken in these countries and under the auspices of the Nordic Council.	Text corrected.
2.4.1	Yes	Yes	NA	Agreed	
2.4.2	Yes	Yes	NA	Agreed	

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
2.4.3	Yes	Yes	NA	Agreed	
2.5.1	No	No	NA	"Further evidence from ecosystem modelling---". There has been no substantive description or discussion of relevant ecosytem modelling anywhere in this report. The score may be valid but it has not been justified adequately.	Additional explanation and references added.
2.5.2	No	No	NA	I agree with the score but, as elsewhere, the rationale leaves something to be desired. Where are the refferences to the Norwegian seas management plans? Is the Celtic Sea (sic Long-term Management plan relvant here or sdhould it be Celtic seas? If the latter, who is the instigator and responsible authority; where is the appropriate reference for it? The score may be valid but it has not been justified adequately.	Additional references added

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
2.5.3	No	No	NA	Where is the reference to NORWECOM? "--- some quantification of the level of impacts is available through the reference fleet programme ---". This is the only mention of the (Norwegian?) reference-fleet programme, but nowhere is it described or its key relevant findings summarised. "This is currently demonstrated through the development of management plans for Barents Sea, Norwegian Sea, Celtic Seas and North Sea." Where are these plans to be found; references are not given? The score may be valid but it has not been justified adequately.	Additional references added
3.1.1	Yes	No	It is difficult to discern from this condition and	"The management of western mackerel is in line with best scientific advice as provided through	As stated in the rationale, for (a) at SG60 co-operation must extend to sharing of scientific data, advice and assessment, which does occur

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
			action plan how it differs from what has been taking place over the past 5 years. If this fishery is to be certified, this condition (and action plan) needs to be more explicit with a more demanding timescale.	ICES (the International Council on the Exploration of the Seas), and exercised through the setting of an annual TAC (Total Allowable Catch). The TAC is allocated between fishing nations via the Coastal States Agreement." 1 – By no stretch of the imagination is there currently 'effective management in line with scientific advice'. 2 – In the absence of an effectrive agreement by all participant in the fishery, it is inaccurate, if not misleading to suggest that an effective TAC has been set. 3 – The EU–Norway–Faroe CSA agreement may make a notional allocation for other states but unless they are signatories and accept the allocation it is inaccurate, if not misleading to suggest that effective an TAC has been set. "Other states operating in the fishery do not accept the management plan, resulting in the quota being	through the ICES process. This is set out in CBA4.2.1.3. It therefore clearly passes SG60, but a condition is set to deliver "organised and effective cooperation with other parties".

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
				exceeded." In other words, there is not 'a framework for cooperation with other parties, where necessary, to *deliver* management outcomes consistent with MSC Principles 1 and 2'. This being the case, it is far from convincing that the fishery meets the SG60 threshold.	
3.1.2	Yes	Yes	Condition?	MS – (EU member states?) not in glossary. PI a & c – agreed, but for b it is a moot point whether or not "the management system demonstrates consideration of the information obtained". Information obtained supports (*inter alia*) the Icelandic claim to be included in the management plan, but, for whatever reason, this is not happening. The case supporting SG80 for (b) needs	Further text added.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				to stronger.	
3.1.3	Yes	Yes	NA	Agreed.	
3.1.4	Yes	Yes	NA	Agreed, but as elsewhere the arggument is couched exclusively in terms of the CFP without any refernce to Norway, in whose waters these vessels are able to fish. The Norwegians have very specific rules relating to the control of slippage.	Text added.
3.2.1	Yes	No	Condition?	"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." The fishery management system should (must) include all principal catching nations. Currently there is not an effective management system as two of the principal nation's are not	We note the basis of the PR comments, but the focus of this PI is on management objectives – and the evidence and justification prresented is consistent with this. No change.

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
				signatories. "The Coastal States Agreement process provides the core basis for management of this stock ---", but not all the principal participants are signatories so the so-called agreement is meaningless. This being the case, SG100 is not met, even partially, and, arguably, by the same token, SG80 is not met either.	
3.2.2	Yes	Yes	NA	Agreed.	
3.2.3	No	Yes	NA	Agreed, but both the report and scoring table omits any reference to Norway, in whose waters some vessels fish. This omission is particularly relevant with respect to Norwegian reasearch and regulations concerning slipped catches.	Note added
3.2.4	No	Yes	NA	Both here in the scoring table and in the text we are given bland	Additional material added.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.	Certification Body Response
				reassurances concerning research actions and plans. Nowhere are we told exactly what research is carried out by which institutions. Not least, there is no mention given as to what role, if any, the client fleet's home authorities contribute in this respect.	
3.2.5	Yes	Yes	NA	Agreed.	

Appendix 3. Stakeholder submissions

Meeting Record – Northern Ireland Pelagic Sustainability Group (NIPSG) Atlantic Mackerel & WOS Herring/ NS Herring

Attendees: Pieter-Jan Shoen (Head of Marine Fisheries- AFBINI) - PJS
Andy Hough (T/L & P2) – AH John Nichols (P1) – JN
Crick Carleton (P3) – CC – Carol Leiper - Note taker

Date: Friday 30th January 2015

Time / Location: 10.15 to 11.05 - Conference Call

Subjects Discussed:

» Stakeholder Statement - Introductions
» WoS LTL Species
» Scientific Survey of Landings

AH - Read through the Stakeholder statement and introduced the team. He then asked PJH what his position was in AFBINI.

PJS – Head of Marine Fisheries Section

JN - Advised that there are 3 stock species

- Atlantic Mackerel
- West of Scotland Herring
- Autumn spawning stock in North Sea & Eastern Chanel Herring

PJS confirmed that the client fishery on North Sea herring was entirely in ICES Division IVa

Discussion took place between JN and PJS and clarification was saught as to the specific West of Scotland Stock PJS confirmed that it was a North Stock. AH confirmed the UoC was 6a North (6b 5b very little fishing in these areas)

PJS confirmed that this has been an issue for a while Costal 2000 ICES PJS confirmed that there would be an ICES benchmark meeting next week and he would be involved in the fringes and attending part of the meeting. 6a North and 6a south benchmark ICES historical work – study group between 2009-10 – discussion took place about using the SAM model.

JN posed the question to PJS if he considered the Herring in this area as low trophic. It was agree that this question would be easier to answer via email and JN would email the definitions listed below to PJS.

WoS LTL Species

i) A large proportion of the trophic connections in the ecosystem involve this stock, leading to significant predator dependency.

ii) A large volume of energy passing between lower and higher trophic levels passes through this stock.

iii) There are few other species at this trophic level through which energy can be transmitted from lower to higher trophic levels, such that a high proportion of the total energy passing between lower and higher trophic levels passes through this stock (ie the ecosystem is 'wasp waisted'

Scientific Survey of Landings

JN commented that there only seems to be information (scientific sampling) on landings from England, Wales and Germany, southern Ireland up to a point but nothing from France, Northern Ireland or Netherlands. PJS said he could comment on Northern Ireland but was surprised about the Dutch. JN commented that Germany puts in a lot of effort for only 4000 tonnes but PJS advised there may be an agreement in place as Germany has a lot of heavy landings.

Management Plan

JN noted that the 2005 Management Plan is in place but modified in 2008 that the one we will be using, biomass limit 50,000 tones and an SSB management plan level of 75,000t which does not leave much of a margin for error.

Discussion took place about the area misreporting in 1990 west of the 4 degree line with catches taken in Iva and misreported to 6a PJS confirmed that the Scottish Enforcement Agency was gathering information on misreporting

JN commented on the reliability of the catch data – ICES stock assessment is noisy but SSB and F retrospective changes are down. PJS The retrospective up and down not all information of survey, there is a stock mixing issue as well.

JN commented that this would mean scoring down on the robustness of that assessment

- Misreporting
- Stock identity
- Mixing from other areas

JN confirmed he would email further questions to PJS.

Discussion took place on the landing areas of the 3 vessels. It was confirmed that the two smaller pair vessels are based in Kilkeel but landings are made in Bangor

- Havilah
- Western Viking (to join fleet April/May 2015 currently the Stephanie M)

The 3rd vessel of the fleet is the much larger Voyager which although registered in Kinkeel docks in the Shetlands.

Observer Coverage

CC discussed the controls and observer coverage that takes place on the Irish vessels. DARD are the control agency involved in Northern Ireland also VMS monitoring by other agencies. Discussion took place about the trial CCTV on-board Scottish vessels, PJS confirmed that DARD has not gone down that route. CC mentioned that the Port Inspectors in Ardglass had limited information on the 3 vessels FQA hauls 10% of them PJS asked Cc what areas he was looking at. CC confirmed he was just looking for an average. PJS confirmed that 10% of the UK quota goes to the Voyager PJS indicated there is some species swaps go on WOS – Horse Mackerel. The Pair trawl trade in rather than lease 1/3 of Irish Quota and lease another 1/3 they are always looking for more quota.

CC asked why NIPSG was “going it alone” PJS commented that they had broken away from SPSG but was not sure of the reasons for this

Landings Obligations

AH commented that Landings information was often short of verifiable information on by-catch ETP species, Mammals, Birds, basking sharks. AH asked if PJS was aware of any particular studies to provide data. He could not comment off the top of his head but would check whilst attending the ICES benchmark meeting about any Observer programmes and EU data collection programmes. AH commented for example grey seals were a natural predator for herring. AH asked when the results of benchmark study would be released. The team confirmed that they would email details of the LTL criteria and then follow up with an email of detailed questions that may arise from information gained at the site visit.

The discussion was closed at 11.05

Meeting Record – NIPSG

Attendees: Alan McCulla

Team – John Nichols, Andy Hough

ASI – Colin Brannon

Date: 3 Feb 2015

Time / Location: 09:30 to 12:30

1. Unit of Certification

It was confirmed that the Client shall be referred to in reports etc as NIPSG. NIPSG being composed of ANIFPO and NIFPO and member vessels.

Other eligible fishers shall be restricted to other UK vessels only.

2. Information on the fishery

Confirmed that the pattern of operation of NIPSG vessels is essentially the same as SPSG vessels.

Havilah and Western Viking (replacement for Stephanie M) work as pair-trawlers.

Data on catches (and bycatches), quota allocations and swaps and areas of operation to be sourced from DARD.

NIPSG vessels operate electronic logbooks. Slippage not allowed and known to be rare (unless for safety reasons etc), Incidences of slippage recorded in logbooks.

No known interactions with ETP species, despite cetaceans being common in vicinity of vessels.

3. Management

SPSG have code of conduct. This is available to NIPSG, but not instigated as yet.

NIPSG vessels available to carry observers, as and when requests received.

Not aware of any ongoing research into increased gear selectivity etc, but vessels willing to accommodate studies (e.g. scientists carried, formally and informally on a number of trips).

Not aware of any recent developments in terms of Coastal States agreement

At-sea inspections may be carried out by Scottish Marine Protection Agency, Norwegian coastguard, Royal Navy, Irish Navy. VMS is universal. Spotter planes are still used.

Relationships with DARD and AFNI are good, particularly in identifying shared concerns re UK and EU negotiations.

Ministerial decisions are well explained, there are regular formal and informal meetings with managers, including through the Pelagic AC.

4. Traceability

All sales are direct to processors, unless through Norwegian sales organisation. No transhipment at sea takes place. No at sea processing takes place.

Actions called for:

1. Assessment team to follow up further questions with DARD and follow up remaining questions at closing meeting on 6 Feb.

Meeting Record – NIPSG

Attendees: P Campbell, G Griffiths, S McComiskey, J Campbell. Sea Fisheries Inspectorate DARD

Team – John Nichols, Andy Hough, Crick Carlton

ASI – Colin Brannon

Date: 4 Feb 2015

Time / Location: 10:00 to 13:00.

Subjects Discussed:

1. DARD organisation, roles and interactions with other relevant bodies

Roles and responsibilities were discussed in relation to pelagic fisheries – licensing, VMS tracking, inspections of landings etc. An organisation chart of DARD was provided. DARD holds enforcement meetings with other UK agencies at 4 monthly intervals.

2. DARD had any specific information on the area of operation of the fleets and in particular the geographical distribution of their catches.

Areas of operation are monitored via VMS. Information to be provided to team. Catches are recorded on electronic logbooks and subject to at-sea inspection.

3. Licensing procedures

Licenses are issued biennially. A copy of a current licence was provided. License variations (e.g. changes to quotas) are now issued by SMS/email.

4. Information held on vessels

Information on vessel specifications is held electronically and available to inspectors etc on request.

5. Consultation process with internal and external stakeholders

Issues of concern with industry are consulted directly. Wider consultation is organized and facilitated over issues of wider (e.g. environmental) concern. Consultation responses may be reviewed by committees of the NI Assembly.

6. Objectives and policy development

DARD strategy and internal review processes to be provided.

7. Internal and external reviews of DARD

EC audits are conducted at regular (approx.2-3 year) intervals. Internal DARD reviews on governance, performance and financial management are undertaken regularly. Performance measures are reported within the NI government on sub-annual intervals.

8. Quota allocation procedures

Quotas are determined on past track record, modified by FQAs. EU quotas are devolved to UK, thence to devolved governments and thence to POs and vessels.

9. Landing records and inspections

Landing data provided. Inspections are carried out according to EU regulations – 15% by weight, 10% by number of landings. DARD receive prior notification of all landings. Inspections can cover landings from vessels, discharge control, weighings, tanker identification and inspection of factory records

10. Monitoring, control and surveillance procedures, number of inspections, compliance issues

Information provided on inspections. No issues or concerns over compliance in this fleet. Boats and harbours may be subject to spot checks. EU landings obligation regulations to include CCTV on vessels and observer coverage. CCTV to be implemented expect mid-2015.

11. Sanctions

May extend from warnings, fixed penalties, EU penalty points or prosecution.

12. Incentives for good practice, subsidies

Access to EMFF inadmissible for vessels with penalty points.

13. Bycatches and discards – species, quantities

Landing information, including all species, to be provided.

14. Contact with seabed, particularly with sensitive habitats

No knowledge of any incidences of contact with seabed or lost gear. There is an obligation to report lost gear.

15. Interactions with Endangered, threatened and protected species

No records of any interactions with ETP species. An annual report of interactions is made to ASCOBANS, this has been requested from AFBI

16. Maps of relevant activities for these vessels for 2014 (VMS, or plot of catches by ICES rectangle - relevant activities the three fisheries), and details of what ports landings are made to.

Information to be provided.

17. DARD – information on any participation in an observer programme?

None at present.

18. Are there any relevant / related research programmes in hand – bycatch reduction?

None relevant to these pelagic fisheries.

19. What procedures are being put in place to apply / monitor the pelagic landings obligation?

Pelagic Discard Plans to be provided.

Meeting Record – NIPSG

Attendees: Alan McCulla

Team – John Nichols, Andy Hough, Crick Carlton

Date: 6 Feb 2015

Time / Location: 09:30 to 11:00

Subjects Discussed:

1. Fishery operation

Confirmed no Scottish vessels currently in NI POs

Confirmed ‘Other Eligible Fishers’ to include other UK vessels

CCTV implementation – no indication at present when this may be implemented in Ni vessels.

Arrangement of POs and vessel operation confirmed.

Stephanie M quota, crew and other arrangements to be transferred to replacement vessel, Western Viking

Repeated that catches may be taken from areas IV and VI, but no other herring fisheries would be prosecuted on same trips. Vessels entering Clyde fishery inspected prior to start of fishing.

2. MSC Process

Confirmed that Mackerel assessment fundamentally affected by outcome of Coastal States negotiations on quota allocation. Expect this to be reported shortly.

Initial scoring indicates no immediate issues with herring fisheries. However, scoring to be completed and report yet to be subject to Client Review, Peer review and Stakeholder Review.

Assuming all data delivered promptly, then expect scoring completed end Feb and report completed by late March. Excepting possibility of objections, assessments expected to be completed within assessment timescale (by September 2015).

To check eligibility date requirements not affected by forthcoming changes in MSC chain of custody requirements.

Appendix 3.1 Amendments made to the PCDR following stakeholder consultation

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
17980	20681	72	Guidance	CR-27.10.6.1 v1.3	PI 1.2.2 scoring issue a: The team includes information relevant to the tools used to implement the HCRs. This information however is only required in scoring issue c.	1.2.2	1.2.2 a) Clearly identifies the rules and tools in use which are consistent with and support the harvest strategy. These are all generally understood but not sufficiently well defined because of the ongoing management problems. We consider that all the evidence presented is relevant in support of SG 60 but not SG 80. 1.2.2 c) Examines the evidence that the tools, described in detail at a) are appropriate and effective at achieving the required exploitation levels. Inevitably at this Performance Indicator there will be some minor repetition of information because all the scoring issues are addressing some aspect of the same rules and tools

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
17980	20682	73	Major	CR-27.10.6.1 v1.3	PI 1.2.2 scoring issue b: The scoring issue here focusses on the 'overarching harvest control rule is the level of annual TAC.' However, scoring issue a concludes that the HCR that meets SG60 are 'interim arrangements' . At present, it is not clear that scoring issue b addresses the main uncertainty of these 'interim arrangements' , and thus, the rationale does not justify the score.	1.2.2	We have added the text below at the end of scoring issue b) which addresses this point: Furthermore the interim arrangements noted in scoring issue a) above, whist being accepted by ICES, do nevertheless introduce a further element of uncertainty. As a consequence the rigorous requirement, at SG 100, that the design of the rules satisfactorily addresses a wide range of uncertainty, is not met.
17980	20685	46	Guidance		In section 5.2.3 replace herring with mackerel where appropriate		Text amended

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
17980	20689	34-35; 83-89	Minor	CR-27.10.6.1 v1.3	Insufficient evidence is provided in sections 3.4.2 and 3.4.3 and within scoring justification for retained, bycatch and ETP information PIs to justify scores provided. PI2.1.3 scoring issue c states that: "The information is therefore adequate (in a small way) to support a strategy to manage each of the retained species and to determine the efficacy of such strategies." The comment 'in a small way' does not provide confidence that evidence presented meets the SG100 level. PI2.1.3a No evidence of level of slippage that may occur "(for safety reasons, etc.)"	2.1.3, 2.2.3, 2.3.3	The score for PI 2.1.3 a) has been changed to reflect the uncertainty surrounding slippage (Although of course the slippage mentioned in the report is of the target species mackerel, the selectivity of fishing means that bycatch is such a minor proportion of the catch that any slippage of bycatches will be extremely small). The wording of SI c has been clarified to more clearly reflect the intent of the team. PI 2.1.3 now scores 95. Again, it should be remembered that references of uncertainty of slippages relate to the target species, mackerel. PI 2.2.3 relates to bycatches other than the main non-target pelagic species. All evidence, including from AFBI which is now also referenced, has been that direct catches of 'bycatch species' are de minimis. The effects of slippage on such catches (i.e. a small proportion of a de minimis amount) have been considered negligible. Scores are unchanged. For PI 2.3.3, additional information has been added to the scoring commentary further clarifying the information available on linkages of the fishery with ETP species.

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
					(page 88). PI2.2.3 - ACB3.1.2 requires evidence of observed and unobserved mortaility of bycatch species. Slippage and discarding is reported as occurring (pages 35, 73, 78 and 88) but no evidence is provided within P2 to demonstate that this would not impact potential bycatch species. PI2.3.3 scoring issue c states that: "Reliable information is avalible on nature and extent of interactions of the fishery with ETP species, this inclues direct and indirect linkages". Evidence is not provided to support this statement (e.g observer		

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
					records, logbooks).		
17980	20691	84	Guidance	*N/A v1.3	PI2.1.1 scoring issue d - last paragraph does not reflect justification in this scoring issue.		Text amended.

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
17980	20692	34; 83-89	Major	CR-27.10.6.1 v1.3	PI2.1.x - Atlato-scandian herring is identified as a minor retained species in section 3.4.2, but is not included as a scoring element when scoring the retained species PIs.	2.1.1 , 2.1.2 , 2.1.3	This is correct (obviously the subject of an 'administrative error'), and Atlantoscandian herring has been included in the scoring tables. As this stock performs as for North Sea herring, scoring is not affected
17980	20693	35	Guidance	*N/A v1.3	In section 3.4.2 retained and bycatch species, West of Scotland herring is reported as being "above a point that recruitment is impared". This contradicts recent ICES Stock advice and evidence presented when scoring PI2.1.1.		Section 3.4.2 states that WoS herring is expected to be below the point of recruitment impairment.

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
17980	20695	6; 13;	Guidance	*N/A v1.3	On page 6 under section 3.1 reference is made to Food Certification International Ltd. Figure 3-5 on page 13 is not referenced in text. In section 7, pages 50-56 references are repeated (e.g. ICES, 2014d).		Text amended

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
17980	20704	61-64	Major	CR-27.10.6.1 v1.3	PI 1.1.1 scoring issue b and PI 1.1.2 scoring issue c - Justification for assuming that Fmsy is not an appropriate reference point is not considered adequate. Bmsy is not a target reference point and the basis for Btrigger is Bpa and not based on an estimate of MSY. For PI 1.1.2 scoring issue c, the scoring justification states that: "In that context 2014 MSY B trigger (2.36mt*) is a very precautionary and very reasonable proxy for BMSY." However, no support for this is provided (for example, simulation or another analysis that shows Bmsy	1.1.1, 1.1.2	We have used ICES terminology and definitions which most find acceptable. We have now added a second part to the Table in scoring issue c) at PI 1.1.2 which references the technical basis for the reference points which were reviewed and revised at the EU, Norway, and the Faroe Islands request to ICES to evaluate a multi-annual management strategy for mackerel (Scomber scombrus) in the Northeast Atlantic. In Report of the ICES Advisory Committee, 2015. ICES Advice 2015, Book 9, Section 9.2.3.1. This is considered to represent a measure with the same intent or outcome as Bmsy.

MainID	SubID	PageReference	Grade	RequirementVersion	OversightDescription	Pi	CABComment
					lies above Btrigger).		

Appendix 4. Surveillance Frequency

Table 4.1 : Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
1 and subsequent	Level 3 surveillance: Yr 1 – off-site audit Yr 2 – off-site audit Yr 3 – off-site audit	This is the initial certification period for these UoCs and so 2 auditors are required. This will be the team leader and P1 expert.	All information required can be provided electronically to the assessment team, and electronic communications are easily and reliably available. The management system is very transparent. There are two conditions; information for both can be provided remotely, but will need to be confirmed at annual surveillances. It is noted

	Yr 4 - On-site surveillance audit & re-certification site visit		that Brexit negotiations may affect the completion of conditions, but this may also be determined remotely.

Table 4.2: Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1 and subsequent	October	October 2017	Anniversary date of certification will allow for inclusion of recent scientific advice and harmonisation with previously certified mackerel fisheries re meeting common conditions of certification.

Table 4.3: Fishery Surveillance Program

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 3	Off-site audit	Off-site audit	Off-site audit	On-site surveillance audit & re-certification site visit

Appendix 5. Client Agreement

Acoura confirm that the client has reviewed the Public Certification Report and is in full agreement with the terms of certification detailed therein.

Appendix 5.1 Objections Process

Box below for guidance - please delete, along with this note.

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

(Reference: CR 27.19.1)

Appendix 6. Initial Scoring for Principle 1

Due to the time elapsed between site visit and the completion of this Public Comment Draft Report, a consultation period was opened for submission of new relevant information from stakeholders (as per CR2.0 7.3.4). No new information was submitted. The team reviewed the various elements of the fishery and changes were made to the report in regards to Principle 1 while Principles 2 and 3 remained unaffected.

Following a variation approved by the MSC, Principle 1 was rescored using the CR1.3 assessment tree. The new scoring for Principle 1 is contained within the report while the original scoring and a side by side showing the changes in scoring can be found here, in Appendix 7

Appendix 7.1 Summary Of Changes

PI	Changes	Scoring 2015	Rescoring 2016
1.1.1a	Text & Score	100	80
1.1.1b	Text & Score	100	80
1.1.1		**100**	**80**
1.1.2	**Text Only**	**80**	**80**
1.1.3	**N/A**	**-**	**-**
1.2.1a	Text & Score	100	80
1.2.1b	Text Only	80	80
1.2.1c	No Change	60	60
1.2.1d	Text Only	100	100
1.2.1e	N/A	-	-
1.2.1		**90**	**85**
1.2.2a	Text & Score	80	60
1.2.2b	No Change		
1.2.2c	Text & Score	60	60
1.2.2		**75**	**65**
1.2.3	**No Change**	**90**	**90**
1.2.4a	No Change	100	100
1.2.4b	No Change	60	60
1.2.4c	No Change	100	100
1.2.4d	Text Only		
1.2.4e	No Change	100	100

1.2.4		**95**	**95**
Principle Level score		**88.8**	**81.9**

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	**Guidepost**	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	There is no evidence of a significant reduction in recruitment at low SSB within the time series. The most recent re-examination of reference points concluded that the previous basis for the biomass limit level, Bloss, the lowest SSB in the time series, remained valid. Based on the 2014 benchmarked assessment and subsequent update, this lowest level was estimated to have occurred in 2002: Bloss 1.84mt. As a consequence of the changed perception of SSB the biomass limit level (Blim) has been increased from 1.67mt to 1.84mt (*in the 2014 Update assessment SSB/2002 is 1.89mt and it is therefore possible that this will be the Blim level selected in a revised management plan)* The estimate of SSB in 2014 from the 2014 update assessment was 4.42mt. This is well above both the biomass limit level, Blim, and the biomass precautionary approach, Bpa, reference point (2.36mt). This Bpa reference point is set at a level with a high probability of the stock being above Blim. The lower variance estimate (95% CI) of SSB in 2014 was 3.22mt. Therefore there is a high degree of certainty (95% probability) that the SSB is currently above the point where recruitment might be impaired.		
b	**Guidepost**		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)	(Y)

PI 1.1.1		**The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing**
	Justification	The SSB in 2014 was estimated to be double the Management plan $SSB_{trigger}$ level of 2.2mt and well above the maximum sustainable yield (MSY) $B_{trigger}$ and B_{pa} levels of 2.36mt. The revised benchmark and update assessments in 2014 show that the SSB has been above 3mt since 2008. Therefore there is a high degree of certainty (95% probability) that the stock has been above its target reference point over recent years. Between 1994 and 2006, SSB was below the revised MSY Biomass trigger reference level of 2.36mt and either at or below the management plan biomass trigger level of 2.2mt over the same period.
References		ICES, 2013a,c; ICES, 2014a,c,d ;

Stock Status relative to Reference Points			
	Type of reference point	**Value of reference point**	**Current stock status relative to reference point**
Target reference point	Management plan $SSB_{trigger}$ MSY $B_{trigger}$ and B_{pa}	2.20mt 2.36mt	4.42mt (range 3.22mt – 6.06mt)
Limit reference point	Blim	1.84mt	4.42mt (range 3.22mt – 6.06mt)

OVERALL PERFORMANCE INDICATOR SCORE:	**100**
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	**Guidepost**	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	A raft of appropriate biological reference points, for biomass and fishing mortality have been defined and in operation since 2008. Some of these points were re-evaluated in 2014 following a benchmark assessment of stock status based on a new assessment model. The reference points meet internationally agreed standards and have been endorsed by ICES as consistent with the MSY, Management plan and Precautionary approaches.		
b	**Guidepost**		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)	(N)
	Justification	The biomass limit point (Blim) is set at the lowest SSB in the time series at which there has been no evidence of a significant reduction in recruitment. This is a point below which impaired recruitment might be expected but at and above which there have been no clear signs of impaired recruitment. However there is no strong evidence, for example from a well-established stock and recruitment relationship, that appropriate precautionary issues have been taken into account in setting the limit level at B_{loss}. The biomass limit level was raised from 1.67mt to 1.84mt in 2014 simply in line with the revised benchmark assessment of the SSB in 2002 which remains the lowest SSB in the time series dating back to 1980.		
c	**Guidepost**		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?		(Y)	(N)

<table>
<tr><td colspan="2">PI 1.1.2</td><td colspan="4">Limit and target reference points are appropriate for the stock</td></tr>
<tr><td></td><td>Justification</td><td colspan="4">Precautionary approach, maximum sustainable yield and management plan reference points for biomass and fishing mortality were established in 2008. In 2014 the benchmark assessment of the stock opted to change the assessment model which changed the perception of stock status historically. As a consequence, and following established ICES procedures and set guidelines, the reference points were re-examined and changed.

<table>
<tr><th>Reference point</th><th>2008 value</th><th>2014 value</th></tr>
<tr><td>MSY B trigger</td><td>2.2mt</td><td>2.36mt</td></tr>
<tr><td>F MSY</td><td>0.22</td><td>0.25</td></tr>
<tr><td>Precautionary approach B lim</td><td>1.67mt</td><td>1.84mt</td></tr>
<tr><td>:: B pa</td><td>2.3mt</td><td>2.36mt</td></tr>
<tr><td>:: F lim</td><td>0.42</td><td>0.39</td></tr>
<tr><td>:: F pa</td><td>0.23</td><td>0.26</td></tr>
</table>
The management plan was not re-visited and the reference points for SSB trigger (2.2mt) and F target (0.2 – 0.22) remain the same. The management plan is currently being reviewed with the results of that review expected in 2015.

The management plan has an agreed target F range supported by an SSB trigger level. These are quite clearly more precautionary at present than the MSY reference points for SSB and F. However the management plan is currently not being implemented. Whilst the current position satisfies the requirements at SG 80 as being consistent with BMSY it does not fully satisfy the requirement at SG 100. Until the management plan has been re-examined, and the results published by ICES, there is insufficient evidence that relevant precautionary issues, such as the ecological role of the stock, and also the changed perception of stock status, have been taken into account with a high degree of certainty (95% probability).

Although mackerel is not a key low trophic level species it does play an important role in the Northeast Atlantic ecosystem as a predator and also a prey item. There is currently no evidence that its role as a prey item in the North-east Atlantic ecosystem is a consideration in setting the natural mortality in the stock assessment process. Natural mortality is assumed, by the ICES assessment working group, to be 0.15 for all age groups and constant over time.</td></tr>
<tr><td>d</td><td>Guidepost</td><td></td><td>For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.</td><td colspan="2"></td></tr>
<tr><td></td><td>Met?</td><td></td><td>(Not relevant)</td><td colspan="2"></td></tr>
<tr><td></td><td>Justification</td><td colspan="4">Northeast Atlantic mackerel are not considered to be a LTL species.</td></tr>
<tr><td colspan="2">References</td><td colspan="4">ICES 2013a,c; ICES 2014a,d</td></tr>
</table>

PI 1.1.2	Limit and target reference points are appropriate for the stock	
OVERALL PERFORMANCE INDICATOR SCORE:		**80**
CONDITION NUMBER (if relevant):		

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	**Guidepost**	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?	(Y/N)		(Y/N)
	Justification			
b	**Guidepost**	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?	(Y/N)	(Y/N)	(Y/N)
	Justification			
c	**Guidepost**	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?	(Y/N)	(Y/N)	

PI 1.1.3		**Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe**
	Justification	
References		
OVERALL PERFORMANCE INDICATOR SCORE:		**N/A**
CONDITION NUMBER (if relevant):		

7.1 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	**Guidepost**	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)

PI 1.2.1		There is a robust and precautionary harvest strategy in place
	Justification	There is an agreed Management Plan in place which forms the foundations of the Harvest Strategy. The plan was agreed between the EU, Faroe Islands and Norway (the Coastal States) in October 2008. The plan is firmly based on the Precautionary approach and MSY reference points and was evaluated and endorsed by ICES. Because of the changed perception of stock status in 2014 the Coastal States asked ICES for advice on a multi-annual management strategy. The results of that special request were published in February 2015. After consideration of the ICES advice by the Coastal States a new multi-annual strategy should be developed from the advice and be available for the management of the fishery from 2016 to 2018. In the meantime ICES consider that they are able to continue to provide advice on the basis of the existing plan. That advice to the Coastal States forms the basis on which to set the total TAC. The strategy is therefore expected to achieve stock management objectives reflected in the target and limit reference points (SG60). The 2008 Long term Management plan ***1.*** *For the purpose of this long-term management plan, "SSB" means the estimate according to ICES of the spawning stock biomass at spawning time in the year in which the TAC applies, taking account of the expected catch.* ***2****. When the SSB is above 2,200,000 tonnes, the TAC shall be fixed according to the expected landings, as advised by ICES, on fishing the stock consistent with a fishing mortality rate in the range of 0.20 to 0.22 for appropriate age groups as defined by ICES.* ***3****. When the SSB is lower than 2,200,000 tonnes, the TAC shall be fixed according to the expected landings as advised by ICES, on fishing the stock at a fishing mortality rate determined by the following:* *Fishing mortality F = 0.22* SSB/ 2,200,000* ***4****. Notwithstanding paragraph 2, the TAC shall not be changed by more than 20% from one year to the next, including from 2009 to 2010.* ***5.*** *In the event that the ICES estimate of SSB is less than 1,670,000 tonnes, the Parties shall decide on a TAC which is less than that arising from the application of paragraphs 2 to 4.* ***6.*** *The Parties may decide on a TAC that is lower than that determined by paragraphs 2 to 4.* ***7****. The Parties shall, as appropriate, review and revise these management measures and strategies on the basis of any new advice provided by ICES* This harvest strategy is clearly responsive to the status of the stock irrespective of the degree of compliance with scientific advice on annual catches. The strategy is firmly based on an annual analytical assessment of the spawning stock biomass in relation to reference points. The results of the rigorous assessment process then clearly dictate the tactics for the following year in terms of a fishing mortality. This then translates directly into an advised catch for the following year. That advised catch takes into account the catch levels of the previous year. This clearly meets the requirements at SG 80. The seven elements of the long term management plan, which is the basis of the harvest strategy, not only *work together towards achieving management objectives reflected in the target and limit reference points* but are also clearly designed to achieve those objectives. This also meets the requirements at SG100

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
b	Guidepost	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)	(N)
	Justification	The harvest strategy has worked well in the past as evidenced by the recovery of the stock since the implementation of the current management plan in October 2008. Similar strategies, based on reducing F in line with reductions in SSB linked to specific management reference points, have worked well for numerous other stocks. Such plans are generally endorsed by ICES as being consistent with the Precautionary approach. The harvest strategy for this stock is therefore likely to work based on prior experience and plausible argument The evidence of whether or not the harvest strategy is working to achieve sustainable exploitation of the stock lies in the current stock status in relation to the Management Plan reference points for SSB and F. SSB has been steadily increasing since 2006 and in 2013 was almost double the management plan trigger level and the stock is being harvested sustainably. With good recruitment over recent years the SSB is predicted to have increased further at spawning time in 2014. In spite of recent catch levels in excess of the ICES advised levels, fishing mortality has been reducing since 2007 and is on target in relation to the Management plan level of F0.2 - 0.22. In relation to maximum sustainable yield targets the stock is well above the MSY B trigger level and in line with FMSY. This is evidence which clearly satisfies the requirements at SG80. However the performance of the strategy has not been fully evaluated in terms of whether or not it will be able to continue to maintain the stock at target levels if the current situation of catches in excess of the advised level continues. Therefore the requirements at SG 100 are not met.		
c	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	(Y)		
	Justification	There is a well-established and comprehensive international monitoring control and surveillance programme in place to ascertain the total catch of NEA mackerel from the whole area of its distribution. The resultant catch data are used by ICES to assess the status of the stock and to provide annual advice based on the agreed harvest strategy. This comprehensive stock monitoring and assessment programme involves scientists from all the countries involved in the fishery. They meet annually at the ICES working group for widely distributed and migratory stocks (WGWIDE). The resultant assessment is based not only on the official landings statistics but also uses data, provided by working group members, on discarding, slippage and possible under-reporting of catch. The new State Space assessment model (SAM) provides reliable estimates of both SSB and F with 95% confidence intervals. The outputs from the annual stock assessment are well able to determine whether or not the harvest strategy is working.		

PI 1.2.1		**There is a robust and precautionary harvest strategy in place**		
d	**Guidepost**			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			(Y)
	Justification	The current Management plan, which is the basis of the harvest strategy, was evaluated and established in 2008. Reference points which underpin the strategy are kept under regular review by the ICES working group and some were updated in 2014 following a benchmarked assessment of stock status. This forms a well-established procedure for all ICES assessment working groups. Following the 2014 benchmark assessment and the resultant change in the perception of stock status there was a request from the Coastal States for advice on a multi-annual management strategy. The results of that special request were published in February 2015.The advice included a re-evaluation of all the reference points with some changes which are listed in the Table in PI 1.1.2 scoring issue (c). The evaluation provided options for consideration of different combinations of fishing mortality with biomass trigger levels. It also proposes changes to the MSY B trigger level and to the fishing mortality reference points for MSY, Fpa and F lim. The advice has not yet resulted in changes to the current management plan in the form of a revised management strategy, but after consideration of the ICES advice the Coastal States will formulate a new multi-annual strategy. This revised strategy based on the ICES response to the request, will be available for the management of the fishery from 2016 to 2018. The procedures outlined above clearly constitute periodic reviews and improvements to the harvest strategy thus meeting the requirements at SG 100.		
e	**Guidepost**	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	This scoring issue is not scored as sharks are not a target species		
References		ICES, 2008; ICES, 2013c; ICES 2014a,d		
OVERALL PERFORMANCE INDICATOR SCORE:				**90**
CONDITION NUMBER (if relevant):				

7.2 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	**Guidepost**	Generally understood harvest rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.	Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.	
	Met?	(Y)	(Y)	
	Justification	The rules and tools necessary to successfully implement the harvest strategy are those which control the fishing effort on the whole stock and which are explicitly and well defined in the 2008 Management Plan. The Plan was agreed by the Coastal States Group, consisting of Norway, the Faroe Islands and the EU, in October 2008. ICES concluded that the Plan is precautionary under the assumption that the TAC equals the total removals from the stock. The annual implementation of the harvest strategy is the responsibility of the Coastal States group, who meet at least annually to agree on the national quota shares in the fishery. The Management Plan is clearly designed to ensure that the exploitation rate is reduced proportionately as limit reference points for either SSB or F are approached. In fact the strategy ensures that the exploitation rate is progressively reduced if SSB falls below an upper trigger level well above the biomass limit level. The overarching harvest control rule, which dictates the exploitation level, is setting an annual TAC based on the annual advice from ICES on all aspects of stock status. The harvest strategy is also strongly supported by the strict rules appertaining to a raft of technical measures. These include minimum landing size of 30cm in the North Sea and 20cm elsewhere, closed areas and closed seasons in the North Sea to protect the severely depleted North Sea spawning component, a restricted fishing area (SW Mackerel Box) off the SW coast of the UK where juvenile mackerel are abundant, a ban on high grading and a discarding ban for all Norwegian, Faroese and Icelandic vessels (soon to be extended to all EU vessels) These additional rules and tools are all well-defined The TAC rules, and the technical measures and general basis on which they are established, do have a commonality throughout the ICES area and those rules are well defined and are generally understood by both managers and fishers. The rules governing the subsequent allocation of the TAC in this fishery, both nationally and by area, through the Coastal States Agreement, are also well defined and generally understood. Similarly the rules allocating shares in the quota to individual fishing enterprises at the national level are generally understood. As a consequence the management of the fishery does meet the requirements at both SG 60 and SG 80 in having well defined harvest control rules which are consistent with the harvest strategy and ensure that the exploitation rate is reduced in stages from an upper trigger level to effectively zero if the biomass limit level is reached. The requirements at SG 60 and SG 80 are therefore fully met.		

PI 1.2.2		There are well defined and effective harvest control rules in place		
b	Guidepost		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 overarching harvest control rule is the level of annual TAC. This is heavily dependent on a reliable estimate of current stock status and predicted future recruitment to the fishable stock biomass. The main uncertainties in that context are the reliability of the catch data. This is affected by unrecorded catches through discarding and slippage which are known to occur. The assessment working group are aware of the problem and wherever possible include reliable estimates in the catch data used for stock assessment and subsequent advice on the annual TAC. There was a problem in 2013 when the assessment working group were unable to carry out an analytical assessment of stock status because of internal problems which had developed with the Integrated catch assessment (ICA) model. The new stock assessment model, first used in 2014, is able to address the periods of unreliable catch data satisfactorily. This was the major driving force in the decision to abandon the use if the ICA assessment model in favour of the new age based, fully statistical, state space (SAM) model. The model was set up so that it does take into account the large uncertainty in historical catches prior to 2000. The new model presents the SSB, Fishing mortality and Recruitment estimates with 95% confidence intervals which reflect the level of uncertainty in those estimates. This provides the opportunity for managers to take a more cautious approach to the management of the stock taking the main uncertainties into account. The requirements at SG 80 are fully met. In recent years there has been a problem of catches in excess of the annual scientific advice. The reasons for this and the implications for the sustainable exploitation of the stock are specifically addressed in detail at scoring issue c) below. In the context of this scoring issue the problem has generated a major source of uncertainty for the future sustainable exploitation of this stock. It is not clear how the design of the existing harvest control rules can possibly continue to deliver sustainable exploitation if the annual TAC is regularly exceeded. As a consequence the rigorous requirement, at SG 100, that the design of the rules satisfactorily address this major source of uncertainty are not met		
c	Guidepost	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)	(N)	(N)
	Justification	At the generic level, setting an annual TAC, based on a reliable annual estimate of stock status, backed by a precautionary long term Management plan, together with an appropriate raft of technical measures (listed in a) above), does have a reliable track record for many stocks in the Northeast Atlantic. The management of the NEA mackerel stock has all these elements in place supported by rigorous surveillance, monitoring and enforcement of the national quotas and technical measures. This provides some evidence from past performance, that the harvest control rules and		

PI 1.2.2		There are well defined and effective harvest control rules in place

tools, currently in place, are able to provide effective and appropriate methods to control exploitation satisfying the requirements at SG60.

It is accepted that the overarching TAC rule, which underpins the Management Plan, has been effective and has worked successfully in the past to control exploitation. Responsibility for the allocation of the annual TAC is administered by a Coastal States Agreement which for this fishery involves Norway, the Faroe Islands the EU and Iceland. Iceland was not accepted as a Coastal State member until 2010. There are currently internal issues in relation to that agreement which have caused major problems for the successful implementation of the harvest control rules. Since 2008 there has been a lack of agreement internationally on implementation of the rules which has led to unilateral quotas being set outside the ICES advice.

This breakdown in the management of the fishery since 2008 has been the result of major changes in the distribution and abundance of NEA mackerel which has taken fishable quantities into the waters of countries that were not previously involved in the fishery in particular Iceland, and Greenland. The changes in distribution have also resulted in increased abundance of mackerel in Faroese waters. It became apparent that the quota sharing arrangement, within the Coastal States agreement, was an ad hoc arrangement with no legally backed mechanism which could address the legitimate claims of other countries to a share in the advised annual TAC. (see also PI 3.1.1). This has resulted in annual catches grossly in excess of the advised catches based on the management plan. As a consequence the strategy has been unable to respond to the status of the stock and the predicted catch levels, corresponding to the ICES advice, have been heavily exceeded since 2009.

To illustrate the magnitude of the problem the Table below shows the performance of the harvest strategy and associated harvest control rules for the fishery in 2011, 2012, 2013 and the ICES advice and declared intentions for the 2014 fishery and advice for 2015.

Year	2011	2012	2013	2014	2015
Management plan ICES advice In Kt	592-646	586-639	497-542	927-1011	831-906
Declared intentions	927,245t	930,135t	895,336 t	1,396,238 t	
Actual landings	946,661t	892,353	931,732		

The Coastal States did reach an agreement in March 2014 on sharing the ICES advised quota closely corresponding to the management plan (927-1011kt) for the 2014 fishery. That agreement continued to be based on an ad hoc arrangement of TAC sharing resulting in shares of: EU -611,205t: Faroe Islands – 156,240t: Norway – 279,115t: NEAFC – 42,577t (Total: 1,089,137t).

However the arrangement did not involve Iceland, Greenland or Russia who took catches of 151,235t, 52,783t and 80,812t respectively in the 2013 fishery. Those three countries are predicted to take around 354,000t in the 2014 fishery based on declared intentions and estimated catches (see Table below) The strategy to harvest in line with the management plan clearly did not work in the 2013 fishery, where the catch was almost twice the ICES advised TAC, and is unlikely to have worked in the 2014 fishery where the predicted catch is likely to be an overshoot of around 400,000t of the advised TAC.

In their advice for the fishery in 2015 the advisory committee of ICES took into account the likely catch in the 2014 based on the declared intentions of countries outside the Coastal States Agreement.

<table>
<tr><td colspan="2">PI 1.2.2</td><td>There are well defined and effective harvest control rules in place</td></tr>
<tr><td></td><td></td><td>Details of those predictions, and the basis on which they were made, are listed in the Table below.

ICES used all available information and estimated the likely total catch of NEA mackerel, in tonnes, from all areas in 2014 as follows:

<table>
<tr><td>EU quota</td><td>611,205</td><td>Coastal States March 2014</td></tr>
<tr><td>Spanish payback</td><td>-9747</td><td>EC Regulation</td></tr>
<tr><td>EU quota deductions</td><td>-6568</td><td>EC Press release</td></tr>
<tr><td>Norwegian quota</td><td>279,115</td><td>Coastal States March 2014</td></tr>
<tr><td>Russian quota</td><td>116,700</td><td>WGWIDE estimation</td></tr>
<tr><td>Estimated discards</td><td>4664</td><td>WGWIDE estimation</td></tr>
<tr><td>Icelandic quota</td><td>147,721</td><td>Press release April 2014</td></tr>
<tr><td>Inter-annual quota transfer</td><td>6908</td><td>Fisheries Directorate web page</td></tr>
<tr><td>Faroese quota</td><td>156,240</td><td>Coastal States March 2014</td></tr>
<tr><td>Greenland quota</td><td>90,000</td><td>Estimate from Greenland</td></tr>
<tr><td>Total</td><td>1,396,238</td><td></td></tr>
</table>
This would be an overshoot of 390kt compared with the ICES advised catch, based on the current Management Plan of 927 – 1011kt.(F 0.2-0.22).

All the evidence over recent years clearly shows that current management actions (tools in use) used to share the scientifically advised annual TAC are not wholly effective in achieving the exploitation levels required under the harvest control rules. As a consequence the fishery does not meet the SG 80 scoring guideposts.</td></tr>
<tr><td colspan="2">References</td><td>ICES, 2008; ICES, 2013c; ICES 2014a,d,e,f; Simmonds et al, 2010.</td></tr>
<tr><td colspan="2">OVERALL PERFORMANCE INDICATOR SCORE:</td><td>75</td></tr>
<tr><td colspan="2">CONDITION NUMBER (if relevant):</td><td>1</td></tr>
</table>

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	**Guidepost**	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)

PI 1.2.3		Relevant information is collected to support the harvest strategy
	Justification	The stock structure of mackerel occurring in the northeast Atlantic is complex but is well described and understood. It has been the subject of considerable research and debate over the past forty years. Tagging for an example has shown them to be highly migratory with fish tagged off the Iberian peninsula occurring in the northern North Sea and off the Norwegian coast. In recent years their distribution has been gradually spreading to the North and West and they are now found in fishable quantities in Icelandic, Faroese and Greenland waters and have been recorded as far north as Svalbard. In spite of their widespread distribution there is a definable structure at spawning time, with a southern, western and North Sea component. The development of these three components can be separately followed through the triennial egg surveys. However because at certain times of the year the components may mix, they have to be managed as a single stock unit. The triennial egg survey, begun in 1977, has provided valuable knowledge on the life history, spawning behaviour and the changes in the distribution of spawning, over that period. Information on stock productivity and stock abundance is routinely collected as part of the scientific sampling programmes of landings by all participating countries in the fishery. This includes length, age, weight at age and maturity data. These data are also observed and recorded during the triennial egg surveys. The record of scientific sampling of the landings in this fishery is good. Overall sampling coverage in 2013 was 89% and has been over 80% over the past ten years. Seven countries achieved a 95% sampling coverage in 2013. These data are vital in support of the annual stock assessment. A wide range of relevant supporting information, including environmental data is obtained from related scientific surveys. These surveys include the triennial egg surveys; the international bottom trawl surveys (IBTS); the international ecosystem survey of the Nordic seas (IESSNS) and the Norwegian tagging programme. These four surveys are now used as tuning indices in the new stock assessment model The structure of the fleets in the directed fisheries for NEA mackerel are exceptionally well known and well described in the annual reports of the ICES assessment working group. This includes knowledge of gear types and gear configurations in use throughout the fishery and numbers of vessels. Information on national fleet size and structure is updated annually by the working group in the stock annexe to their annual assessment report. Fleets which may take mackerel as a by-catch, in for example the horse mackerel and blue whiting fisheries, are also well known and described. The evidence shows that there is a wide 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. This raft of data, with some time series dating back over forty years is clearly comprehensive and provides a relevant range of information which strongly supports the current harvest strategy. The requirements at SG 80 and SG 100 are fully met.

PI 1.2.3		Relevant information is collected to support the harvest strategy		
b	Guidepost	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	All the relevant information required for carrying out an annual stock assessment in support of the harvest control rule is appropriately monitored. There are now three fishery independent tuning data series providing indices of stock abundance plus tagging data in support of the stock assessment. Some uncertainty has now been introduced in relation to the triennial egg survey index. This index has been recalculated back to 1992 based on new information on the rate of egg development. Monitoring of landings in support of the TAC control is carried out contemporaneously with the fishery and enforcement action can be introduced quickly. This fully supports the modest requirements at SG60. The ICES assessment working group now consider that the estimates of total removals are much more reliable than in the period before 2000. Discarding and slippage were known to occur in this fishery in the past but discarding is now illegal in most countries and will become illegal in EU waters in 2015. The new assessment model is able to take into consideration the uncertainty in the earlier catch data and the estimates of the state of the stock after 1992 are much more reliable. The new assessment model now has three fishery independent data series with which to tune the assessment whereas with the previous model only had the triennial egg survey to provide a fishery independent view of the status of the stock. The requirements at SG 80 are fully met. In spite of the recent improvements in the reliability of the catch data, ICES still considers that the total removals from the stock are expected to be under estimates because of incomplete discards data and un-quantified slippage. Whilst the period of very uncertain catch rates due to massive under-reporting prior to 2000 is taken into account in the new model it nevertheless continues to generate very high uncertainty on the estimates of stock size and fishing mortality until the early 1990's. There are other sources of uncertainty which affect the robustness of the assessment and resultant forecasts on which the harvest strategy is based. These include the estimate of the likely catch in 2014, fish weights at age, the proportion mature and the fishery selection at age. These factors all affect the reliability of the short and long term forecasts. Because of these factors in cannot be stated that 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. Therefore SG 100 is not fully met.		
c	Guidepost		There is good information on all other fishery removals from the stock.	

PI 1.2.3		**Relevant information is collected to support the harvest strategy**		
	Met?		(Y)	
	Justification	Mackerel are known to occur in the catches in other pelagic fisheries over the whole area for example in the horse mackerel and blue whiting fisheries and in demersal fisheries in the North Sea and English Channel. Where quota is available, or discarding is banned, they are retained, landed and recorded. There is adequate monitoring and surveillance of these fisheries which ensures that the information is available. Generally with targeted fisheries on shoaling fish unwanted by-catch is avoided. The level of unrecorded by-catch in other fisheries is considered to be small.		
References		Jansen & Gislason, 2011; Jansen & Gislasen, 2013; Jansen et al, 2012; ICES, 1977; ICES, 2007a,b; ICES, 2013a,b; Lockwood et al, 1977; Lockwood et al, 1981; Lockwood et al, 1988; Mendiola et al, 2006; Molloy, 2004; Russell, 1976; Simmonds et al, 2010.		
OVERALL PERFORMANCE INDICATOR SCORE:				**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	**Guidepost**		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	From 1993 to 2012 an Integrated Catch Assessment (ICA) model was used to assess the status of the Northeast Atlantic mackerel stock. This model was widely used for other pelagic stocks within the ICES area. Over recent years concerns have been expressed, within the assessment working group, regarding the ability of this model to take into account the quality of the input data, in particular the unreliability of the catch data. The assessment working group in 2013 concluded that the ICA model was no longer appropriate and did not carry out an assessment. Instead the advice for the fishery in 2014 was based on the ICES data limited catch approach. The assessment was then benchmarked in February 2014 (WKPELA). An important element of the terms of reference for the ICES benchmark workshop was the requirement to evaluate potential new assessment models which could take into account and handle the uncertainty in the actual catch data particularly for the period prior to 2000. The State Space Assessment model (SAM) was identified early in the process of model exploration as an ideal candidate to replace the ICA model. SAM is an age based, fully statistical model in which all the data are treated as observations. The model then estimates observation variances for each data source (catch and survey data) which can describe how well each data source is fitted in the model and the influence it has on the final outcome. One of the shortcomings of the ICA model was that the only fishery independent data source which could be used was the triennial egg survey data, used as an SSB index from 1992. The SAM model was also able to use two other fishery independent data sources as abundance tuning indices. They were the International bottom trawl survey (IBTS) recruitment index (age ‘0’) from 1998; the (IESSNS) International ecosystem summer survey of the Nordic seas (ages 6-11) from 2007, 2010-2013. The basic SAM model was modified, by the benchmark workshop, in order for it to be able to incorporate tagging data from the Norwegian tagging programme (age 2yrs +) for the recapture years 1980 to 2006. The output from the model is presented with a high and low value for the final estimates of SSB, F and Recruitment representing the 95% confidence intervals on those estimates. The rigorous exploration, evaluation and subsequent modification of this assessment model took into account all the major features of the biology of mackerel and the nature of this bulk catch and bulk landing pelagic fishery. Although SAM is now being increasingly used as the preferred assessment modelling framework within ICES, the model is still in its infancy and there are a number of shortcomings. Although the model has been published in a peer reviewed paper, there is currently no manual on its use. It is recognised that a high degree of knowledge of both statistics and programming is required to run it. These issues make SAM difficult to understand and implement for non-experts. ICES recognises that there is currently a limited pool of experts available as a knowledge resource. The labelling of the model outputs is still unsatisfactory.		

PI 1.2.4		There is an adequate assessment of the stock status		
b	Guidepost	The assessment estimates stock status relative to reference points.		
	Met?	(Y)		
	Justification	The new model provides estimates of SSB, F and recruitment in the same way that the previous ICA model did. These can be easily related to the MSY Management plan and Precautionary approach biological reference points agreed by ICES. The major difference in the output from the new model is that these estimates are provided with a high and low range representing the 95% confidence intervals, a measure of the confidence in the final estimate. This should prove to be an valuable tool for the management of this fishery		
c	Guidepost	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)	(Y)
	Justification	The major source of uncertainty in the assessment of NEA mackerel is the reliability of the catch data in particular the serious problems of misreporting, underreporting and discarding particularly prevalent in the period prior to 2000. Another source of uncertainty in the past has been the availability of just one single source of fishery independent data with which to tune the assessment. This is the triennial egg survey now used as an SSB index although it has been used as an absolute estimate in the past. The influence of this single index reduces as the survey year recedes. The new assessment model (SAM) satisfactorily addresses both these areas of uncertainty as detailed in a) above. This fully statistical model is able to down weight the influence of observed parameters according to estimated variances on those observations. The uncertainties in the assessment are expressed as variances on the final estimates of SSB, F and Recruitment thus fully satisfying the requirement to evaluate stock status relative to reference points in a probabilistic way. For an example the precision of the estimates of F, SSB and R in the most recent year in the assessment (2013) were 25%, 33% and 63% respectively.		
d	Guidepost			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			(N)

PI 1.2.4		**There is an adequate assessment of the stock status**		
	Justification	Exploration of alternative hypotheses and assessment approaches normally forms a routine element of most of the ICES assessment working groups when time permits. It is also a major part of the regular benchmark assessments of each stock. For the NEA mackerel in 2014 there was an urgent requirement to do this because the previous assessment model had been abandoned by the working group in the previous year. As a consequence a benchmark workshop was convened in February 2014 (WKPELA) specifically to address this problem (and the assessment of herring in the Celtic Sea). As detailed in the workshop report the process of evaluation and consideration of other models to replace the abandoned ICA model for NEA mackerel was not rigorous. Because of the urgent need to provide an assessment of stock status the SAM model was selected early in the deliberations of the benchmark workshop. This relatively new model had been used for other assessments by ICES and could be adapted and used quickly for NEA mackerel. Therefore the process does not meet the *'rigorously explored'* criterion of this scoring issue.		
e	**Guidepost**		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.
	Met?		(Y)	(Y)
	Justification	All ICES assessments are rigorously peer reviewed by the ICES advisory committee on fisheries management (ACOM) before being released into the public domain and before being used to present advice on the management of the fishery. In addition to this review the assessment reports are reviewed by the scientists and administrators from the EU, Norway and the Faroe Islands through the Coastal States meetings. Furthermore the 2014 benchmark assessment was subject to external peer review. The reviewers comments are included the report as 'General observations of the benchmark process' and 'Specific observations on the assessment'. This fully satisfies the requirements at SG 100		
References		ICES, 2013a,c; ICES, 2014a,c,d,e,f; Neilsen and Berg, 2014; Pattersen and Melvin, 1996; Simmonds et al, 2010.		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				**-**

Appendix 8 Summary Of Changes

Marine and Fisheries Division

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19 July 2016

Dear Alan

You contacted me about the Northern Ireland Pelagic Sustainability Group's application for MSC accreditation of its NEA Mackerel and NS Herring fisheries. The Department is aware of the significant importance of these fisheries and the importance of MSC to assure potential markets of the sustainability of the Northern Ireland pelagic sector's operations. Securing Coastal States agreement from annual negotiations between the European Union, Faroe Islands, Iceland, Norway and Russia, is the fundamental mechanism for the management of these stocks. The main objective of the agreements is to set the annual allocation to participating countries, and the EU, based on the advised and agreed annual TAC.

This Department works closely with other UK Fisheries Administrations to agree a common UK approach to the negotiations which is in turn articulated to the relevant EU representatives. As you are aware those arrangements will change when the UK leaves the EU and new arrangements for the sharing of and access to fisheries resources will be needed to reflect the future relationship that the UK will have with the EU and with other countries. Whatever arrangements emerge, this Department will continue to work with other UK Fisheries Administrations to promote mechanisms for the sustainable management of these stocks and to ensure that the UK gets equitable share of these as a result of Coastal States agreements.

Yours sincerely

Ian Humes

Ian Humes
Head of DAERA Sea Fisheries Policy and Grants

If you are deaf or have a hearing difficulty you can contact the Department via the Next Generation Text Relay Service by dialling 18001 + telephone number.

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