PUBLIC CERTIFICATION REPORT FOR THE

Reassessment of the Norway North Sea demersal fisheries

Norges Fiskarlag

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Objective:
Re-assessment of the Norway North Sea demersal fisheries against MSC Fisheries Standards v2.0 (Assessment tree v.1.3).

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Rev. No.	Date	Reason for Issue	Prepared by	Verified by
0	2017-12-05	Client Draft Report	Hans Lassen, Lucia Revenga, Geir Hønneland & Sandhya Chaudhury	
1	2018-01-18	Peer Review Draft Report	Hans Lassen, Lucia Revenga, Geir Hønneland & Sandhya Chaudhury	
2	2018-02-28	Public Comment Draft Report	Hans Lassen, Lucia Revenga, Geir Hønneland & Sandhya Chaudhury	
3	2018-04-26	Final Report	Hans Lassen, Lucia Revenga, Geir Hønneland & Sandhya Chaudhury	
3.1	2018-05-04	Determination & Final Report	Hans Lassen, Lucia Revenga, Geir Hønneland & Sandhya Chaudhury	
4	2018-06-11	Public Certification Report	Hans Lassen, Lucia Revenga, Geir Hønneland & Sandhya Chaudhury	

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ABBREVIATIONS & ACRONYMS

ACOM	(ICES) Advisory Committee
CPUE	Catch per unit effort
DoF	Directorate of Fisheries
ETP	Endangered, threatened and protected species
FAM	Fisheries assessment methodology
FAO	Food and Agriculture Organization of the United Nations
FCR	Fisheries certification Requirements
GLM	Generalized linear model
ICES	International Council of the Seas
IMR	Institute for Marine Research
MFCA	Ministry of Fisheries and Coastal Affairs
MSC	Marine Stewardship Council
NEA	North East Arctic
NFA	Norges Fiskarlag
NS	North Sea
PI	Performance indicator
PISG	Performance Indicator Scoring Guidepost
SG	Scoring Guidepost
SSB	Spawning stock biomass
TAC	Total allowable catch
UOC	Unit of Certification
VME	Vulnerable marine ecosystems
VMS	Vessel monitoring system
WGDEEP	(ICES) Working Group on the Biology and Assessment of Deep-sea Fisheries Resources
XSA	Extended survivors analysis

STOCK ASSESSMENT REFERENCE POINTS

B_0	The (spawning) biomass expected if there had been no fishing (assuming recruitment as estimated through stock assessment).
B_{lim}	Spawning biomass limit reference point, sometimes used as a trigger within harvest control rules, or defined as the point below which recruitment is expected to be impaired or the stock dynamics are unknown
B_{msy}	Spawning Biomass at which the maximum sustainable yield is expected (sometimes expressed as SB_{msy})
B_{targ}	Spawning biomass target reference point
F_{lim}	Exploitation rate limit reference point, often taken as Fmsy based on UNFSA
F_{msy}	Fishing mortality rate associated with the achieving maximum sustainable yield
F_{targ}	Fishing mortality target reference point
MSY	Maximum Sustainable Yield

1 EXECUTIVE SUMMARY

This report provides information on the re- assessment of the Norway North Sea demersal fisheries against Marine Stewardship Council (MSC) Fisheries Standard. The re-assessment is for the North Sea saithe with additional species cod, haddock and hake as target species.
The report is prepared by DNV GL for the client Norges Fiskarlag.

The Norway North Sea saithe fishery received its original certificate on 16 June 2008 and was re-certified on 16 June 2013 (Certificate number: F-DNV-60011, valid until 16 June 2018).
The re-assessment, along with scope extension to include North Sea cod, haddock and hake, was announced on the MSC website 17th August 2017 followed by a supporting notice to stakeholders issued by the MSC on the same date. The change of fishery name and change in UOC was announced on 23.11.2017. Direct email notification was also sent to the stakeholders previously identified for this fishery, inviting interested parties to contact the audit team.

The re-assessment audit was performed as an on-site audit in Oslo and Bergen, Norway. The re-assessment activities were carried out by DNV GL team leader and CoC expert Mrs. Sandhya Chaudhury and Independent MSC Fisheries experts Hans Lassen, Lucia Revenga and Geir Hønneland during 19 -20 September 2017. The assessment team gathered input from the various stakeholders, including the Norwegian Ministry of Trade, Industry and Fisheries, the Institute of Marine Research, the Directorate of Fisheries and the client fishery.

The re-assessment activities were carried out using the re-assessment audit methodology, as defined in the MSC Certification Requirements (CR) (version 2.1) and in the subsequent MSC Guidance for the Fisheries Certification Requirements (version 2.0). The default assessment tree as set out in the MSC CR v1.3 was used for this re-assessment. The fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any of the individual MSC Criteria. Scope of certification is up to the point of landing and chain of custody commences from the point of sale.

The list of vessels covered by this assessment is shown in **Appendix 7 List of vessels**

Table 1 Assessment team

Role	**Name**
Team leader and Chain of custody responsible:	Mrs. Sandhya Chaudhury
Principle 1 expert:	Hans Lassen
Principle 2 expert:	Lucia Revenga Giertych
Principle 3 expert:	Geir Hønneland

Table 2 Assessment timeline

Event	**Date**
Announcement of initial assessment:	18th August 2017
Site visit and stakeholder consultations:	19th & 20th September 2017
Variation response: UoC change	5th October 2017
Change of name & Unit of Certification	23rd November 2017
Publication of Public Certification Draft Report:	06th March 2018
Publication of Final Report:	10th May 2018
Publication of Public Certification Report:	11th June 2018
Eligibility date:	16th June 2018

1.1 Main strengths and weaknesses of the client's operation

1.1.1 Main strengths

Principle	Performance Indicator	Comment
Principle 1	1.1.1	The four stocks are all subject to ICES category 1 assessments, i.e. based on data that cover all fisheries both removal and discard data, detailed documentation of the catch, annual abundance surveys results and detailed documentation of where the fisheries take place. The stocks are in general in good state or for the North Sea cod is recovering There is a harvest strategy shared by all Parties involved in the fisheries and agreement to develop management plans or modify these plans as necessary.
Principle 2	2.4.3 and 2.5.3	There is detailed information as regards the different habitat types present in the North Sea as well as broad modelling and knowledge on the ecosystem drivers in the area.
Principle 3		The fisheries management systems involved Norwegian and EU CFP are well developed and implemented.

1.1.2 Main weaknesses

Principle	Performance Indicator	Comment
Principle 1	1.1.b	The North Sea cod stock has been depleted and is now recovering. The long variation is below B_{lim}.
	1.2.2.a	The Management plans and the embedded harvest control rules are based on reference points that are no longer considered appropriate for the North Sea saithe and hake stock. These plans and rules are under review with the agreed objective to update the plans
Principle 2	2.4.1	In the UK EEZ not all MPA have associated management measures such as area closures to protect benthic habitats. The demersal fisheries fishing grounds may overlap with OSPAR VME species such as seapens and burrowing megafauna. There are reservations as regards the impacts that these gears may cause on these VME which are, at present, not protected in the fishing grounds, and which may overlap VMS tracks.
	2.4.2	Fishing gears such as Danish seine and demersal trawlers are expected to have an impact on vulnerable habitats. The fishery takes place in fishing grounds in which vulnerable habitats have been identified but are not yet protected.
Principle 3		None relevant

1.2 Determination / draft determination

The Norway North Sea demersal fisheries 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.

Based on the evaluation of the fishery presented in this report the assessment team recommends the certification of the Norway North sea demersal fisheries including the bycatch of saithe in ICES sub-area IV in the Norway blue whiting fishery for the client Norges Fiskarlag.

As the fishery achieved a score of below 80 against 4 scoring indicators, the assessment team has set 4 conditions (Table 3) for the continued certification that the client is required to address. The conditions are applicable to improve performance to at least the 80 level within the period set by the assessment team.

The assessment team also makes 1 recommendation for the fishery (Table 4).

The Technical Reviewer at DNV GL adheres to the recommendation of the assessment team and approves the certification of the Norway North Sea demersal fisheries for the client Norges Fiskarlag.

Table 3 Conditions for certification (full text in Appendix 1.3)

Condition number	PI	Condition	Time-scale for compliance
1	1.1.1b	Cod - all gears: The Client shall demonstrate that management decisions are consistent with the management plan and that the management plan aims at rebuilding the stock to a level consistent with PI 1.1.1 objectives, e.g. MSY	4 years
2	1.2.2a	Hake – all gears: The management plan should be revised. The Client shall urge authorities and industry colleagues to give priority to this revision. The condition can be closed when the management plan is revised and ICES has found that this plan is in accordance with precautionary principles	4 years
3	2.4.1	All species- Danish seine & Demersal trawls: The necessary conservation and management measures for all vulnerable marine habitats in the UoC fishing grounds shall be in place and implemented, such that the UoC does not cause serious or irreversible harm to structure and function of vulnerable habitats (as described by OSPAR). The fishery will also need to provide overlapped maps of Danish seine and demersal trawling activity and OSPAR threatened or declining habitats.	4 years
4	2.4.2	All species-Danish seine & Demersal trawls: The client shall present evidence of the implementation of management measures directed to the protection of vulnerable species that are at present not protected in the fishing grounds, in order to achieve the Habitat Outcome 80 performance level.	4 years

Table 4 Recommendations (full text in Appendix 1.3)

Recommendation number	PI	Recommendation
1	2.3.1	It is recommended that the different UoC's in the fleet keep a record of non-fatal interactions with ETP species. This record should reflect not only the specie interacted but the vessel's position and date.

2 AUTHORSHIP AND PEER REVIEWERS

2.1 Assessment team

Table 5 Assessment team

Role	Name	Qualifications
Team leader and Chain of custody responsible	Sandhya Chaudhury	Sandhya Chaudhury is a Principal Specialist at DNV GL Business Assurance. She holds a B.Sc. in Biological science and a MBA. Sandhya Chaudhury has been the Lead Auditor/Team Leader for various MSC Pre- and Full Assessments since 2005. She has participated in various MSC workshops introducing certification methodology for MSC Fisheries and Chain of Custody to workshop participants. She is well-versed in project management with proven ability to lead cross-disciplinary teams. Sandhya has auditor experience with other quality management standards since 2002 and industry experience since 1991. Sandhya has been previously involved with the assessment of this fishery until 2013. Sandhya has no conflicts of interest in relation to the fishery under assessment. She meets the competence criteria in MSC Certification requirements v. 2.0, annex PC, in having appropriate skills related to Chain of Custody requirements. She also has the knowledge of the country, language and local fishery She is trained as a team leader, incl. traceability, according to v. 1.3 and v.2.0. She has been traceability responsible for several MSC assessments and is a qualified MSC CoC auditor and technical reviewer and has also been responsible for both the Fisheries and CoC schemes. Sandhya`s qualifications meet the competence criteria defined in the MSC Certification requirements v.2.0, annex PC, for the Team-leader. Sandhya has no conflicts of interest in relation to the UoA under her responsibility.

Principle 1 expert	Hans Lassen	Hans Lassen is an independent consultant. He holds a cand. scient. (M.Sc.) from Copenhagen University (1969) and a HD (B.Sc.) from the Copenhagen Business School (1978). His background is in fish stock assessments, particularly in the application of computers and models. He joined the Danish Institute of Fisheries and Marine Research (DIFRES) in 1971. 1988-1992 he worked in the Greenland Fisheries Research Institute as Deputy Director and Director and returned to DIFRES in 1992. Between 1998 and 2003 he was in charge of the Fisheries Group in the ICES Secretariat as Fisheries Adviser who serves as secretary to the ICES Advisory Committee on Fishery Management. After 2004 he was head of the ICES Advisory Programme within the ICES Secretariat. He retired from the ICES secretariat in 2010 and has since worked as a private consultant on projects within his expertise. He has been a member and Chairman of numerous ICES committees and groups, has within the Northwest Atlantic Fisheries Organization chaired STACFIS and the Scientific Council, been a member of STECF (EC, DG Fish), scientific adviser to Danish delegations to fisheries negotiations and chaired an internal EC expert group to provide input to the EC Multi-annual Guidance Program, within the Nordic Council of Ministers he chaired its Working Group on Fisheries and worked with the FAO/DANIDA project (1982-1998) on teaching fish stock assessment. In 2006 he was awarded the prestigious Swedish prize "Kungsfenan" for contributions to communication between science and the fishing industry. At his retirement from ICES he was awarded a Special Service Award. He is author and co-author of more than 30 peer reviewed papers in prime scientific journal and numerous papers for scientific symposia. He has been a member of MSC certification assessment teams for Westgreenland shrimp and lumpfish, and for Barents Sea Demersal trawl fisheries (Greenland). He has acted as reviewer for several MSC assessment reports including cod, haddock, shrimps, anchovy, sardine and vendace. Hans has no conflicts of interest in relation to the UoA under her responsibility.
Principle 2 expert	Lucia Revenga Giertych	Lucia Revenga is a marine scientist, specialized in Fisheries Biology who holds degrees in Marine Sciences and in Environmental Sciences. For 5 years, she worked with TRAGSA for the Spanish General Marine Secretariat, conducting researches on the biology and stock status of different species, such as Bluefin tunas, skipjack tunas, albacores, mackerels, sardines, eels, prawns, Norway lobsters, halibuts. She has also taken part in oceanographic surveys focused in the search of vulnerable marine ecosystems. From 2011 to 2015 she worked for IFAPA (Institute for Research and Training in Fisheries) as a Fisheries biology teacher for fishermen. She also conducts research in fishery local activities with the aim of increasing community awareness of the conservation of coastal ecosystems and encouraging sustainable fishing practices. Since then she works as an independent consultant. As a P2 expert she has been involved in the DS Nephrops assessment, the Olympic krill assessment, the AKER BioMarine Krill Fishery reassessment, and the Medfish project. She has been involved as a team leader in the IDW blue shell mussel reassessment. Lucia`s qualifications meet the competence criteria defined in the MSC Certification requirements v.2.0, annex PC, for the Team-leader. Lucia has no conflicts of interest in relation to the UoA under her responsibility.

Principle 3 expert	Geir Hønneland	Geir Hønneland holds a PhD in political science from the University of Oslo (2000) and has studied international fisheries management (with main emphasis on enforcement and compliance issues), international environmental politics and international relations in Polar regions. He has been affiliated with the Fridtjof Nansen Institute in Oslo for more than 20 years and has acted as director since 2015. Among his fisheries-related books are *Making Fishery Agreements Work* (Edward Elgar, 2012; China Ocean Press, 2016), *Law and Politics in Ocean Governance: the UN Fish Stocks Agreement and Regional Fisheries Management Regimes* (Martinus Nijhoff, 2006), *Russian Fisheries Management: The Precautionary Approach in Theory and Practice* (Martinus Nijhoff, 2004) and *Coercive and Discursive Compliance Mechanisms in the Management of Natural Resources* (Kluwer, 2000; Springer, 2014). Before embarking on an academic career, he worked five years for the Norwegian Coast Guard, where he was trained and certified as a fisheries inspector. Geir has been involved in MSC assessments since 2009 and has acted as P3 expert in more than 30 full assessments and re-assessments, as well as several pre-assessments and surveillance audits. His experience from full assessments includes many demersal, pelagic and industrial fisheries in the Northeast Atlantic and Southern Ocean, as well as inland fisheries. In the Northeast Atlantic, he has covered the international management regimes in the Barents Sea, Norwegian Sea, North Sea, Skagerrak, Kattegat and the Baltic Sea, as well as national management regimes in Norway, Sweden, Denmark, Russia, Iceland, Faroe Islands, Greenland and Scotland, as well as the EU level and the enforcement component of other EU countries, such as Germany, Netherlands and the UK. His qualifications meet the competence criteria defined in the MSC Certification requirements v.2.0, annex PC. Hønneland has no conflicts of interest in relation to the UoA under his responsibility.

2.2 Peer reviewers

Based on experience with the relevant MSC Fishery programme and components of the Unit of Certification, the peer reviewers listed in Table 6 were selected in accordance with MSC Fishery Certification Requirements on qualifications and competencies.

The proposed Peer Reviewers was announced on the MSC website 3rd October 2017 and confirmed on 16th October 2017 followed by supporting notices to stakeholders issued by the MSC on the same dates. Direct email notifications were also sent to the stakeholders previously identified for this fishery.

Table 6 Peer reviewers

Peer reviewer	Name
Peer reviewer 1	John Nichols
Peer reviewer 2	Bert Keus

3 DESCRIPTION OF THE FISHERY

3.1 Unit(s) of Assessment (UoA) and scope of certification sought

The fishery is, to the knowledge of the assessment team, within the scope of the MSC Fisheries standard according to the following determinations:

- The target species is a fish and the fishery does not use poisons or explosives.
- The fishery is not conducted under a controversial unilateral exemption to an international agreement.
- The client or client group does not include an entity that has been successfully prosecuted for a forced labour violation in the last 2 years.
- The fishery has mechanisms for resolving disputes and disputes do not overwhelm the fishery.

3.1.1 UoA and Proposed Unit of Certification (UoC)

3.1.1.1 Unit of Assessment

The Unit of Assessment defines the full scope of what is being assessed, and includes the Unit of Certification and any other eligible fishers.

The Unit of Assessment includes the target stock (s), the fishing method or gear type/s, vessel type/s and/or practices, and the fishing fleets or groups of vessels, or individual fishing operators pursuing that stock, including any other eligible fishers that are outside the Unit of Certification.

The Unit of Assessment for this fishery assessment is specified in Table 7.

The rationale for the chosen Unit of Assessment is that these Norwegian fisheries take place in different areas of the North Sea and Skagerrak with different types of fishing vessels and gears and are managed under EU-Norway Agreement and by Norwegian Authorities.

Table 7 Unit of Assessment (UoA)

	Target Species (Common names and latin name	Description of stock	Method of catch	Location of the fishery
1	Saithe (*Pollacius virens*)	North Sea saithe	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
2	Cod (*Gadus morhua)*	North Sea cod	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27

3	Haddock (*Melanogrammus aeglefinus*)	North Sea haddock	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
4	Hake (European) (*Merluccius merluccius*)	North Sea hake (European)	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
Management		The NS saithe, cod, haddock and hake stocks are managed under EU-Norway Agreement and by Norwegian Authorities		
Client group		Norges Fiskarlag on behalf of the entire Norwegian fleet		
Fishing fleet		The entire Norwegian fleet. No other eligible fishers have been identified for the fishery.		

3.1.1.2 Proposed Unit of Certification

The Unit of certification is the unit entitled to receive an MSC certificate.

The proposed Unit of Certification include the target stock (s), the fishing method or gear type/s, vessel type/s and/or practices, the fishing fleets or groups of vessels or individual fishing operators pursuing that stock including those client group members initially intended to be covered by the certificate.

The MSC FCR v2.0 specifies that the Unit of Certification is defined as *"The target stock or stocks (= biologically distinct unit/s) combined with the fishing method/gear and practice (including vessel type/s) pursuing that stock and any fleets, groups of vessels, or individual vessels of other fishing operators."*

The proposed Unit of Certification is provided in Table 8 and includes the saithe bycatch in the blue whiting fishery in ICES subarea IV (certified as a scope extension to the Norway Spring spawning herring fishery, certificate nr. MSC-F-61388 issued 09.01.2018).

Table 8 Proposed Unit(s) of Certification at the start of the certificate (prior to any certificate sharing)

	Target Species (Common names and latin name	Description of stock	Method of catch	Location of the fishery
1	Saithe (*Pollacius virens*)	North Sea saithe	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa/ FAO statistical area 27
2	Cod (*Gadus morhua)*	North Sea cod	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27

3	Haddock (*Melanogrammus aeglefinus*)	North Sea haddock	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
4	Hake (European) (*Merluccius merluccius*)	North Sea hake (European)	Danish seines Demersal trawl Hooks and lines (includes longline and jigging) Seine nets (purse) Gill Nets (not specified) Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
Management		The NS saithe, cod, haddock and hake stocks are managed under EU-Norway Agreement and by Norwegian Authorities		
Client group		Norges Fiskarlag on behalf of the entire Norwegian fleet		
Fishing fleet		The entire Norwegian fleet. No other eligible fishers have been identified for the fishery.		

3.1.1.3 Other eligible fishers at the start of the certificate (prior to any certificate sharing)

Other eligible fishers mean operators that have been evaluated as part of the Unit of Assessment, but who are not eligible to use the MSC Fishery certificate without a certificate sharing agreement with the client group.
There are no other eligible fishers identified for these fisheries. The certificate includes all Norwegian vessels targeting North Sea saithe, cod, haddock and hake in IV. Other fisheries that target the same stock operate under different management schemes and are hence not eligible.

3.1.2 Final UoC(s)

The Unit of Certification covered by the MSC Fishery certificate at the time of certification is described in Table 9.

Table 9 Unit(s) of Certification under assessment and assessment results

Uoc	Assessment result	Target stock	Method of catch	Location of the fishery
1	Pass	North Sea saithe (*Pollacius virens*)	Danish seines	North Sea ICES Area IV & IIIa / FAO statistical area 27
2	Pass	North Sea saithe (*Pollacius virens*)	Demersal trawl	North Sea ICES Area IV & IIIa / FAO statistical area 27
3	Pass	North Sea saithe (*Pollacius virens*)	Hooks and lines (includes longline and jigging)	North Sea ICES Area IV & IIIa / FAO statistical area 27
4	Pass	North Sea saithe (*Pollacius virens*)	Seine nets (purse)	North Sea ICES Area IV & IIIa / FAO statistical area 27
5	Pass	North Sea saithe (*Pollacius virens*)	Gill Nets (not specified)	North Sea ICES Area IV & IIIa / FAO statistical area 27
6	Pass	North Sea saithe (*Pollacius virens*)	Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
7	Pass	North Sea cod (*Gadus morhua)*	Danish seines	North Sea ICES Area IV & IIIa / FAO statistical area 27
8	Pass	North Sea cod (*Gadus morhua)*	Demersal trawl	North Sea ICES Area IV & IIIa / FAO statistical area 27
9	Pass	North Sea cod (*Gadus morhua)*	Hooks and lines (includes longline and jigging)	North Sea ICES Area IV & IIIa / FAO statistical area 27

10	Pass	North Sea cod (*Gadus morhua)*	Seine nets (purse)	North Sea ICES Area IV & IIIa / FAO statistical area 27
11	Pass	North Sea cod (*Gadus morhua)*	Gill Nets (not specified)	North Sea ICES Area IV & IIIa / FAO statistical area 27
12	Pass	North Sea cod (*Gadus morhua)*	Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
13	Pass	North Sea haddock (*Melanogrammus aeglefinus*)	Danish seines	North Sea ICES Area IV & IIIa / FAO statistical area 27
14	Pass	North Sea haddock (*Melanogrammus aeglefinus*)	Demersal trawl	North Sea ICES Area IV & IIIa / FAO statistical area 27
15	Pass	North Sea haddock (*Melanogrammus aeglefinus*)	Hooks and lines (includes longline and jigging)	North Sea ICES Area IV & IIIa / FAO statistical area 27
16	Pass	North Sea haddock (*Melanogrammus aeglefinus*)	Seine nets (purse)	North Sea ICES Area IV & IIIa / FAO statistical area 27
17	Pass	North Sea haddock (*Melanogrammus aeglefinus*)	Gill Nets (not specified)	North Sea ICES Area IV & IIIa / FAO statistical area 27
18	Pass	North Sea haddock (*Melanogrammus aeglefinus*)	Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
19	Pass	North Sea hake (European) (*Merluccius merluccius*)	Danish seines	North Sea ICES Area IV & IIIa / FAO statistical area 27
20	Pass	North Sea hake (European) (*Merluccius merluccius*)	Demersal trawl	North Sea ICES Area IV & IIIa / FAO statistical area 27
21	Pass	North Sea hake (European) (*Merluccius merluccius*)	Hooks and lines (includes longline and jigging)	North Sea ICES Area IV & IIIa / FAO statistical area 27
22	Pass	North Sea hake (European) (*Merluccius merluccius*)	Seine nets (purse)	North Sea ICES Area IV & IIIa / FAO statistical area 27
23	Pass	North Sea hake (European) (*Merluccius merluccius*)	Gill Nets (not specified)	North Sea ICES Area IV & IIIa / FAO statistical area 27
24	Pass	North Sea hake (European) (*Merluccius merluccius*)	Pots	North Sea ICES Area IV & IIIa / FAO statistical area 27
Management		The NS saithe stock is managed under EU-Norway Agreement and by Norwegian Authorities		
Client group		Norges Fiskarlag on behalf of the entire Norwegian fleet		
Fishing fleet		The entire Norwegian fleet. No other eligible fishers have been identified for the fishery.		

3.1.2.1 Final other eligible fishers at the time of certification

Other eligible fishers mean operators that have been evaluated as part of the Unit of Assessment, but who are not eligible to use the MSC Fishery certificate without a certificate sharing agreement with the client group.

There are no other eligible fishers identified for these fisheries. The certificate includes all Norwegian vessels targeting North Sea saithe, cod, haddock and hake in IV. Other fisheries that target the same stock operate under different management schemes and are hence not eligible.

3.1.3 Total Allowable Catch (TAC) and Catch Data

Table 10 TAC and catch data for North Sea saithe

TAC	Year	2016	65696 m. tonnes
UoA share of TAC	Year	2016	33352 m. tonnes
UoC share of TAC	Year	2016	33352 m. tonnes
Total green weight catch by UoC	Year (most recent)	2016	31561 m. tonnes
Total green weight catch by UoC	Year (second most recent)	2015	35749 m. tonnes

Table 11 TAC and catch data for North Sea cod

TAC	Year	2016	37689 m. tonnes
UoA share of TAC	Year	2016	6025 m. tonnes
UoC share of TAC	Year	2016	6025 m. tonnes
Total green weight catch by UoC	Year (most recent)	2016	5625 m. tonnes
Total green weight catch by UoC	Year (second most recent)	2015	5534 m. tonnes

Table 12 TAC and catch data for North Sea haddock

TAC	Year	2016	33643 m. tonnes
UoA share of TAC	Year	2016	7238 m. tonnes
UoC share of TAC	Year	2016	7238 m. tonnes
Total green weight catch by UoC	Year (most recent)	2016	1517 m. tonnes
Total green weight catch by UoC	Year (second most recent)	2015	2074 m. tonnes

Table 13 TAC and catch data for North Sea hake

TAC	Year	2016	109592 m. tonnes*
UoA share of TAC	Year	2016	NA **
UoC share of TAC	Year	2016	NA
Total green weight catch by UoC	Year (most recent)	2016	6139 m. tonnes
Total green weight catch by UoC	Year (second most recent)	2015	4476 m. tonnes

* Total ICES quota advice for northern hake

** No direct Norwegian quota, but fished under "others" quota in the EU

3.1.4 Scope of Assessment in Relation to Enhanced Fisheries

The MSC Certification Requirements and Guidance v2.0 defines enhanced fisheries as: "Any activity aimed at supplementing or sustaining the recruitment, or improving the survival and growth of one or more aquatic organisms, or at raising the total production or the production of selected elements of the fishery beyond a level that is sustainable by natural processes. It may involve stocking, habitat modification, elimination of unwanted species, fertilisation or combinations of any of these practices".

The fisheries in the UoA are wild capture fisheries and do not meet the definition above. None of the four species (cod, haddock, saithe and hake) that are assessed in this report are therefore not considered to be enhanced.

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

The MSC Certification Requirements v2 defines ISBF fisheries as any fishery which prosecutes a target fin or shellfish species that was intentionally or accidentally transported and released by human activity into an aquatic environment beyond its natural distribution range. This does not include species that are "introduced" into a location due to an expansion in their natural geographic range.
The fisheries under assessment do not meet the definition above and are therefore not considered as ISBF.

3.2 Overview of the fishery

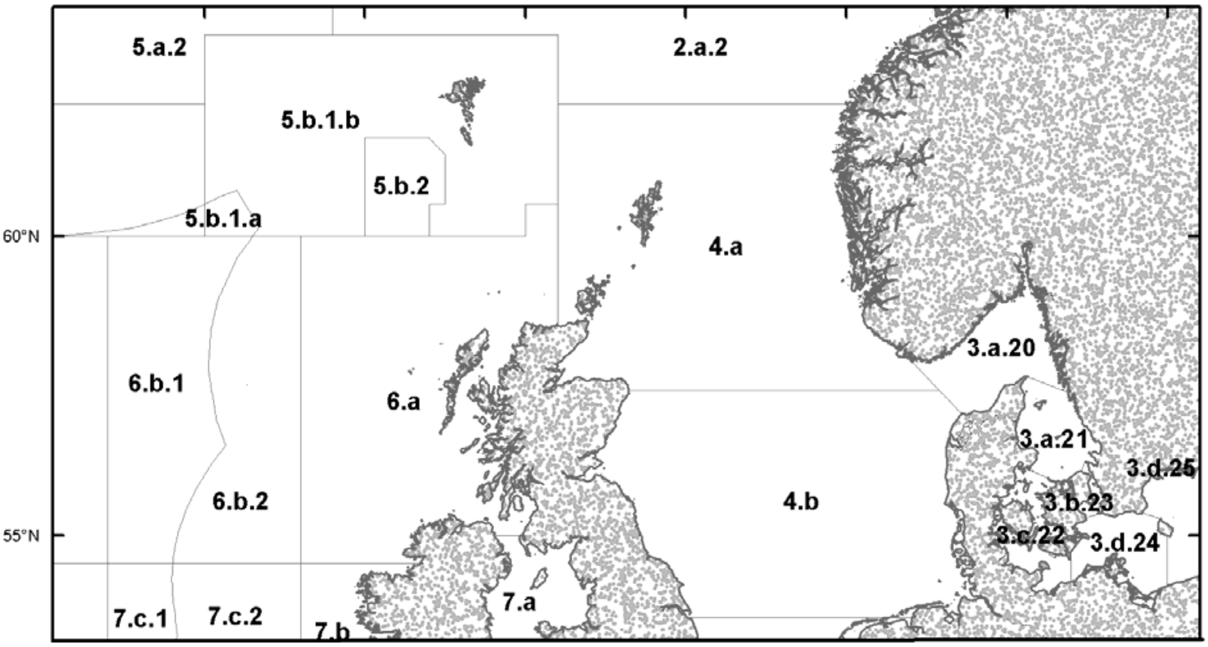


Figure 1 **ICES area used for statistics and stock deliniation. Source http://www.ices.dk/marine-data/maps/Pages/default.aspx**

3.2.1 Client name and contact information

Table 14 Client contact data

Client name:	Norges Fiskarlag
Contact person:	Tor Bjørklund Larsen
Address:	Pirsenteret, 7462 Trondheim, Norway
Telephone:	+47 980 33 041
Email:	fiskarlaget@fiskarlaget.no / tor@fiskarlaget.no

3.2.2 Client information

Norges Fiskarlag (Norwegian Fishermen's Association / NFA) was established in 1926 as an interest group for the hitherto unorganized Norwegian fishermen. The main focus of the Association was better and effective control of the fish brought to shore as well as improved working conditions in the high-risk profession.

The NFA's most important objective is to organize all professional Norwegian fishermen, and the activities embrace the political, economic, social and cultural fields of interest to its members, as well as other matters, more or less, directly connected to their fishing activities. The organization is a politically independent, national organization based on voluntary membership of fishermen via their county associations and group organizations. The highest governing body of the NFA is its Congress, which consists of 69 delegates, elected by the seven county associations and two group organizations which together constitute the NFA. The Congress meets bi-annually. Intermediate authority is exercised by the National Committee that comprises of 14 members chosen from the member organizations and elected by the Congress.

The main office in Trondheim is staffed by approximately 20 people, including the General Secretary, Assistant General Secretary and sections for areas of specific interest including resource management. The NFA organizes both owners of fishing vessels and fishermen working on a share or percentage basis. The organization today represents about 25% of the registered Norwegian fishermen.

NFA coordinates the MSC Fisheries certification processes with DNV GL for the following fisheries on behalf of the entire Norwegian fleet:

- North East Arctic Cod
- North East Arctic Haddock
- North East Atlantic mackerel
- North Sea and Skagerrak Herring
- Norwegian Spring Spawning Herring
- Norwegian Spring Spawning Herring scope extension for Blue whiting.
- North East Arctic Saithe
- North Sea Saithe
- North East Arctic Cold Water Prawn
- Norway sandeel, pout and North Sea sprat

3.2.3 General overview of the fishery

(Based on ICES (2017) ICES Fisheries Overviews Greater North Sea Ecoregion)
The Norwegian fisheries that are assessed in this report include bottom trawlers, long liners and gillnetters. Locally there are fisheries using jigs, traps and pots.

ICES (2017) presents an overview of the North Sea fisheries. Around 6600 fishing vessels are active in the Greater North Sea. Total landings are about 2 million tonnes. Total fishing effort has declined substantially since 2003. Pelagic fish landings are greater than demersal fish landings.

The spatial distribution of fishing gear varies across the Greater North Sea. Static gear is used most frequently in EU waters and little in the Norwegian fisheries. Bottom trawls are used throughout the North Sea. In terms of tonnage of catch, most of the fish stocks harvested from the North Sea are being fished at levels consistent with achieving good environmental status (GES) under the EU's Marine Strategy Framework Directive; however, the reproductive capacity of the stocks has not generally reached this level.

Almost all the fisheries in the North Sea catch more than one species; controlling fishing on one species therefore affects other species as well. Furthermore, biological interactions occur between species (e.g. predation) and fishing on one stock may affect the population dynamics of another. The greatest physical disturbance of the sea-bed in the North Sea occurs by mobile bottom-contacting gear during fishery in the eastern English Channel, in near-shore areas in the south-eastern North Sea, and in the central Skagerrak. Incidental bycatches of protected, endangered, and threatened species occur in several North Sea fisheries.

The Norwegian North Sea fleet is composed of about 1585 vessels. 85% of these catch demersal species, including fish, crustaceans, cephalopods and elasmobranchs, and 30% catch pelagic species. Fisheries for saithe, cod, haddock and hake is part of this fleet. Approximately 60% of the fleet targeting demersal species are small vessels (< 10 m) that operate near the Norwegian coast using traps, pots and gillnets, catching crabs, squid and several fish species. Medium-sized vessels (10– 24 m) mainly target Nephrops and crabs using pots and traps, shrimp using trawls, and cod, saithe, ling and monkfish using gillnets. The industrial fleet (5 vessels of 24–40 m; 25 vessels >40 m) target Norway pout and sandeel for reduction. The offshore fleet (>40 m) is predominantly otter trawlers, but also includes seiners and longliners. Larger vessels (>24 m) account for most of the landings of saithe, ling, cod, tusk, hake, haddock, herring, blue whiting, mackerel and sprat.

The Norwegian fishery occurs both in the Norwegian EEZ as well as in the EU zone based on agreements reached at annual fisheries consultation between EU and Norway.

Table 15 Catch (tons) by species in 3.a.20, 4.a, b and 6.a and by zone for 2014-2016. Source Fiskeridirektoratets fiskeridatabase. Downloaded 22 September 2017.

	EU zone			Norwegian zone			Total		
Species	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**
Haddock	1786	1148	757	1042	919	814	2828	2067	1571
Hake	1221	2476	2911	2042	2001	3213	3263	4477	6124
Saithe	12365	19564	15347	25586	16722	16792	37951	36286	32139
Cod	2422	3173	3361	2719	2723	2850	5141	5896	6211
Total	**17794**	**26361**	**22376**	**31389**	**22365**	**23669**	**49183**	**48726**	**46045**
2014-16%	**46.2%**			**53.8%**			**100.0%**		

The fisheries occur mainly in the Northern North Sea (IVa)

Table 16 Catch (tons) (Haddock, Hake, Saithe and cod combined) for 2014-2016. Source Fiskeridirektoratets fiskeridatabase. downloaded 22 September 2017.

ICES Area	2014	2015	2016	2014-16 %
3.a	1146	1067	1057	2.27%
4.a	45667	45911	42183	92.92%
4.b	1896	1285	2149	3.70%
6.a	474	463	656	1.11%
Total	**49183**	**48726**	**46045**	**100.00%**

3.2.3.1 Gears and vessel size

The gears are primarily bottom trawl (Table 17) but the fisheries use a mix of gears. The fisheries are primarily conducted by vessels between 21 and 28 m oal, **Table 18**)

Table 17 Catch (tons) (Haddock, Hake, Saithe and cod combined) by gear in IIIa, IVa,b and VIa (combined). Source Fiskeridirektoratets fiskeridatabase. Downloaded 22 September 2017.

Gear	2014	2015	2016	2014-16 %
Other gears	105	166	214	0.34%
Gillnets	5080	7609	7463	14.00%
Jigging	223	204	186	0.43%
Long Line	1657	2193	1679	3.84%
Purse seine	2462	4281	2369	6.33%
Danish seine	728	342	894	1.36%
Trawl	38928	33931	33240	73.70%
Total	**49183**	**48726**	**46045**	**100.00%**

Table 18 Catch (tons) (Haddock, Hake, Saithe and cod combined) for 2016 by gear and vessel length (m oal). Source Fiskeridirektoratets fiskeridatabase. Downloaded 22 September 2017.

	<11 m	11-14,99 m	15-20,99 m	21-27,99 m	>28 m	Unk length	Total
EU - zone							
Other gears	5	0	0	79	79	0	163
Gillnets	0	0	0	1983	2339	0	4322
Jigging	43	0	0	0	0	0	43
Long Line	9	219	40	0	878	0	1146
Purse seine	0	0	0	0	44	0	44
Danish seine	0	0	0	311	51	0	362
Trawl	0	0	0	2181	14115	0	16296
EU - zone Total	**57**	**219**	**40**	**4554**	**17506**	**0**	**22376**
Norwegian zone							
Other gears	17	3	0	25	1	5	51
Gillnets	1182	370	0	631	936	22	3141
Jigging	122	4	0	0	0	17	143
Long Line	4	92	49	0	385	3	533
Purse seine	22	11	0	492	1800	0	2325
Danish seine	59	99	0	69	305	0	532
Trawl	161	188	66	3051	13478	0	16944
Norwegian zone Total	**1567**	**767**	**115**	**4268**	**16905**	**47**	**23669**
Grand Total	**1624**	**986**	**155**	**8822**	**34411**	**47**	**46045**

3.3 Principle One: Target Species Background

The target species that are covered by this assessment includes four stocks. These stocks are all under an annual ICES assessment and advice for fisheries within sustainable limits. The stocks are

- North Sea Saithe (*Pollachius virens*) in subareas 4 and 6, and in Division 3.a (North Sea, Rockall and West of Scotland, Skagerrak and Kattegat)
- North Sea Cod (*Gadus morhua*) in Subarea 4, Division 7.d, and Subdivision 20 (North Sea, eastern English Channel, Skagerrak)
- North Sea Haddock (*Melanogrammus aeglefinus*) in Subarea 4 (North Sea), Division 6.a (West of Scotland,) and Subdivision 20 (Skagerrak)
- Northern hake (*Merluccius merluccius*) in subareas 4, 6, and 7, and in divisions 3.a, 8.a–b, and 8.d, Northern stock (Greater North Sea, Celtic Seas, and the northern Bay of Biscay)

Results from a North Sea mixed-fisheries analysis which includes among others the four stocks mentioned above are presented in ICES (2017).

The cod, haddock and saithe are managed as shared between Norway and EU and discussed as part of the December 2016 consultations (Agreed record 2 December 2016)

There are management plans for all four stocks. However, the plans for cod, haddock and hake are, because of changes in the productivity in the stocks not considered to be appropriate as the reference points have been updated. The advice is currently based on ICES MSY advisory scheme for category 1 stocks, ICES (2016) Advice basis

The fish are easily distinguished from other species in the catch and there is no IPI species.

The cod, haddock, saithe and hake are all four larger predators, they occupy higher trophic level in the ecosystem and are not key LTL species.

	Cod	Haddock	Saithe	Hake	Ref
Trophic Level	4.1	4.0	4.3	4.4	http://www.fishbase.de download 9/10/2017

3.3.1 North Sea Saithe (*Pollachius virens)*

3.3.1.1 Background and biology

(based on https://www.imr.no/temasider/fisk/sei/sei_i_nordsjoen_skagerrak_og_vest_av_skottland/en)

Saithe is an Atlantic Ocean species. Populations occur in the North Sea and west of Scotland, in waters surrounding Faroe Islands and along the Norwegian coast north of 62 ° N, and in waters adjacent to Newfoundland and Canada. They may occur as far south as the Bay of Biscay. Tagging studies have shown occasional mixing between different populations in the eastern Atlantic.

Saithe spawn in the North Sea in the area west of Shetland to Tampen and Viking banks during February-March at depths ranging from 150 to 200m. Their eggs float in the upper layers of the water column. Larvae initially extend south along the western edge of the Norwegian Trench, and then are carried with coastal currents in large whirlpools formed by south-bound Atlantic water and the north-bound coastal currents. When saithe become 3 to 4 years old, they often are in poor condition during spring after a long winter. Most of the year class moves across the Norwegian Trench into the North Sea, where krill continues to be a substantial part of their diet; however, Norway pout, herring and other fish species become increasingly important.

Saithe in the North Sea grow faster than saithe north of 62 ° N, and reach sexual maturity at a younger age. They are recruited to the fishery under mountains by the coast, and by age three they have reached 35-40cm in length. They become sexually mature between four to six years of age, and approximately 50cm in length.

In summer, saithe are found over the entire North Sea plateau from approximately 57° N to 62° N, but in winter they are concentrated on spawning grounds west of Shetland and between Shetland, Tampen, and Viking Bank. Juveniles are concentrated along the western edge of the Norwegian Trench — especially around the Statfjord oil field, Egersund Bank, and areas southeast. Also during summer, the largest densities of saithe are found at edges of the North Sea plateau.

3.3.1.2 Fishery

The Norwegian fishery for saithe largely occurs in the Northern North Sea (ICES IVa) and mainly by trawl, Table 19.

Table 19 Catch (tons) of Saithe by Norwegian vessels 2016 by ICES area. Source Fiskeridirektoratets Database. Downloaded 10/10/2017

	IIIa			IVa			IVb			VIa		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Purse seine	0	1	0	2,462	4,263	2,335	0	1	8	0	0	0
Gillnets	47	64	28	2,258	4,229	3,184	108	14	471	0	0	1
Jigs	39	42	27	63	49	53	32	26	22	0	0	0
Long Line	0	0	1	346	575	357	15	10	4	0	11	0
Danish seine	7	2	1	108	31	283	20	1	6	0	0	0
Trawl	403	363	357	31,045	25,883	24,113	518	357	317	437	296	540
Other gears (incl Pots)	0	1	0	41	67	29	6	0	0	0	0	0
Total Norway	**497**	**474**	**415**	**36,322**	**35,096**	**30,354**	**698**	**409**	**828**	**437**	**306**	**541**

3.3.1.3 Data and Assessment

The stock is well documented, ICES (2017) North Sea Saithe Advice. The commercial catches and discards are subject to detailed statistical programmes, age and length frequencies are available from catch sampling. The stock is subject to annual R/V abundance surveys (IBTS Q3, ages 3–8) and a combined commercial index scaled to the exploitable biomass (French, German, Norwegian trawler fleets) is available. Maturity-at-age and natural mortality are assumed to be constant. Stock weights are catch weights.

Commercial catch per unit of effort information for French, German and Norwegian trawlers was combined into a single index of biomass of fishable saithe. Factors such as vessel experience and fishing behaviour likely contribute to the variability in cpue for all fleets, but these are not captured in the cpue model.

The assessment model used is an age -based analytical assessment SAM model, (ICES, 2017) WGNSSK that uses catches in the model and in the forecast[1].

Conflicting signals between the survey and fishable biomass index contributes to the assessment uncertainty. The uncertainty for age 3 saithe in 2016 is estimated to be large. The fraction of age 3 saithe migrating into the survey area (and the fishery) is low and varying between years with no obvious trend. Observations of saithe at age 3 are not suitable for predicting year-class strength. This means that assumed recruitment values are highly uncertain; 27% of the advised total catch in 2018 is based on the recruitment assumptions for 2017 and 2018.

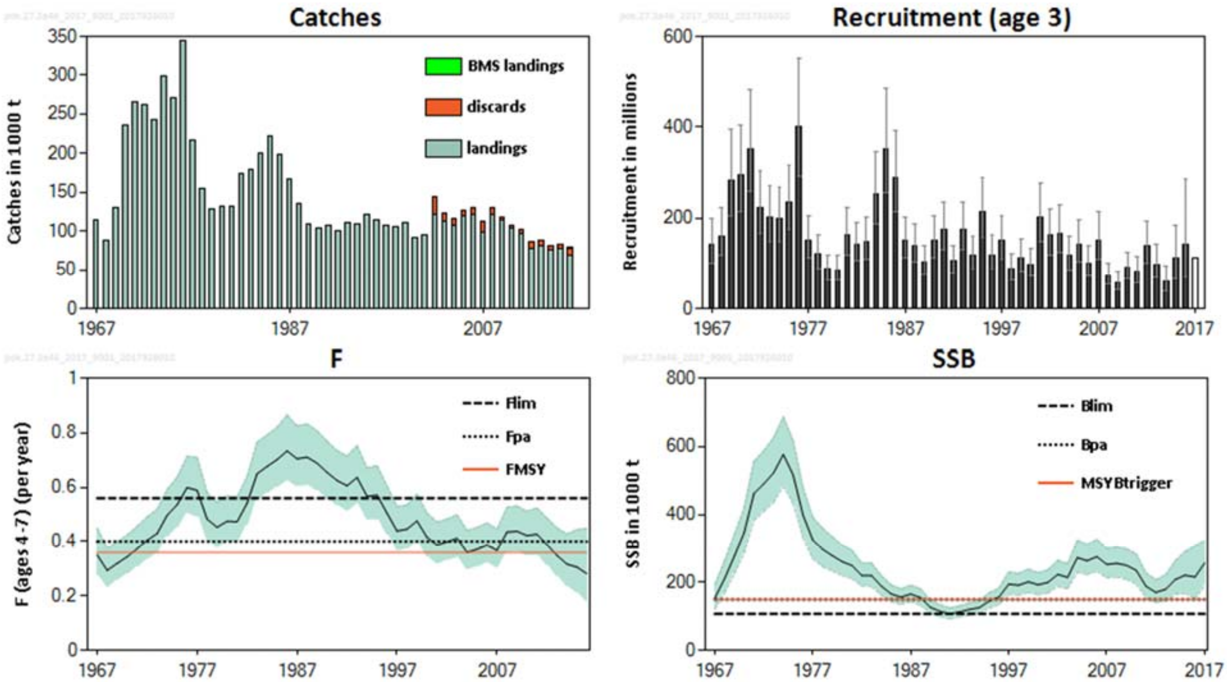
The saithe assessment went through an ICES benchmark process in 2016 (ICES, 2016). The scientific survey used in the assessment does not cover the whole stock distribution; however, it is considered generally representative. The survey index is uncertain because it is influenced by occasional large catches. This occurred for example in 2016.

3.3.1.4 Stock status

ICES assesses this stock annually. The stock unit is defined as subareas 4 (North Sea) and 6 (Rockall and West of Scotland), and Division 3.a (Skagerrak and Kattegat).

The stock is fished below F_{MSY} and the stock size is well above PRI levels, Figure 2. Recruitment (R) has fluctuated over time and has generally been below the long-term average since 2003. Fishing mortality (F) has been below F_{MSY} since 2013. Spawning Stock Biomass (SSB) has fluctuated without trend and has been above MSY Btrigger since 1996.

[1] SAM is a simple state-space assessment model based on catch at age data. Compared to the deterministic procedures it solves a list of problems originating from falsely assuming that age classified catches are known without errors and allows quantification of uncertainties of estimated quantities of interest. Compared to full parametric statistical catch at age models the statespace assessment model avoids the problem of fishing mortality being restricted to a parametric structure (e.g. multiplicative), and problems related to having a high number of model parameters compared to the number of observations. The main criticism of state-space assessment models is that they tend to be more conservative (react slower to changes) than the alternatives.



Saithe (Pollachius virens) in Subareas 4, 6 and Division 3.a

		Fishing pressure					Stock size			
		2014	2015	2016			2015	2016	2017	
Maximum Sustainable Yield	F_{MSY}	✔	✔	✔	Below	MSY $B_{Trigger}$	✔	✔	✔	Above trigger
Precautionary Approach	F_{pa}, F_{lim}	✔	✔	✔	Harvested sustainably	B_{pa}, B_{lim}	✔	✔	✔	Full reproductive capacity
Management plan	F_{MGT}	–	–	–	Not applicable	B_{MGT}	–	–	–	Not applicable

Figure 2 North Sea Saithe Stock Status. Source ICES (2017) North Sea Saithe Advice, Figure 1 and Table 1

3.3.1.5 Management

The stock is managed by EU and Norway under their fisheries agreement. The Parties have established a management plan and this management plan has been followed. ICES has evaluated the embedded HCR and found this to be precautionary, ICES (2012). Catches have been within the agreed TAC. The management plan is to be updated based on revised reference points.

New reference points were estimated is presented in the text Table below. F_{MSY} analyses were conducted with Eqsim [Standard ICES software]. Saithe in subareas 4 and 6, and in Division 3.a. Reference points, values, and their technical basis. Source: ICES. (2016). Report of the Benchmark Workshop on North Sea Stocks (WKNSEA), 14–18 March 2016, Copenhagen, Denmark. ICES CM 2016/ACOM:37. 698 pp. and ICES (2017) North Sea Saithe Advice.

Framework	Reference point	Value	Technical basis
MSY approach	MSY $B_{trigger}$	150,000 t	B_{pa}
	F_{MSY}	0.36	EQsim analysis based on the recruitment period 2003– 2015
Precautionary approach	B_{lim}	107.000 t	B_{loss}
	B_{pa}	150,000 t	$B_{lim} \times \exp(1.645 \times 0.2) \approx 1.4 \times B_{lim}$
	F_{lim}	0.56	EQsim analysis based on the recruitment period 2003– 2015.
	F_{pa}	0.40	$F_{lim} \times \exp(-1.645 \times 0.2) \approx F_{lim} / 1.4$

These revised reference points have been reviewed and are to be considered at the EU-Norway consultations for updating the HCR.

3.3.2 North Sea Cod (*Gadus morhua*)

3.3.2.1 Background and biology

(Based on Sieben et al 2017)

Cod (Gadus morhua) is widely distributed throughout the North Sea and adjacent waters. For fish stock assessment purposes, the stock is assessed as a single unit covering ICES Division 7d (The eastern Channel), ICES Subdivision 4 (North Sea Proper) and 3a (Skagerrak). There are indications of sub-populations inhabiting different regions of the North Sea (e.g. from genetic studies). The inferred limited degree of mixing suggests slow re-colonization in areas where sub-populations are depleted. Cod in the North Sea are typically about 30-100 cm in size and it is rare to find individuals older than 8-10 years. They grow rapidly with a one-year-old fish at about 25cm reaching 100cm by the age of 6-7 years. In the past, North Sea cod reached spawning age at about 3.5 years but in recent years this has reduced to about 2.5 years and is an important change because it means a higher proportion of the total stock is able to spawn and is a major reason why the stock is considered to be in a better state now compared with some years earlier.

Spawning takes place in the late winter and early spring of each year from about February to April. Fish tend to congregate on traditional spawning grounds and these higher concentrations are often the target of fishing operations. It is believed fish return to the same spawning grounds from which they were born which leads to some separation of populations within the North Sea. It appears, for example, that fish forming the more southern component of the stock have become relatively less abundant than those that spawn in the north (ICES, 2016).

The eggs and larvae are pelagic. As they develop they metamorphose and by the late summer or early autumn they begin to spend more time closer to the seabed where they may mix with older cod. The larvae depend on plankton for food and are particularly reliant on copepods such as *Calanus*. As the cod get older and after metamorphosis from larvae to fish, cod feed increasingly on other fish and are also highly cannibalistic.

3.3.2.2 Fishery

Cod is fished from EU member states and Norway. Catch statistics for the UoC (Norwegian fleet) is presented in Table 20.

Table 20 Cod Catch (t) for 2014-2016 for Norwegian vessels and by gear and ICES Subdivision. Including catches in the Norwegian fjords. Source Fiskeridirektoratet downloaded 10/10/2017

	IIIa			IVa			IVb			VIa		
Cod	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**
Purse seine	0	0	0	1	14	27	0	0	0	0	0	0
Gillnets	124	120	92	1,819	2,446	2,325	117	90	594	0	0	26
Jigs	40	49	50	3	5	7	45	31	26	0	0	0
Long Line	1	1	26	603	823	751	339	331	308	9	54	3
Danish seine	24	15	15	181	135	235	34	21	14	0	0	0
Trawl	341	308	360	1,342	1,404	1,297	65	19	24	4	5	11
Other gears (incl Pots)	3	4	8	48	17	19	1	0	0	0	0	0
Total Norway	**533**	**497**	**551**	**3,997**	**4,844**	**4,662**	**601**	**492**	**965**	**13**	**59**	**39**

3.3.2.3 Data and Assessment

The cod fishery in the North Sea is well documented. There is detailed annual statistics on the commercial catches (international landings, ages and length frequencies from catch sampling by métier) and there are abundance indices from two annual surveys (IBTS Q1, IBTS Q3). Annually varying natural mortalities estimated from multispecies model (1974–2013) are applied. These data are from the stomach sampling programmes.

The assessment is based on the Age-based analytical assessment (SAM; ICES, 2017 WGNSSK), see footnote for the saithe assessment, section 3.3.1.3. This model uses catches in the model and in the forecast, together with the abundance indices. Unaccounted removals were estimated for 1993–2005. This approach was reviewed at the ICES benchmark ICES (2015).

3.3.2.4 Stock status

The North Sea cod stock showed a general decline in all areas prior to the mid-2000s and a general increase in all areas thereafter, apart from the southern area. Fishing mortality (F) has declined since year 2000, but is estimated to be above FMSY. Spawning–stock biomass (SSB) has increased from the historical low in 2006 to above MSY Btrigger in 2017. There are indications of increased recruitment in 2017. However, the stock is not fully recovered.

The benchmark in 2015 introduced annually varying maturity estimates to the assessment (ICES, 2015a). Maturity-at-age was re-estimated in 2017 to produce a time-series of maturity estimates that are consistently calculated over time and corrected for errors. The re-estimated maturities caused a re-scaling of the SSB, to an extent that necessitated the re-calculation of reference points.

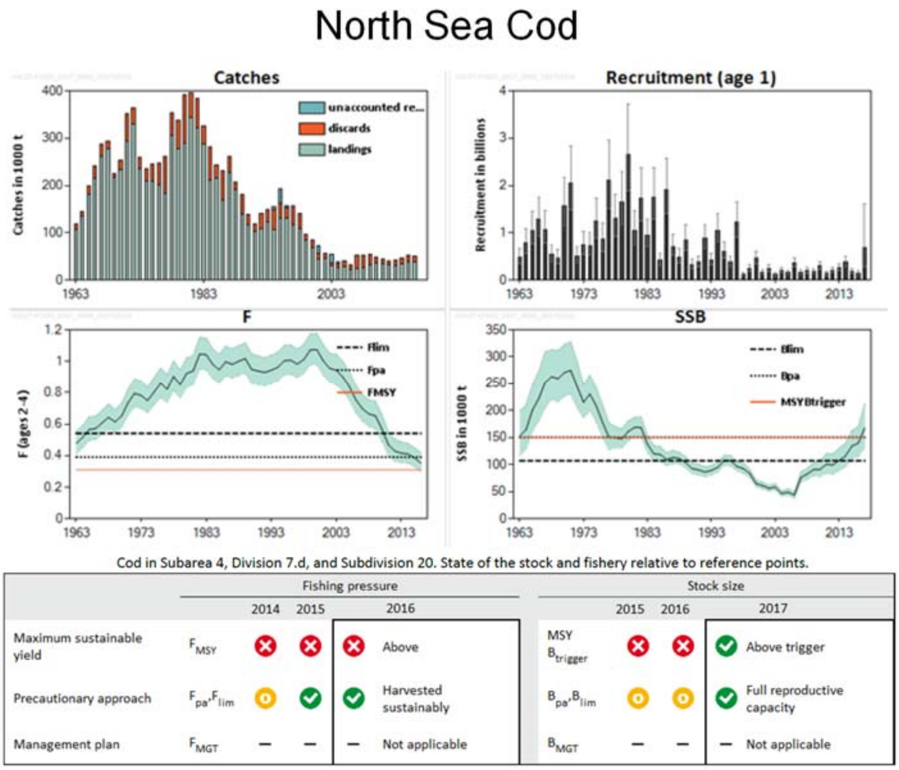


Figure 3 North Sea Cod. Stock status. Source ICES (2017) North Sea Cod Advice Figure 1 and Table 1

The revised reference points are given in Table 21.

Table 21 Revised reference points from ICES (2017) WGNSSK

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY Btrigger	150,000 t	B_{pa} 1988– 2016	ICES (2017a)
	F_{MSY}	0.31	EQsim analysis based on recruitment period	
Precautionary approach	B_{lim}	107,000 t	SSB associated with the last above-average recruitment (1996 year class)	
	B_{pa}	150,000 t	$B_{lim} \times \exp(1.645 \times 0.2) \approx 1.4 \times B_{lim}$	
	F_{lim}	0.54	EQsim analysis based on recruitment period 1998–2016	

Framework	Reference point	Value	Technical basis	Source
	F_{pa}	0.39	$F_{lim} \times \exp(-1.645 \times 0.2) \approx F_{lim} / 1.4$	
EU–Norway Management Strategy	SSBMS-lower	70,000 t	Former B_{lim}	EU (2008)
	SSBMS-upper	150,000 t	Former Bpa	
	FMS-lower	0.20	Fishing mortality when SSB < SSBMS-lower	
	FMS-upper	0.40	Fishing mortality when SSB > SSBMS-upper	

3.3.2.5 Management

The stock is managed joint between Norway and EU and its management is part of the annual fisheries consultations.

The EU–Norway management strategy was updated in December 2008. The EU has adopted a long-term plan with the same aims (EU management plan; EU, 2008). ICES evaluated the EU–Norway management strategy in 2009 and concluded that it was in accordance with the precautionary approach if implemented and enforced adequately. The management strategy was considered by ICES to switch from the recovery phase to the long-term phase in 2013. Changes to the stock assessment and reference points in 2015 and 2017 imply a need to re-evaluate the management strategy to ascertain if it can still be considered precautionary under the new stock perception. Until such an evaluation is conducted, the ICES advice is based on the MSY approach.

3.3.3 North Sea Haddock (*Melanogrammus aeglefinus*)

3.3.3.1 Background and biology

Haddock is a demersal species found on both sides of the northern Atlantic Ocean. It has a stock structure similar to the cod, except that it does not occur in the Baltic Sea. Most of the haddock are found north of a line from Newcastle to Hanstholm in Denmark. ICES assesses the haddock in the North Sea, West of Scotland and in the Skagerrak as a single stock, ICES (2017) Advice on North Sea Haddock.

Haddock in the North Sea is most commonly found at depths of 40 to 130 m, and in temperatures from 2 to 10 C. Haddock range in size between 30 and 70 cm weighing 0.9 to 1.8 kilograms. Growth is rapid. However, the degree to which younger fish contribute to reproductive success of the population is unknown. In the North Sea, the haddock becomes mature at 2-3 years of age, at a length of about 30 cm. A five-year-old haddock is 38-45 cm long. Haddock spawns in March-May in central areas of the North Sea. Spawning occurs between January and June, peaking during late March and early April. An average-sized female produces approximately 850,000 eggs, and larger females are capable of producing up to 3 million eggs each year.

Nursery areas are coastal areas in Moray Firth, around the Orkneys and Shetland, and along the shelf at about 200 m depth from Shetland to Skagerrak. The haddock in most areas occasionally produces very strong year classes which may carry the fishery for several years. Juveniles are found in shallower waters and larger adults deeper water. Generally, adult haddock do not make long migrations as do the younger fish, but seasonal movements have been known to occur across all ages.

The haddock is mainly feeding on benthos (bottom-living animals) like bristle worms, mussels and serpent stars, but sandeels and herring eggs are also part of the diet.

3.3.3.2 Fishery

The fishery is mixed with the cod fishery. It occurs mainly in the Northern North Sea (IVa) and mainly with trawl, Table 22.

Table 22 North Sea Haddock. Catch (t) for Norwegian vessels 2014-2016 by gear and by ICES subdivisions. Source: Fiskeridirektoratet downoaded 10/10/2017

	IIIa			IVa			IVb			VIa		
	2014	**2015**	**2016**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**
Purse seine	0	0	0	2	2	1	0	0	0	0	0	0
Gillnets	16	18	15	221	193	242	2	1	7	0	0	0
Jigs	0	0	0	1	1	0	0	0	0	0	0	0
Long Line	0	0	4	255	290	170	75	65	46	0	5	1
Danish seine	8	4	6	137	103	110	13	8	7	0	0	0
Trawl	61	40	45	1,569	1,085	795	464	252	114	2	2	3
Other gears (incl Pots)	0	0	0	4	2	7	0	0	0	0	0	0
Total Norway	**86**	**63**	**70**	**2,188**	**1,675**	**1,324**	**555**	**326**	**175**	**2**	**7**	**5**

3.3.3.3 Data and Assessment

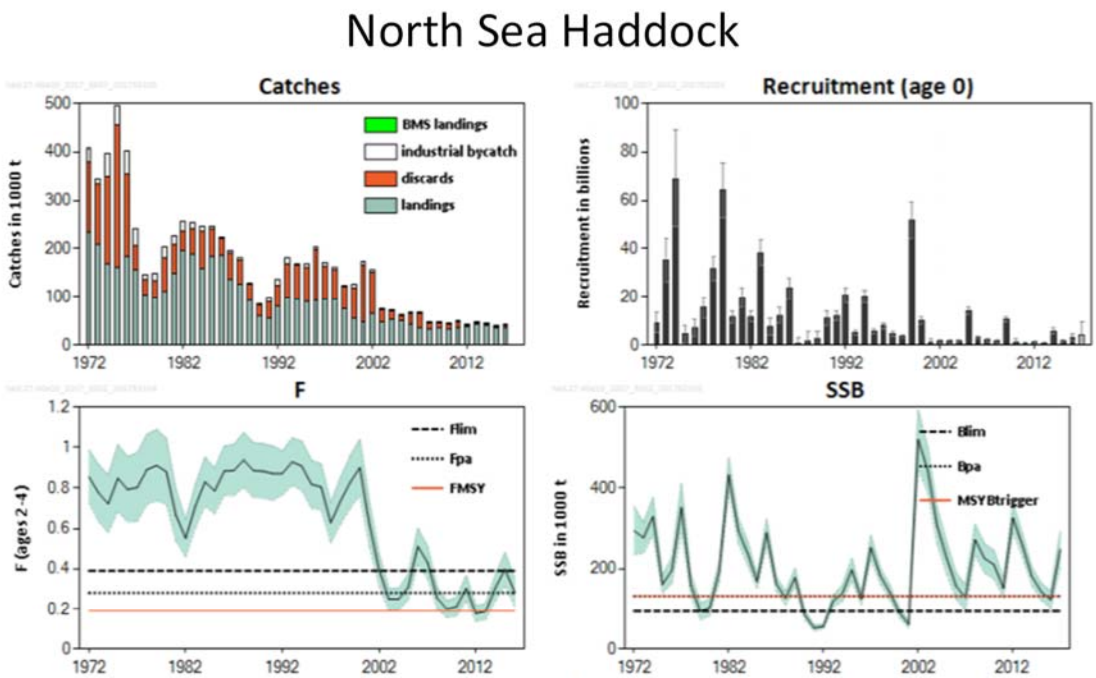
There are data for the commercial catches (international landings, ages from catch sampling), two annual survey indices: IBTS Q1, IBTS Q3. Natural mortality data vary with age and over time (estimates updated ICES, 2015) and based on stomach data.

The assessment is based on the North Sea (Subarea 4 and Subdivision 20) survey indices, which are considered to be sufficiently representative of the whole stock. No combined survey index for the whole area is available.

The stock was recently benchmarked in 2014 (ICES, 2014), at which it was decided that the previously separate stocks in the North Sea and Skagerrak, and West of Scotland, should be assessed as one stock. The 2016 inter-benchmark protocol (ICES, 2016a) corrected an error in the computer code and derived a model configuration that reduced the retrospective basis in the extant assessment model, and re-estimated the reference points accordingly. F_{MSY} was estimated at WGNSSK ICES (2017). ICES issued a revision of the advice for 2018 on 6 December 2017. This revision takes into account the results of the summer survey 2017 (IBTS Q3) which suggested that the advice for 2018 should be lowered from 51037 t (June 2017) to 48990 t; stock status was not changed.

The assessment is based on an age-based analytical assessment (TSA; ICES, 2017, WGNSSK) that uses catches in the model and in the forecast. TSA is a state-space framework for the modelling of commercial catch-at-age, discard and survey data. The original model based on catch-at age data was extended to include survey ICES (2014) includes a detailed description of the method. A main advantage in the context of haddock assessment is that the TSA is better able to deal with the highly varuiable recruitment.

3.3.3.4 Stock status



Haddock in Subarea 4, Division 6.a, and Subdivision 20. State of the stock and fishery relative to reference points.

		Fishing pressure					Stock size			
		2014	2015	2016			2015	2016	2017	
Maximum sustainable yield	F_{MSY}	✗	✗	✗	Above	MSY $B_{trigger}$	✓	✗	✓	Above trigger
Precautionary approach	F_{pa},F_{lim}	O	✗	O	Increased risk	B_{pa},B_{lim}	✓	O	✓	Full reproductive capacity
Management plan	F_{MGT}	–	–	–	Not applicable	B_{MGT}	–	–	–	Not applicable

Figure 4 North Sea Haddock (Subarea 4, Division 6.a and Subdivision 20). Stock status and stock trends. Source ICES (2017) North Sea haddock advice, Figure 1 and Table 1

Figure 4 summarises the current status of the haddock stock and trends. Fishing mortality (F) has been fluctuating above F_{MSY} for most of the time-series and is above F_{MSY} in 2016. Spawning–stock biomass (SSB) has been mostly above MSY $B_{trigger}$ since 2002. Recruitment since 2000 has been characterized by a low average level with occasional larger year classes, the size of which is diminishing. The 2014 recruitment estimate is higher than recent low recruitment, but is still below the long-term average.

Table 23 Haddock in Subarea 4, Division 6.1 and Subdivision 20, Reference points, values and their technical basis. Source. ICES *2017(North Sea Haddock advice Table 5 (Modified).

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger}$	132000 t	Bpa	ICES (2016) Haddock Benchmark
	F_{MSY}	0.194 Upper: 0.194 Lower 0.167	EQsim analysis based on the recruitment period 2000– 2015	ICES (2017) WGNSSK
Precautionary approach	B_{lim}	94000 t	Lowest estimated SSB that resulted in high recruitment (1979)	ICES (2016) Haddock Benchmark
	B_{pa}	132000 t	Blim × exp(1.645 × 0.2) ≈ 1.4 × Blim	
	F_{lim}	0.384	EQsim analysis based on recruitment period 2000– 2015	
	F_{pa}	0.274	Flim × exp(−1.645 × 0.2) ≈ Flim / 1.4	
Management plan	SSB_{mgt}	100000 t 140000 t	Former Btrigger values Blim and Bpa	EU–Norway management strategy
	F_{mgt}	0.3	Management strategy evaluation	

3.3.3.5 Management

The stock is shared between EU and Norway and therefore managed under the EU/Norway fisheries agreement, See Agreed Record (2 December 2016, Annex II).

The management plan is presented in the Agreed record (2 December 2016) and is to be updated. The Management plan includes

- A maximum fishing mortality (0.3) for SSB > 140,000t
- A reduction scheme for fishing mortality if SSB < 140,000 t and further reduction if SSB <100,000 t

3.3.4 Northern Hake (*Merluccius merluccius*)

3.3.4.1 Background and biology

(based on Pawson et al (2014) and http://www.imr.no)

European hake is widely distributed over the Northeast Atlantic shelf. Two hake stocks are distinguished for management purposes and are managed and assessed as two separate stocks in the ICES area: the so called northern stock, in Divisions IIIa, Subareas IV, VI and VII and Divisions VIIIa, b, d, and the southern stock in Divisions VIIIc and IXa along the Spanish and Portuguese coasts. The Norwegian fishery exploits the Northern stock in the North Sea (Subarea 4) West of Scotland (Division 6.a) and in Skagerrak (Subdivision 20). As with other Northeast Atlantic stocks, there has been an expansion of the hake stock into northern waters. This was examined at a November 2016 workshop (ICES, 2017a) which confirmed that the changes in the stock distribution have occurred at the northern limits of its distribution: west and north of Scotland, northern North Sea and Skagerrak. This shift has implications for management and the hake stock has therefore been moved from being an EU managed stock to being managed under the EU-Norway fishery agreement.

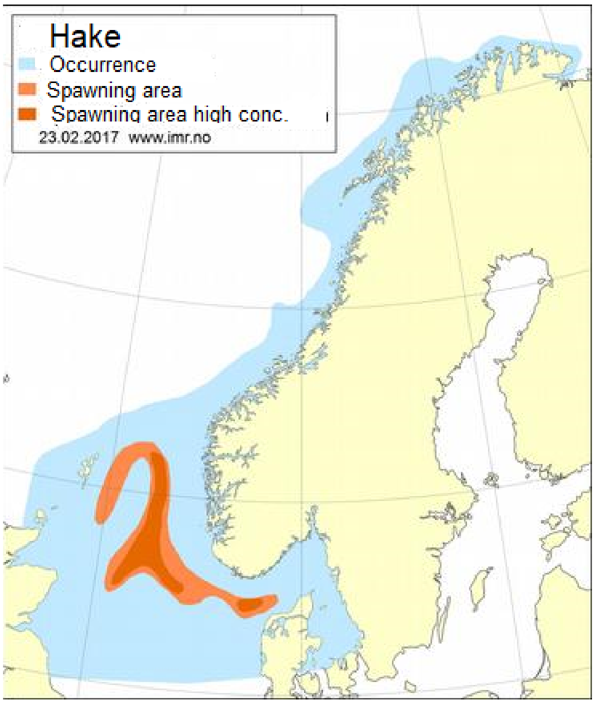


Figure 5 **Northern Hake. Area of occurrence and spawning. Source http://www.imr.no**

Hake has maximum size of 140 cm and maximum weight of 13 kg. The lifespan is up to 12 years. It occurs in the North Sea, Skagerrak / Kattegat and the Norwegian fjords, with spawning areas in the Bay of Biscay and west of Ireland / England along the 200 m isobaths, North Sea and Norwegian fjords, Figure 5. Hake that is distributed along the Spanish coast and in the Bay of Biscay spawns mainly between January and June, whilst specimens in Norwegian waters appear to spawn between July and October. Estimating the age of hake is difficult partly because of false annual rings associated with environmental changes and, also because of unclear otolith cores. Recaptures from tagging studies done off the coast of France have shown that hake grow quicker than previously assumed. Based on the comparison of genetic material hake in the North Sea seems to be different to fish west of Scotland and in the Mediterranean Sea.

Hake is found close to the bottom at 50-600 meters depth during the day, but may migrate upwards into shallower depths at night to feed. The main preys include mackerel, herring, blue whiting and mesopelagic nekton (lantern fish, hatchet fish, shrimps, and krill). Stomach content analysis have also shown that hake prey on hake, but that the extent of cannibalism depends on fish size and location.

3.3.4.2 Fishery

Landings from the North Sea have increased the last 5 years, and reduced fishing mortality is unlikely to be the reason for the observed increase in abundance, i.e. the increase is driven by environmental factors. Catch data for 204-2016 are given in Table 24.

Table 24 Northern hake in the North Sea. Catch (t) by gear and by ICES subdivision for 2014-2016 by Norwegian vessels. Source: Fiskeridirektoratet downloaded 10/10/2017

	IIIa			IVa			IVb			VIa		
Hake	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**
Purse seine	0	0	0	0	1	2	0	0	0	0	0	0
Gillnets	19	6	3	317	423	429	34	5	50	0	0	0
Jigs	0	0	0	0	0	0	0	0	0	0	0	0
Long Line	0	0	0	19	25	8	0	0	0	0	1	0
Danish seine	2	8	1	195	15	209	3	1	7	0	0	0
Trawl	15	21	23	2,635	3,756	5,049	7	48	123	22	90	71
Other gears (incl Pots)	0	0	0	0	76	151	0	0	0	0	0	0
Total Norway	**35**	**36**	**27**	**3,166**	**4,296**	**5,849**	**44**	**53**	**179**	**22**	**91**	**71**

3.3.4.3 Data and Assessment

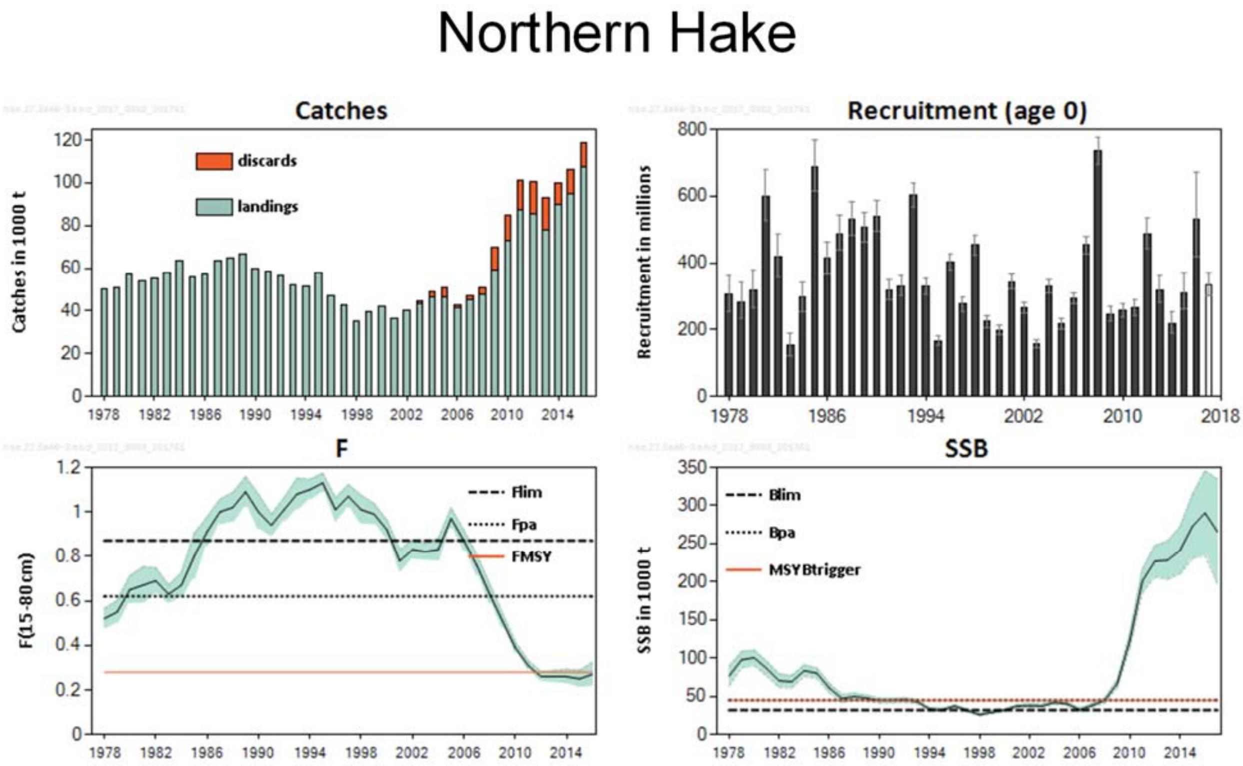
There are data for all Commercial landings and there are sampling data (in particular length compositions) for these landings. There are logbook statistics available. Furthermore, the stock status and trend are monitored by four annual survey indices (EVHOE-WIBTS-Q4, SpPGFS-WIBTS-Q3, IGFS-WIBTS-Q4, and RESSGASC).

The assessment is based on a Length-based model (SS3), see Stock Annex, and Methot (2000). The model, as used for the hake assessment, uses landings and some discards in the model. Additional discards are then included to calculate a catch forecast. The data are presented as quarterly length compositions of the catches.

3.3.4.4 Stock status

The spawning-stock biomass (SSB) has increased significantly since 2006 and is well above historical estimates. Fishing mortality (F) has decreased significantly after 2005, and has been below FMSY since 2012. The recruitment (R) estimate for 2016 is above average, Figure 6.

The uncertainty in the assessment is relatively high, with large changes in biomass estimates in



Hake in subareas 4, 6, and 7, and in divisions 3.a, 8.a–b, and 8.d, Northern stock. State of the stock and fishery relative to reference points.

	Fishing pressure					Stock size				
		2014	2015	2016			2015	2016	2017	
Maximum sustainable yield	F_{MSY}	✓	✓	✓	At FMSY	MSY $B_{trigger}$	✓	✓	✓	Above trigger
Precautionary approach	F_{pa},F_{lim}	✓	✓	✓	Harvested sustainably	B_{pa},B_{lim}	✓	✓	✓	Full reproductive capacity
Management plan	F_{MGT}	–	–	–	Not applicable	SSB_{MGT}	–	–	–	Not applicable

Figure 6 Northern Hake. Status of stock and stock trends. Source: ICES (2017) ICES Advice Northern hake, Figure 1 and Figure 1

consecutive years. The model confidence intervals are an underestimate of uncertainty because they are narrower than inter-annual changes in estimates in consecutive years. There is a lack of tuning data for the earlier years of the assessment for some areas outside of subareas 7 and 8, and for the larger individuals in the population. The data compilation of this stock is very complicated because it is exploited by several countries and the assessment model configuration is complex. In turn, the assessment model is very sensitive to the data and the settings used.

The Norwegian fleet observes the discard ban. Discarding of juvenile hake can be substantial in some areas and fleets. Discarding of large individuals has increased in recent years because of quota restrictions in certain fleets. Some fleets fishing this stock have been under the EU landing obligation since 2016. However, the landing obligation (Discard ban) does not apply to all fleets fishing hake.

3.3.4.5 Management

The stock was until 2017 managed under the EU CFP, EU (2013). The specific management plan that is applicable is EU (2004). However, this plan is based on precautionary reference points that are no longer appropriate. ICES has not evaluated this plan. Until a new multi-annual plan is developed, TACs would be set according to ICES scientific advice and its MSY approach to achieve or maintain the stock at maximum sustainable yield (Paragraph 9 of EC, 2015a).

The revised reference points are summarised in the text Table below Hake in subareas 4, 6, and 7, and in divisions 3.a, 8.a–b, and 8.d, Northern stock. Reference points, values, and their technical basis. The text Table is based on ICES. (2016). EU request to ICES to provide FMSY ranges for selected stocks in ICES subareas 5 to 10. In Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 5, Section 5.4.1.

Framework	Reference point	Value	Technical basis
MSY approach	MSY Btrigger	45,000 t	Bpa
	FMSY	0.28	Stochastic simulations on a segmented regression stock– recruitment relationship.
Precautionary approach	Blim	32,000 t	A low biomass which was followed by a quick recovery. ICES (2016b)
	Bpa	45,000 t	1.4 × Blim
	Flim	0.87	Fishing mortality resulting in a 5% probability of SSB falling below Blim.
	Fpa	0.62	Flim/1.4

The overarching objective of the management strategy is laid down in Article 2 of EC (2013), in particular application of the precautionary approach and exploitation which maintains stocks above levels which can produce maximum sustainable yield.

As the northern hake stock is increasingly present in the North Sea, the EC and Norway have agreed that it is a shared stock and that joint management measures should be considered (Article 6.3 in ECNO, 2017). These plans would codify what is stipulated by the Common Fishery Policy – application of the precautionary approach and achievement of MSY-based management consistent with ICES scientific advice.

TACs conform to ICES advice based on the MSY approach and thus F_{MSY} and the precautionary approach which reduces fishing mortality below B_{PA} and as B_{LIM} is approached.

3.4 Principle Two: Ecosystem Background

3.4.1 Retained species

Landing obligation was implemented in Norway in 1987. According to data provided by the Directorate of Fisheries, the following species were retained by the different UoCs during 2015 and 2016.

Table 25: Landing records (in tonnes) for the Danish seine fleet in 2016 and 2015.

Danish seine	2016 catch (tonnes)	%	2015 catch (tonnes)	%
Saithe	314	29,93	41	11,17
Cod	338	32,22	176	47,96
Haddock	151	14,39	131	35,69
Hake	237	22,59	18	4,90
Ling	4	0,38	0	0
Monkfish	5	0,48	1	0,27
TOTAL	1.049	100,00	367	100,00

Table 26: Landing records (in tonnes) for the purse seine fleet in 2016 and 2015.

Purse seine	Catch 2016 (tonnes)	%	Catch 2015 (tonnes)	%
Saithe	2.342	100	4263	100
TOTAL	2342	100	4263	100

Table 27: Landing records (in tonnes) for the hooks and lines fleet in 2016 and 2015.

Hooks and lines	Catch 2016 (tonnes)	%	Catch 2015 (tonnes)	%
Saithe	455	24,70	678	28,46
Cod	1.102	59,83	1.218	51,13
Haddock	264	14,33	419	17,59
Hake	8	0,43	26	1,09
Tusk	3	0,16	13	0,55
Ling	10	0,54	27	1,13
Monkfish	0	0	2	0,08
TOTAL	1.842	100	2.383	100

Table 28: Landing records for the gillnet fleet in 2016 and 2015 (in tonnes)

Gill nets	Catch 2016 (tonnes)	%	Catch 2015 (tonnes)	%
Saithe	3.908	43,67	4.557	52,33
Cod	3.539	39,55	2882	33,09
Haddock	360	4,02	284	3,26
Hake	770	8,60	676	7,76
Tusk	16	0,18	16	0,18
Ling	299	3,34	242	2,78
Monkfish	54	0,60	49	0,56
Redfish	3	0,03	3	0,03
TOTAL	8.949	100	8.709	100

Table 29: Landing records (in tonnes) for the demersal trawl fleet in 2016 and 2015.

Demersal trawl	Catch 2016 (tonnes)	%	Catch 2015 (tonnes)	%
Saithe	25.057	69,88	26.492	73,27
Cod	2.164	6,04	2060	5,70
Haddock	1.379	3,85	1769	4,89
Hake	6.500	18,13	5333	14,75
Greenland Halibut	92	0,26	104	0,29
Tusk	14	0,04	11	0,03
Ling	524	1,46	305	0,84
Monkfish	121	0,34	67	0,19
Redfish	4	0,01	11	0,03
Greater silver smelt	0	0	7	0,02
TOTAL	35.855	100	36.159	100

Table 30: Landing records (in tonnes) by other gears in 2016 and 2015.

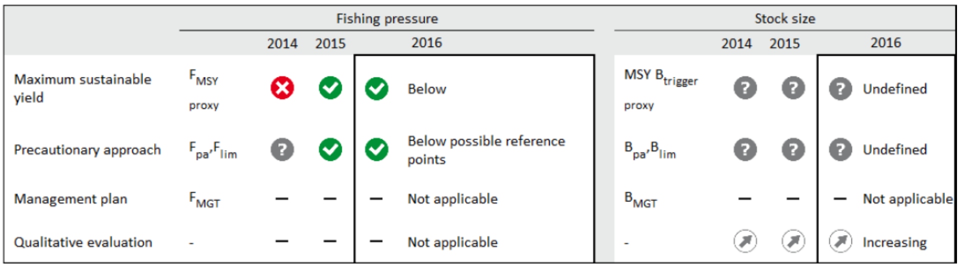
Other gears	Catch 2016 (tonnes)	%	Catch 2015 (tonnes)	%
Saithe	46	16,20	79	28,11
Cod	54	19,01	34	12,10
Haddock	13	4,58	7	2,49
Hake	154	54,23	154	54,80
Tusk	1	0,35	1	0,36
Ling	12	4,23	4	1,42
Monkfish	4	1,41	2	0,71
TOTAL	284	100	281	100

According to the data shown in Tables 25 to 30, main retained species to consider for most of the UoA would be saithe, cod, haddock and hake. Minor retained species to consider would be:

- ling and monkfish for the Danish seine fleet;
- tusk, ling, monkfish and redfish for the gill net fleet;
- tusk, ling and monkfish for the hooks and lines fleet;
- Greenland halibut, tusk, ling, monkfish, redfish and greater silver smelt for the demersal trawl fleet;
- and tusk, ling and monkfish for other gears.
- There are no main not minor retained species for the purse seine fleet.

The stock status of main retained species (saithe, cod, haddock and hake) has already been described in the Principle 1 background section. Stock status of minor species is described as follows based on scientific advice:

- Ling (*Molva molva*): ICES 2017 advice for ling in subareas 6–9, 12, and 14, and in divisions 3.a and 4.a, suggests that when the precautionary approach is applied, catches should be no more than 17 695 tonnes in each of the years 2018 and 2019. Landings in all areas assessed in the advice are within those limits. Of those, 849 tonnes were landed by the Norwegian demersal fleet in the North Sea. The advice is based on a standardized CPUE (Catch per Unit Effort) series from the Norwegian longline fleet which shows an increasing trend. Other time-series covering smaller areas of the stock distribution show a similar trend.



	Fishing pressure				Stock size			
		2014	2015	2016		2014	2015	2016
Maximum sustainable yield	F_{MSY} proxy	✗	✓	✓ Below	MSY $B_{trigger}$ proxy	?	?	? Undefined
Precautionary approach	F_{pa}, F_{lim}	?	✓	✓ Below possible reference points	B_{pa}, B_{lim}	?	?	? Undefined
Management plan	F_{MGT}	–	–	– Not applicable	B_{MGT}	–	–	– Not applicable
Qualitative evaluation	-	–	–	– Not applicable	-	↗	↗	↗ Increasing

Figure 7: Ling in subareas 6–9, 12, and 14, and in divisions 3.a and 4.a. State of the stock and fishery relative to reference points. The status evaluation is based on the reference point proxy for FMSY using the length-based indicator method (ICES, 2017).

The stock size relative to candidate reference points is unknown, but the stock has been increasing since 2004.

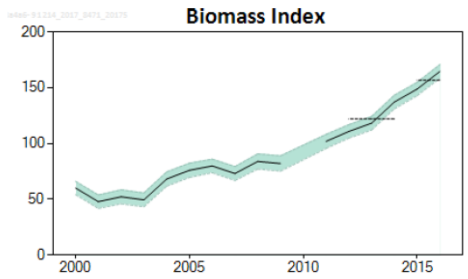
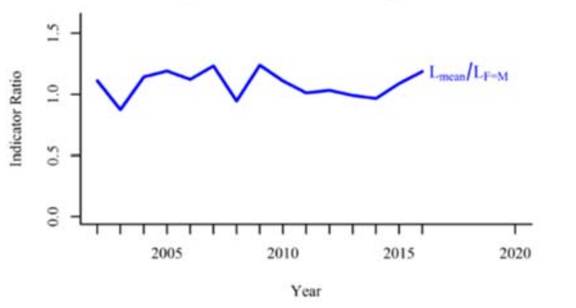
a.Biomass ratio	b.Index ratio
	

Figure 8: Biomass index (a) and index ratio (b) showing that fishing mortality is below the proxy of the MSY reference points. (Index ratio: Lmean/LF = M from the length-based indicator method used for the evaluation of the exploitation status).

- Monkfish (*Lophius piscatorius*) According to ICES 2017 advice on anglerfish in subareas 4 and 6 and Division 3.a, the stock size indicator shows an increasing biomass since 2011 and the relative harvest rate has been relatively stable since 2014. The stock status relative to candidate reference points is unknown. ICES advises that when the pre-cautionary approach is applied, catches in 2018 should be no more than 26.408 tonnes. (if discard rates do not change from the average of the last 3 years, this implies landings of no more than 25.563 tonnes). Landings by the Norwegian demersal fishery were 184 tonnes in 2016 and 121 tonnes in 2015.

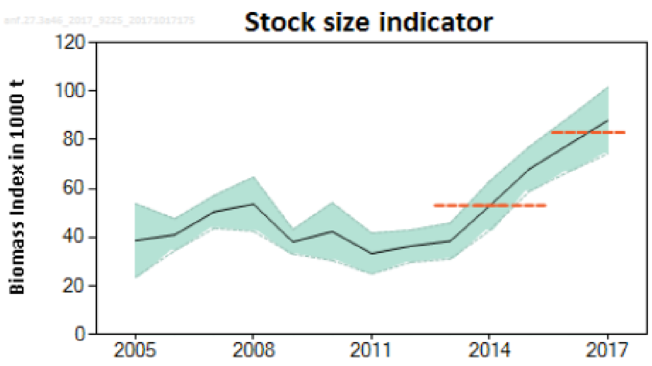


Figure 9: Stock biomass (thousands tonnes) from SCO-IV-VI-AMISS-Q2. The dashed horizontal lines indicate the average of the most recent two years and the previous three years. The shaded area represents the 95% confidence interval.

- Tusk (*Brosme brosme*): According to ICES 2017 Advice on tusk in subareas 4 and 7–9, and in divisions 3.a, 5.b, 6.a, and 12.b (Northeast Atlantic), when the precautionary approach is applied, catches should be no more than 8984 tonnes in each of the years 2018 and 2019. Landings by the Norwegian North Sea demersal fishery were 34 tonnes in 2016 and 41 tonnes in 2015. Discarding is considered to be negligible.

	Fishing pressure					Stock size				
		2014	2015	2016			2014	2015	2016	
Maximum sustainable yield	F_{MSY} proxy	✓	✓	✓	Below	MSY $B_{trigger}$ proxy	✓	✓	✓	Above
Precautionary approach	F_{pa},F_{lim}	✓	✓	✓	Harvested sustainably	B_{pa},B_{lim}	✓	✓	✓	Full reproductive capacity
Management plan	F_{MGT}	–	–	–	Not applicable	B_{MGT}	–	–	–	Not applicable
Qualitative evaluation	-	–	–	–	Not applicable	-	–	–	–	Not applicable

Figure 10: State of the stock and fishery relative to proxy reference points.

- Beaked redfish (*Sebastes mentella*): There is no ICES advice for the stock in the North Sea. Landings by the Norwegian North Sea demersal fishery under assessment were 7 tonnes in 2016 and 14 tonnes in 2015.
- Greenland halibut (*Reinhardtius hippoglossoides*): There is no ICES advice for the stock in the North Sea. Landings by the Norwegian North Sea demersal fishery were 92 tonnes in 2016 and 104 tonnes in 2015. All catches were taken by the demersal trawl UoC.
- Greater silver smelt (*Argentina silus*): No reference points are defined for this stock. An attempt has been made this year to calculate MSY proxy reference points for this stock. However, there were concerns about the quality of the input parameters for the analysis and further investigation is needed (ICES, 2017). The acoustic survey time-series in Subarea 2 is considered the best stock indicator available and although it is short and intermittent it is used as the basis for the advice. The Norwegian shrimp survey in Division 3a also shows more than a 20% increase in abundance.
  ICES advises that when the precautionary approach is applied, catches should be no more than 15 656 tonnes in each of the years 2018 and 2019. Landings by all fleets in subareas 1, 2 and 4, and in Division 3a in 2016 were 18893 tonnes. As regards the Norwegian North Sea demersal fishery, no catches of greater silver smelt were taken during 2016. Catches in 2015 were 7 tonnes.

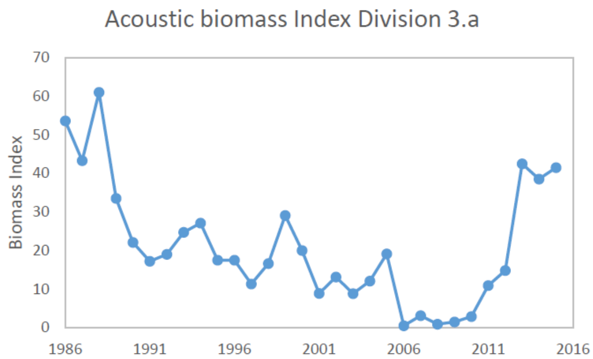


Figure 11: Norwegian acoustic biomass index from Subarea 3a (in tonnes).

3.4.2 Bycatch species

Since the implementation of the landing obligation in Norway in 1987, discarding is not permitted. In practice this means that all commercial species are landed and recorded on sales- slips, but non-commercial species and small individuals of commercial species may still be discarded. Besides, Regulation J-250-2013, protecting basking sharks, spurdogs, porbeagles and silky sharks, obliges the discarding of certain shark species, as long as they are alive, in order to minimise their mortality. Unfortunately, there are no records by the commercial fleet about the identification or number of individuals released every year, so there is no option to measure trends of these interactions. Non-fatal interactions with marine mammals or birds are not recorded either.

There is no formal observer programme, so there are no direct observations on the level of discarding or the species composition of discards from the Norwegian fleet. However, there is information available regarding the expected catch composition of the different fishing gears thanks to the research undertaken by the IMR reference fleet. Crew members in the reference fleet vessels record all interactions, including those with released individuals.

The data gathered through the reference fleet is sufficient to estimate which could be the main and minor bycatch species in the Norwegian North Sea demersal fisheries. Data collected in 2016 shows that there are no main bycatch species to consider for any UoC. Generally speaking, the proportion of minor species in the catch is very low, with the exemption of skates, rays and sharks in the longline and gillnet fisheries, where the proportion could reach 4% of the catch.

Minor bycatch species present in the catch composition of the reference fleet are:

- For the 2 vessels in the Danish seine reference fleet (inshore), minor bycatch species are spinetail and stone crabs.
- For the 5 vessels in the purse seine reference fleet there were no bycatch species in the catch.
- For the 3 vessels in the longline reference fleet (inshore and offshore), minor bycatch species were crabs, cuckoo ray, rabbit fish, blackmouth dogfish, six-gilled shark, shagreen ray, round ray, blonde ray, sandy ray, longnosed skate, unidentified skates and velvet belly.
- For the 10 vessels in the demersal gillnet fleet (inshore and offshore), there is a high number of minor species to consider, such as sea cucumbers, starfishes, crustaceans, crabs, squids, rabbit fish, spine tail, sailray, blackmouth dogfish, long-nosed skate, velvet belly, spotted ray, cuckoo ray, catsharks, other unidentified skates and rays and 4 eider ducks.
- For the 6 vessels in the demersal trawl reference fleet (inshore and offshore) minor bycatch species to consider are spinetail, rabbit fish, and other unidentified skates and rays.
- For the 2 vessels in the inshore pots reference fleet, minor bycatch species were common whelk and crabs (*Munida spp.*).

There is limited information on the status or populations of all minor bycatch species, although certain research is undertaken and published by ICES. Due to the high number of minor bycatch species, the low proportion of each of them, and the limited information regarding their stock status, minor bycatch species have been grouped to facilitate their evaluation.

3.4.3 Endangered, threatened or protected species

Expected ETP species would include birds and marine mammals present in the area. According to ICES 2016 ecosystem overview of the Greater North Sea area, there are at least 19 species of seabird breeding in the area, in particular large numbers of northern gannet (*Morus bassanus)*, herring gull (*Larus argentatus)*, lesser black-backed gull (*Larus fuscus)*, common guillemot (*Uria aalge*) and black-legged kittiwake (*Rissa tridactyla*, this one protected by the Norwegian red list of endangered species). The North Sea is used for feeding, both by breeding species on its coasts and by birds from further afield during the non-breeding season. Broadly, the numbers of breeding seabirds increased until about 2000, after which there was a decline. As regards marine mammals, two species of seal occur commonly in the North Sea: grey seal (*Halichoerus grypus)* and harbour seal (*Phoca vitulina).* Four cetacean species occur commonly or are resident: minke whale (*Balaenoptera acutorostrata)*, harbour porpoise (*Phocoena phocoena)*, white-beaked dolphin (*Lagenorhynchus albirostris)* and bottlenose dolphin (*Tursiops truncates)*. A further five species are considered regular but less common, short-beaked common dolphin (*Delphinus delphis)*, Atlantic white-sided dolphin (*Lagenorhynchus acutus)*, long-finned pilot whale (*Globicephala melas)*, killer whale (*Orcinus orca)* and Risso's dolphin (*Grampus griseus)*. All marine mammals are protected by the EU Habitats Directive.

According to MSC CR v1.3, the team shall define ETP species to consider either as those recognised by national ETP legislation or by the international binding agreement, to which Norway is a signatory country, such as CITES (Convention on International Trade in Endangered Species) and the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals). As regards the ASCOBANS Agreement (Agreement on the Conservation of Small Cetaceans in the Baltic, North East Atlantic, Irish and North Seas) Norway is a non-party range state. However, as the fishing grounds include European waters, the team has decided to take these species into consideration, as well as those covered by the EU Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) and EU Council Regulation 104/2015 fixing fishing opportunities and prohibiting the capture of certain fish species (now superseded by EU CR 120/2018). Besides, the Norwegian red list of endangered species sets the risk level for the different species in Norway. The Marine Resources Acts ensures, through its precautionary approach, that management action is taken when necessary to avoid red-listing of species. Besides, Regulation J-250-2013 specifically protects basking sharks, spurdogs, porbeagle and silky sharks. The IUCN status is also given as a reference of the status of the mentioned stocks as well as OSPAR listing in the North Sea region.

Table 31: ETP species for the Norwegian fleet in the North Sea. (N/A: Not applicable; EN: Endangered; VU: Vulnerable; LC: Least concern; CR: Critically endangered; NT: Near threatened; DD: Data deficient). Species marked with * are not considered ETP as they are not protected by binding agreements, regardless of them been considered as threatened by OSPAR.

Common name	Scientific name	CITES Appendix I	Ascobans	Bonn C.	Norwegian red list (2015)	EU CR 104/2015	EU CR 120/2018	EU habitats directive	Ospar	IUCN redlist
Sturgeon	*Acipenser sturio*	**Yes**	No	**Yes Annex I**	N/A	No	No	**Annex II and IV**	Yes	N/A
Razorbill	*Alca torda*	No	No	**No**	**EN**	No	No	No	No	NT
Allis shad	*Alosa alosa*	No	No	No	N/A	No	No	**Annex II**	Yes	N/A
Starry ray	*Amblyraja radiata*	No	No	No	LC	**Yes**	**Yes**	No	No	VU
European eel	*Anguilla anguilla*	No	No	**Yes Annex II**	**VU**	No	No	No	Yes	CR
Narrow sawfish	*Anoxypristis cuspidate*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	EN
Minke whales	*Balaenoptera acutorostrata*	**Yes**	No	No	LC	No	No	**Annex IV**	No	LC
Sei whale	*Balaenoptera borealis*	**Yes**	No	**Yes Annex I**	N/A	No	No	**Annex IV**	No	EN
Silky shark	***Carcharhinus***	No	No	**Yes Annex II**	N/A	No	No	No	No	NT

Common name	Scientific name	CITES Appendix I	Ascobans	Bonn C.	Norwegian red list (2015)	EU CR 104/2015	EU CR 120/2018	EU habitats directive	Ospar	IUCN redlist
	falciformes									
White shark	*Carcharodon carcharias*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	VU
Loggerhead seaturtle	*Caretta caretta*	No	No	No	N/A	No	No	**Annex II**	No	VU
Leafscale gulper shark	*Centrophorus squamosus*	No	No	No	N/A	**Yes**	**Yes**	No	Yes	VU
Portuguese dogfish	*Centroscymnus coelolepis*	No	No	No	N/A	**Yes**	**Yes**	No	Yes	NT
Basking shark	***Cetorhinus maximus***	No	No	**Yes Annex I and II**	**EN**	**Yes**	**Yes**	No	Yes	EN
Houting	*Coregonus oxyrinchus*	No	No	No	N/A	No	No	**Annex II**	Yes	N/A
Kitefin shark	*Dalatias licha*	No	No	No	N/A	**Yes**	**Yes**	No	No	NT
Birdbeak dogfish	*Deania calcea*	No	No	No	N/A	**Yes**	**Yes**	No	No	LC
Short-beaked common dolphins	*Delphinus delphis*	No	**Yes**	**Yes Annex II**	N/A	No	No	**Annex IV**	No	LC
Common Skate	*Dipturus batis*	No	No	No	**CR**	**Yes**	**Yes**	No	Yes	CR
Common skate	*Dipturus cf. flossada*	No	No	No	**CR**	**Yes**	**Yes**	No	Yes	CR
Common skate	*Dipturus cf. intermedia*	No	No	No	**CR**	**Yes**	**Yes**	No	Yes	CR
Great lantern shark	*Etmopterus princeps*	No	No	No	N/A	**Yes**	**Yes**	No	No	DD
Smooth lantern shark	*Etmopterus pusillus*	No	No	No	N/A	**Yes**	**Yes**	No	No	LC
Puffin	*Fratercula arctica*	No	No	No	**VU**	No	No	No	No	VU
Fulmar	*Fulmarus glacialis*	No	No	No	**EN**	No	No	No	No	LC
Cod*	*Gadus morhua*	No	No	No	N/A	No	No	No	Yes	VU
Tope shark	*Galeorhinus galeus*	No	No	No	N/A	**Yes**	**Yes**	No	No	VU
Long-finned pilot whales	*Globicephala melas*	No	**Yes**	No	LC	No	No	**Annex IV**	No	DD
Risso's dolphin	*Grampus griseus*	No	**Yes**	No	N/A	No	No	**Annex IV**	No	LC
Grey seal	*Halichoerus grypus*	No	No	No	LC	No	No	**Annex II**	No	LC
Bottlenose whale	*Hyperoodon ampullatus*	**Yes**	**Yes**	**Yes Annex II**	LC	No	No	**Annex IV**	No	DD
Long-snouted seahorse*	*Hippocampus guttulatus*	No	No	No	N/A	No	No	No	Yes	DD
Short-snouted seahorse*	*Hippocampus hippocampus*	No	No	No	N/A	No	No	No	Yes	DD

Common name	Scientific name	CITES Appendix I	Ascobans	Bonn C.	Norwegian red list (2015)	EU CR 104/2015	EU CR 120/2018	EU habitats directive	Ospar	IUCN redlist
Pygmy sperm whale	*Kogia breviceps*	No	**Yes**	No	N/A	No	No	**Annex IV**	No	DD
Atlantic white-sided dolphin	*Lagenorhynchus acutus*	No	**Yes**	**Yes**	LC	No	No	**Annex IV**	No	LC
White beaked dolphins	*Lagenorhynchus albirostris*	No	**Yes**	**Yes**	LC	No	No	**Annex IV**	No	LC
Porbeagle	***Lamna nasus***	No	No	**Yes Annex II**	**VU**	**Yes**	**Yes**	No	Yes	CR
Reef manta ray	*Manta alfredi*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	VU
Giant manta ray	*Manta birostris*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	VU
Humpback whales	*Megaptera novaeangliae*	**Yes**	No	**Yes Annex I**	LC	No	No	**Annex IV**	No	LC
Sowerby's beaked whales	*Mesoplodon bidens*	No	**Yes**	No	DD	No	No	**Annex IV**	No	DD
Longhorned mobula	*Mobula eregoodootenkee*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	NT
Lesser devil ray	*Mobula hypostoma*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	DD
Spinetail mobula	*Mobula japanica*	No	No	**Yes Annex I**	N/A	No	**Yes**	No	No	NT
Shortfin devil ray	*Mobula kuhlii*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	DD
Devil fish	*Mobula mobular*	No	No	**Yes Annex I**	N/A	No	**Yes**	No	No	EN
Munk's devil ray	*Mobula munkiana*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	NT
Lesser Guinean devil ray	*Mobula rochebrunei*	No	No	**Yes Annex I**	N/A	No	**Yes**	No	No	VU
Chilean devil ray	*Mobula tarapacana*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	Vu
Smoothtail mobula	*Mobula thurstoni*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	NT
Killer whale	*Orcinus orca*	No	**Yes**	**Yes Annex II**	LC	No	No	**Annex IV**	No	DD
Sea lamprey	*Petromyzon marinus*	No	No	No	NT	No	No	**Annex II**	Yes	N/A
Harbour seal	*Phoca vitulina*	No	No	No	LC	No	No	**Annex II**	No	LC
Harbour porpoises	*Phocoena phocoena*	No	**Yes**	**Yes Annex II**	LC	No	No	**Annex II**	Yes	LC
Sperm whale	*Physeter macrocephalus*	**Yes**	No	**Yes Annex I and II**	N/A	No	No	**Annex IV**	No	VU
Dwarf sawfish	*Pristis clavata*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	EN
Smalltooth sawfish	*Pristis pectinata*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	CR
Largetooth sawfish	*Pristis pristis*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	CR

Common name	Scientific name	CITES Appendix I	Ascobans	Bonn C.	Norwegian red list (2015)	EU CR 104/2015	EU CR 120/2018	EU habitats directive	Ospar	IUCN redlist
Green sawfish	*Pristis zijsron*	No	No	**Yes Annex I**	N/A	**Yes**	**Yes**	No	No	CR
Balearic shearwater	*Puffinus mauretanicus*	No	No	**Yes**	N/A	No	No	No	Yes	CR
Thornback ray	*Raja clavata*	No	No	No	LC	**Yes (in ICES IIIa)**	**Yes (in ICES IIIa)**	No	Yes	NT
Spotted ray*	*Raja montagui*	No	No	No	N/A	No	No	No	Yes	LC
Guitarfishes	*Rhinobatidae*	No	No	No	N/A	**Yes**	**Yes**	No	No	N/A
Black-legged kittiwake	*Rissa tridactyla*	No	No	No	**EN**	No	No	No	Yes	LC
White skate*	*Rostroraja alba*	No	No	No	N/A	No	No	No	Yes	EN
Salmon*	*Salmo salar*	No	No	No	LC	No	No	No (only for fresh water salmon)	Yes	LC
Golden redfish	*Sebastes marinus*	No	No	No	**EN**	No	No	No	No	N/A
Spurdog	***Squalus acanthias***	No	No	**Yes Annex II**	**EN**	No	No	No	Yes	CR
Angel shark	*Squatina squatina*	No	No	No	N/A	**Yes**	**Yes**	No	Yes	CR
Striped dolphins	*Stenella coeruleoalba*	No	**Yes**	No	N/A	No	No	**Annex IV**	No	LC
Common tern	*Sterna hirundo*	No	No	**Yes**	**EN**	No	No	No	No	LC
Roseate tern	*Sterna dougallii*	No	No	**Yes**	N/A	No	No	No	Yes	LC
Bottle nosed dolphins	*Tursiops truncatus*	No	**Yes**	**Yes Annex I**	N/A	No	No	**Annex II**	No	LC

Species in bold are specifically protected by Norwegian Regulation J-250-2013. Source: DNV-GL

Direct interactions would be those caused by the gear getting in touch with the animal. This may result in casualties or injuries for the individual and damage for the nets. Landing records show no reports of interactions or landings of ETP species. As regards indirect effects, these would be those related to biomass removal by the fishery, affecting prey availability for ETP species.
ETP populations such as marine mammals are monitored by different programs through population estimates. Monitoring of seabirds is carried out through monitoring of the breeding success of birds.

The Norwegian reference fleet collects information on all catches by the 20 vessels which compound the reference fleet.

Data from the Norwegian reference fleet shows that, for all vessels in the high seas fleet south of 62ºNorth, interactions with ETP species during 2016 were as follows: 114 fulmars (*Fulmarus glacialis*), 1 harbour porpoise (*Phocoena phocoena*) and 1 common harbour seal (*Phoca vitulina*).

As regards the IMR reference fleet south 62ºN, during 2016 the different gears had interactions with the following individuals:

- For the 2 vessels in the Danish seine reference fleet: 6 spurdogs (*Squalus acathias*), 1 golden redfish (*Sebastes norvegicus*) and 1 **Thornback ray.**
- For the 5 vessels in the purse seine reference fleet there were no interactions with ETP species in 2016.
- For the 3 vessels in the longline reference fleet: 2 porbeagles (*Lamna nasus*) and 25 spurdogs (*Squalus acanthias*), 1 **Thornback ray and 1 starry ray.**
- For the 10 vessels in the demersal gillnet reference fleet fishery: 2 razorbills (*Alca torda*), 11 harbour porpoise (*Phocoena phocoena*), 4019 spurdogs (*Squalus acanthias*), 3 common harbour seals (*Phoca vitulina*) and 33 Golden redfish (*Sebastes norvegicus*), **6 starry rays, , 3 thornback rays, and 2 tope sharks.**
- For the 6 vessels in the demersal trawl reference fleet there were interactions with **2 thornback rays and 1 starry ray** during 2016.
- For the 2 pot vessels in the inshore reference fleet there were no interactions with ETP species during 2016.

As reported on recorded landings (see Tables 25 to 30) fatal interactions with ETP species were limited to catches of redfish taken by the gillnets and demersal trawl UoC. Moreover, it has not been possible to determine if those redfish individuals were beaked redfish or golden redfish. The stock of Golden redfish is protected by the Norwegian red list (the Marine Resources Act, through its sustainability principle, should take management actions to protect enlisted species), as its status in the ICES areas I and II is weak. There is no ICES advice neither for golden nor beaked redfish in the North Sea region.

Certain gear types have implemented mitigation devices to avoid interactions with ETP species, although these are not mandatory in the Norwegian fleet. The coastal gillnet fleet has pingers to prevent interactions with seals and other marine mammals while longlines have streamers and rotating hooks to prevent interactions with seabirds.

As regards the collection of information of interactions with ETP species, electronic logbooks have a dedicated box to record any interaction with such species, although records so far just show either zero interactions or no recordings of such.

3.4.4 Habitats

According to VMS data provided by the Directorate of Fisheries, the demersal saithe, cod, haddock and hake fisheries in the North Sea take place in the following fishing grounds.

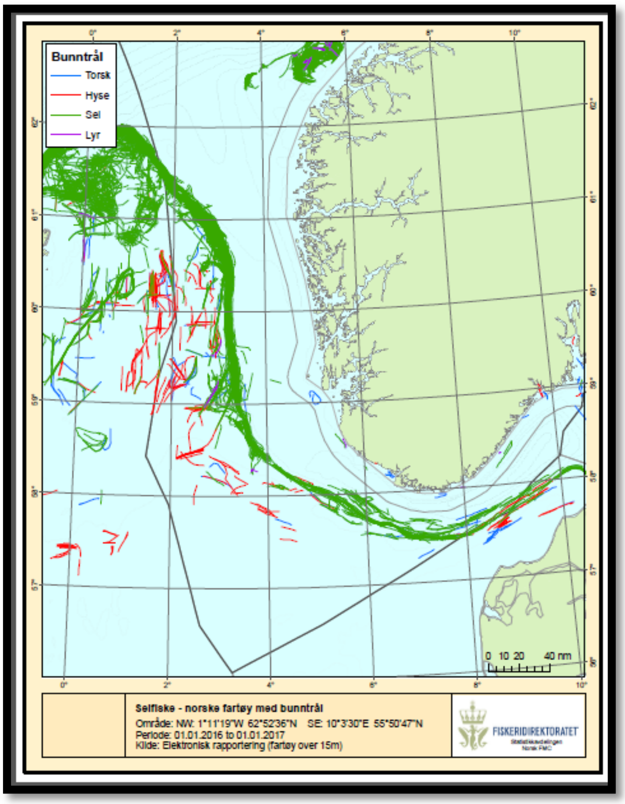


Figure 12: 2016 Fishing activity by Norwegian vessels (demersal trawlers) targeting saithe, cod, hake and haddock in the Greater North Sea. (Blue: cod; red: haddock; green: saithe; purple: hake). Source: Directorate of Fisheries.

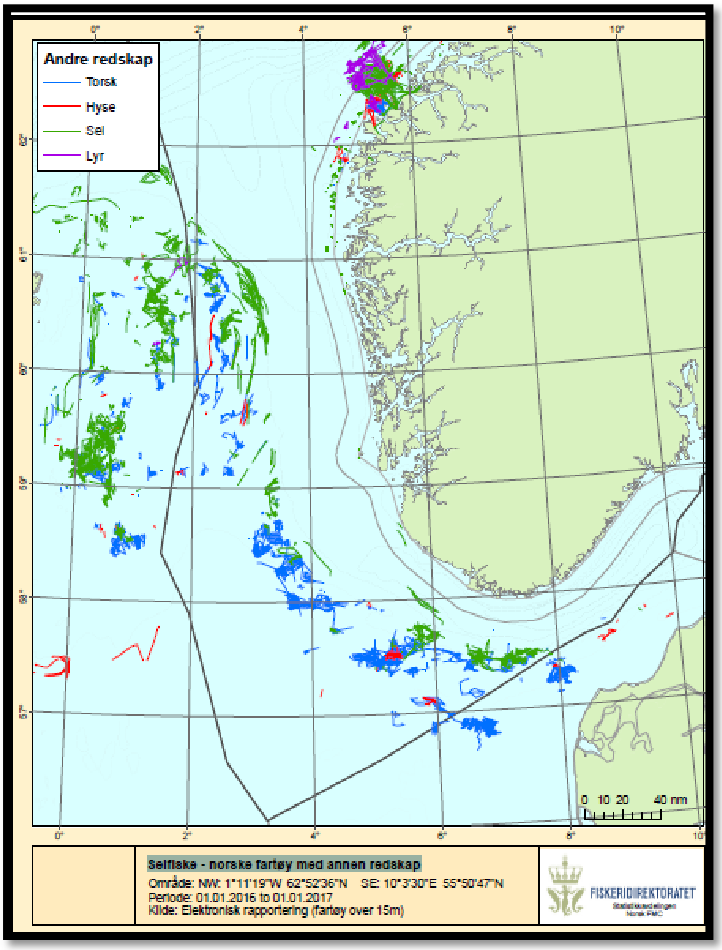


Figure 13: 2016 Fishing activity of Norwegian vessels (non-trawlers) targeting saithe, cod, hake and haddock in the Greater North Sea. Danish seine, Purse seine, hooks and lines and gillnets. (Blue: cod; red: haddock; green: saithe; purple: hake). Source: Directorate of Fisheries.

The European Marine Observation and Data Network (EMODnet) has mapped the North Sea waters to find out that the seabed habitat types in the areas where these fisheries take place ranges broadly within short distances. The seafloor consists of mostly mixed sediments comprised of mud, sand, gravel and rock. In the north, the areas close to the Scottish and Norwegian coasts are rocky, with mud predominant in the other northerly areas. Coarser sands are dominant in the shallow- tidally active south. The patchwork distribution of the sediments is due to glacial deposition during the last ice age. Glaciers from Scotland and Scandinavia deposited large amounts of sand and gravel to the North Sea floor, creating features like the Dogger Bank (Mackinson, S. and Daskalov, G., 2007). **Figure 14** below shows the main sediments in the areas where the fishery takes place.

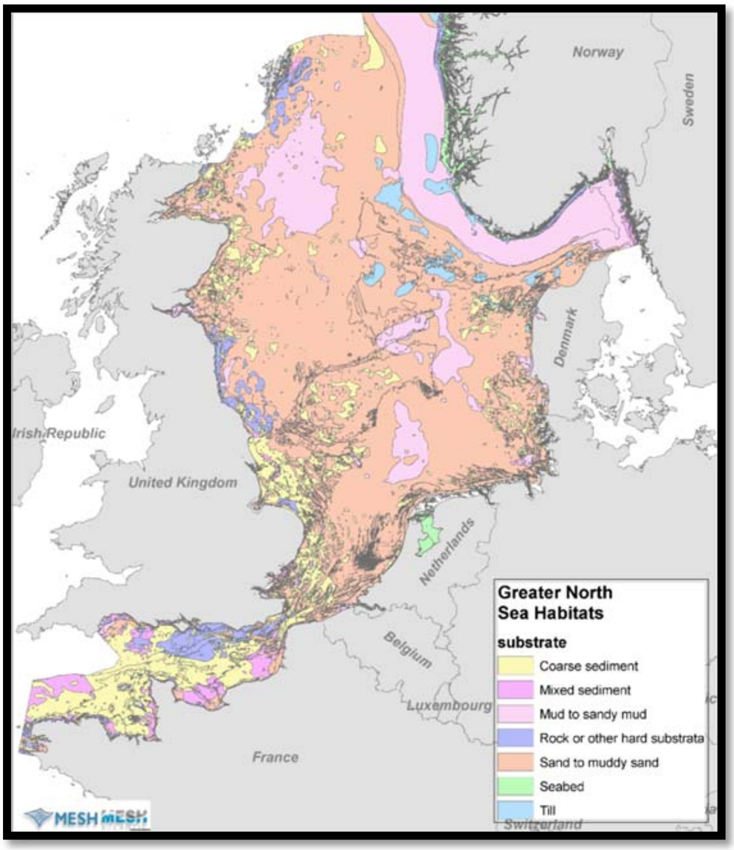


Figure 14: Major substrates on the shelf in the Greater North Sea. Source: **www.emodnet-seabedhabitats.eu**

According to ICES 2016 overview of the North Sea, the benthic substrate in the area is predominantly characterized by soft sediments (from muds to gravel beds). Sediments from mobile muds to coarse sands are present throughout the region. Gravel beds are mainly distributed in the English Channel and the southern North Sea. The North Sea contains limited biogenic and geogenic reefs, except for patches of *Sabellaria spinulosa* reefs and scattered boulder fields. Oysters and Sea grass were common long ago in the central part of the North Sea, but they both have mostly disappeared. The benthic communities present now in the North Sea show a division between communities in the mainly shallow inshore waters in the south (English Channel to German Bight) from those in deeper waters (>50 m) north of the Dogger Bank. In between, the offshore communities of the sandy and muddy areas are also well distinguished (including the Oyster Ground and the sandy Dogger Bank). Coarser substrata, especially in the southwestern North Sea and the eastern English Channel generally support species-rich communities, contrasting the latitudinal (south-to-north) trend towards higher diversity in finer sediments (ICES, 2016).

EU Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), sets different species and areas that fall under protection in EU jurisdiction. Figure 15 below shows areas which are protected by this regulation (blue areas), while red areas show areas protected by the EU Birds Directive.

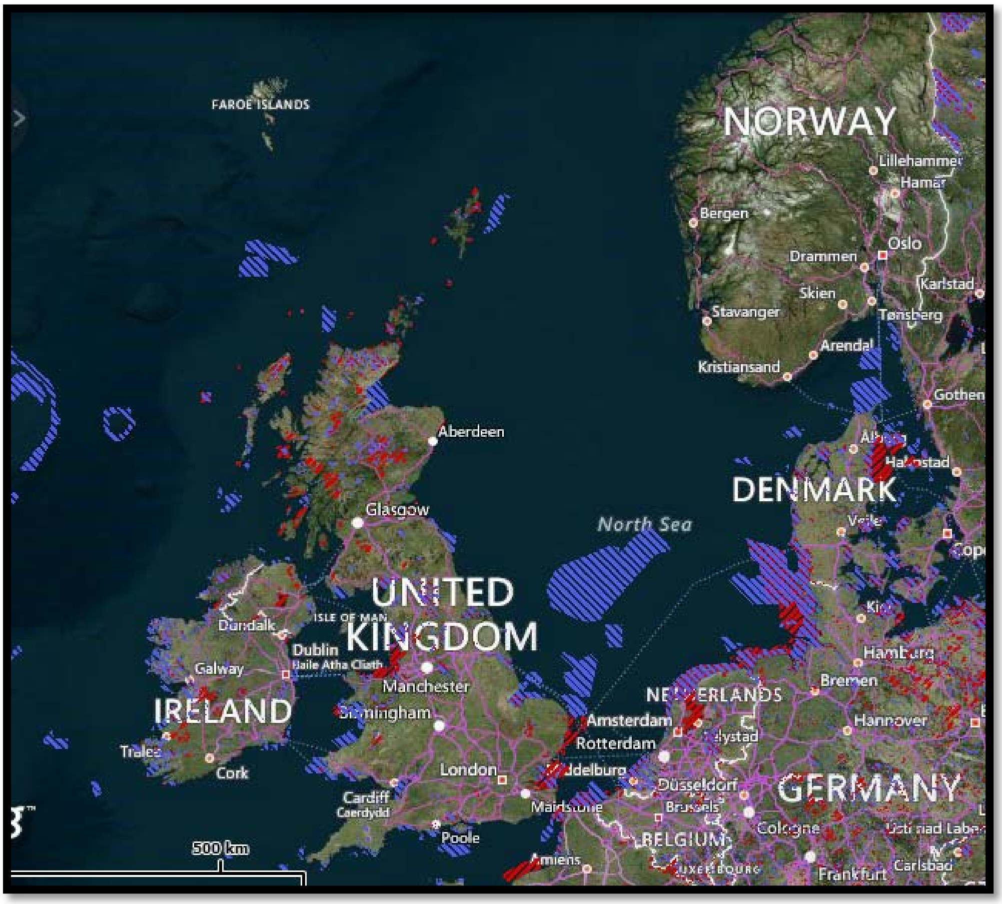


Figure 15: EU Natura 2000 Marine Protected Habitats (in blue) in EU jurisdiction. Source: EU Natura 2000 display map.

The OSPAR Commission also works identifying threatened or declining habitats in the North East Atlantic region. For the North Sea, the OSPAR Commission specifies the following habitats as declining in the Greater North Sea area:

- Coral gardens
- Intertidal *Mytilus edulis* beds on mixed and sandy sediments
- Intertidal muds
- Littoral chalk communities
- *Lophelia pertusa* reefs
- Maerl beds
- *Modiolus modiolus* beds
- *Ostrea edulis* beds
- *Saballaria spinulosa* reefs
- Sea-pen and burrowing megafauna communities
- *Zoostera* beds.

Figure 16 below shows big sea-pen and burrowing megafauna aggregations (in blue) which may overlap with the Norway saithe, cod, haddock and hake fisheries.

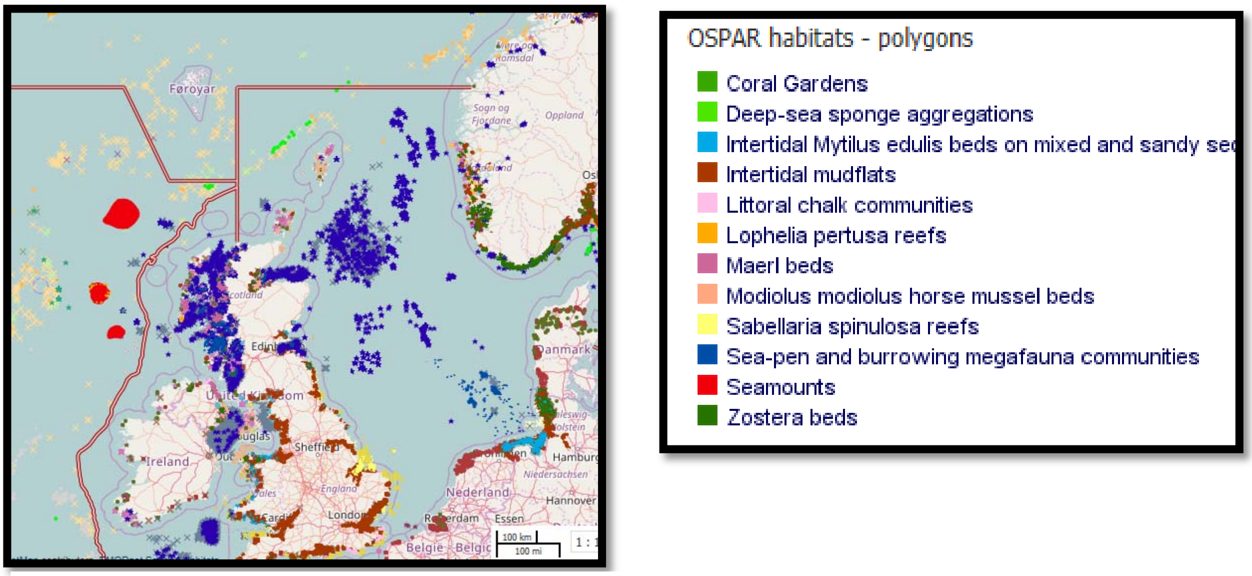


Figure 16: OSPAR map for threatened or declining habitats. Source: OSPAR Commission.

The Norwegian MAREANO program also maps the location of vulnerable habitats in Norwegian waters. **Figure 17** below shows the location of coral reefs (orange), soft sponge aggregations (pink), seapens (yellow) and other vulnerable habitats within the Norwegian EEZ. Red boxes show protected areas, intended for the protection of corals. The Directorate of Fisheries also offers maps of protected areas, but most of these areas are located in coastal areas within the fjords (https://kart.fiskeridir.no/fiskeri). In 2016 Regulation J-48-2016 was ratified in order to protect coral reefs from degradation as a result of fishing activity, and designates different areas for the protection of benthic habitats.

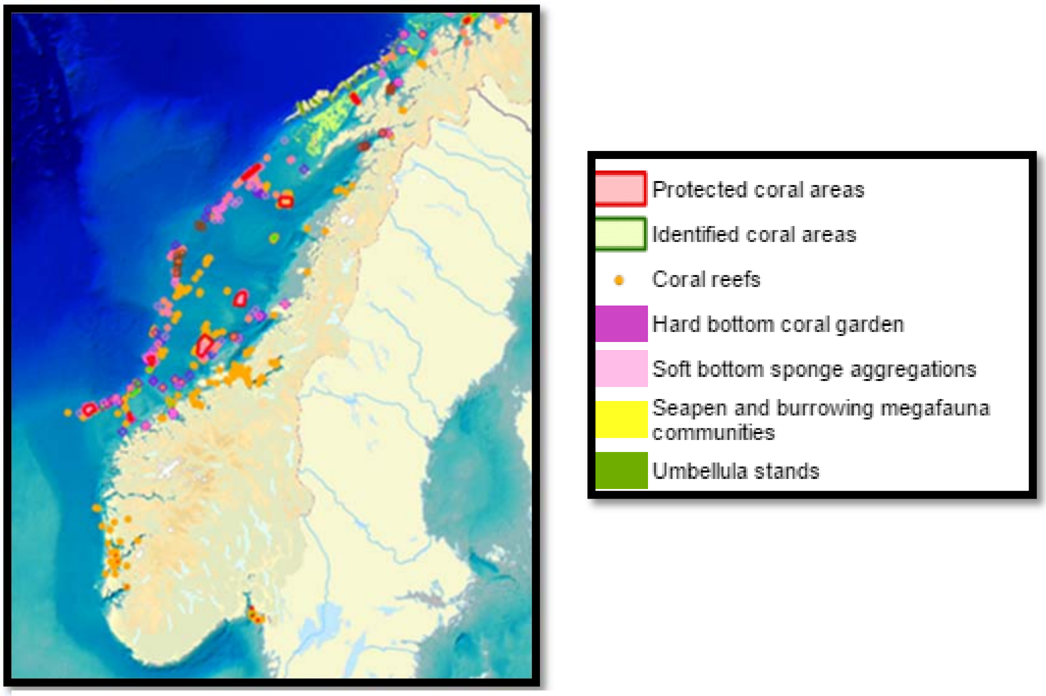
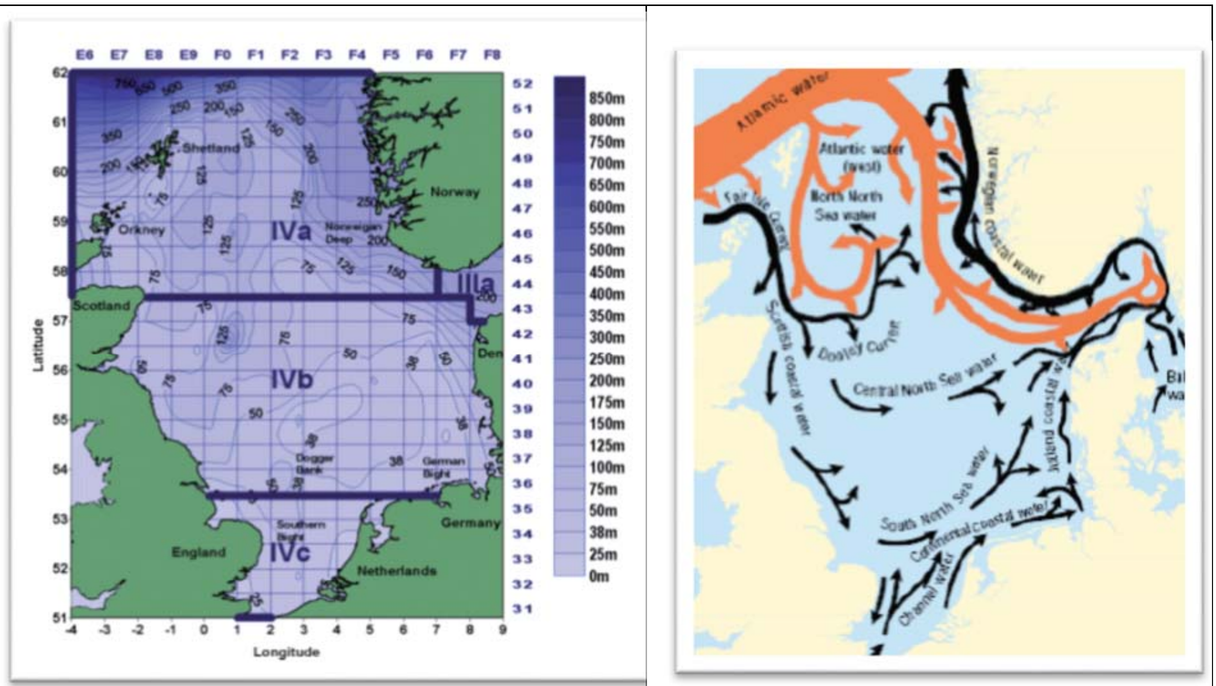


Figure 17: Vulnerable habitats and protected areas as identified in the MAREANO Program maps. Source: **www.mareano.no**

3.4.5 Ecosystems

The North Sea (ICES Area IV, divisions a, b and c) is a mid-latitude, relatively shallow continental shelf covering approximately 570,000 km2 (Jones, 1982) with an average depth of approximately 90 m, the deepest part in the Norwegian trench being approximately 400 m deep. It is bounded by the coasts of Norway, Denmark, Germany, the Netherlands, Belgium, France and Great Britain and recognised as a Large Marine Ecosystem (McGlade, 2002). The continental coastal zone, with a mean depth of 15 m, represents an area of about 60,000 km2, and is strongly influenced by rivers and industrial inputs.

The North Sea region is subject to different pressures, all linked to human activity: fishing, coastal construction, maritime transport, oil and gas exploration and production, tourism and recreation, navigation dredging, aggregate extraction, military and wind farm construction. Over the last few decades, climate warming has been made evident, especially in the southern area, leading to changes in the species abundance. Besides, the heavy marine traffic, has led to the apparition of non-indigenous species. According to Mackinson, S. and Daskalov, G. (2007), there are at least 274 non-indigenous species in the area. This brings different associated ecological impacts, the main one being the reduction in the abundance of native species.



a. Source: Mackinson, S. and Daskalov, G., 2007

b. Source: Brown *et al.*, (1999)

Figure 18: a. Bathymetry of the North Sea. ICES Area IV, divisions a, b and c, set the boundaries of the North Sea. b. Surface water circulation in the North Sea. The width of arrows is indicative of the magnitude of volume transport. Red arrows indicate relatively pure Atlantic water.

The North Sea ecoregion consists of four key areas:

- Northern North Sea (depths 0–500 m) is strongly influenced by the salty Atlantic inflow (salinity 35‰), which causes seasonal stratification. In these stratified waters the density boundary between the mixed and stable water (thermocline, halocline, pycnocline) divides the inorganic nutrient -rich bottom water layer from the wind mixed upper layer where nutrients may be limiting. When the rich bottom waters reach the surface then algal blooms appear. The deepest area of the Northern North Sea in the Norwegian Trench, is located at the Eastern part.

- Southern North Sea (depths 0–50 m) is influenced by large river inputs (salinity 29‰), both of freshwater and of nitrates and phosphates. The area is shallower and the water column remains mixed for most of the year. This leads to highest Primary production in the coastal regions of the Southern North Sea. The area is also influenced by inflowing waters from the English Channel, which generate strong tidal currents and an increased sediment load.
- The English Channel joins the southern North Sea to the Atlantic. It is usually mixed and heavily influenced by tides and wind events.
- The Skagerrak and Kattegat Seas link the North Sea with the Baltic Sea. Water here is less saline due to the influence of the Baltic Sea input and also less tidal.

The North Sea is characterized by episodic changes in the productivity of key components of the ecosystem, described as regime shifts. There have been reports of a shift from pelagic to benthic production. Phytoplankton, zooplankton and demersal and pelagic fish have all exhibited such cycles in variability, which are also expected for the future (Mackinson, S. and Daskalov, G., 2007).

There are different institutions carrying out research in the North Sea (IMR, DTU-Aqua, the UK Joint Nature Conservation Committee, the Royal Belgian Institute of Natural Sciences, …) and various ecosystem models for the North Sea area, such as the North Sea Stochastic Multispecies Model (SMS Model; Lewy and Vinther, 2004), the Ecopath and Ecosim model (Mackinson, S. and Daskalov, G., 2007), a model for trophic interactions in the North Sea for 1981 (Christensen, V., 1995), larval transport models for the North Sea (https://odnature.naturalsciences.be/remsem/ecosystem-modelling),… Different countries in the area (Norway, UK, the Netherland, Denmark and Germany, among others) also participate in the CoralFish project, which is focused on the research on interactions between cold water corals, fish and fisheries, in order to develop monitoring and predictive modelling tools for ecosystem based management.

The North Sea Stochastic Multispecies Model (SMS Model; Lewy and Vinther, 2004) is a statistical model based on maximum likelihood optimization. It is a development of the earlier "MSVPA" models (Gislason and Helgason, 1985) and it can be viewed as a simplified version of the "Gadget" model system (Begley and Howell, 2004), and serves to support ecosystem based management of the North Sea fish stocks. The model includes the 4 targeted species (saithe, cod, haddock and hake) as well as other fish predators and preys in the region, and also birds, grey seals and harbour porpoise. Inputs for the model are taken from observations of catch-at-age, survey indices and stomach contents. The SMS model provides outputs such as estimations of biomasses, fishing mortalities and predation mortalities. Predation mortalities are updated on a tri-annual schedule, and are used in many single species stock assessments in the North Sea, assuring that dependant predators are left sufficient available resources for their preying needs.

According to Mackinson, S. and Daskalov, G., (2007), the main fisheries in the area can be split into demersal, pelagic and industrial, and supply approximately two million tonnes of fish each year. The overall fishing effort has fallen to half since the year 2000, and there has been a swift change into less fuel consuming fishing gears. Mobile bottom trawling techniques used by commercial fisheries in the 12 m+ vessel category have been deployed over approximately 290 000 km2 of the Greater North Sea in 2013, corresponding to ca. 42.5% of the eco-region's spatial extent. The proportion of swept seafloor decreased gradually by ca. 7.5% between 2009 and 2013.

Main fisheries in the North Sea are:

- The demersal fisheries target species such as cod (*Gadus morhua*), haddock (*Gadus aeglefinus*) and whiting (*Gadus merlangus*), plaice (*Pleuronectes platessa*), sole (*Solea solea*) and saithe (*Pollachius virens*). These fisheries are in decline since early 1980s.
- The pelagic fisheries target herring (*Clupea harenguss*) and mackerel (*Scomber scomber*).
- Industrial fisheries account for most of the catches in the area, providing roughly one million tonnes of species such as sandeels (Ammodytes Spp), Norway pout (*Trisopterus esmarkii*) and sprat (*Sprattus sprattus*). The catch of these species is processed into fishmeal and fish oil, not for human consumption.
- There are also important crustacean fisheries for *Nephrops* (*Nephrops norvegicus*), pink shrimp (*Pandalus borealis*), brown shrimp (*Crangon crangon*) and brown crab (*Cancer pagurus*).

Fishing can affect both community structure and foodwebs. Characteristics of the North Sea foodweb are a high production by autotrophic organisms which in turn are consumed by zooplankton and benthos, followed by fish, seabirds, and mammals. The North Sea foodweb is one of the most studied ones in the ICES area. In the past big fish, including elasmobranchs, were major predators in the ecosystem, but now the foodweb is perturbed as many of these big fish are either absent or present only in reduced numbers. The recovering of these big fish populations will likely have consequences for the different fish populations. **Figure 19** below shows foobweb interactions as described by Lynam, C. (2007).

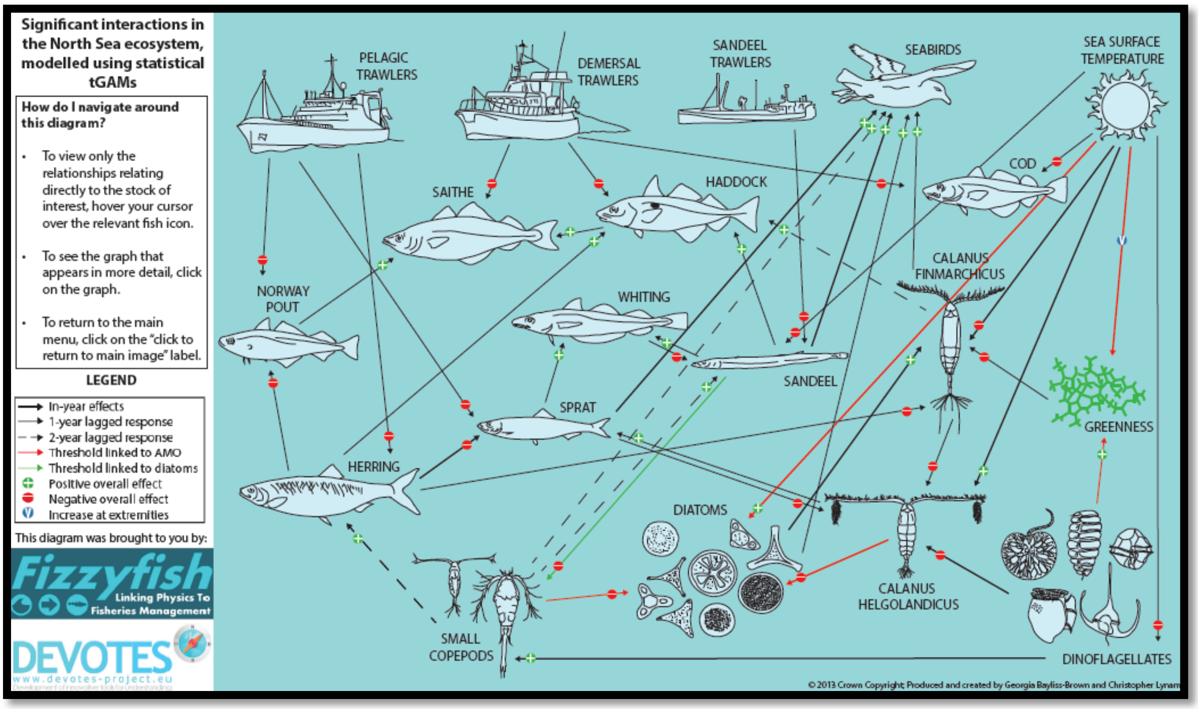


Figure 19: Significant interactions in the North Sea ecosystem, modelled using statistical tGAMs.
Source:**http://www.ices.dk/community/Documents/Expert%20Groups/Lynam_tGAMmodel_key_mov.pdf**

Trophic levels describe the hierarchical architecture of the food web. According to Mackinson, S. and Daskalov, G. (2007), Trophic Levels in the North Sea can be generally described as follows:

- The lowest Trophic Level is 1, and by definition is assigned to primary producers (phytoplankton),
- herbivores trophic level is normally bigger than 2,
- planktivorous fish and carnivorous zooplankton trophic level ranges between 2 and 4,

- most of the benthivores have a trophic level ranging between 3 and 4,
- piscivores trophic level range between 3 and 5 depending on the diet,
- dominant top-predators are seals (Trophic level of 5.01), large sharks (Trophic level of 4.93), and other species such as spurdog, cod, monk, hake and halibut with Trophic Levels between 4.8 and 4.9.

According to Mackinson, S. and Daskalov, G., 2007, as confirmed by Engelhard et al 2014 as shown in **Figure 20** below, in the North Sea there are several different species identified in the same trophic levels. Trophic levels for the targeted species are:

- saithe: 4.36 (and 4.03 for juvenile saithe)
- cod: 4.83 (and 4.43 for juvenile cod)
- haddock: 4.28 (and 4.06 for juvenile haddock)
- hake: 4.91

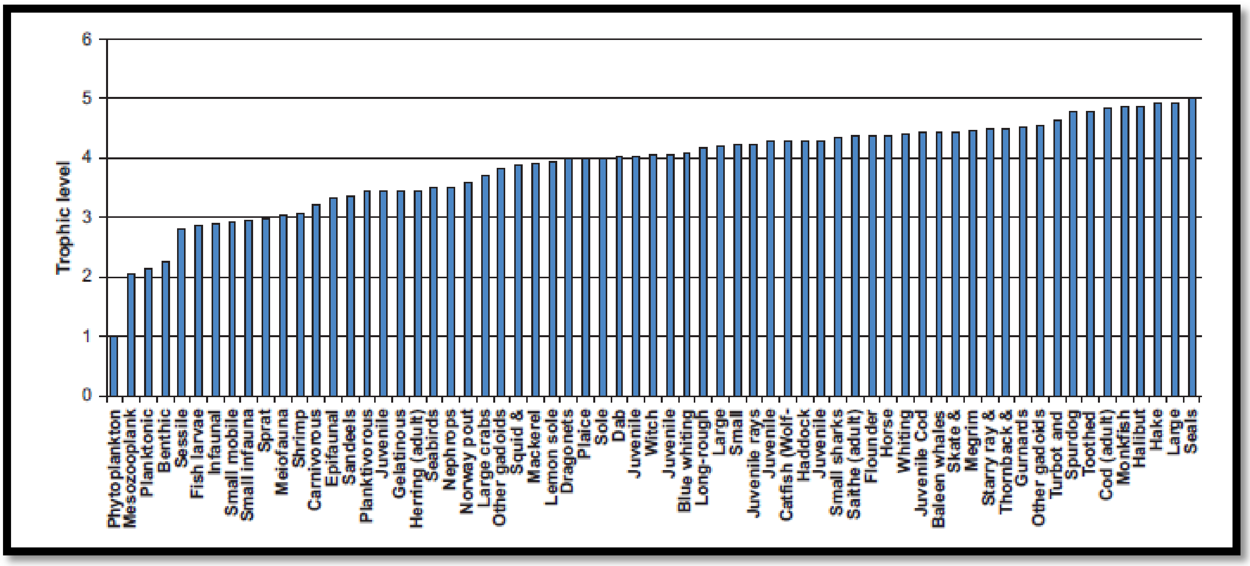


Figure 20: Species present in the North Sea and trophic level of each species in the North Sea trophic chain. Source: Mackinson, S. and Daskalov, G., 2007.

Table 32: Scoring elements

Scoring elements	**Scientific name**	**Target, retained or bycatch species**	**Main or minor**	**Date deficient or not.**
Saithe	*Pollachius virens*	Target	N/A	No
Cod	*Gadus morhua*	Target	N/A	No
Haddock	*Melanogrammus aeglefinus*	Target	N/A	No
Hake	*Merluccius merluccius*	Target	N/A	No
Ling	*Molva molva*	Retained	Minor	No
Monkfish	*Lophius piscatorius*	Retained	Minor	No
Tusk	*Brosme brosme*	Retained	Minor	No
Beaked redfish	*Sebastes mentella*	Retained	Minor	Yes
Greenland halibut	*Reinhardtius hippoglossoides*	Retained	Minor	Yes
Greater silver smelt	*Argentina silus*	Retained	Minor	No

3.5 Principle Three: Management System Background

3.5.1 Jurisdiction

The fishery takes place in waters under Norwegian and EU jurisdiction.

3.5.2 Legal basis and management set-up

Norway has a well-established system for fisheries management, which has evolved over more than a century and is now codified in the 2008 Marine Resources Act and secondary legislation. The Act applies to all catch and use of marine resources and their genetic material (§ 3) and covers issues such as bio-prospecting (Chapter 2), catch levels and quotas (Chapter 3), catch and use of marine resources (Chapter 4), arrangements on the fishing fields, liability for damage and local regulations (Chapter 5) and monitoring, enforcement, sanctions and criminal liability (Chapters 6–12).

The Marine Resources Act is a framework law, which, in the main, authorizes the Government to issue specific regulations within designated fields. The most important rules are found in the Regulation on the Execution of Marine Fisheries, which is updated annually. The Regulation contains rules for mesh size, selection and limitations on the use of specific catch gear (Chapters II–V), seasonal restrictions (Chapter VI), bycatch (Chapters VII–VIII), minimal fish size (Chapter IX), discard ban (Chapter X), restrictions on the use of trawl in specific areas (Chapters XI–XII), protection of coral reefs (Chapter XIII), documentation on hold volumes (Chapter XIV), marking of vessels and gear (Chapters XV–XVI), loss of gear (Chapter XVII) and fish welfare (Chapter XVIII). Other important legal instruments are the 1999 Act on the Right to Participate in Fisheries, the 2015 Act on First-Hand Sales of Wild Catch of Marine Resources, the 2016 Regulation on Participation in Fisheries, the 2016 Regulation on Licensing and the 2016 Regulation on Landing and Sales Notes. All Regulations are subject to running modifications and additions through so-called J-orders, which are distributed to the fishing fleet electronically. This includes dedicated and regularly updated annual regulations for the fishery of each specific species, including separate regulations for cod, haddock and hake.

The executive body at governmental level is the Ministry of Trade, Industry and Fisheries, while the practical regulation of fisheries is delegated to the Directorate of Fisheries. Enforcement at sea is taken care of by the Coast Guard, which is part of the Royal Norwegian Navy, but performs tasks on behalf of several ministries, including the Ministry of Trade, Industry and Fisheries. Scientific research is performed by the Institute of Marine Research. Fisheries management authorities coordinate their regulatory work with that of other bodies of governance, for instance the Ministry of Climate and Environment and the Norwegian Environmental Agency, which are responsible for the implementation of the integrated management plans for different marine areas.
Management of shared stocks in the North Sea is regulated through a framework agreement on fisheries cooperation between Norway and the EU from 1980 (in force 1981). Six stocks are identified as 'joint stocks' which are jointly managed (among them cod and haddock), while four stocks are considered 'joint stocks but not jointly managed. In 2017, EU and Norway agreed to treat hake as a new joint stock. The national legal documents refer to, and, are in compliance with relevant international agreements, such as the 1982 Law of the Sea Convention and the 1995 Fish Stocks Agreement.

3.5.3 Objectives

The 2008 Marine Resources Act requires that Norwegian fisheries management be guided by the precautionary approach, in line with international treaties and guidelines (§ 7 a)), and by an ecosystem approach that takes into account habitats and biodiversity (§ 7 b)). The same objectives are found in the most relevant policy documents, such as the integrated management plan for the North Sea and Skagerrak.

3.5.4 Stakeholders and consultation processes

Norway has a long tradition of including non-governmental organizations in fisheries management, with continuous consultation and close cooperation between governmental agencies and user-group organizations in particular, the Norwegian Fishermen's Association, but also the more specialized organizations such as the fishermen's sales organizations. As these organizations have regional branches, whose representatives are actively involved in policy-making, ensuring that local knowledge is also taken into consideration in the management process. So-called Regulatory Meetings are organized twice a year and are open to all; user-group organizations and NGOs attend on a regular basis. In addition, there is day-to-day contact by telephone and email between authorities, user groups and other interested parties. Distribution of the national quota between different gear and fishing fleets has in practice been delegated to the Norwegian Association of Fishermen, which includes all fishermen from the smallest coastal vessels to ocean-going trawlers. Hence, the inherent conflict of interest between different vessel types is handled at the level of the Fishermen's Association, and the outcome is formalized by the Ministry or Directorate after agreement has been reached within the Association. Technical regulation measures are, to a large extent, decided upon in direct consultations 'over the table' between authorities and user groups at the Regulatory Meetings. The Sami Parliament is formally consulted in the management of fisheries that are of historical importance to the Sami population.

In addition to formal and informal consultation on the running regulation of the fisheries, user-group organizations and authorities work together – e.g. in designated working groups – to tackle new and emerging challenges to the fishery, such as conflicts with the petroleum sector, marine litter, ghost fishing and other threats to the marine environment.

User groups such as the Norwegian Fishermen's Association also participate in the annual negotiations conducted between Norway and other countries, including with EU. Norwegian management authorities actively seek advice from user groups in preparation for all international consultations and negotiations, and user groups are included in the Norwegian delegation.

3.5.5 Enforcement and compliance

The Marine Resources Act places the overall responsibility for monitoring, control and surveillance in Norwegian fisheries with the Directorate of Fisheries (§ 44). The 1997 Coast Guard Act provides the Coast Guard with the authority to conduct inspections in waters under Norwegian jurisdiction, within the fields covered by the Marine Resources Act and secondary legislation given with statutory authority in that Act (§ 9). Hence, MCS in Norwegian fisheries is taken care of through shared responsibility and close collaboration between the Directorate of Fisheries, the Coast Guard and the regional sales organizations. The Directorate of Fisheries keeps track of how much fish is taken of the quotas of individual vessels, different vessel groups and other states at any given time, based on reports from the fishing fleet. Norwegian vessels are required to have electronic logbooks, or more specifically Electronic Reporting Systems (ERS). This implies that real-time data are forwarded to the Directorate of Fisheries, with the possibility to make corrections of data submitted each day within 12 hours into the next day. Norway has agreements in place with a number of other countries about exchange of ERS data, including the EU. The self-reported catch data can be checked at sales operations through the sales organizations, which have monopoly on first-hand sale of fish in Norway, and through physical checks performed by the sales organizations, the Directorate of Fisheries and the Coast Guard. The sales organizations are required to record all landings of fish in Norway and keep track of how much remains of a vessel's quota at any given time, on the basis of the landings data. This information is compared to the figures provided by the vessels to the Directorate of Fisheries through the electronic logbook. The value of any catch delivered above a vessel's quota is retained by the sales organization and used for control purposes. The sales organizations have their own inspectors who carry out physical controls of landings. They check, among other things, weighing equipment, quantity and size distribution of the catch, the quality of the fish and documentation. The Directorate has seven regional offices along the coast, staffed with inspectors that carry out independent physical control of the fish at the point of landing, including total volume, species and fish size. All landings have to be reported six hours in advance in order to give the inspectors the possibility to check the landed catch. The landed volumes are compared to the volumes reported to the Directorate through the logbooks. Both landing and at-sea control is conducted using a risk-based framework aimed at utilizing resources to optimize compliance at any given moment.

As mentioned above, the Coast Guard is administratively part of the Norwegian Navy but performs tasks on behalf of several ministries, including the Ministry of Trade, Industry and Fisheries. Its most important field of work in practice is fishery inspections. Coast Guard inspectors board fishing vessels and control the catch (e.g. catch composition and fish size) and fishing gear (e.g. mesh size) on deck and the volume of fish in the holds.

Using the established conversion factors for the relevant fish product, the inspectors calculate the volume of the fish in round weight and compare this with the catches reported to the Directorate through the logbooks.

As part of the UoA catch is landed in Denmark, therefore the EU and national Danish enforcement systems also have to be assessed. The EU system for fisheries control is laid out in the Control Regulation, which entered into force on 1st January 2010. The Regulation applies to all activities covered by the CFP carried out on the territory of member states or in EU waters, and by EU fishing vessels or nationals of a member state (Art. 2). It requires all member states to adopt appropriate measures, allocate adequate financial, human and technical resources and set up all administrative and technical structures necessary for ensuring control, inspection and enforcement of activities under the CFP (Art. 5). The Regulation contains Titles ('sections' above chapter level) on, among other things, access to waters and resources (Title III), control of fisheries (Title IV), control of marketing (Title V), surveillance (Title VI), inspections and proceedings (Title VII), enforcement (Title VIII) and common control programmes (Title IX). Among the substantial requirements are that member states operate a vessel monitoring system (VMS) and an automatic identification system (AIS), to be generally applied by vessels above 12 and 15 meters, respectively (Art. 9, 10), and that they make the use of fishing logbooks mandatory for all vessels above 10 meters (Art. 14) and electronic logbook for all vessels above 12 meters (Art. 15). The Regulation also introduces an obligation of member states to employ real-time closure of fisheries (Art. 51-54). Further, member states are obliged to carry out monitoring of fishing activities by inspection vessels or surveillance aircraft (Art. 71) and physical inspections of fishing vessels (Art. 74-77); in addition to national inspectors, a pool of Community inspectors shall also be set up (Art. 79). Procedures are established for situations where infringements are detected (Art. 82-88), including enhanced follow-up when infringements are serious, such as mis-recording of catches of more than 500 kg or 10 % of what is reported in the logbook (Art. 84). Further, provisions are given for proceedings (Art. 85-88) and sanctions (Art. 90-93).

The legal basis for enforcement of Danish fishery regulations is found in the Fisheries Act's Chapter 22 (§§ 117–129) and the Regulation on Fisheries' Chapter 21 (§§ 176–179). Monitoring, control and surveillance is in the main taken care of by the Fisheries Control, which has been subordinate to the Agricultural Agency after AgriFish was dissolved and fisheries policy transferred to the Ministry of Foreign Affairs in August 2017. The Fisheries Control has seven regional offices: three on Western Jutland (Fisheries Control West) and Fisheries Control East (Eastern Jutland, Sjælland and Bornholm). A Fisheries Monitoring Centre (FMC), which is a constituent part of the Fisheries Control, is located in Kolding, Eastern Jutland. The Fisheries Control's offices are deliberately located outside the important fishing towns in order to avoid problems for the inspectors in their private sphere, but still within a distance that makes it possible to reach them in 1-2 hours. With the FMC as implementing body, the Fisheries Control keeps track of how much fish is taken from the quotas of different vessels at any time, based on electronic haul-by-haul catch information provided by the fishing vessels every 24 hours. Electronic logbook and VMS are mandatory for all vessels above 12 meters. Estimated landings, irrespective of landing country, are reported to Danish enforcement authorities before landing. Copies of sales notes are forwarded to the Fisheries Control, where they are used for official registration of quota uptake and control against information provided in the logbooks. There is an extensive exchange of information (e.g. inspection data) among the North East Atlantic states, bi-laterally and multi-laterally through the NEAFC control and enforcement scheme. Hence, any infringements revealed by Danish enforcement authorities in the UoA fishery are reported to Norwegian authorities.

Norwegian enforcement authorities report the level of compliance in the fishery to be high. In 2016, the Coast Guard carried out 1599 inspections at sea. 74 inspections (4.6 %) resulted in a fine or prosecution. The Directorate of Fisheries performed 2549 inspections in 2016, of which 1048 were in the cod, haddock and saithe fisheries. Infringements leading up to a fine or prosecution were found in 30 inspections of the latter category (2.9 % %).

In Denmark, 219 infringements were registered in 2016, following 2809 inspections at port, 560 at sea and 95 based on automated cross-checks. This gives an infringement ratio of 6.3 %. However, the majority (66 %) are minor violations of reporting requirements that do not lead to any sanctions beyond a warning. No points for serious infringements were given in 2016 (down from 14 in 2014 and 2 in 2015).

As follows from the above, the fishery has in place a comprehensive system for monitoring, control and surveillance, including physical checks of fishing operations, catch and gear, as well as a fine-meshed sanctioning system. In addition to these coercive compliance mechanisms, various forms of norm, legitimacy and communication related mechanisms have also proved effective to deliver compliance in Norwegian fisheries. First, there is a degree of social control in the small coastal communities from which the fishery takes place, and the high level of user-group involvement may provide regulations with a degree of legitimacy that increases fishermen's inclination to comply with them. The same applies to the relationship between fishermen and enforcement officers, which is reported to be good. Inspectors are trained to approach the fishermen in as forthcoming a manner as possible and perceive themselves as having a guidance-providing and not only a policing role towards the fishing fleet.

3.5.6 Review of the management system

There are various mechanisms in place to evaluate key parts of the fishery-specific management system, but at varied levels of ambition and coverage. At the Regulatory Meetings that take place twice a year, management authorities receive feedback on management practices from the industry and other interested stakeholders, including NGOs. The scientific research component of the fisheries management system is reviewed in ICES reports and advice. The enforcement component is subject to continuous evaluation at meetings between the various bodies involved in enforcement activities, where priorities are hammered out on the basis of risk-based monitoring of past experience. The international side to the Norwegian fisheries management system is reviewed by the Parliament upon submission by the Government (through the Ministry of Trade, Industry and Fisheries) of annual reports on the agreements concluded with other states for the coming year, and the previous year's fishing in accordance with such agreements. The Office of the Auditor General regularly carries out holistic reviews of different sectors of the Norwegian bureaucracy (so-called 'management audits', as opposed to the more traditional financial audits). Such a review of the fisheries management system was undertaken in 2003–2004. At the initiative of the Russian Auditor General, a parallel audit of the Norwegian and Russian management systems for the Barents Sea fisheries was carried out in 2006–2007 and updated in 2011. The first management review of fisheries management in the North Sea and Skagerrak was finalized in 2017.

4 EVALUATION PROCEDURE

4.1 Harmonised Fishery Assessment

4.1.1 Overlapping fisheries

There are numerous overlapping fisheries in the North Sea demersal fisheries. The MSC certified fisheries are summarised in Table 33

Table 33 Summary of MSC certified or fisheries in assessment involving North Sea stocks of saithe, cod, haddock and hake (November 2017)

North Sea Stock	SFSAG Scottish Fisheries Sustainable Accreditation Group- North Sea cod, North Sea saithe & North Sea haddock with components in assessment	DFPO Denmark	Norway North Sea saithe	Joint Demersal fisheries in the North Sea and adjacent waters	Cornish Hake gillnet fishery	Germany North sea saithe Trawl
	Certified with component(s) in assessment	Certified – To be replaced by Joint demersal fisheries in the North Sea and adjacent waters	Certified with component(s) in assessment	In assessment	Certified (UoC VIIe-k i.e. outside the North Sea)	In re-assessment
	ME Certification Limited		DNV GL	ME Certification Limited	Acoura Marine Ltd	Acoura Marine Ltd
Saithe	X	X	X	X		X
Cod	X	X	X	X		
Haddock	X		X	X		
Hake	X		X	X	X	

4.1.1.1 North Sea Saithe (IV and VIa)

Table 34 summarises the scoring for Principle 1 for the MSC certified fisheries. The scoring is well harmonised. Where a condition previously has been raised, this has subsequently been closed.

Table 34 Principle 1 - North Sea Saithe (IV and VIa) MSC certified fisheries and fisheries in assessment. Scoring/Preliminary scoring for Principle 1

	Re-assessment Germany North Sea saithe trawl (preliminary)	Re-assessment Norway North Sea saithe	Germany North Sea saithe trawl	UK Fisheries/ DFFU/ Doggerbank Group saithe	Norway North Sea saithe	Scapeche, Euronor and Compagnie de Peche de St Malo saithe	Scottish Fisheries Sustainable Accreditation Group (SFSAG) saithe	DFPO Denmark North Sea & Skagerrak cod & saithe fishery (saithe component)
	Nov 2017	Nov 2017	08 Oct 2013	April 2016	June 2013	Sep 2016	Oct-2013	Jul-2017
	ACOURA	DNV GL	ACOURA	MEC	DNV GL	MEC	MEC	ACOURA
	V1.3	V1.3	V1.3	V1.3	v.1.3	V1.3	V1.3	V1.3
1.1.1	100 (uncertainty dealt with at ICES Benchmark	100	100	80 (uncertainty in the assessment)	100	80	(70 Closed) 80	90

	2016)							
1.1.2	100	100	80	90 (ecological role not accounted for)	80	90	90 (Closed)	80
1.1.3	N/A	N/A	N/A	N/A	N/A	N/A	(90) PI 1.1.1 rescored	N/A
1.2.1	100	100	100	100	100	100	90	95
1.2.2	90	90	90	90	90	90	80	80
1.2.3	100 (revised survey index and discards included)	100	90	90 (Discards not included in the assessment)	90	90	80	(75 Closed) 80
1.2.4	100 Assessment reviewed at benchmark	100	90	95	90	95	90	85

4.1.1.2 North Sea Cod (ICES IV, IIIa and VIId)

Table 35 summarises the scoring for Principle 1 for the MSC certified fisheries. The scoring is well harmonised. The condition on PI 1.1.1 has been harmonised. There is a need to harmonise scoring of PI 1.2.1.

Table 35 Principle 1 – North Sea Cod Stock Status / Harvest Control Rules All gear types

	Norway North Sea Cod Fishery	Danish North Sea Cod Fishery	DFPO Denmark North Sea & Skagerrak cod & saithe fishery	SFSAG North Sea Cod Fishery	Comment
	2017	2015	Jul-2017	2016	
	DNV GL	ME Certification	ACOURA	ME Certification	
	V1.3	V1.3	V1.3	V2.0	
1.1.1	70	60	60	70	The stock has continued to increase and the management plan is being followed
1.1.2	100	80	80	100	
1.1.3	90	75	75	85	Stock is no longer considered depleted below PRI reference points
1.2.1	95	75	75	85	The harvest strategy is successful as demonstrated by the outcome in 2017
1.2.2	90	90	90	100	
1.2.3	100	100	100	100	
1.2.4	100	100	100	100	
Overall	90.6	81.5	81.5	90.0	

4.1.1.3 North Sea Haddock (IV)

Table 36 summarises the scoring for Principle 1 for the MSC certified fisheries. The scoring is well harmonised.

Table 36 Principle 1 – North Sea haddock Stock Status / Harvest Control Rules All gear types

	Re-assessment Norway North Sea Haddock	SFSAG North Sea Haddock Fishery	Scapeche, Euronor and Compagnie de Peche de St Malo Haddock	DFPO Denmark North Sea & Skagerrak Haddock fishery	DFPO Denmark North Sea & Skagerrak Haddock fishery	
	Nov 2017	Apr 2016 (rev SA1) 2017)	Oct 2017	Jul 2012	In assessment	
	DNV GL	MEC	MEC	FCI		
	V1.3	V1.3	V1.3			
1.1.1	90	70 (There is no condition. The stock is deemed not to fluctuate around its target reference point	100	90		
1.1.2	100	80		80		
1.1.3	N/A	80		N/A		
1.2.1	95	95		85		
1.2.2	90	80 (rescored at SA 1)		80		
1.2.3	100	90		90		
1.2.4	100	95		95		

4.1.1.4 North Sea Hake

Table 37 summarises the scoring for Principle 1 for the MSC certified fisheries. The scoring is well harmonised.

Table 37 Principle 1 – North Sea hake Stock Status / Harvest Control Rules All gear types

	Re-assessment Norway North Sea Hake	DFPO Denmark North Sea & Skagerrak Haddock	DFPO Denmark North Sea & Skagerrak Haddock fishery	SFSAG	Cornish hake gillnet fishery	
Certification status	Nov 2017	Sep 2014	In assessment	In assessment	Nov 2014	
Certifier	DNV GL	FCI	MEC	MEC	Intertek	
	V1.3	V1.3	V2.0		V1.3	
1.1.1	100	90			100	
1.1.2	100	75			90	
1.1.3	N/A	N/A			N/A	
1.2.1	95	90			90	
1.2.2	75	75			75	
1.2.3	100	80			80	
1.2.4	95	90			90	

4.1.2 Harmonisation activities

From table 34 to 37 above it is summarized that there is a need to harmonise scoring of PI 1.2.1 for the North Sea cod fishery. An email with our scoring, the rationale and the need for them to harmonise at the next step was sent to the relevant CABs and all feedback considered- Appendix 3.

4.1.3 Harmonisation outcomes

No harmonization outcomes have been noted.

4.2 Previous assessments

4.2.1 Full Assessment

The North Sea saithe fishery was first assessed and certified in June 2008. The full assessment was based on an assessment tree defined by the responsible CAB and had 3 conditions. All conditions from the full assessment were fully met (Table 38)

Table 38 Summary of assessment conditions for the Full Assessment

Condition	Year closed	Justification
Condition 1: uncertainties in assessment relating to estimation of recruitment and the effect of migration in and out of the stock	2010	
Condition 2: need for more detailed data on the by-catch of all species and a need for sampling programmes to estimate consequences on the stock and ecosystem	CLOSED	Norwegian legislation now requires that all fish species caught are recorded and landed, and all bird and mammal interactions should also be recorded. Although the system is not yet fully operational, it will contribute to meeting the aims of this condition. Also, IMR observers embarked on reference-fleet vessels record any occurrence of marine mammal (ETP) by-catch and henceforth will also record bird (ETP) by-catch. No specific problems relating to retained or by-catch species have been identified. The client is on schedule to meet the obligations of this condition
Condition 3: promotion of rebuilding of the North Sea cod stock through separate recordings of all catches of cod in saithe-directed fisheries, and evaluation in terms of its contribution to fishery effects on cod stocks	CLOSED	Given that Norwegian North Sea cod by-catch are included within the TACs for the saithe stock, and hence included within the assessment and management process, adherence with the overall TACs set should lead to a recovery of the stock. Thus, the client fleet is meeting the requirements of this condition through compliance with current legislation and regulations and supporting IMR data-gathering initiatives.

4.2.2 First Re-assessment

The first re-assessment for the North Sea saithe fishery was announced on 18th July 2012. Site visits were performed by the certification body (here DNV GL) and the assessment team and consultations were done with interested stakeholders in September 2012. The performance indicators and the pertaining scoring systems were evaluated, and it was judged that the fishery continued to meet the requirements for MSC certification. The assessment team used the default assessment tree as defined in the MSC Certification Requirements v1.2 without any modifications. The principle level scores from the first re-assessment are given in Table 39. The fishery achieved a score of below 80 against 1 scoring indicator for the North Sea saithe harvested by jiggers & longliners. The assessment team set a condition for continuing certification.

Table 39 Principle Level Scores -First re-assessment

Principle	Danish seine	Trawl	Purse seine	Jigging & Longline	Others
Principle 1 – Target Species	91,3	91,3	91,3	91,3	91,3
Principle 2 – Ecosystem	90	88,7	91,7	90,7	90
Principle 3 – Management System	98	98	98	98	98

The condition from the first re-assessment was fully met (Table 40)

Table 40 Summary of assessment conditions for the First Re- Assessment

Condition	PI(s)	Year closed	Justification
1. The client should develop a sampling programme to deliver sufficient 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 ling (Molva molva).	2.1.3	2016	This condition has essentially been fulfilled. With the revision to the CPUE database for the longline fleet over 2015, progress on this new standardized CPUE and large improvements in the ICES InterCatch database, as the last surveillance states "there is an effective strategy in place to manage ling and tusk". It is now considered that SG 80 b (Information is sufficient to estimate outcome status with respect to biologically based limits) for ling and tusk is now met and the condition should be closed.

4.3 Assessment Methodologies

Table 41 Assessment methodologies

Standard	MSC Fishery Certification Requirements and Guidance version 2.0.
Report template	MSC Full Assessment Reporting Template v2.0
Assessment tree	Default assessment tree v 1.3

4.3.1 The MSC fisheries standard

The MSC fisheries standard sets out requirements that a fishery must meet to enable it to claim that its fish come from a well-managed and sustainable source. The MSC standard applies to wild-capture fisheries that meet the scope requirements as confirmed in section 3.1.

The MSC fisheries standard comprises three core principles:

Principle 1: Sustainable target fish stocks

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 2: Environmental impact of fishing

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.

Principle 3: Effective management

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.

4.3.2 The assessment tree structure

The default tree structure is divided into four main levels for the purposes of scoring, as summarised below and illustrated in Figure 21:

- Principle: The Principles represent the overarching basis for the assessment tree
- Component: A high level sub-division of the Principle
- Performance Indicator (PI): A further sub-division of the Principle
- Scoring Issue (SI): A sub-division of the PI into related but different topics. Each PI has one or more scoring issues against which the fishery is assessed at the SG 60, 80, and 100 levels.

The detailed assessment tree used in this assessment is included in Appendix 1.

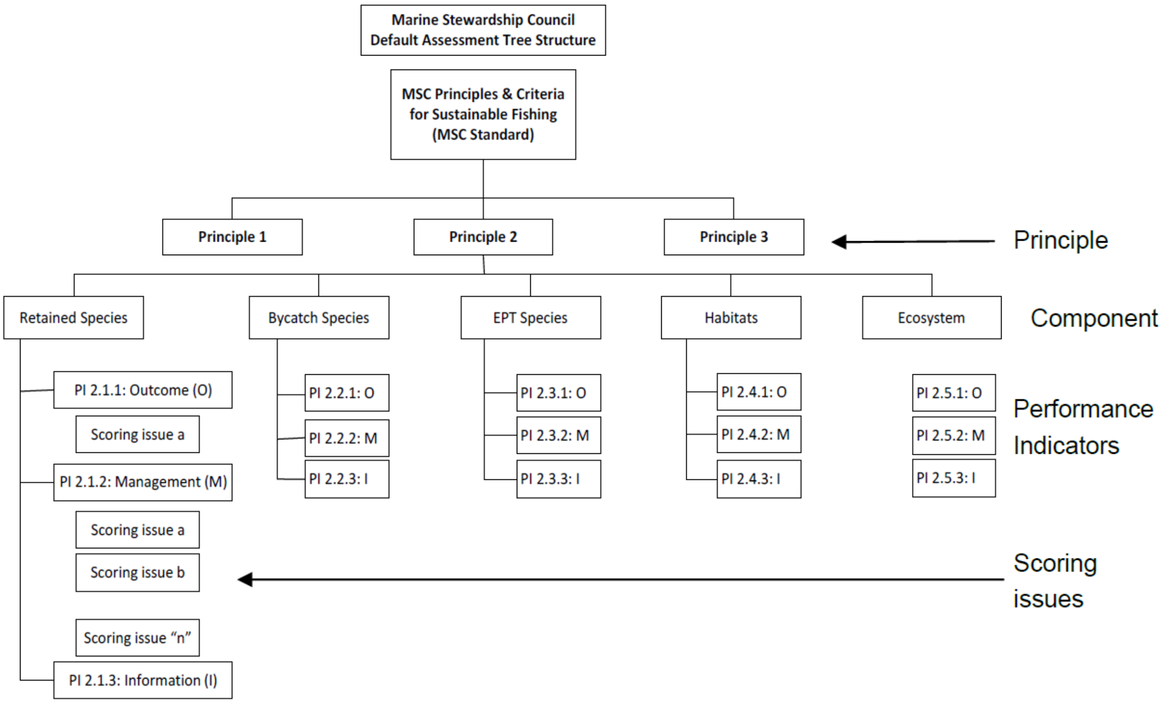


Figure 21 The assessment tree structure

4.4 Evaluation Processes and Techniques

The re-assessment of the North Sea saithe fisheries was extended to include the North Sea cod, haddock and hake. In addition to ICES IV the sub-are IIIa is also included in the re-assessment. A sixth gear, the little- used pots, has also been added on – see Table 2.

Site visits to the fishery were performed by the CAB, DNV GL, and the assessment team and consultations were done with interested stakeholders. The performance indicators and the pertaining scoring systems were evaluated, and it was judged if the fishery meets the requirements for MSC certification.

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

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

Even though a fishery fulfils the criteria for certification, there may still be some important potential risks to future sustainability that are revealed during assessment. These are performance indicators that score less than 80, but more than 60. In order to be granted a MSC fishery certificate the client must agree to further improvements to raise the score to 80. DNV GL and the assessment team has set a timescale for the fishery to improve the relevant areas, so that the certification process can continue.

Default performance indicators and the scorings allocated in the evaluation are enclosed in the section 6.2.

4.4.1 Site Visits

Relevant stakeholders were visited in September 2017 as outlined in Table 42. The site visit was used to gather information about the different fisheries by the same client. These were:

1. Norway NEA saithe fishery: 4th Surveillance and Re-assessment
2. Norway NEA cod fishery: 2nd Surveillance assessment
3. Norway NEA haddock fishery. 2nd Surveillance assessment
4. Norway North Sea saithe fishery: 4th Surveillance and Re-assessment (with additional species cod, haddock and hake; are IIIa and gear pots.

Information gathered is presented in this report and in the enclosed scoring tables. Apart from the site visit meetings, no other field activities, such as visits to vessels, landing sites or processing plants, were undertaken.

Table 42 Itinerary of field activities

Date	Main activities and locations inspected	Names of individuals contacted during field inspections
19.09.2017	**DOF, Bergen:** Function, role and responsibility, Harvest strategy for the fisheries, including regulations limiting fishing effort and harvest control rules, short-term and long-term management objectives for the fisheries, consultation and decision-making process, mechanisms for resolution of legal disputes, regulations for the fisheries in the relevant geographical area, control, surveillance and monitoring routines/regulations applied to the fisheries in the relevant geographical area, strategy for minimising or eliminating ETP by-catch, strategy and plans for protection of sensitive habitats, fishermen's compliance with laws and regulations, significant discrepancies found at landing control for the fisheries in the last year and VMS data for the fisheries. **IMR, Bergen**: Sampling programmes/level of sampling and surveys including observer programmes, integration of national data collection programmes and stock assessments with ICES assessments, stock status, stock structure and recruitment, catch data for the most recent fishing season, monitoring programmes for bycatch, discard and ETP species, level of slipping/ discards, impact of the fishery on marine habitats and the ecosystem and research strategy or programmes for the fishery.	Directorate of Fisheries, Bergen -Modulf Overvik -Gunnstein Bakke Institure of Marine Research -Bjarte Bogstad - Arvid Staby Client Representatives -Tor B Larsen
20.09.2017	Ministry of Trade, Industry and Fisheries, Oslo: Function, role and responsibility, harvest strategy for the fisheries, including regulations limiting fishing effort and harvest control rules, short-term and long-term management objectives for the fisheries, consultation and decision-making process for the stocks of the fisheries, mechanisms for resolution of legal disputes, regulations for fisheries in the relevant geographical area, control, surveillance and monitoring routines/ regulations applied to the fisheries in the relevant geographical area, level of slipping/discards, strategy for minimising or eliminating ETP by-catch, strategy and plans for protection of sensitive habitats, fishermen's compliance with laws and regulations, significant discrepancies found at landing control for the fisheries in the last year, catch data for the most recent fishing season, observed fishing pattern (gear used, fishing area, number of boats, fishing season), VMS data for the fisheries and research strategy or programmes for the fisheries	Ministry of Trade, Industry and Fisheries - Geir Ervik - Mari Didriksen - Rune Dragset

20.09.2017	DNV GL office at Høvik, Oslo: Basic info about the company, ownership or organizational structure, roles and responsibilities in the MSC Fishery certification process, vessel/certificate member list, fishing operations, fishing season, allocation of fishing days, fishing areas and gear used, catch and effort data, impact on ecosystem, by-catch of fish species, by-catch of marine mammals, birds, ETP species, bycatch of fish and shellfish species, marine mammals, ETP species and birds, discarding practices, overlap of the fishery with sensitive habitats and closed areas, compliance with rules and regulations, control, surveillance and monitoring routines, disputes, sanctions and penalties, traceability system on board and at landing, labelling of products/changes in labelling of products, landing sites, first point of landing, first point of sale, main products/change in product range, main markets and of progress against conditions and recommendations	Client: Norges Fiskarlag - Vidar Naalsund, SUROFI - August Fjeldskår, Fisherman - Tor B. Larsen

4.4.2 Consultations

The assessment team met with relevant stakeholders as outlined in Table 42. Information gathered is presented in this report and in the scoring tables.

4.4.2.1 Process consultations

Several stakeholders have been identified and contacted during the assessment of the Norges Fiskarlag Norway North Sea demersal fisheries. Relevant stakeholders were interviewed in September 2017 as outlined in Table 42

Information was made publicly available at different stages of the assessment (Table 43). Notifications on the MSC website (www.msc.org) were distributed to listed stakeholders in directed mails.

Table 43 Process announcements and consultations

Consultation subject	Consultation date	Consultation channels
Announcement of 2nd re-assessment	18.08.2017	https://www.msc.org
Confirmation of assessment team	18.08.2017	https://www.msc.org
Notification of assessment timeline	18.08.2017	https://www.msc.org
Announcement of assessment tree	18.08.2017	https://www.msc.org
Advertisement of certification and Invitation to contribute to assessment process	20.08.2017	Email distribution
Stakeholder notification: Site visit scheduled	20.08.2017	Email distribution
Variation request: change of UoC	26.09.2017	https://www.msc.org
Variation response: change of UoC	05.10.2017	https://www.msc.org
Proposed peer reviewers	03.10.2017	https://www.msc.org
Peer reviewer confirmation	16.10.2017	https://www.msc.org
Change of name and UoC	23.11.2017	https://www.msc.org
Public comment draft report	06.03.2018	https://www.msc.org
Final report	10.05.2018	https://www.msc.org
Public certification report	11.06.2018	https://www.msc.org

4.4.3 Evaluation Techniques

4.4.3.1 Announcements

The assessment was announced at MSC.org to reach international stakeholders and e-mails were used to reach local stakeholders. At the beginning of the re-assessment, the CAB compiled a stakeholder list based on a guidance from the client and existing stakeholder list from the earlier assessments and subsequent surveillances.

The list covered 70 stakeholders and has been updated and used at every stage of the consultation process undertaken for this fishery.

4.4.3.2 Methodology used

The assessment team decided to use the default assessment tree as defined in the MSC Certification Requirements v1.3 without any modifications. The MSC Full Assessment Reporting Template v2.0 is used for this report.

4.4.3.3 Scoring process

After all relevant information, collected during the site visits of 19th and 20th September 2017, was compiled and analysed, the assessment team scored the Unit of Assessment against the Performance Indicator Scoring Guideposts (PISGs) in the assessment tree. The team discussed evidence on the 21st and 22nd September 2017 at the DNV GL offices in Oslo, and weighed up the balance of evidence and used their judgement to agree on a score following MSC FCR processes and based on consensus. Some information was received from the relevant stakeholders during the scoring meeting and some after the meeting. The team evaluated all the information and agreed on the final scores through email communication.

Individual Performance indicators are scored. Scores for individual PIs are assigned in increments of five points. Any divisions of less than five points are justified. Scores for each of the three Principles are reported to the nearest one decimal.

- If one or more of the scoring issues fails to meet the scoring guidepost at the 60 level, the UoA fails and no further scoring is provided for the Performance indicator.
- Where all of the SG60 scoring issues are met, the PI achieves at least a 60 score, and the team assesses each of the scoring issues at the SG80 level.
- Where one or more of the SG80 scoring issues is not met, the PI is given an intermediate score reflecting the overall performance against the different SG80 scoring issues, and one or more condition(s) are assigned to the PI.
- Where all of the 60 scoring issues and all of the 80 issues are met, the PI achieves at least an 80 score, and the team assesses each of the scoring issues at the SG100 level.
- Where one or more of the SG100 scoring issues is not met, the PI is given an intermediates score reflecting the overall performance against the different SG100 scoring issues.
- Where all of the SG60, SG80 and SG100 scoring issues are met, the PI achieves a 100 score.

In Principle 1 and 2 the scoring may include PI with multiple scoring elements. Scoring is then applied to the individual scoring elements and the overall score for the PI is determined based on the score of the different scoring elements. Scoring elements considered in this assessment are listed below.

Component	Scoring elements	Main / not main	Justification for main / not main [primary and secondary species]	Data-deficient or not
Retained	Saithe	Main	More than 5% of the catch composition	No
Retained	Cod	Main	More than 5% of the catch composition	No
Retained	Haddock	Main	More than 5% of the catch composition	No
Retained	Hake	Main	More than 5% of the catch composition	No
Retained	Greenland halibut	Not main	Less than 5% of the catch composition	No
Retained	Tusk	Not main	Less than 5% of the catch composition	No
Retained	Ling	Not main	Less than 5% of the catch composition	No
Retained	Monkfish	Not main	Less than 5% of the catch composition	No
Retained	Beaked redfish	Not main	Less than 5% of the catch composition	No
Retained	Greater SilverSmelt	Not main	Less than 5% of the catch composition	No

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

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

The final scores are based on group consensus within the assessment team. The assessment team will recommend certification where the weighted average score is 80 or more for all the three Principles, and where all individual scoring issues are met at the SG60 level.

Conditions are set where the fishery fails to achieve a score of 80 to any Performance Indicators. Conditions with milestones are set to result in improved performance to at least the 80 level within a period set by the assessment team. The client is required to provide a client action plan to be accepted by the assessment team. The client action plan shall detail:

- how conditions and milestones will be addressed
- who will address the conditions
- the specified time period within which the conditions and milestones will be addressed
- how the action(s) is expected to improve the performance of the UoA
- how the CAB will assess outcomes and milestones in each subsequent surveillance or assessment
- how progress to meeting conditions will be shown to CABs.

4.4.3.4 Risk Based Framework

The RBF methodology has not been used in this re-assessment.

5 TRACEABILITY

5.1 Eligibility Date

Products from the certified fishery eligible to be sold as MSC certified or bear the MSC ecolabel from 16th June 2018.
The eligibility date is the date of the re-certification of the fishery.

5.2 Traceability within the Fishery

As described in section 3.5, monitoring, control and surveillance is the shared responsibility and is done with close collaboration between the Directorate of Fisheries, the Coast Guard, the regional sales organizations and the EU counterparts. Norwegian Coast Guard and EU inspectors board fishing vessels and control the catch (e.g. catch composition and fish size) and fishing gear (e.g. mesh size) on deck and the volume of fish in the holds. Norwegian vessels are required to have electronic logbooks, where real-time catch data are forwarded to the Directorate of Fisheries.

All vessels are monitored by the Directorate of Fisheries through VMS data. The client has access to tracking data, and organizational and peer pressure in addition to official control contributes to minimizing the possibility of fishing outside the unit of certification.

The Directorate of Fisheries keeps track of how much fish is taken of the quotas of different vessels, vessel groups or other states at any given time, based on reports from the fishing fleet. The self-reported catch data can be checked at sales operations through the sales organizations, which have monopoly on first-hand sale of fish in Norway, the Danish auction places, and through physical checks performed by the sales organizations, the Directorate of Fisheries and the Coast Guard.

Catches are recorded using an "app" on smartphones, which also provide fishing location in a similar way to VMS on the larger vessels. The implementation of this is in compliance with the new regulation introduced in 2015. Smaller vessels continue to provide notification of landing location and landing company, two hours prior to landing and also provide sales notes following landing. Catches are landed in mainly in Norway the main market being producers and traders in Norway.

The sales organizations are required to record all landings of fish in Norway. This information is compared to the figures provided by the vessels to the Directorate of Fisheries through the electronic logbook. Physical controls of landings are carried out both by inspectors from the sales organizations and the Directorate of Fisheries. The sales organizations in the scope of these certifications are:

- Norges Råfisklag,
- Surofi,
- Vest-Norges Fiskesalslag
- Rogaland Fiskesalgslag
- Skagerrakfisk

Catch certificate is mandatory for export to EU. The catch certificate accompanies the delivery note from the vessel. Buyers can access and extract catch certificates electronically. Fish is mainly sold through auctions. All transactions are done through the client, logged and publicly available. All relevant information on catch is provided to the client on a pre-delivery note. Vessels complete the pre-filled delivery note and set correct quantity and size distribution in accordance with requirements from DoF. After landing, the delivery note is signed electronically and sent to the client for invoicing and settlement to fishermen. Purchaser name is included on the delivery note. The MSC Fishery certificate number is provided on invoices, and invoices are issued through the sales organizations. The fish changes ownership from vessel to processing plant, most often at the landing sites.

As regards the bycatch of saithe in the blue whiting fishery in ICES sub area I, II and IV:
-There is a 100 % overlap between "saithe industry trawl bycatch UoC" and the saithe certification UoC. According to Norges Sildelaget all saithe bycatch landed for consumption is from ICES sub-areas IIA1, IIA2, IVA and IVB. This is the area of operations where the targeted bycatch fishery takes place, so the risk of other fish entering chain of custody is negligible – see Table 44 & Table 45 below.

-The sales organization always have catch area as one of the variables for putting "MSC eligible" on the sales notes in their computer systems. Therefore; should there be saithe landed from the other UOC area for the blue whiting fishery e.g. ICES XI, it would never be identified as MSC eligible raw material in any sales documents.

Table 44 Bycatch of saithe in trawler vessels:

ICES sub areas	Quantity in kg.
IIa1	2.205
IIa2	25.535
IIIa	0
IVa	62.860
IVb	324
Vb1b	0
Vb2	0
VIa	0
VIb1	0
VIb2	0
VIIc1	0
VIIc2	0
VIIk1	0
VIIk2	0

Table 45 By catch of saithe only in trawler vessels with industry trawl licenses:

ICES sub areas	Quantity in kg.
IIa1	2.205
IIa2	22.047
IIIa	0
IVa	62.867
IVb	314
Vb1b	0
Vb2	0
VIa	0
VIb1	0
VIb2	0
VIIc1	0

VIIc2	0
VIIk1	0
VIIk2	0

At sea processing and trans-shipping
There is no trans-shipping in the Norway North Sea demersal fisheries. At-sea processing varies and is dependent on vessel. Certified products produced on-board vessels are: Live, fresh, frozen, salted and dried fish; filets and by-products (bellyflaps, heads, roe, liver and trimmings).

Traceability of product that goes into the production of fish oil and fishmeal cannot be met through the fishery certificate. Therefore, separate CoC certification is needed for those vessels that produce fish oil and fishmeal and wish to sell this as MSC certified products.

Points of landing
Landing sites are mainly in Norway, with inspections by DoF and sales organization as described above.
For products landed outside Norway, landing information is transmitted to Norwegian Authorities who cooperate with national control bodies at points of landing to ensure correct information.

5.2.1 Traceability risk factors

Table 46 Traceability risk factors within the fishery

Traceability Factor	Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)
Potential for non-certified gear/s to be used within the fishery	Low risk. The certificate covers the entire Norwegian fleet fishing for these species within the UoC.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	Low risk. The UoC covers the fishing grounds where the fishery takes place, that is, the North Sea & Skagerrak fishing grounds. The present fishing grounds of the certificate are Norwegian and European waters. All Norwegian vessels are obliged to carry VMS on board and to log in the electronic logbook when the fishing operation begins. This data is monitored by the Directorate of Fisheries, who can distinguish not only where the vessels are but also if the vessels are fishing or not.
Potential for vessels outside of the UoC or client group fishing the same stock	High risk. The UoA covers the North Sea and Skagerrak waters. The saithe, cod, haddock and hake stocks are targeted by different fleets but within the agreed quotas. Therefore, the risk for vessels outside the client group fishing the same stock is high.

Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)	Low risk. All fishing vessels are required to keep logbooks for the recording of fishing by species, gear and area. Sampling is done at the landing ports once the fish is landed. Landing ports of the fisheries are mainly in Norway. There are good co-operation systems between Norway and European countries and information on compliance and enforcement is shared among the different enforcement administrations. Robustness of these enforcement systems is expected to be high. The risk of mixing between certified and non-certified catch during storage, transport and handling activities is low.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	Low risk. All Norwegian vessels targeting saithe, cod, haddock and hake pump the catch on- board into reception tanks. The risk of mixing with non-certified catch is non-existing at that moment as the certificate covers all Norwegian vessels fishing in the North Sea and Skagerrak. Mixture with non-certified catch would only occur if the vessel decided to travel outside the North Sea or Skagerrak waters but this is recorded in the logbooks/VMS and the catch must be stored and reported as non-certified.
Risks of mixing between certified and non-certified catch during transhipment	Low risk. Transhipment does not take place in these fisheries. This is monitored by the Directorate of Fisheries through the VMS.
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	None identified.

5.3 Eligibility to Enter Further Chains of Custody

The resulting products of on-board processing, landed by Norwegian vessels involved in these fisheries, recorded by the Directorate of Fisheries and the sales organizations, and sold through or by approval from the sales organizations are eligible to enter further Chain of Custody. This includes the saithe bycatch in the blue whiting fishery in ICES subarea IV (certified as a scope extension to the Norway Spring spawning herring fishery, certificate nr. MSC-F-61388 issued 09.01.2018).The list of vessels is updated at every assessment and is an appendix to this report - Appendix 7 List of vessels. The scope of the MSC Fishery certification is up to the point of landing and Chain of Custody commences from the point of landing and sale.

The products included in the scope of certification are produced on-board the vessels and are: live, fresh, frozen, salted and dried fish; filets and by-products (bellyflaps, heads, tongues, cheeks, roe, liver and trimmings).

Traceability of product that goes into the production of fish oil and fishmeal cannot be met through the fishery certificate. Therefore, separate CoC certification is needed for those vessels that produce fish oil and fishmeal and wish to sell this into further chains of custody as MSC.

Table 47 Eligibility to enter further chains of custody

Conclusion and determination	The products included in the scope of certification are produced on-board the vessels and are: live, fresh, frozen, salted and dried fish; filets and by-products (bellyflaps, heads, tongues, cheeks, roe, liver and trimmings)
List of parties, or category of parties, eligible to use the fishery certificate and sell product as MSC certified	Norwegian vessels with valid licenses to fish saithe, cod, haddock and hake in the waters of the North Sea and Skagerrak. Annex 6 shows the list of vessels as of September2017. An update of the list of vessels is available at the Directorate of Fisheries upon request.
Point of intended change of ownership of product	Landing ports or fish auctions (sales organizations) where registration of landings is carried out and weights registered.
List of eligible landing points (if relevant)	Landing points and fish auctions (sales organizations)
Point from which subsequent Chain of Custody is required	The scope of the MSC Fishery certification is up to the point of landing and Chain of Custody commences from the point of landing and sale.

5.4 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to Enter Further Chains of Custody

Inseparable or practically inseparable stock is not involved in this assessment.

6 EVALUATION RESULTS

6.1 Principle Level Scores

Table 48 Final Principle scores for [species] [per gear]

(score changes from PCDR are in blue)

Stock	UOC	Gear	Principle 1 – Target Species	Principle 2 – Ecosystem	Principle 3 – Management System
Saithe	1	Danish seine	98.8	86	95.4
	2	Demersal trawlers	98.8	87	95.4
	3	Hooks & Lines	98.8	90	95.4
	4	Purse seine	98.8	92.7	95.4
	5	Gillnets	98.8	89.7	95.4
	6	Pots	98.8	90	95.4
Cod	7	Danish seine	90.6	86.3	95.4
	8	Demersal trawlers	90.6	85.3	95.4
	9	Hooks & Lines	90.6	90.3	95.4
	10	Purse seine	90.6	92.7	95.4
	11	Gillnets	90.6	90	95.4
	12	Pots	90.6	85.7	95.4
Haddock	13	Danish seine	95.6	86.3	95.4
	14	Demersal trawlers	95.6	85.3	95.4
	15	Hooks & Lines	95.6	90.3	95.4
	16	Purse seine	95.6	92.7	95.4
	17	Gillnets	95.6	90	95.4
	18	Pots	95.6	90	95.4
Hake	19	Danish seine	95.6	86	95.4
	20	Demersal trawlers	95.6	85.3	95.4
	21	Hooks & Lines	95.6	90	95.4
	22	Purse seine	95.6	92.7	95.4
	23	Gillnets	95.6	89.7	95.4
	24	Pots	95.6	90	95.4

6.2 Summary of PI Level Scores

6.2.1 NORTH SEA SAITHE

<table>
<tr><td colspan="10">Fishery Assessment Scoring Worksheet version 1 - effective November 14, 2011</td></tr>
<tr><td colspan="10">Norway North sea Demersal fishery Re-assessment 2017 (Assessment tree V1.3) - saithe</td></tr>
<tr><th>Prin-ciple</th><th>Component</th><th>PI No.</th><th>Performance Indicator (PI)</th><th>Danish Seine</th><th>Purse seine</th><th>Hooks & Lines</th><th>Gillnets</th><th>Demersal Trawlers</th><th>Pots</th></tr>
<tr><td>One</td><td>Outcome</td><td>1.1.1</td><td>Stock status</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.1.2</td><td>Reference points</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.1.3</td><td>Stock rebuilding</td><td colspan="6"></td></tr>
<tr><td></td><td>Management</td><td>1.2.1</td><td>Harvest strategy</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.2.2</td><td>Harvest control rules & tools</td><td colspan="6">90</td></tr>
<tr><td></td><td></td><td>1.2.3</td><td>Information & monitoring</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.2.4</td><td>Assessment of stock status</td><td colspan="6">100</td></tr>
<tr><td>Two</td><td>Retained species</td><td>2.1.1</td><td>Outcome</td><td>85</td><td>100</td><td>90</td><td colspan="2">85</td><td>80</td></tr>
<tr><td></td><td></td><td>2.1.2</td><td>Management</td><td>90</td><td>100</td><td colspan="4">90</td></tr>
<tr><td></td><td></td><td>2.1.3</td><td>Information</td><td>90</td><td>100</td><td colspan="4">90</td></tr>
<tr><td></td><td>Bycatch species</td><td>2.2.1</td><td>Outcome</td><td colspan="6">80</td></tr>
<tr><td></td><td></td><td>2.2.2</td><td>Management</td><td colspan="6">95</td></tr>
<tr><td></td><td></td><td>2.2.3</td><td>Information</td><td colspan="6">85</td></tr>
<tr><td></td><td>ETP species</td><td>2.3.1</td><td>Outcome</td><td colspan="2">85</td><td colspan="3">80</td><td>85</td></tr>
<tr><td></td><td></td><td>2.3.2</td><td>Management</td><td colspan="2">90</td><td colspan="2">85</td><td colspan="2">90</td></tr>
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<tr><td></td><td>Habitats</td><td>2.4.1</td><td>Outcome</td><td>60</td><td>100</td><td>100</td><td>100</td><td>60</td><td>100</td></tr>
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<tr><td></td><td></td><td>2.5.2</td><td>Management</td><td colspan="6">95</td></tr>
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<tr><td></td><td></td><td>3.1.4</td><td>Incentives for sustainable fishing</td><td colspan="6">100</td></tr>
<tr><td></td><td>Fishery specific management system</td><td>3.2.1</td><td>Fishery specific objectives</td><td colspan="6">90</td></tr>
<tr><td></td><td></td><td>3.2.2</td><td>Decision making processes</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>3.2.3</td><td>Compliance & enforcement</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>3.2.4</td><td>Research plan</td><td colspan="6">80</td></tr>
<tr><td></td><td></td><td>3.2.5</td><td>Management performance evaluation</td><td colspan="6">90</td></tr>
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<tr><td></td><td></td><td colspan="2">Principle 3 - Management</td><td colspan="6">95,4</td></tr>
</table>

6.2.2 NORTH SEA COD

Fishery Assessment Scoring Worksheet version 1 - effective November 14, 2011

Norway North sea Demersal fishery Re-assessment 2017 (Assessment tree V1.3) - cod

Prin-ciple	Component	PI No.	Performance Indicator (PI)	Danish Seine	Purse seine	Hooks & Lines	Gillnets	Demersal Trawlers	Pots
One	Outcome	1.1.1	Stock status	70					
		1.1.2	Reference points	100					
		1.1.3	Stock rebuilding	90					
	Management	1.2.1	Harvest strategy	95					
		1.2.2	Harvest control rules & tools	90					
		1.2.3	Information & monitoring	100					
		1.2.4	Assessment of stock status	100					
Two	Retained species	2.1.1	Outcome	90	100	95	90	85	80
		2.1.2	Management	90	100	90			
		2.1.3	Information	90	100	90			
	Bycatch species	2.2.1	Outcome	80					
		2.2.2	Management	95					
		2.2.3	Information	85					
	ETP species	2.3.1	Outcome	85		80			85
		2.3.2	Management	90		85		90	
		2.3.3	Information	80					
	Habitats	2.4.1	Outcome	60	100	100	100	60	100
		2.4.2	Management	75	90	90	90	75	90
		2.4.3	Information	85	95			85	95
	Ecosystem	2.5.1	Outcome	100					
		2.5.2	Management	95					
		2.5.3	Information	95					
Three	Governance and policy	3.1.1	Legal & customary framework	95					
		3.1.2	Consultation, roles & responsibilities	100					
		3.1.3	Long term objectives	100					
		3.1.4	Incentives for sustainable fishing	100					
	Fishery specific management system	3.2.1	Fishery specific objectives	90					
		3.2.2	Decision making processes	100					
		3.2.3	Compliance & enforcement	100					
		3.2.4	Research plan	80					
		3.2.5	Management performance evaluation	90					
		Overall weighted Principle-level scores							
		Principle 1 - Target species		90,6					
		Principle 2 - Ecosystem		86.3	92.7	90,3	90	85.3	85.7
		Principle 3 - Management		95,4					

6.2.3 NORTH SEA HADDOCK

<table>
<tr><td colspan="10">Fishery Assessment Scoring Worksheet version 1 - effective November 14, 2011</td></tr>
<tr><td colspan="10">Norway North sea Demersal fishery Re-assessment 2017 (Assessment tree V1.3) - haddock</td></tr>
<tr><th>Prin-ciple</th><th>Component</th><th>PI No.</th><th>Performance Indicator (PI)</th><th>Danish Seine</th><th>Purse seine</th><th>Hooks & Lines</th><th>Gillnets</th><th>Demersal Trawlers</th><th>Pots</th></tr>
<tr><td>One</td><td>Outcome</td><td>1.1.1</td><td>Stock status</td><td colspan="6">90</td></tr>
<tr><td></td><td></td><td>1.1.2</td><td>Reference points</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.1.3</td><td>Stock rebuilding</td><td colspan="6"></td></tr>
<tr><td></td><td>Management</td><td>1.2.1</td><td>Harvest strategy</td><td colspan="6">95</td></tr>
<tr><td></td><td></td><td>1.2.2</td><td>Harvest control rules & tools</td><td colspan="6">90</td></tr>
<tr><td></td><td></td><td>1.2.3</td><td>Information & monitoring</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.2.4</td><td>Assessment of stock status</td><td colspan="6">100</td></tr>
<tr><td>Two</td><td>Retained species</td><td>2.1.1</td><td>Outcome</td><td>90</td><td>100</td><td>95</td><td>90</td><td>85</td><td>80</td></tr>
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<tr><td></td><td></td><td>2.1.3</td><td>Information</td><td>90</td><td>100</td><td colspan="4">90</td></tr>
<tr><td></td><td>Bycatch species</td><td>2.2.1</td><td>Outcome</td><td colspan="6">80</td></tr>
<tr><td></td><td></td><td>2.2.2</td><td>Management</td><td colspan="6">95</td></tr>
<tr><td></td><td></td><td>2.2.3</td><td>Information</td><td colspan="6">85</td></tr>
<tr><td></td><td>ETP species</td><td>2.3.1</td><td>Outcome</td><td>85</td><td>85</td><td>80</td><td>80</td><td>80</td><td>85</td></tr>
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<tr><td></td><td>Habitats</td><td>2.4.1</td><td>Outcome</td><td>60</td><td>100</td><td>100</td><td>100</td><td>60</td><td>100</td></tr>
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<tr><td></td><td>Ecosystem</td><td>2.5.1</td><td>Outcome</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>2.5.2</td><td>Management</td><td colspan="6">95</td></tr>
<tr><td></td><td></td><td>2.5.3</td><td>Information</td><td colspan="6">95</td></tr>
<tr><td>Three</td><td>Governance and policy</td><td>3.1.1</td><td>Legal & customary framework</td><td colspan="6">95</td></tr>
<tr><td></td><td></td><td>3.1.2</td><td>Consultation, roles & responsibilities</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>3.1.3</td><td>Long term objectives</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>3.1.4</td><td>Incentives for sustainable fishing</td><td colspan="6">100</td></tr>
<tr><td></td><td>Fishery specific management system</td><td>3.2.1</td><td>Fishery specific objectives</td><td colspan="6">90</td></tr>
<tr><td></td><td></td><td>3.2.2</td><td>Decision making processes</td><td colspan="6">100</td></tr>
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<tr><td></td><td></td><td>3.2.4</td><td>Research plan</td><td colspan="6">80</td></tr>
<tr><td></td><td></td><td>3.2.5</td><td>Management performance evaluation</td><td colspan="6">90</td></tr>
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<tr><td></td><td></td><td colspan="2">Principle 1 - Target species</td><td colspan="6">95,6</td></tr>
<tr><td></td><td></td><td colspan="2">Principle 2 - Ecosystem</td><td>86.3</td><td>92.7</td><td>90,3</td><td>90</td><td>85.3</td><td>90</td></tr>
<tr><td></td><td></td><td colspan="2">Principle 3 - Management</td><td colspan="6">95,4</td></tr>
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6.2.4 NORTH SEA HAKE

<table>
<tr><td colspan="10">Fishery Assessment Scoring Worksheet version 1 - effective November 14, 2011</td></tr>
<tr><td colspan="10">Norway North sea Demersal fishery Re-assessment 2017 (Assessment tree V1.3) - hake</td></tr>
<tr><th>Prin-ciple</th><th>Component</th><th>PI No.</th><th>Performance Indicator (PI)</th><th>Danish Seine</th><th>Purse seine</th><th>Hooks & Lines</th><th>Gillnets</th><th>Demersal Trawlers</th><th>Pots</th></tr>
<tr><td>One</td><td>Outcome</td><td>1.1.1</td><td>Stock status</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.1.2</td><td>Reference points</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.1.3</td><td>Stock rebuilding</td><td colspan="6"></td></tr>
<tr><td></td><td>Management</td><td>1.2.1</td><td>Harvest strategy</td><td colspan="6">95</td></tr>
<tr><td></td><td></td><td>1.2.2</td><td>Harvest control rules & tools</td><td colspan="6">75</td></tr>
<tr><td></td><td></td><td>1.2.3</td><td>Information & monitoring</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>1.2.4</td><td>Assessment of stock status</td><td colspan="6">95</td></tr>
<tr><td>Two</td><td>Retained species</td><td>2.1.1</td><td>Outcome</td><td>85</td><td>100</td><td>90</td><td colspan="2">85</td><td>80</td></tr>
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<tr><td></td><td>Habitats</td><td>2.4.1</td><td>Outcome</td><td>60</td><td colspan="3">100</td><td>60</td><td>100</td></tr>
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<tr><td></td><td>Ecosystem</td><td>2.5.1</td><td>Outcome</td><td colspan="6">100</td></tr>
<tr><td></td><td></td><td>2.5.2</td><td>Management</td><td colspan="6">95</td></tr>
<tr><td></td><td></td><td>2.5.3</td><td>Information</td><td colspan="6">95</td></tr>
<tr><td>Three</td><td>Governance and policy</td><td>3.1.1</td><td>Legal & customary framework</td><td colspan="6">95</td></tr>
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<tr><td></td><td></td><td colspan="2">Principle 3 - Management</td><td colspan="6">95,4</td></tr>
</table>

6.3 Summary of Conditions

Table 49 Summary of Conditions

Condition number	Condition	Performance indicator	Related to previously raised condition?
1	North Sea Cod: The Client shall demonstrate that management decisions are consistent with the management plan and that the management plan aims at rebuilding the stock to a level consistent with PI 1.1.1 objectives, e.g. MSY	1.1.1b	N
2	North Sea Hake: The management plan should be revised. The Client shall urge authorities and industry colleagues to give priority to this revision. The condition can be closed when the management plan is revised and ICES has found that this plan is in accordance with precautionary principles	1.2.2a	N
3	Danish seine and Demersal trawl: By the fourth surveillance audit necessary conservation and management measures for all vulnerable marine habitats in the UoC fishing grounds shall be in place and implemented, such that the UoC does not cause serious or irreversible harm to structure and function of vulnerable habitats (as described by OSPAR). The fishery will also need to provide overlapped maps of Danish seine and demersal trawling activity and OSPAR threatened or declining habitats.	2.4.1	N
4	Danish seine and Demersal trawl: By the fourth surveillance audit the client shall present evidence of the implementation of management measures directed to the protection of vulnerable species that are at present not protected in the fishing grounds, in order to achieve the Habitat Outcome 80 level of performance.	2.4.1	N

6.4 Recommendations

Table 50 Summary of Recommendations

Recommendation number	Recommendation	Performance indicator
1	It is recommended that the different UoCs in the fleet keep a record of non-fatal interactions with ETP species. This record should reflect not only the specie interacted but the vessel's position and date. The maintenance of this record is especially important for UoCs with higher interactions, such as gillnets and hooks and lines. These recording would serve in the future to increase the knowledge of the impact of the different gear types on the different ETP populations, but also to increase the knowledge on the status of such populations.	2.3.1

6.5 Determination, Formal Conclusion and Agreement

The Norway North Sea demersal fisheries 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.
Based on the evaluation of the fishery presented in this report the assessment team recommends the certification of the Norway North sea demersal fisheries including the bycatch of saithe in ICES sub-area IV in the Norway blue whiting fishery for the client Norges Fiskarlag.

As the fishery achieved a score of below 80 against 4 scoring indicators, the assessment team has set 4 conditions for the continued certification that the client is required to address. The conditions are applicable to improve performance to at least the 80 level within the period set by the assessment team.

The assessment team also makes 1 recommendation for the fishery.

FORMAL STATEMENT by the decision making entity:

The Technical Reviewer at DNV GL adheres to the recommendation of the assessment team and approves the certification of the Norway North Sea demersal fisheries for the client Norges Fiskarlag.

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- http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/dgs-nea.pdf
- http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/byc.eu.pdf
- https://www.imr.no/forskning/programmer/okosystem_nordsjoen/en
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- http://www.fiskeridir.no/ (with management measures)
- http://www.fiskeridir.no/English/Fisheries/Real-Time-Closure-RTC
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APPENDIX 1 SCORING AND RATIONALES

Appendix 1.1 Performance Indicator Scores and Rationale

Principle 1- Saithe

Evaluation Table for PI 1.1.1 - saithe

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	The stock is at a high level, Figure 2 well above PRI reference points. SG60 is met. The lower confidence limit (5%) of the SSB estimate is well above PRI reference points SG 80 and SG100 are met,		
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)
	Justification	SSB is well above MSYBtrigger and varying around a constant level for about 20 years. SG80 is met The lower confidence limit (5%) is above MSYBtrigger for about 20 year which is more than 2 generations. SG100 is met.		
References		ICES (2017) North Sea Saithe Advice		

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 Btrigger (=Bpa) Fpa FMSY	150,000 t 0.40 per year 0.36 per year	SSB (2017) = 257,327 t Confidence limits [190,767:323,890] F(2016= 0.28 per year Confidence limits [0.18:0.45]]
Limit reference point	Blim Flim	107,000 t 0.56 per year	

OVERALL PERFORMANCE INDICATOR SCORE:	**100**
CONDITION NUMBER (if relevant):	

Evaluation Table for PI 1.1.2 - saithe

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	Limit and target points are defined and calculated based on ICES standard procedures. The assessment on which this is based is full analytical. SG 60 and SG80 are met		
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)	(Y)
	Justification	The ICES procedure for calculating reference points are followed. The reference points are reviewed through the ICES benchmark procedures SG 100 is met		
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)	(Y)
	Justification	Reference points were reviewed (and modified) at the 2016 benchmark of the saithe. ICES does not provide MSY estimates but as a surrogate Bpa is used. The reference points are set consistent with the BMSY. SG80 is met The reference points are set to maintain the stock at MSY and the reference points are calculated taking the ecological role of the saithe into account through the standard ICES process. The saithe is not an LTL species. SG100 is met.		
d	**Guidepost**		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		(Not relevant)	

PI 1.1.2		Limit and target reference points are appropriate for the stock	
	Justification	Saithe is not key LTL species, see section 3.3	
References		ICES 2017 North Sea Saithe advice ICES 2016 Benchmark (WKNSEA)	
OVERALL PERFORMANCE INDICATOR SCORE:			**100**
CONDITION NUMBER (if relevant):			**N/A**

Evaluation Table for PI 1.1.3 NOT SCORED - STOCK NOT DEPLETED

Evaluation Table for PI 1.2.1 - saithe

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)
	Justification	The harvested strategy is agreed between EU and Norway. Both parties define their national strategy on the MSY concept (fishing law and EU CFP basic regulation). The harvest strategy is based on an annual TAC set according to an ICES assessment/management plan deemed precautionary by ICES. This plan is based on agreed reference points (limit and target) SG60 is met. The strategy is based on scientific advice reflecting stock development and as mentioned above the plan is based on limit and target reference points. SG80 is met The strategy is based on scientific advice reflecting stock development and is designed through the EU-Norway annual consultations achieve stock management objectives reflected in the target and limit reference points, cf Agreed management plan. SG100 is met		
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)	(Y)
	Justification	The stock has responded to the harvest strategy as expected – remained at a high level relative to precautionary reference points – and SG60 is met. The strategy has been tested both by experience (more than 10 years) and theoretically (ICES evaluation). SG80 is met. The performance of the strategy has been fully evaluated (Management plan evaluation) and the stock development provide evidence that the strategy main the stock above target levels. SG100 is met.		
c	**Guidepost**	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	(Y)		
	Justification	The monitoring includes Commercial catches (international landings, Below Minimum Sise landings, and discards, age and length frequencies from catch sampling); survey index (IBTS Q3, ages 3–8); combined commercial index scaled to the exploitable biomass (French, German, Norwegian trawler fleets). The assessment provides an insight whether the strategy is working. SG60 is met		

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 strategy is reviewed annual at EU-Norway consultations. ICES reviews the strategy as part of the benchmarks most recently in 2016. SG100 is met.		
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	Saithe is not a shark		
References		ICES (2017) Saithe advice ICES (2016) Benchmark of North Sea stocks (WKNSEA)		
OVERALL PERFORMANCE INDICATOR SCORE:				100
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.2 - saithe

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	A well-defined HCR has developed under the EU-Norway agreement. This HCR is summarized in section 2.3.2.2 but is currently replaced by the ICES MSY strategy while the HCR is being updated with revised reference points. Hence SG60 is met. The Saithe management plan and the ICES MSY HCR both includes setting the fishing mortality at or below F_{MSY} and a scheme for reduction of the fishing mortality should the stock fall below B_{lim} or similar reference point. The Parties are working towards a revision of the management plan with revised reference points. SG80 is met.		
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 main uncertainties are with the estimate of the recruitment and conflicting signals between the survey and fishable biomass index, see section 2.3.2 for further details Observations of saithe at age 3 are not suitable for predicting year-class strength. This means that assumed recruitment values are highly uncertain; 27% of the advised total catch in 2018 is based on the recruitment assumptions for 2017 and 2018. The survey index is uncertain because it is influenced by occasional large catches. This occurred for example in 2016. These uncertainties are accounted for in the SAM formulation of the assessment, see ICES (2017) WKNSEA. Hence SG80 is met. While the stock assessment takes account of the main uncertainties there is a wider range of environment factors that influence the productivity of the saithe population and are not accounted for in the Harvest Control Rule and SG100 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)	(Y)	(Y)

PI 1.2.2		There are well defined and effective harvest control rules in place	
	Justification	The status and history of the North Sea Saithe stock is sumamrised in Section 3.3.1.4 and Figure 2. The tools that are available includes the standard set for the Norwegian fisheries management, i.e.capacity restrictions, licences, TAC, technical measures. These are known to be effective and appropriate to control exploitation. SG60 is met. The status and the history of the siathe stock demonstrate the tools are effective and appropriate in achieving the explotation levels required under the HCR. SG80 is met. The The evidence clearly demonstrates shows that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.	
References		ICES (2017) WKNSEA Benchmark of North Sea saithe stock assessment ICES (2017) North sea Saithe Advice	
OVERALL PERFORMANCE INDICATOR SCORE:			**90**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 1.2.3 - saithe

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	There is a comprehensive range of information available, Brander (1994) on the stock, fisheries statistics including fleet statistics on the exploitation; There is abundance survey information available. SG60 is met. The information is sufficient to support the HCR. SG80 is met The amount of information is the result of a century of research and of a major effort to understand the environmental impacts, Brander (1994). SG100 is 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)	(Y)
	Justification	There are detailed fisheries statistics programmes that cover all removals by commercial fisheries, there is sampling of the landings, there are data from the Norwegian Reference fleet, and there are two annual abundance surveys. These data are sufficient to support the HCR. SG80 is met. The information required by the HCR (fisheries data, age compositions, etc. and abundance survey information) These are available on an annual basis. There is a good understanding of the uncertainties; the robustness of the assessment is tested at benchmark, most recent in 2015 and the robustness of the management is considered as part of the evaluation of the management plan. SG100 is met.		
c	**Guidepost**		There is good information on all other fishery removals from the stock.	
	Met?		(Y)	
	Justification	All fisheries targeting saithe, cod, haddock and haddock are subject to extensive statistical programmes and all removals are well documented, ICES (2017). SG80 is met.		

PI 1.2.3	Relevant information is collected to support the harvest strategy	
References	Brander (1994) ICES (2012) Evaluation of North Sea Management Plan ICES (2016) Benchmark of North Sea Stocks (WKNSEA) ICES (2017) Saithe Advice	
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.2.4 - saithe

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	The stock assessment was benchmarked by ICES in 2016 and the stock assessment was reviewed and a best practice defined. The advice is based on this assessment. SG80 is met. The review at the benchmark considered the assessment in a wider context. SG100 is met.		
b	**Guidepost**	The assessment estimates stock status relative to reference points.		
	Met?	(Y)		
	Justification	The advice is based on stock status relative to reference points. SG60 is met.		
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 saithe assessment went through an ICES benchmark process in 2016 (ICES, 2016a). The scientific survey used in the assessment does not cover the whole stock distribution; however, it is considered generally representative. The survey index is uncertain because it is influenced by occasional large catches Conflicting signals between the survey and fishable biomass index contributes to the assessment uncertainty. The uncertainty for age 3 saithe in 2016 is estimated to be large. The fraction of age 3 saithe migrating into the survey area (and the fishery) is low and varying between years with no obvious trend. This means that assumed recruitment values are highly uncertain. SG60 is met. These uncertainties are taken into account in formulating the advice. SG80 is met. The assessment is based on the SAM approach providing confidence limits for the estimates. SG100 is met.		
d	**Guidepost**			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.

<table>
<tr><td colspan="2">PI 1.2.4</td><td colspan="3">There is an adequate assessment of the stock status</td></tr>
<tr><td rowspan="2"></td><td>Met?</td><td></td><td></td><td>(Y)</td></tr>
<tr><td>Justification</td><td colspan="3">The assessment has been tested and shown to be robust at the benchmark ICES (2016). The benchmark reviews alternative approaches and agrees on a ‘best practice approach’. SG100 is met.</td></tr>
<tr><td rowspan="3">e</td><td>Guidepost</td><td></td><td>The assessment of stock status is subject to peer review.</td><td>The assessment has been internally and externally peer reviewed.</td></tr>
<tr><td>Met?</td><td></td><td>(Y)</td><td>(Y)</td></tr>
<tr><td>Justification</td><td colspan="3">The stock assessment is subject to the ICES scrutiny procedure apprlied in the standard advisory process and is also regulary reviewed as part of the benchmark process, ICES (2016). The internal ICES process includes peer review by experts outside the saithe assesors (WG members) and outside the assessment group through the advisory committee.
The assessment is reviewed as part of the advice formulation process SG80 is met
The benchmark process includes external experts. SG100 is met.</td></tr>
<tr><td colspan="2">References</td><td colspan="3">ICES (2012) Evaluation of the Saithe management plan
ICES (2016) Benchmark of North Sea Stocks (WHNSEA)
ICES (2017) Advice on North Sea Saithe</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE:</td><td>100</td></tr>
<tr><td colspan="4">CONDITION NUMBER (if relevant):</td><td></td></tr>
</table>

Principle 1- Cod

Evaluation Table for PI 1.1.1 - cod

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	The North Sea cod stock is well above Blim, Figure 3, SG60 is met. The lower confidence limit (5%) of the estimated SSB for 2016) is above Blim SG80 and SG100 is met.		
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?		(N)	(N)
	Justification	The cod stock has been through a period approx. 1990-2010 when SSB was below Blim. It is only in 2017 that SSB > MSY Btrigger. The stock is not fluctuating around its target reference point (Bpa or higher). SG80 is not met		
References		ICES (2017) Cod advice		

Stock Status relative to Reference Points			
	Type of reference point	**Value of reference point**	**Current stock status relative to reference point**
Target reference point	Bpa Fpa FMSY	150,000 t 0.39 0.31 (Upper:0.46; lower 0.20)	SSB (2017) = 167,711 t Confidence limits [121,523; 190,640] t F(2016) = 0,35
Limit reference point	Blim Flim	107,000 t 0.54	

OVERALL PERFORMANCE INDICATOR SCORE:	**70**
CONDITION NUMBER (if relevant):	**COND 1**

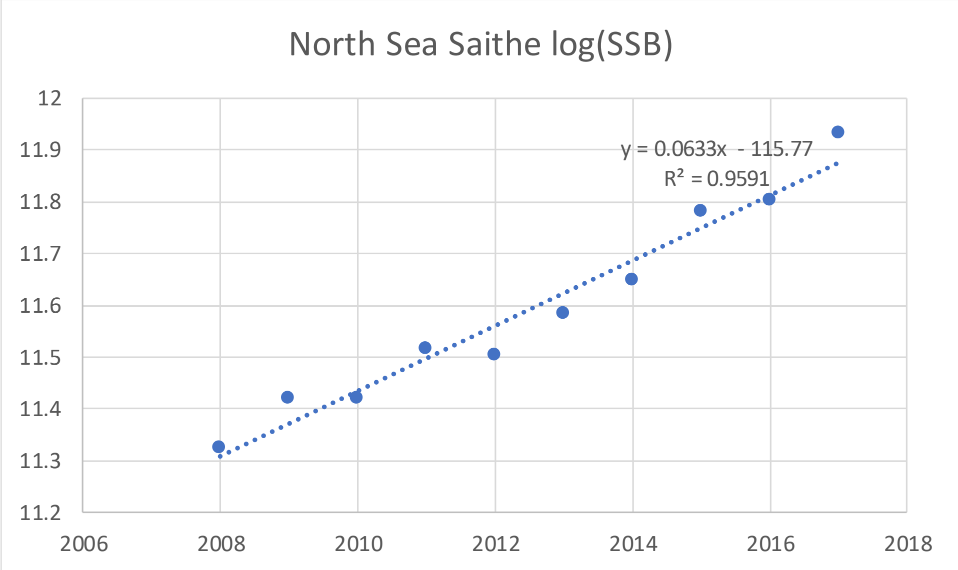
Evaluation Table for PI 1.1.2 - cod

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	There are refence points available, see scoring Table for PI 1.1.1, and these are appropriate for the stock, as benchmarked and recalculated in 2017, ICES (2017) Advice and ICES (2017) WGNSSK SG60 and SG80 are met.		
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)	(Y)
	Justification	The limit reference points are set at a level above which there is an appreciable risk of impairing recruitment in accordance with ICES standard approach to defining limit reference points. SG80 is met. The reference points are calculated using a precautionary approach cf. ICES standard procedure, ICES (2017) WGNSSK. SG 100 is met		
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)	(Y)
	Justification	The target reference points Bpa, Fpa, FMSY (upper and lower boundaries) are defined to assure that they are consistent with a MSY strategy. SG80 is met. The target reference points are defined so that SSB should be maintained at a level consistent with Bpa (used as a surrogate for BMSY). The reference points are based on an age dependent natural mortality based on the ecological role of cod in the North Sea ecosystem. SG100 is met.		
d	**Guidepost**		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		(Not relevant)	

PI 1.1.2	Limit and target reference points are appropriate for the stock	
Justification	Cod is not a key, LTL species, see section	
References	ICES (2017) Cod advice) ICES (2017) WGNSSK	
OVERALL PERFORMANCE INDICATOR SCORE:		100
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.1.3 - cod

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)		(Y)
	Justification	Management of the North Sea cod stock is based on cooperation between Norway and EU. The harvest strategy is laid down in the cod management plan from 2008, see section 3.3.2.5. Stock development since 2008 has demonstrated that the management plan is achieving its primary goal of rebuilding the cod stock. SG60 is met. The cod stock left the recovery phase in 2013 (in the language of the management plan) and is now in the long-term phase i.e. it is expected that the stock will continue at this fairly high level . The fishing mortality has been reduced is is close to F_{MSY}. If the rebuilding is not completed at this time there is strong evidence that this will be the case within the next few years. SG100 is met.		
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)	(Y)	(N)

PI 1.1.3		Where the stock is depleted, there is evidence of stock rebuilding within a specified timeframe		
	Justification	The HCR came into effect in 2008 when the SSB was measured at around 80,000 t; the minimum target is MSY Btrigger (150,000t) requirering a dobbling of the SSB.The realized rate of in SSB [2008-2017] is about 6% (7,000 t) per year, see graph below based on ICES (2017) North Sea Cod advice. The implied rebuilding time in the management plan is thus 10-12 years less twice the generation time which is about 8 years. SG60 and SG80 are met. The stock rebuilding time in the plan iss longer than 1 generation time SG100 is not met.  		
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)	(Y)	
	Justification	The stock is well monitored and in particular abundance indices for two annual surveys provide data that are effective in monitoring rebuilding. SG60 is met. There is direct evidence that the stock is rebuilding, Figure 3. SG80 is met.		
References		ICES (2017) WGNSSK ICES (2017) North Sea Cod advice		
OVERALL PERFORMANCE INDICATOR SCORE:				90
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.1 - cod

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)
	Justification	The harvest strategy is based on the EU-Norway fisheries agreement (1980). This agreement and the commitments that EU, its member states and Norway accepted (f.ex. MSY objectives) and the objectives embedded in their fisheries legislations establish a set of stock management objectives consistent with objectives in PI 1 and PI 2. The cod management plan is based on reference points that meet these objectives. SG 60 is met. The harvest strategy is based on ICES scientific advice with an underlying stock assessment of the cod stock. The advice is therefore responsive to the state of the stock and as the management plan is based on similar reference points as used in the ICES advice these work together (harvest strategy and management objectives) to achieve PI objectives. SG80 is met. The management plan is designed to achieve stock management objectives reflected in the embedded reference points (Bpa and Blim together with Fpa). SG100 is met.		
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 experience is that the cod stock has recovered under the management plan; SG60 is met. The evidence of a rebuilding stock demonstrate that the management plan is achieving its objectives. SG80 is met The performance of the management plan has been fully tested through a management plan evaluation and the stock development show that the strategy is achieving its objectives. However, it remains to be demonstrated that the management plan is able to maintain the stock at target level as the SBB > Blim only occurred recently. SG100 is not met		
c	**Guidepost**	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	(Y)		
	Justification	There is an extensive monitoring programme of the North Sea cod stock status and the fisheries that exploit this stock, detailed fisheries statistics, sampling of the landings, observers at sea, two annual abundance surveys. SG60 is met.		

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 harvest strategy is reviewed through ICES benchmarks, ICES (2015), and through the annual review at the EU-Norway fisheries consultations. The harvest strategy (science, stock assessment, scientific advice, management decisions, MCS) is amended as appropriate. SG100 is met.		
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	Cod is not a shark		
References		ICES (2015) Benchmark ICES (2017) Cod advice Agreed record of EU-Norway Fisheries Consultation October 2016		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.2 - cod

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 management plan, see section 3.3.2.5, includes a well-defined HCR based on precautionary reference points. SG60 is met. There is a well-defined HCR based on precautionary reference points and including provision to reduce fishing mortality should the stock fall below limit reference points. SG80 is met.		
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 main uncertainties include uncertainty in the stock assessment – observational variability – and these are accounted for in the stock assessment (SAM methodology). SG80 is met. While the HCR take account of these uncertainties and also of annual variability in stock productivity. However, the wider variability based on changes in climate and other environmental parameters are not included and SG100 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)	(Y)	(Y)
	Justification	The management tools include the usual package of TAC and technical measures. Furthermore, a set of real time closures has been applied in management, the Norwegian legislation includes move-on rules to protect juvenile fish. The tools have been used and the stock has recovered. SG60 is met. The stock recovery and the reduction of fishing mortality, Figure 3, demonstrate that the tools are effective. SG80 is met. The stock recovery clearly shows that the tools in use are effective in particular the reduction of fishing mortality demonstrates this point. SG100 is met.		
References		ICES (2017) advice Agreed record EU-Norway Fisheries consultations December 2016 ICES (2017) WKNSEA Benchmark of North Sea saithe stock assessment ICES (2017) North Sea Saithe Advice		

PI 1.2.2	There are well defined and effective harvest control rules in place	
OVERALL PERFORMANCE INDICATOR SCORE:		**90**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.2.3 - cod

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	There is a comprehensive range of information available, Pope and Macer (1996), Brander (1994) on the stock, fisheries statistics including fleet statistics on the exploitation; SG60 is met The information is sufficient to support the HCR. SG80 is met The amount of information is the result of a century of research and of a major effort to understand the environmental impacts, Brander (1994). SG100 is 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)	(Y)
	Justification	There are a detailed fisheries statistics programmes that cover all removals by commercial fisheries, there is sampling of the landings, there are data from the Norwegian Reference fleet, and there are two annual abundance surveys. These data are sufficient to support the HCR. SG80 is met. The information required by the HCR (fisheries data, age compositions, etc. and abundance survey information) These are available on an annual basis. There is a good understanding of the uncertainties; the robustness of the assessment is tested at benchmark, most recent in 2015 and the robustness of the management is considered as part of the evaluation of the management plan. SG100 is met.		
c	**Guidepost**		There is good information on all other fishery removals from the stock.	
	Met?		(Y)	
	Justification	The fisheries statistics programmes covers all fishing in Norwegian waters as well as in EU waters. These programmes includes landing statistics, logbooks and VMS surveillance. SG80 is met.		

PI 1.2.3	Relevant information is collected to support the harvest strategy	
References	Pope and Macer (1996) Brander (1994) ICES (2012) Evaluation of North Sea Management Plan ICES (2017) Advice ICES (2015) Benchmark ICES (2008) Evaluation of cod HCR	
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.2.4 - cod

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	The stock assessment is reviewed at an ICES benchmark, ICES (2015), the approach was changed and is considered to be based on 'best scientific practice'. The HCR is reviewed at MPE ICES (2008). SG80 is met. The stock assessment includes major features including exploitation (fishing mortality) and age dependent natural mortality. The natural mortality is updated annually. SG100 is met.		
b	**Guidepost**	The assessment estimates stock status relative to reference points.		
	Met?	(Y)		
	Justification	The assessments are made relative to established reference points, Table 21, SG60 is met.		
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 assessment is based on the SAM methodology, ICES (2017) WGNSSK and ICES (2015) Benchmark. This methodology is based on an identification of the major uncertainties – observation variability – and these uncertainties are taken into account by the methodology, Berg and Nielsen (2014). SG 60 and SG 80 is met. The SAM methodology provides uncertainty estimates of its parameters, (confidence limits, shown in Figure 3). SG100 is met.		
d	**Guidepost**			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			(Y)

<table>
<tr><th colspan="2">PI 1.2.4</th><th colspan="4">There is an adequate assessment of the stock status</th></tr>
<tr><td></td><td>Justification</td><td colspan="4">The assessment has been reviewed at ICES benchmark, ICES (2015) and alternative approaches have been considered. SG100 is met.</td></tr>
<tr><td rowspan="3">e</td><td>Guidepost</td><td></td><td>The assessment of stock status is subject to peer review.</td><td colspan="2">The assessment has been internally and externally peer reviewed.</td></tr>
<tr><td>Met?</td><td></td><td>(Y)</td><td colspan="2">(Y)</td></tr>
<tr><td>Justification</td><td colspan="4">The ICES system includes peer reviewing at various stages. The working group (WGNSSK) provides a first review of the assessment, the advice drafting group also reviews the outcome. The benchmark system is a thorough review of the methodologies and the methods themselves are occasionally reviewed, f. ex. At the 2013 symposium on Stock Assessment methods. SG80 is met.
The ICES benchmark system involve external reviewers-. SG100 is met.</td></tr>
<tr><td colspan="2">References</td><td colspan="4">[List any references here]</td></tr>
<tr><td colspan="5">OVERALL PERFORMANCE INDICATOR SCORE:</td><td>100</td></tr>
<tr><td colspan="5">CONDITION NUMBER (if relevant):</td><td></td></tr>
</table>

Principle 1- Haddock

Evaluation Table for PI 1.1.1 - haddock

<table>
<tr><td colspan="2">PI 1.1.1</td><td colspan="3">The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</td></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td>Guidepost</td><td>It is likely that the stock is above the point where recruitment would be impaired.</td><td>It is highly likely that the stock is above the point where recruitment would be impaired.</td><td>There is a high degree of certainty that the stock is above the point where recruitment would be impaired.</td></tr>
<tr><td>Met?</td><td>(Y)</td><td>(Y)</td><td>(Y)</td></tr>
<tr><td>Justification</td><td colspan="3">The North Sea haddock stock is fluctuating with MSYBtrigger as the lower limit since 2003 about 2 generation times. SG60 is met.
The lower confidence limit (5%) of SSB has in the same period not been below Blim – the SSB below which there is an increased risk of impaired recruitment. SG80 and SG100 are met.</td></tr>
<tr><td rowspan="3">b</td><td>Guidepost</td><td></td><td>The stock is at or fluctuating around its target reference point.</td><td>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.</td></tr>
<tr><td>Met?</td><td></td><td>(Y)</td><td>(N)</td></tr>
<tr><td>Justification</td><td colspan="3">The stock is fluctuating for about 2 generation times around 1.5 * MSY $B_{trigger}$. SG80 is met.
The North Sea haddock stock productivity is highly variable and the lower of the confidence limit (5%) of the SBB has been below MSY $B_{trigger}$ in the period considered (20002-). Also, the fishing mortality is above FMSY and this makes it less likely if the stock is fluctuating around its relevant MSY level. This demonstrate that there is not high degree of certainty in this conclusion. SG100 is not met.</td></tr>
<tr><td colspan="2">References</td><td colspan="3">ICES (2017) North Sea Haddock advice</td></tr>
<tr><td colspan="5">Stock Status relative to Reference Points</td></tr>
<tr><td colspan="2"></td><td>Type of reference point</td><td>Value of reference point</td><td>Current stock status relative to reference point</td></tr>
<tr><td colspan="2">Target reference point</td><td>MSY $B_{trigger}$
F_{MSY}
B_{pa}
F_{pa}
SSB_{mgt}
F_{mgt}</td><td>132,000 t
0.194
132,000 t
0.274
100,000 t
0.3</td><td rowspan="2">SSB (2017) = 248,592 t
Confidence limits
[291,864; 205,319] t
F(2016) = 0.28</td></tr>
<tr><td colspan="2">Limit reference point</td><td>B_{lim}
F_{lim}</td><td>94,000 t
0.384</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE:</td><td>90</td></tr>
<tr><td colspan="4">CONDITION NUMBER (if relevant):</td><td></td></tr>
</table>

Evaluation Table for PI 1.1.2 - haddock

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 full set of ICES standard reference points are defined for this stock, see PI 1.1.1 above. SG60 is met. The reference points are calculated based on ICES standard procedures and are appropriate for the stock, Table 23. SG80 is met.		
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)	(Y)
	Justification	The limit reference points are set at a level above which there is an appreciable risk of impairing recruitment in accordance with ICES standard approach to defining limit reference points. SG80 is met. The reference points are calculated using a precautionary approach cf. ICES standard procedure, ICES (2017) WGNSSK. SG 100 is met		
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)	(Y)
	Justification	The target reference points Bpa, Fpa, FMSY (upper and lower boundaries) are defined to assure that they are consistent with a MSY strategy. SG80 is met. The target reference points are defined so that SSB should be maintained at a level consistent with Bpa (used as a surrogate for BMSY). The reference points are based on an age dependent natural mortality based on the ecological role of cod in the North Sea ecosystem. SG100 is met.		
d	**Guidepost**		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		(Not relevant)	

PI 1.1.2		Limit and target reference points are appropriate for the stock
	Justification	Haddock is not a key LTL species, see section 3.3
References		ICES (2017) North Sea Haddock advice ICES (2017) WGNSSK ICES (2016) Inter-Benchmark Haddock

OVERALL PERFORMANCE INDICATOR SCORE:	**100**
CONDITION NUMBER (if relevant):	**N/A**

Evaluation Table for PI 1.1.3 NOT SCORED - STOCK NOT DEPLETED

Evaluation Table for PI 1.2.1 - haddock

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)
	Justification	The harvest strategy is based on the EU-Norway fisheries agreement (1980). This agreement and the commitments that EU, its member states and Norway accepted (f.ex. MSY objectives) and the objectives embedded in their fisheries legislations establish a set of stock management objectives consistent with objectives in PI 1 and PI 2. Although, there is currently no agreed management plan for haddock for the full stock area the haddock management is based on reference points that meet these objectives. SG 60 is met. The harvest strategy is based on ICES scientific advice with an underlying stock assessment of the cod stock. The advice is therefore responsive to the state of the stock and as the management plan is based on similar reference points as used in the ICES advice these work together (harvest strategy and management objectives) to achieve PI objectives. SG80 is met. The management is designed to achieve stock management objectives reflected in the reference points (Bpa and Blim together with Fpa). SG100 is met.		
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 haddock stock is highly fluctuating but has since 2002 been above MSY $B_{trigger}$ providing experience is that the strategy will keep the stock outside areas with impaired recruitment; SG60 is met. The evidence of a stock above MSY $B_{trigger}$ demonstrates that the management plan is achieving its objectives. SG80 is met Apparently, the management strategy is able to maintain the stock at target level as the SBB > Blim. However, there is no management plan and consequently a full test has not been performed. SG100 is not met		
c	**Guidepost**	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	(Y)		
	Justification	There is an extensive monitoring programme of the North Sea haddock stock status and the fisheries that exploit this stock, detailed fisheries statistics, sampling of the landings, observers at sea, two annual abundance surveys. SG60 is met.		

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 harvest strategy is reviewed through ICES benchmarks, ICES (2015, 2016), and through the annual review at the EU-Norway fisheries consultations. The harvest strategy (science, stock assessment, scientific advice, management decisions, MCS) is amended as appropriate. SG100 is met.		
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	Haddock is not a shark		
References		ICES (2015) Benchmark ICES (2016) Haddock Benchmark ICES (2017) Haddock advice Agreed record of EU-Norway Fisheries Consultation October 2016		
OVERALL PERFORMANCE INDICATOR SCORE:				**95**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 1.2.2 - haddock

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 EU-Norway management is based on a management plan. This plan was evaluated by ICES and found to be precautionary. However, productivity is changing and consequently reference points are updated. The management plan has not yet been updated and instead the Parties base their current decision on advice from ICES based on ICES MSY concept. The plan provides for reduction exploitation rate as limit reference points are approached. SG60 is met. There is a well-defined HCR based on precautionary reference points and including provision to reduce fishing mortality should the stock fall below limit reference points. The plan is to be updated and the process is undergoing. see section 3.3.3.5. SG80 is met.		
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 main uncertainties include uncertainty in the stock assessment – observational variability – and these are accounted for in the stock assessment (TSA methodology). SG80 is met. While the HCR take account of these uncertainties and also of annual variability in stock productivity. However, the wider variability based on changes in climate and other environmental parameters are not included and SG100 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)	(Y)	(Y)
	Justification	The management tools include the usual package of TAC and technical measures. Furthermore, a set of real time closures has been applied in management, the Norwegian legislation includes move-on rules to protect juvenile fish. The tools have been used and the stock has recovered. SG60 is met. The stock recovery and the reduction of fishing mortality, Figure 3, demonstrate that the tools are effective. SG80 is met. The stock recovery clearly shows that the tools in use are effective in particular the reduction of fishing mortality demonstrates this point. SG100 is met.		
References		ICES (2017) advice Agreed record EU-Norway Fisheries consultations October 2016		

PI 1.2.2	There are well defined and effective harvest control rules in place	
OVERALL PERFORMANCE INDICATOR SCORE:		**90**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.2.3 - haddock

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	There is a comprehensive range of information available on the stock, fisheries statistics including fleet statistics on the exploitation; SG60 is met The information is sufficient to support the HCR. SG80 is met The amount of information is the result of a century of research and of a major effort to understand the environmental impacts. SG100 is 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)	(Y)
	Justification	There are a detailed fisheries statistics programmes that cover all removals by commercial fisheries, there is sampling of the landings, there are two annual abundance surveys. Some parts of the fishery is subject to CCTV surveillance. These are sufficient to support the HCR. SG80 is met. The information required by the HCR (fisheries data, age compositions, etc. and abundance survey information) These are available on an annual basis. There is a good understanding of the uncertainties; the robustness of the assessment is tested at benchmark, most recent in 2015 and the robustness of the management is considered as part of the evaluation of the management plan. SG100 is met.		
c	**Guidepost**		There is good information on all other fishery removals from the stock.	
	Met?		(Y)	
	Justification	The fisheries statistics programmes covers all fishing in Norwegian waters as well as in EU waters. These programmes includes landing statistics, logbooks and VMS surveillance. SG80 is met.		

PI 1.2.3	Relevant information is collected to support the harvest strategy	
References	ICES (2017) Advice ICES (2017) WGNSSK ICES (2014) Benchmark ICES (2016) Inter-Benchmark on Haddock in 4, 6.a and 3.a.20 ICES (2008) Evaluation of Haddock HCR	
OVERALL PERFORMANCE INDICATOR SCORE:		100
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.2.4 - haddock

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	The stock assessment is reviewed at an ICES benchmark, ICES (2015) and is considered to be based on 'best scientific practice'. The HCR is reviewed at MPE ICES (2008). SG80 is met. The stock assessment includes major features including exploitation (fishing mortality) and age dependent natural mortality. The natural mortality is updated annually. SG100 is met.		
b	**Guidepost**	The assessment estimates stock status relative to reference points.		
	Met?	(Y)		
	Justification	The assessments are made relative to established reference points, SG60 is met.		
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 assessment is based on the TSA methodology, ICES (2017) WGNSSK and ICES (2015) Benchmark, Fryer et al (1999). This methodology is based on an identification of the major uncertainties – observation variability – and these uncertainties are taken into account by the methodology, SG 60 and SG 80 is met. The TSA methodology provides uncertainty estimates of its parameters, (confidence limits, shown in Figure 3). SG100 is met.		
d	**Guidepost**			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			(Y)

<table>
<tr><td colspan="2">PI 1.2.4</td><td colspan="3">There is an adequate assessment of the stock status</td></tr>
<tr><td></td><td>Justification</td><td colspan="3">The assessment has been reviewed at ICES benchmark, ICES (2015) and alternative approaches have been considered. SG100 is met.</td></tr>
<tr><td rowspan="3">e</td><td>Guidepost</td><td></td><td>The assessment of stock status is subject to peer review.</td><td>The assessment has been internally and externally peer reviewed.</td></tr>
<tr><td>Met?</td><td></td><td>(Y)</td><td>(Y)</td></tr>
<tr><td>Justification</td><td colspan="3">The ICES system includes peer reviewing at various stages. The working group (WGNSSK) provides a first review of the assessment, the advice drafting group also reviews the outcome. The benchmark system is a thorough review of the methodologies and the methods themselves are occasionally reviewed, f. ex. At the 2013 symposium on Stock Assessment methods. SG80 is met.
The ICES benchmark system involve external reviewers-. SG100 is met.</td></tr>
<tr><td colspan="2">References</td><td colspan="3">ICES (2017) Fisheries overview
Fryer et al (1999)</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE:</td><td>100</td></tr>
<tr><td colspan="4">CONDITION NUMBER (if relevant):</td><td></td></tr>
</table>

Principle 1- Hake

Evaluation Table for PI 1.1.1 - hake

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	See **Error! Reference source not found.** and section 3.3.4.5 The Blim is set at 32,000 t while the MSY B trigger is set at 45,000 t. Hence whenever the stock is above MSY B trigger it is well abiove the PRI (Blim)The stock is above the MSY $B_{trigger}$ for the most recent decade. SG60 is met. The lower confidence limit estimated for the SSB has been well above MSY B trigger for the last decade. SG80 is met. The confidence limit applied is 5% - 95%. SG100 is met.		
b	Guidepo st		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)
	Justification	The stock after about 2010 have been above 4 times MSY $B_{trigger}$. SG80 is met. The confidence limit for the SSB is above 3-4 times the MSY $B_{trigger}/B_{pa}$. SG100 is met. Furthermore, the fishing mortality is around (slightly below) F_{MSY} supporting the impression that the stock will be fluctuating around an MSY level.		
References		ICES (2017) WGBIE ICES (2017) Hake advice		

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 $B_{trigger}$ B_{pa} F_{MSY}	45,000 t 45,000 t 0.28 per year	SSB (2018) = 267,673 t Confidence limits [334,331; 197,000] t F(2017) = 0.26 per year
Limit reference point	B_{lim} F_{lim}	32,000 t 0.62 per year	

OVERALL PERFORMANCE INDICATOR SCORE:	**100**
CONDITION NUMBER (if relevant):	

Evaluation Table for PI 1.1.2 - hake

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	There are target reference points available, these are based on ICES standard procedures for defining reference points, see PI 1.1.1 above; SG60 and SG80 are met.		
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)	(Y)
	Justification	The limit reference points are defined based on ICES standard procedures that provide limit refence points designed to avoid exploitation level where reproduction is at risk. SG 80 is met. The ICES procedures are defined based on precautionary considerations. SG100 is met.		
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)	(Y)
	Justification	The target reference points are defined based on ICES standard procedures and are defined consistent with an MSY strategy. SG80 is met. The target reference points are defined such that the stock is maintained at levels consistent with BMSY, i.e. ICES standard procedures which account for precautionary considerations. Through the specification of the natural mortality the ecological role of the stock is considered. SG100 is met.		
d	**Guidepost**		For key low trophic level stocks, the target reference point takes into account the ecological role of the stock.	
	Met?		(Not relevant)	

PI 1.1.2		Limit and target reference points are appropriate for the stock	
	Justification	The stock is not an LTL species, section 3.3.	
References		ICES (2017) WGBIE ICES (2017) Hake advice ICES (2016) Advice basis	
OVERALL PERFORMANCE INDICATOR SCORE:			**100**
CONDITION NUMBER (if relevant):			

Evaluation Table for PI 1.1.3 NOT SCORED - STOCK NOT DEPLETED

Evaluation Table for PI 1.2.1 - hake

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)
	Justification	The harvest strategy is until now based on the EU fishery policy and an EU management plan was agreed in 2004. This plan is no longer appropriate because of changes in the reference points. Until a new plan is agreed and implemented the management of the stock is based on the ICES hake advice. This advice is based on the ICES MSY strategy, see ICES (2016) Advice basis. The future strategy will remain unchanged as the Norwegian and the EU strategies are based on the same principles – MSY fishing under sustainable conditions. The strategy is based on the standard arrangement of scientific advice, joint (authorities and stakeholders) decisions, implementation under well developed MCS programmes and annual reviews of the status of the stock and fisheries. The harvest strategy is implemented under the EU-Norway fisheries agreements involving annual consultations between the Parties. The strategy is expected – as it does for a number of other and similar stocks – to achieve stock management objectives reflected in target and limit reference points. This is implemented through the ICES advice. SG60 is met. Because the strategy is based on annual scientific advice based on annual stock assessments the strategy is responsive to the state of the stock and the elements of the strategy work together to achieve management objectives reflected in the target and limit reference points. SG80 is met. As noted above the 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. SG100 is met.		
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 strategy has been demonstrated to work through the improvements in the status of the European fish stocks over the recent decade. SG60 is met. The strategy also seems to work for the hake stock in specific as demonstrated by the increase in the stock size in that last decade and the decrease of the fishing mortality. SG80 is met. The performance of the harvest strategy for hake has not been fully tested although some evidence demonstrates that it is achieving its objectives. The large increase seen around 2010 and whether this increase is stable is not clearly demonstrated. SG100 is not met.		
c	**Guidepost**	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	(Y)		

<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>Justification</td><td colspan="3">The fisheries are closely monitored both vessels with EU member state flags as well as vessels flying Norwegian colours are subject to obligations to provide landing statistics, catch sampling, logbook and VMS surveillance. Also, there are data from four annual abundance surveys. SG60 is met.</td></tr>
<tr><td rowspan="3">d</td><td>Guidepost</td><td></td><td></td><td>The harvest strategy is periodically reviewed and improved as necessary.</td></tr>
<tr><td>Met?</td><td></td><td></td><td>(Y)</td></tr>
<tr><td>Justification</td><td colspan="3">The harvest strategy is reviewed periodically through the internal EU procedures inter alia involving STECF. The internal procedures including an review of stock status is presented annually.
SG100 is met.</td></tr>
<tr><td rowspan="3">e</td><td>Guidepost</td><td>It is likely that shark finning is not taking place.</td><td>It is highly likely that shark finning is not taking place.</td><td>There is a high degree of certainty that shark finning is not taking place.</td></tr>
<tr><td>Met?</td><td>(Not relevant)</td><td>(Not relevant)</td><td>(Not relevant)</td></tr>
<tr><td>Justification</td><td colspan="3">Hake is not a shark</td></tr>
<tr><td colspan="2">References</td><td colspan="3">STECF annual reports
ICES (2017) Hake advice
ICES (2017) WGBIE</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE:</td><td>95</td></tr>
<tr><td colspan="4">CONDITION NUMBER (if relevant):</td><td></td></tr>
</table>

Evaluation Table for PI 1.2.2 - hake

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 TAC decisions and other regulations of the fisheries are based on ICES and STECF advice. In particular, the TAC advice is based (in recent years) on the ICES MSY framework. SG60 is met. There is not an agreed management plan/HCR in place and the former plan/HCR from 2004 is not considered valid because of changes in the reference points. SG80 is not met.		
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	In defining the HCR the main uncertainties are accounted for, i.e. ICES procedures for MPE evaluation. SG80 is met. However, the ICES standard procedures is not specific and it is not assured that a wide range of uncertainties are accounted for. SG100 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)	(Y)	(N)

PI 1.2.2	There are well defined and effective harvest control rules in place
Justification	The tools available include the standard package of TAC and technical measures. Furthermore, regulations in the form of closed areas and fleet access restrictions (capacity restrictions) and effort restrictions are tools that are available for management. This toolbox is appropriate and generally effective in controlling exploitation. SG60 is met. The fishing mortality is kept below F_{MSY} in recent years and the SSB well above target reference points, Figure 8: Biomass index (a) and index ratio (b) showing that fishing mortality is below the proxy of the MSY reference points. (Index ratio: Lmean/LF = M from the length-based indicator method used for the evaluation of the exploitation status)., This presents evidence that the exploitation level are kept in accordance with objectives (FMSY). SG80 is met. However, the TAC is set slightly above the level advised (sustainable fishery) and the TAC does not exactly restrict the fishery (TAC overshoots). Hence the is not clear evidence that the tools as implemented for the hake fishery is effective. SG100 is not met.

	Advice (t) (MSY Approach)	TAC (t)	Catch (t)
2014	81,846	81,846	89,928
2015	78,457	90,849	95,023
2016	≤ 96,651	108,764	107,530

References	EC 20004 Hake management plan ICES (2016) Advice basis ICES (2017) WGBIE
OVERALL PERFORMANCE INDICATOR SCORE:	**75**
CONDITION NUMBER (if relevant):	**COND 2**

Evaluation Table for PI 1.2.3 - hake

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	There is substantial amount of information available on the hake stock and there is significant research on the particulars of this stock, see Casey and Pereiro (1995). SG60 is met The information is sufficient to allow an appropriate assessment model to be build for support of the harvest strategy (involving annual stock assessment). SG80 is met. The information on European(Northern) hake is comprehensive. Furthermore, the removals including discards are monitored and also environmental data for the North Sea are abundant. SG100 is 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)	(Y)
	Justification	The stock abundance is monitored annually through four abundance surveys. All removals are monitored both landings and discards. SG60 is met. The removal is monitored continuously and the abundance is monitored annually and the HCR is based on an annual TAC setting i.e. that the monitoring of abundance matches the requirements of the TAC setting procedure. SG80 is met. All information required for the TAC setting procedure is available at the required frequency. There is a good understanding of the uncertainties – ageing uncertainties have been a hot topic in this assessment and also the survey uncertainties are well understood. The robustness of the assessment is assessed at ICES benchmarks, ICES (2010)		
c	**Guidepost**		There is good information on all other fishery removals from the stock.	
	Met?		(Y)	
	Justification	All fisheries exploiting Norther hake both flying EU member state flags as well as Norwegian vessels are subject to extensive statistics programmes. There is a discard ban in the Norwegian zone while there are programmes in the EU fisheries that estimate discards. EU countries are required under the EU Data Collection regulation to collect data on discards. Hence all removals are estimated. SG80 is met.		

PI 1.2.3	Relevant information is collected to support the harvest strategy	
References	ICES (2017) WGBIE Casey J. and Pereiro J. (1995) ICES (2014) Benchmark	
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 1.2.4 - hake

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)	(N)
	Justification	The assessment – length based SS3 model – is found to be appropriate for the hake stock assessment, see Stock Annex. The output is geared to the advisory needs i.e. annual TAC advice. SG80 is met. Ecological factors or environmental conditions impacting on hake population dynamics are not taken into account at present in the assessment or in the management. However, synchronous changes have been observed in hake recruitment success and several global, regional and local parameters, which suggest that environmental conditions may be influential for hake. SG100 is not met.		
b	**Guidepost**	The assessment estimates stock status relative to reference points.		
	Met?	(Y)		
	Justification	The assessment estimates stock status relative to reference points see table attached to scoring for PI 1.1.1. SG60 is met.		
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 assessment identifies the major sources of uncertainty partly as an analysis of the input data, see stock annex, and partly because SS3 is a statistical model providing confidence estimates. Hence the major uncertainties are identified, survey variability, SG60 is met. The assessment because SS3 is a statistical model are taken into account, SG80 is met. The stock is evaluated relative to reference points. Stock status is associated with confidence limits and the status is thus probabilistic. SG100 is met.		
d	**Guidepost**			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			(Y)

PI 1.2.4		There is an adequate assessment of the stock status		
	Justification	The assessment was through the 2000s reviewed and several approaches were investigated, see stock annex for a review of the development. The present formulation has been shown to be 'best scientific practice'. SG100 is met.		
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	The assessment has been subject to ICES benchmark. The annual assessments passed through the assessment working group WGBIE and are further reviewed in the advisory process. SG80 is met. The ICES benchmark process involves both internal as well as external review, SG 100 is met.		
References		Stock Annex for hake		
OVERALL PERFORMANCE INDICATOR SCORE:				95
CONDITION NUMBER (if relevant):				

Principle 2

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.
	Danish seine	N/A	N/A	N/A
	Purse seine	N/A	N/A	N/A
	Hooks and lines	N/A	N/A	N/A
	Gillnets	N/A	N/A	N/A
	Demersal trawl	N/A	N/A	N/A
	Pots	N (go to c)	N (go to c)	N

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	The scoring element approach has been used to score the different UoCs, with the exception of the pots UoCs in which the scoring element approach has not been used as there is limited information on catch composition. According to the data shown in Tables 25-30, main retained species for most UoC are saithe, cod, haddock and hake, already evaluated as targeted species in P1. There are 24 UoCs in this assessment. Specifically, main retained species for the different UoCs are: - Danish seine UoCs : saithe, cod, haddock and hake. For UoC 1 (targeting saithe), main retained species would be cod, haddock and hake. For UoC 7 (targeting cod), main retained species would be saithe, haddock and hake. For UoC 13 (targeting haddock), main retained species would be saithe, cod and hake, and for UoC 19 (targeting hake), main retained species would be saithe, cod and haddock. - Purse seine UoCs: saithe. For UoC 4 (targeting saithe), there are no main not minor retained species. For UoCs 10, 16 and 22 (targeting cod, haddock and hake) the only main retained species is saithe. There are no minor retained species. - Hooks and lines UoCs: saithe, cod and haddock. For UoC 3 (targeting saithe), main retained species are cod and haddock. For UoC 9 (targeting cod), main retained species are saithe and haddock). For UoC 15 (targeting haddock), main retained species are saithe and cod, and for UoC 21 (targeting hake) main retained species are saithe, cod and haddock. - Gillnets UoCs: saithe, cod and hake. For UoC 5 (targeting saithe) main retained species are cod and hake, For UoC 11 (targeting cod), main retained species are saithe and hake. For UoC 23 (targeting hake) main retained species are saithe and cod. And for UoC 17 (targeting haddock) main retained species are saithe, cod and hake. - Demersal trawl UoCs: saithe, cod and hake. For UoC 2 (targeting saithe) main retained species are cod and hake. For UoC 8 (targeting cod) main retained species are saithe and hake. For UoC 20 (targeting hake) main retained species are saithe and cod. And for UoC 14, targeting haddock, main retained species are saithe, cod and hake. - All Pots UoCs: For UoC 6 (targeting saithe), UoC 12 (targeting cod), UoC 24 (targeting hake) and UoC 18 (targeting haddock), there is no specific information as regards the catch composition of the pots UoCs, as the fishery has just started to use pots. No official data are available as yet, therefore it is not possible to determine if those species are within biologically based limits. The UoC is evaluated under SIc. SG100 is not met for the pot UoCs.
		ICES gives scientific advice for all main retained species (which biological status is described in detailed in the Principle 1 background section). According to ICES advice: - Saithe: Fishing mortality (F) has been below FMSY since 2013. Spawning–stock biomass (SSB) has fluctuated without trend and has been above MSY Btrigger since 1996. SG100 is met. - Cod: Fishin mortality is estimated to be above FMSY. Spawning–stock biomass (SSB) has increased from the historical low in 2006 to above MSY Btrigger in 2017. There are indications of increased recruitment in 2017. SG80 is met because as the stock is within biologically based limits. Fishing mortality is above the target reference point FMSY. SG100 is not met. - Haddock: Fishing mortality (F) has been fluctuating above FMSY for most of the time-series and was above FMSY in 2016. Spawningstock biomass (SSB) has been mostly above MSY Btrigger since 2002. SG80 is met because as the stock is within biologically based limits. Fishing mortality is above the target reference point FMSY. SG100 is not met. - Hake: The spawning-stock biomass (SSB) has increased significantly since 2006 and is well above historical estimates. Fishing mortality (F) has decreased significantly after 2005, and has been below FMSY since 2012. SG100 is met.

Main retained species	SG60	SG80	SG100
Saithe	Y	Y	Y
Cod	Y	Y	N
Haddock	Y	Y	N
Hake	Y	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

As regards minor retaind species, landing data shows that minor retained species to consider in the different UoCs would be:

- ling and monkfish for the Danish seine UoCs;
- hake, tusk, ling and monkfish for the hooks and lines UoCs;
- haddock, tusk, ling, monkfish and redfish for the gill net UoCs;
- haddock, Greenland halibut, tusk, ling, monkfish, redfish and greater silver smelt for the demersal trawl UoCs.
- There are no main not minor retained species for the purse seine UoCs.

Scientific advice for minor species is described as follows:

Ling (*Molva molva*): ICES 2017 advice for ling in subareas 6–9, 12, and 14, and in divisions 3.a and 4.a, suggests catches should be no more than 17 695 tonnes in each of the years 2018 and 2019. During 2016 849 tonnes were landed by the Norwegian demersal fleet in the North Sea. Although the stock size relative to candidate reference points is unknown, available information suggests that the stock has been increasing since 2004. The Index ratio shows that Fishing mortality is at FMSY, which gives a high degree of certainty that ling stock is within biologically based limits and fluctuating around their target reference points. SG100 is met for ling.

Monkfish (*Lophius piscatorius*): According to ICES 2017 advice on anglerfish in subareas 4 and 6 and Division 3.a, the stock size indicator shows an increasing biomass since 2011 and the relative harvest rate has been relatively stable since 2014. The stock status relative to candidate reference points is unknown. ICES advises that when the precautionary approach is applied, catches in 2018 should be no more than 26.408 tonnes. Landings by the Norwegian demersal fishery were 184 tonnes in 2016 and 121 tonnes in 2015. The lack of information regarding proxy reference points prevent the stock from achieving SG100. SG80 is met by default by the stock as it not a main species.

Tusk (*Brosme brosme*): According to ICES 2017 Advice on tusk in subareas 4 and 7–9, and in divisions 3.a, 5.b, 6.a, and 12.b (Northeast Atlantic), when the precautionary approach is applied, catches should be no more than 8984 tonnes in each of the years 2018 and 2019. Landings by the Norwegian North Sea demersal fishery were 34 tonnes in 2016 and 41 tonnes in 2015. ICES advice shows that the stock is above biological reference points while Fishing mortality is below FMSY. SG100 is met for tusk.

Beaked redfish (*Sebastes mentella*): Landings by the Norwegian North Sea demersal fishery under assessment were 7 tonnes in 2016 and 14 tonnes in 2015. There is no ICES advice for the stock in the North Sea. There are no reference points to consider. SG100 is not met. SG80 is met by default.

Greenland halibut (*Reinhardtius hippoglossoides*): Landings by the Norwegian North Sea demersal fishery were 92 tonnes in 2016 and 104 tonnes in 2015. All catches were taken by the demersal trawl UoC. There is no ICES advice nor reference points for the stock in the North Sea. SG100 is not met. SG80 is met by default.

Greater silver smelt (*Argentina silus*): ICES advises that when the precautionary approach is applied, catches should be no more than 15 656 tonnes in each of the years 2018 and 2019. The Norwegian North Sea demersal fishery had no landings of the stock in 2016, while in 2015 landings were 7 tonnes. No reference points are defined for this stock. SG100 is not met. SG80 is met by default.

Species	SG60	SG80	SG100
Ling	Y	Y	Y
Monkfish	Y	Y	N
Tusk	Y	Y	Y
Beaked redfish	Y	Y	N
Greenland halibut	Y	Y	N
Greater silver smelt	Y	Y	N

<table>
<tr><th colspan="2">PI 2.1.1</th><th colspan="3">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</th></tr>
<tr><td></td><td></td><td colspan="3">SG80 is met by all UoCs as all main retained species achieve SG80. | UoC	Species	SG100
Danish seine	Ling, monkfish	N
Purse seine	None.	Y
Hooks and lines	Tusk, ling, monkfish.	N
Gillnets	Tusk, ling, monkfish and redfish.	N
Demersal trawls	Greenland halibut, tusk, ling, monkfish, redfish and greater silver smelt.	N
Pots	N/A (go to c)	N |</td></tr>
<tr><td>b</td><td>Guidepost</td><td></td><td></td><td>Target reference points are defined for retained species.</td></tr>
<tr><td></td><td>Danish seine</td><td></td><td></td><td>N/A</td></tr>
<tr><td></td><td>Purse seine</td><td></td><td></td><td>N/A</td></tr>
<tr><td></td><td>Hooks and lines</td><td></td><td></td><td>N/A</td></tr>
<tr><td></td><td>Gillnets</td><td></td><td></td><td>N/A</td></tr>
<tr><td></td><td>Demersal trawl</td><td></td><td></td><td>N/A</td></tr>
<tr><td></td><td>Pots</td><td></td><td></td><td>N</td></tr>
<tr><td></td><td>Justification</td><td colspan="3">According to the different ICES advices described under PI 2.1.1.a, target reference points are defined for saithe, cod, haddock, hake, ling and tusk. Target reference points are not defined for monkfish, redfish, Greenland halibut nor greater silver smelt. | Scoring element	SG100
Saithe	Y
Cod	Y
Haddock	Y
Hake	Y
Ling	Y
Monkfish	N
Tusk	Y
Beaked redfish	N
Greenland halibut	N
Greater silver smelt	N | As regards pots, to which the catch composition is uncertain, the team considers that SG100 is not met, since it is not possible to determine which are the species in the catch composition.</td></tr>
<tr><td>c</td><td>Guidepost</td><td>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.</td><td>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.</td><td></td></tr>
</table>

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		
	Danish seine	N/A	N/A	
	Purse seine	N/A	N/A	
	Hooks and lines	N/A	N/A	
	Gillnets	N/A	N/A	
	Demersal trawl	N/A	N/A	
	Pots	Y	Y	
	Justification	Main retained species for the different UoCs (this is, saithe, cod, haddock and hake) are within the limits, therefore SGc is not applicable. As regards the pot UoCs, so far there isn't sufficient information to determine which is the expected catch composition by the fleet. However, the team is aware of the limited number of vessels using pots (less than 5 in 2017), the capture method by pots (which trap fish or other species inside the pot but which remain alive until lifted on board, meaning that releasement would result in unharmed individuals), and the limited catch per unit effort when compared with other gear types. The team considers that all these measures are considered as a partial strategy which should serve to ensure that the fishery would not hinder the recovery and rebuilding of main retained species which are below biologically based limits (if any). SG80 is met by the pot UoC.		
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.		
	Danish seine	N/A		
	Purse seine	N/A		
	Hooks and lines	N/A		
	Gillnets	N/A		
	Demersal trawl	N/A		
	Pots	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	The status of main retained species (saithe, cod, haddock and hake) is known. SGd is not applicable for most UoCs. As regards the pot UoCs, so far there isn't sufficient information to determine which is the expected catch composition by the fleet. However, the team is aware of the limited number of vessels using pots (less than 5 in 2017), the capture method by pots (which trap fish or other species inside the pot but which remain alive until lifted on board, meaning that releasement would result in unharmed individuals), and the limited catch per unit effort when compared with other gear types. The team considers that all these measures are considered as a partial strategy which should serve to ensure that the fishery would not hinder the recovery and rebuilding of main retained species which are below biologically based limits (if any). SG60 is met by the pot UoCs.
References	Landing records. ICES 2017 advice for ling in subareas 6–9, 12, and 14, and in divisions 3.a and 4.a. ICES 2017 advice on anglerfish in subareas 4 and 6 and Division 3.a. ICES 2017 Advice on tusk in subareas 4 and 7–9, and in divisions 3.a, 5.b, 6.a, and 12.b (Northeast Atlantic). ICES 2017 Advice on greater silver smelt in subareas 1, 2, and 4, and in Division 3.a http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/pok.27.3a46.pdf http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/cod.27.47d20.pdf http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/had.27.46a20.pdf http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/hke.27.3a46-8abd.pdf
Final score by scoring element	(see table below)

Scoring element	SG60	SG80	SG100
Saithe	Y	Y	Y
Cod	Y	Y	N
Haddock	Y	Y	N
Hake	Y	Y	Y
Ling	N/A	N/A	Y
Monkfish	N/A	N/A	N
Tusk	N/A	N/A	Y
Beaked redfish	N/A	N/A	N
Greenland halibut	N/A	N/A	N
Greater silver smelt	N/A	N/A	N

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	
UoC 1, targeting saithe (retained species are cod, haddock, hake, ling and monk)	85
UoC 7, targeting cod (retained species are saithe, haddock, hake, ling and monk)	90
UoC 13, targeting haddock (retained species are saithe, cod, hake, ling and monk)	90
UoC 19, targeting hake (retained species are saithe, cod, haddock, ling and monk)	85

OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	
UoC 4, targeting saithe (There are no retained species)	100
UoC 10, targeting cod (retained species is saithe)	100
UoC 16, targeting haddock (retained species is saithe)	100
UoC 22, targeting hake (retained species is saithe)	100

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
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	
UoC 3, targeting saithe (retained species is cod, haddock, hake, tusk, ling and monkfish)	**90**
UoC 9, targeting cod (retained species are saithe, haddock, hake, tusk, ling and monkfish)	**95**
UoC 15, targeting haddock (retained species are saithe, cod, hake, tusk, ling and monkfish)	**95**
UoC 21, targeting hake (retained species are saithe, cod, haddock, tusk, ling and monkfish)	**90**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	
UoC 5, targeting saithe (retained species are cod, hake, haddock, tusk, ling, monkfish and beaked redfish)	**85**
UoC 11, targeting cod (retained species are saithe, hake, haddock, tusk, ling, monkfish and beaked redfish)	**90**
UoC 23, targeting hake (retained species are saithe, cod, haddock, tusk, ling, monkfish and beaked redfish)	**85**
UoC 17, targeting haddock (retained species are saithe, cod, hake, tusk, ling, monkfish and beaked redfish)	**90**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers	
UoC 2, targeting saithe (retained species are cod, hake, haddock, Greenland halibut, tusk, ling, monkfish, beaked redfish, and greater silver smelt): 85	**85**
UoC 8, targeting cod (retained species are saithe, hake, haddock, Greenland halibut, tusk, ling, monkfish, beaked redfish and greater silver smelt): 85	**85**
UoC 20, targeting hake (retained species are saithe, cod, haddock, Greenland halibut, tusk, ling, monkfish, beaked redfish and greater silver smelt): 85	**85**
UoC 14, targeting haddock (retained species are saithe, cod, hake, Greenland halibut, tusk, ling, monkfish, beaked redfish and greater silver smelt): 85	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	
UoC 6 targeting saithe	**80**
UoC 12 targeting cod	**80**
UoC 24 targeting hake	**80**
UoC 18 targeting haddock	**80**
CONDITION NUMBER (if relevant):	**N/A**

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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawl	Y	Y	Y
	Pots	Y	Y	Y
	Justification	Both the Norwegian Marine Resources Act and the European Common Fisheries Policy are established strategies which should address all main impacts of the fishery on the ecosystem. Both strategies base their measures on data gathered through different research institutions, including ICES advice on fish stocks. Besides, Norway has developed a suite of regional seas management plans (for the Barents Sea, the Norwegian Sea, and the North Sea and Skagerrak Sea) that are aimed at monitoring and safeguarding the status of the marine environment. There are fishery biological and technical conservation measures for safeguarding stocks and managing fisheries and the interactions with other animals, such as the "Firth of Forth" closure to ensure prey availability for seabirds, the "sprat box" closure to protect juveniles of herring, or the "Norway pout box", introduced in 1977 in north-east Scotland where fisheries with small-meshed trawls were banned. In the Norwegian economic zone, the Patch Bank was closed permanently in 2002, and in 2008 the fishing season was restricted. The team considers the fishing strategy along with the different measures in place, such as gear and mesh size regulations, the allocation of quotas, the establishment of fishing seasons, move on rules, seasonal area closures and protected areas are sufficient to be considered as a strategy for managing retained species. SG100 is met for all UoCs.		
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.
	Danish seine	Y	Y	N

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		
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N
	Justification	There is reliable information on landings, and also ICES advice for some retained species such as saithe, cod, haddock, hake, ling, monkfish, tusk and greater silver smelt. However, there is limited information as regards the status of beaked redfish and Greenland halibut. The records on landings, the monitoring of the different species and the advice given serve to give confidence that the partial strategy will work, as any drop of the stock will easily be noticed, and the advice would result in lower quotas, area closures or specifically designed management plans. SG80 is met by all UoC. The lack of both advice and/or allocated quotas on certain minor retained species prevents different UoCs from achieving SG100. Besides, the team can't provide evidence of testing of such strategy. SG80 is met by the Danish seine, the hooks and lines, the gillnet, the demersal trawl and the pots UoCs. Direct information about the purse seine fishery (showing a clean catch composition where all landings are the targeted saithe) confirms that the fishing strategy itself can be considered as a tested strategy that ensures that the purse seine fishery does not pose a risk of serious harm to retained species. SG100 is met by the purse seine UoCs.		
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.
	Danish seine		Y	Y
	Purse seine		Y	Y
	Hooks and lines		Y	Y
	Gillnets		Y	Y
	Demersal trawl		Y	Y
	Pots		Y	Y
	Justification	There is clear evidence that the strategy is successfully implemented, as confirmed by conversations with the Norwegian Ministry of Fisheries. There are control measures covering fleet effort, gear types and sizes, landings, quotas and permanent and temporary area closures. All UoCs meet SG100.		

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		
d	Guidepost			There is some evidence that the strategy is achieving its overall objective.
	Danish seine			N
	Purse seine			Y
	Hooks and lines			N
	Gillnets			N
	Demersal trawl			N
	Pots			N
	Justification	There is evidence that the strategy has been implemented, however, while there is reliable information on the status of the stocks of main retained species, there is lack of reliable information on the status of the stocks of certain minor retained species. This prevents the fishery from achieving SG100, as it is not possible to determine if the strategy is achieving the objective of not hindering the recovery of minor species such as monkfish, which is a minor retained species in all UoC (apart from the purse seine UoCs). Danish seine, hooks and lines, gillnets, demersal trawls and pots do not achieve SG100. The selectivity of the purse seine fishery (where 100% of catches are the targeted saithe serves to grant SG100, as there is evidence that the fishing strategy is not hindering the recovery of any other species. SG100 is met for the purse seine UoCs.		
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	Not relevant for the fishery under assessment. Sharks are not a retained species for any UoC under assessment.		
References		IMR personal comments Directorate of Fisheries personal comments. Landing records. http://www.fiskeridir.no/ (with management measures) https://www.sildelaget.no/ (with allocated quotas) http://www.fisheries.no/ (with fishing regulations) http://www.fiskeridir.no/English/Fisheries/Real-Time-Closure-RTC		
OVERALL PERFORMANCE INDICATOR SCORE: Danish seine				90
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine				100

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
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**90**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**90**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers	**90**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**90**
CONDITION NUMBER (if relevant):	**N/A**

Evaluation Table for PI 2.1.3:

<table>
<tr><td colspan="2">PI 2.1.3</td><td colspan="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</td></tr>
<tr><td colspan="2">Scoring Issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="8">a</td><td>Guidepost</td><td>Qualitative information is available on the amount of main retained species taken by the fishery.</td><td>Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery.</td><td>Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.</td></tr>
<tr><td>Danish seine</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Purse seine</td><td>Y</td><td>Y</td><td>Y</td></tr>
<tr><td>Hooks and lines</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Gillnets</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Demersal trawl</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Pots</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Justification</td><td colspan="3">The landing obligation, which was implemented in 1987, serves to provide quantitative information on the impacts of the fishery in all affected species. Removals by other EU countries in the area are also known by the relevant EU institutions. The impact of the fishery with respect to stock status can be easily evaluated for those species that are evaluated by ICES on an annual basis. Besides, the ICES International Bottom Trawl Survey (IBTS) in the North Sea, undertaken since the 70's, contributes to increase the knowledge on the different species in the area. However, the lack of advice or defined biological reference points on certain minor retained species (such as monkfish, present in the catch composition of all UoCs apart from purse seines) prevent the different UoCs from achieving SG100. SG80 is met.
The purse seine fleet benefits from very clean catch composition where all catches are the targeted saithe. Therefore, the consequences of the purse seine fishery on other retained species can be estimated to be nil. SG100 is met for the purse seine UoCs.</td></tr>
<tr><td rowspan="7">b</td><td>Guidepo st</td><td>Information is adequate to qualitatively assess outcome status with respect to biologically based limits.</td><td>Information is sufficient to estimate outcome status with respect to biologically based limits.</td><td>Information is sufficient to quantitatively estimate outcome status with a high degree of certainty.</td></tr>
<tr><td>Danish seine</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Purse seine</td><td>Y</td><td>Y</td><td>Y</td></tr>
<tr><td>Hooks and lines</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Gillnets</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Demersal trawl</td><td>Y</td><td>Y</td><td>N</td></tr>
<tr><td>Pots</td><td>Y</td><td>Y</td><td>N</td></tr>
</table>

PI 2.1.3		**Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species**		
	Justification	Certain retained species are subject to ICES advice and have defined reference points (saithe, cod, haddock, hake, tusk and ling). This information (along with landing records) is sufficient to quantitatively estimate outcome status with a high degree of certainty. For other minor retained species such as monkfish, redfish, Greenland halibut and greater silver smelt, the lack of reference points makes it difficult to assess outcome status with respect to biologically based limits. As all UoCs have some of these minor retained species in their catch composition, the team concludes that SG100 is not met for the Danish seine, hooks and lines, gillnets, demersal trawls and pots UoCs. The purse seine UoC benefits from not having these species in their catch composition. SG100 is met by the purse seine UoCs.		
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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawl	Y	Y	Y
	Pots	Y	Y	Y
	Justification	Data on stock status of all different species in the catch continues to be collected via research trips such as the ICES Annual International Bottom Trawl Survey, and is used by ICES and IMR to provide advice on the different species in the catch. Landing statistics since the implementation of the Norwegian landing obligation can provide trends of the landings of the different retained species in the catch composition and the areas where these species are more abundant. On general terms, the evaluation of how new management measures serve to manage retained species can be done by comparing landing statistics before and after the implementation of the different management measures. SG100 is met by all UoCs.		
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.
	Danish seine		Y	Y
	Purse seine		Y	Y
	Hooks and lines		Y	Y
	Gillnets		Y	Y

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		
	Demersal trawl		Y	Y
	Pots		Y	Y
	Justification	The implementation of the landing obligation and the statistics associated serve to monitor ongoing mortalities of all retained species. All records are subject to scrutiny by the Directorate of Fisheries who follows up catches and quotas. All UoCs meet SG100.		
References		Landing records. ICES 2017 advice for ling in subareas 6–9, 12, and 14, and in divisions 3.a and 4.a. ICES 2017 advice on anglerfish in subareas 4 and 6 and Division 3.a. ICES 2017 Advice on tusk in subareas 4 and 7–9, and in divisions 3.a, 5.b, 6.a, and 12.b (Northeast Atlantic). ICES 2017 Advice on greater silver smelt in subareas 1, 2, and 4, and in Division 3.a http://www.fiskeridir.no/ (with management measures) https://www.sildelaget.no/ (with allocated quotas) http://www.fisheries.no/ (with fishing regulations) http://www.fiskeridir.no/English/Fisheries/Real-Time-Closure-RTC		
OVERALL PERFORMANCE INDICATOR SCORE: Danish seine				**90**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine				**100**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines				**90**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets				**90**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers				**90**
OVERALL PERFORMANCE INDICATOR SCORE: Pots				**90**
CONDITION NUMBER (if relevant):				**N/A**

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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N
	Justification	Since the implementation of the landing obligation in Norway in 1987, discarding is not permitted. In practice this means that all commercial species are landed and recorded on sales slips, but non-commercial species and small individuals of commercial species may still be discarded. Besides, Regulation J-250-2013 obliges to the discarding of certain shark species as long as they are alive, in order to minimise their mortality. Unfortunately, there are no records by the commercial fleet about the identification or number of individuals released every year, so there is no option to measure trends of these interactions. Non-fatal interactions with marine mammals or birds are not recorded either. There is no formal observer programme, so there are no direct observations on the level of discarding or the species composition of discards from the Norwegian fleet. However, there is information available regarding the expected catch composition of the different fishing gears thanks to the research undertaken by the IMR reference fleet. Crew members in the reference fleet vessels record all interactions, including those with released individuals. The data gathered through the reference fleet is sufficient to estimate which could be the main and minor bycatch species in the Norwegian North Sea demersal fisheries. Data collected in 2016 shows that there are no main bycatch species to consider for any UoC. SG80 is met by default by all gear types. As regards minor bycatch species, there are different sharks, rays and skates species, along with crustaceans and other fish and non ETP species. Given the uncertainties both in the specific bycatch ratio per gear type and the status of the different bycatch species, SG100 is not met for any gear type.		
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.	
	All UoCs	N/A	N/A	

<table>
<tr><td colspan="2">PI 2.2.1</td><td colspan="3">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</td></tr>
<tr><td></td><td>Justification</td><td colspan="3">There are no main bycatch species to consider</td></tr>
<tr><td rowspan="3">c</td><td>Guidepost</td><td>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.</td><td></td><td></td></tr>
<tr><td>All UoCs</td><td>N/A</td><td></td><td></td></tr>
<tr><td>Justification</td><td colspan="3">There are no main bycatch species to consider.</td></tr>
<tr><td colspan="2">References</td><td colspan="3">Reference fleet data for vessels south 62ºN.</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE: Danish seine</td><td>80</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE: Purse seine</td><td>80</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines</td><td>80</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE: Gillnets</td><td>80</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers</td><td>80</td></tr>
<tr><td colspan="4">OVERALL PERFORMANCE INDICATOR SCORE: Pots</td><td>80</td></tr>
<tr><td colspan="4">CONDITION NUMBER (if relevant):</td><td>N/A</td></tr>
</table>

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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawl	Y	Y	Y
	Pots	Y	Y	Y
	Justification	Data collected by the IMR reference fleet serves to support that there are no main bycatch species to consider. The implementation of the landing obligation in 1987 served to minimize the bycatch of the different commercial species, although certain discarding of non-commercial species is known to take place. Both IMR and the Ministry of Fisheries have shown no concerns as regards this practice, and consider the discarding to be minimal and with no significant detrimental effects for the different stocks. Mesh regulations should serve to avoid catch of small fish, and move on rules to avoid the continued catch of juvenile fish. The team considers the landing obligation as a strategy for minimizing bycatch. SG100 is met by all UoCs.		
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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N

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	The measures that have been in place for many years are known to be effective. The small proportion of non-commercial species in the catch composition of the reference fleet for the different gear types gives confidence that the strategy is working in avoiding the catch of these species. The lack of specific testing or research undertaken for each gear type and fishing area prevent the fishery from achieving SG100. All UoC achieve SG80.		
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.
	Danish seine		Y	Y
	Purse seine		Y	Y
	Hooks and lines		Y	Y
	Gillnets		Y	Y
	Demersal trawl		Y	Y
	Pots		Y	Y
	Justification	There is clear evidence that the strategy is successfully implemented, as confirmed by conversations with the Norwegian Ministry of Fisheries. There is a strong enforcement system covering fleet effort, gear types and mesh sizes, landings and permanent and temporary area closures. All UoCs meet SG100.		
d	Guidepost			There is some evidence that the strategy is achieving its overall objective.
	Danish seine			Y
	Purse seine			Y
	Hooks and lines			Y
	Gillnets			Y
	Demersal trawl			Y
	Pots			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	Data provided by the IMR reference fleet show a small proportion of non-commercial (potential bycatch) species in the catch, which generally do not reach a 1% of the catch (although certain species, such as sharks, skates and rays can reach higher numbers, but less than 4% of the catch). This data, and the lack of infringement s by the fleet as regards discarding, serves as an evidence that the strategy is achieving its objective of minimizing bycatch. SG100 is met by all gear types.
References		Reference fleet catch data. Conversations with the Ministry of Fisheries and the Directorate of Fisheries.

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**95**
CONDITION NUMBER (if relevant):	**N/A**

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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N
	Justification	Landing obligation was implemented in Norway in 1987, banning the discarding of commercial species. Discarding of non-commercial species is known to take place, but according to data by the reference fleet there are no main bycatch species in the catch of any of the assessed gear types. SG80 is met. Data from the reference fleet is sufficient to quantitatively estimate the catch of discarded species, however, the limited information on the status of the different species prevent all UoC under assessment from achieving SG100.		
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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N

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**		
	Justification	Data collected by the reference fleet is sufficient to identify which are the bycatch species to consider. It could also give an estimation of the quantities taken by the different gear types in the Norwegian fleet. However, the lack of information on the stock and population status of the different species makes it difficult to estimate the outcome status with respect to biologically based limits, as these are not defined for many bycatch species. Expected impact would in any case be negligible, as catches of bycatch species is very low. SG100 is not met. Data provided by the reference fleet shows that there are no main species to consider for any UoC. SG80 is met by all UoCs.		
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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawl	Y	Y	Y
	Pots	Y	Y	Y
	Justification	The main objective of the bycatch strategy would be to reduce the catch of unwanted species to the minimum, and to ensure survival of discarded species. The team considers that the continued recording by the reference fleet serves to evaluate whether the strategy to minimizing bycatch is achieving its objective of minimizing such interactions over the years. Moreover, data gathered by the reference fleet is subject to review by IMR. This information serves to highlight any individual or group of species that might be at specific risk through being bycatch in the saithe fishery. SG100 is met by all UoCs.		
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.
	Danish seine		Y	N
	Purse seine		Y	N
	Hooks and lines		Y	N
	Gillnets		Y	N
	Demersal trawl		Y	N

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		
	Pots		Y	N
	Justification	The reference-fleet programme is an ongoing programme which has been implemented for several years so far. The programme serves to collect any necessary information as regards bycatch species, in order to detect any increase in the risk to their populations. SG80 is met by all UoCs. Monitoring of bycatch is limited to a small number of reference fleet vessels, which may or may not be truly representative of the fleet and the general fishing practice across the fleet. SG100 is not met by any UoC.		
References		Reference fleet data.		

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**85**
CONDITION NUMBER (if relevant):	**N/A**

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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N
	Justification	According to MSC FCR V1.3, CB.3.11.1, ETP Species are those recognized by national ETP legislation or listed in Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the fishery under assessment is not endangered. Species recognized by national legislation (such as Regulation J-250-2013, protecting basking sharks, spurdogs, portbeagles and silky sharks, or EU CR 104/2015, now superseded by EU CR 120/2018) or by signed binding agreements (such as OSPAR) shall also be considered as ETP species. Species listed in the Norwegian Red List of Protected Species are also considered here, as the Norwegian Marine Resources Acts (section 7.b), sets that “management measures shall incorporate an approach that takes into account habitats and biodiversity”, taking action to avoid the redlisting of species. As detailed in Sib, ETP species to consider (due to interactions with the reference fleet) are golden redfish, portbeagle, thornback ray, starry ray, tope shark, spurdog, razorbills, harbor porpoise and common harbor seal. According to information collected by the reference fleet and research studies, and information on compliance provided by the Norwegian Coast Guard, it is highly likely that the effects of the different UoCs are within the national and international requirements for the protection of ETP species. SG80 is met by all UoCs. The lack of detailed description and recording of all interactions by all vessels in the UoA prevents the fishery from achieving SG100.		
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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	N

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		
Gillnets	Y	Y	N
Demersal trawl	Y	Y	N
Pots	Y	Y	Y
Justification	Landing obligation, implemented in 1987, would require vessels to land any dead animal, regardless it being ETP species or not. Landing records (as detailed in Tables 25 to 30) show some landing of redfish (unspecified) by the gillnet and the demersal trawl fishery (with 3 tonnes landed by the gillnet fishery in 2016 and also in 2015, and 4 tons landed by the demersal trawl fleet in 2016 and 11 tonnes in 2015). It was not possible to determine if these individuals of redfish were beaked redfish or golden redfish. While the beaked redfish would be considered as a retained species, the golden redfish (*Sebastes norvegicus*) is considered as an ETP species as it is listed in the Norwegian Red List of Protected Species. There were no landings of ETP species by any other UoC under assessment. Besides, data of possible interactions between fishing vessels and ETP species is collected through the Norwegian reference fleet recording system. For 2016, the Norwegian coastal reference fleet south 62ºN showed the following records: • For the Danish seine reference fleet: 6 spurdogs (*Squalus acanthias*), 1 thornback ray and 1 golden redfish (*Sebastes norvegicus*). • For the purse seine reference fleet there were no interactions with ETP species during 2016. • For the longline reference fleet: 2 porbeagles (*Lamna nasus,* 150 kg), 25 spurdogs (*Squalus acanthias,* 756 kg), 1 thornback ray and 1 starry ray. • For the 10 vessels in the demersal gillnet reference fleet fishery: 2 razorbills (*Alca torda*), 11 harbour porpoise (*Phocoena phocoena*), 4019 spurdogs (*Squalus acanthias*), 6 starry ray, 3 thornback ray, 2 tope shark, 3 common harbour seal (*Phoca vitulina*), and 33 Golden redfish (*Sebastes norvegicus*). Specifically, the catch of spurdogs taken during 2016 corresponds to 6 coastal vessels that caught 3965 juvenile individuals of spurdog (4922 kg) and 4 vessels in the offshore fleet that caught 54 individuals (2628 kg). • For the 6 vessels in the demersal trawl reference fleet there were interactions with 2 thornback ray ad 1 starry ray. • For the pots reference fleet there were no interactions with ETP species during 2016. Records from the reference fleet show significant interactions of the reference fleet with spurdogs (*Squalus acanthias*). Spurdog is also listed in IUCN red list as Vulnerable. Elasmobranchs present a high survival post capture rate. If the return is done quickly, experimental studies demonstrate that there is a high probability of survival (Mandelman and Farrington 2007a). The Norwegian management system obliges to the release of these species when encountered alive (most of the times) or to the landing when they are fatally injured or dead. However, so far the system does not require the recording of these interactions. ICES 2016 Advice on spurdog establishes that there shouldn't be any targeted fishery for spurdog and that bycatches should be kept to minimum. The allocated quota by all EU countries is zero. ICES 2016 also shows that, of the 265 tonnes of spurdog landed in 2015 by the European Northeast Atlantic fleet, 80% were taken by Norwegian vessels. ICES Advice also reports that 68% of catches were taken by gillnets (while 16% were taken by bottom trawlers, 12 % by lines and 2% by other gear types). In any case, according to ICES 2016 advice, and "based on medium-term projections, annual catches at the recent assumed level (2468 tonnes) would allow the stock to increase at a rate close to that estimated with zero catches".		

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**
		The team considers that the 7 tonnes caught by the Norwegian North Sea reference fleet are highly unlikely to create unacceptable impacts on the stock of spurdogs. ICES 2016 Advice on portbeage (*Lanma nasus)* in the Northeast Atlantic reflects that direct fishing should be prohibited and bycatch should be minimized. There is limited information on the stock. Landings in the NEA region were 7 tonnes in 2014. The catch taken by the longline reference fleet were 150 kg in 2016. The team considers that the catch taken by the longline fleet does not create unacceptable impacts on the portbeagle populations. Both spurdogs and portbeagles benefit from Regulation J-250-2013, which obliges to the releasement of these individuals if still alive when taken. ICES advice on tope shark sets that there should be more than 376 tones landed in 2018 in all NEA waters. There are no reference points defined for the stock. According to ICES, 30% of catches are taken by trawlers, 26% by hooks and lines, 21% by gillnets and 23% by other gears. Historically, most of the landings are taken by the French fleet, with Norway representing a very low proportion of the landings of tope shark (less than 1%). The team considers that the 2 individuals taken by the gillnet reference fleet are not causing significant detrimental direct effects on the tope shark stock. There are no reference points defined for the thornback ray stock. ICES advices that catches in 2018 should be no more than 2574 tones for the North Sea, Skagerrak, Kattegat and English Channel areas. There were 7 individuals taken by the reference fleet in 2016. 1 taken by the Danish seine, 1 by the longline fleet, 2 by demersal trwlers and 3 by demersal gillnets. According to ICES advice, Thornback ray in Subarea 4 and in divisions 3.a and 7.d is concentrated in the southwestern part of the stock area (divisions 4.c and 7.d), thus straddling two TAC areas (EU waters of Division 2.a and Subarea 4, and Division 7.d). Most landings of thornback ray are made by France and UK, with Norway being responsible for less than 1% of the landings in the whole distribution area. Latest ICES advice for stary ray (2015) states that tehre shouln't be any directed fisheries at least until 2019. There are no reference points for the stock. This species is widespread in the Central and Northern North Sea and is a common bycatch of bottom trawls. Fishing pressure on the stock is unknown as the species is almost exclusively discarded but the amount of discards has not been quantified and discard survival is unknown. For 2016, the Norwegian reference fleet caught 1 stary ray with longline vessels, 1 with demersal trawlers and 6 with demersal gillnets. As regards Golden redfish, there is no advice for the species in the North Sea. The species is redlisted in the Norwegian red list of protected species and catches should be kept to minimum. The team however considers that the 34 individuals taken by the fleet would not cause unacceptable impacts on the stock, as is a small proportion when compared with ICES estimated landings for Norway of 2400 tonnes in 2015. There were 2 razorbills trapped by the gillnet reference fleet during 2016. According to the description given at Norway Red List of Species, the Norwegian population of Alca torda is estimated to be approximately 90,000 reproducing individuals. There appears to have been a decline in stocks for the entire Norwegian *Alca torda* stock in the range of 50-80% during the last 3 generations of the species (1967-2014), and the decline was particularly high in the first part of this period. The stock in the UK (where the fishery also takes place) is large and appears to have grown in the last 40 years. The team considers that the catches by the gillnet reference fleet were result of an sporadic catch and will not create an unacceptable impact to the razorbill population. Regarding the catches of marine mammals such as harbour porpoise and common harbour seal by the gillnet fishery, it's noteworthy to mention that gillnets are equipped with pingers which should work in scaring marine mammals (especially harbour porpoise) and dissuading them for coming close to the net. In any case, fishermen would always try to avoid interactions between ETP species and the gear, as these could result in expensive reparations and waste of time and money.

<table>
<tr><td colspan="2">PI 2.3.1</td><td colspan="2">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</td></tr>
<tr><td></td><td></td><td colspan="2">As regards the catch of 3 common harbour seals, the species is protected by EU Habitats Directive Annex II, but is considered to be Least Concern by the Norwegian Red List of species. The stock in the North Sea area was strongly decimated in 1988 and again in 2002 due to virus epidemics, but has risen to the level before the epidemic. The Norwegian Red List classification of the species changed from Vulnerable to Least Concern in 2015. The estimated population of Phoca vitulina in Norwegian waters is increasing and up to 7100 individuals in 2013. This is more than 90% of the minimum estimate from the 1990s. It is noteworthy to mention that there are allocated quotas to hunt the stock in Norway. The team considers that the catch by the gillnet fleet does not create an unacceptable impact to the population.
As regards harbour porpoises, the species is protected by EU habitats Directive Annex II, but also by OSPAR and ASCOBANS. The stock is however considered to be Least Concern by the Norwegian Red List. According to it, the stock in the North Sea is estimated at 341.366 individuals, and stable over the period 1995-2006. The team considers that the catch taken by the gillnet fleet does not create an unacceptable impact to the population of harbour porpoises.
The low numbers of ETP species recorded by the reference-fleet observers provide a high degree of certainty that direct interactions between gears such as Danish seine, purse seine and pots do not cause any significant impact on the stocks of ETP species. These gears achieve SG100.
As regards the demersal trawls, hooks and lines and gillnets UoCs, data provided by the reference fleet shows interactions with birds, sharks, marine mammals and fish ETP species. However, and after checking the status of the different affected ETP populations, the team considers that the numbers and quantities taken by these fleets are highly unlikely to create unacceptable impacts to these populations. SG80 is met by demersal trawlers, hooks and lines, and gillnets UoCs. SG100 is not met as the lack of records on interactions with these species does not allow for a high degree of confidence on the lack of detrimental impacts of the fleet on these stocks.
Although the different stocks are monitored by different institutions, such as IMR, NINA and ICES, the team considers that the comprehensive recording of non-fatal interactions with ETP species (specially for demersal trawlers, gillnets and hooks and lines fleet) would benefit the knowledge on the impacts that the gears may have on the different populations, as it would also result in increasing the knowledge of the different ETP species. A Recommendation has been set.</td></tr>
<tr><td rowspan="7">c</td><td>Guidepost</td><td></td><td>Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.</td><td>There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.</td></tr>
<tr><td>Danish seine</td><td></td><td>Y</td><td>N</td></tr>
<tr><td>Purse seine</td><td></td><td>Y</td><td>N</td></tr>
<tr><td>Hooks and lines</td><td></td><td>Y</td><td>N</td></tr>
<tr><td>Gillnets</td><td></td><td>Y</td><td>N</td></tr>
<tr><td>Demersal trawl</td><td></td><td>Y</td><td>N</td></tr>
<tr><td>Pots</td><td></td><td>Y</td><td>N</td></tr>
</table>

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	Indirect effects on ETP populations would be those caused as results of interactions with the fishing gear (such as injuries, which are difficult to quantify) or those related to the reduction of prey availability for prey species, competition for forage, destruction of egg cases or geolocation difficulties. Indirect effects such as prey removal are normally taken into account in the management plans by increasing the natural mortality in the assessment to account for the needs of higher trophic levels. Personal comments by the Institute of Marine Research in Bergen reported that marine mammals are normally taken into account on catch advice, but they could not asseverate the same for bird species. Notwithstanding this, indirect effects are considered unlikely to create unacceptable impacts on ETP species, based on current knowledge in relation to the population status and life history of potentially impacted ETP species. The difficulty to provide a high degree of confidence that there aren't significant detrimental effects of the fishery on ETP species prevents the fishery from obtaining SG100, even though IMR ecosystem modelling of Norwegian fisheries, long-term monitoring of marine mammals by IMR, seabirds by NINA and ICES reviews of seabird, elasmobrachii and marine mammal–fishery interactions have not identified any cause for concern with respect to the North Sea demersal fisheries. All UoCs achieve SG80.
References	http://www.ecolex.org/details/legislation/act-no-37-of-2008-relating-to-the-management-and-conservation-of-living-marine-resources-marine-living-resources-act-lex-faoc082017/? http://www.ecolex.org/details/legislation/regulation-no-1475-on-the-ban-from-catch-of-sharks-in-2012-lex-faoc115522/ Northridge (1988) http://artsdatabanken.no/Files/13973/Norsk_r_dliste_for_arter_2015_(PDF) CITES Appendix I www.ospar.org ICES advice on spurdog in NEA Mandelman, J.W., and M.A. Farrington. 2007a. The estimated short-term discard mortality of a trawled elasmobranch, the spiny dogfish (*Squalus acanthias*). Fisheries Research 83 (2007) 238–245. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/dgs-nea.pdf http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/byc.eu.pdf https://artsdatabanken.no/Rodliste http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/gag.27.nea.pdf http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/rjc.27.3a47d.pdf http://ices.dk/sites/pub/Publication%20Reports/Advice/2015/2015/rjr-234.pdf

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**80**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**80**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers	**80**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**85**
CONDITION NUMBER (if relevant): Recommendation.	**N/A**

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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	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 Norwegian North Sea demersal fishery takes place both in Norwegian and European waters, so both Norwegian and EU regulations apply to the protection of ETP species. Norway is a signatory party to key international conventions affecting ETP species, including CITES (Annex I), OSPAR and the UN code for responsible fishing. Regulation J-250-2013 is specifically designed for the protection of basking sharks, spurdogs, portbeagles and silky sharks. There is also a Norwegian red list of threatened species based on IUCN red list. Besides, the Norwegian Marine Resources Acts (section 7.b), sets that “management measures shall incorporate an ecosystem approach that takes into account habitats and biodiversity”, taking action to avoid the redlisting of species. The EU habitats Directive, the EU birds Directive and the ASCOBANS agreement (to which EU is a signatory party) also establish measures to protect certain ETP species in the EU waters of the North Sea. Electronic logbooks should serve to record fatal interactions with seabirds and marine mammals when these happen. Direct records by the fleet have proven these to be minimal. There is no requirement to record non-fatal interactions, which would serve to better quantify the effects that different UoCs have on the different ETP populations. As described under PI 2.3.1, the Norwegian reference fleet records interactions of the different vessels in the reference fleet will all affected species, which serves to quantify the effects of the different gear types. Fishermen always avoid interactions of ETP species with the fishing gear, as these may result in damages to the net that would require expensive reparations. Hooks and lines have implemented streamers (tori lines) which should serve to prevent interactions with seabirds, while gillnets have pingers (acoustic scaring devices) which should serve to prevent interactions with marine mammals. There are no specific concerns as regards ETP interactions by the purse seine or the pots UoCs, as, if trapped, ETP individuals could easily be released without damage. Entanglements with Danish seine and demersal trawlers could result either in casualty or in releasement, depending on the level of entanglement. Data from the reference fleet show no specific concerns for these gear types. Besides, there are seasonal and permanent closures in the vicinity of seabird nesting sites, and designated Nature 2000 sites for the protection of marine mammals. The different regulations and measures in place are considered as a strategy which is highly likely to achieve national and international requirements for the protection of ETP species. However, the team feels that this is not a comprehensive strategy as it still lacks records and measures to avoid non-fatal interactions. SG80 is met for all UoCs.		
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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks	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.		
	and lines			
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N
	Justification	There is on-site research by IMR through the study of catch composition by the reference fleet. As described in PI2.3.1.b, these interactions have resulted negligible for all gear types but gillnets and hooks and lines. As regards gear types with higher interactions, such as hooks and lines and gillnets, the team considers that the specific measures in place will work in relation to the species and gears affected. Such specific measures are the use of tori lines in the hook and line fleet and the use of pingers in the gillnet fleet. Besides, Regulation J-250-2013 applies to all gear types and obliges to the releasement of both spurdogs and portbeagles if entangled. Research undertaken by Madelman and Farrington (2007) shows that shark species have a high survival rate if released soon. The team concludes that the low number of interactions by gears types such as Danish seine, purse seine, demersal trawls and pots and the specific measures in place for hooks and lines and gillnets, along with the high post-capture survival rate of certain species, give an objective basis for confidence that this strategy will work for all UoCs. SG80 is met by all UoCs. However, the reference fleet only represents a small proportion of the Norwegian fleet, and to this day e-logbooks in normal operational vessels do not record ETP interactions, not even catches of elasmobranchs (or any other species) that are released alive, but only landings of those that did not manage to survive. The lack of specific knowledge on both the real impact by the fleet and the status of some ETP species prevent all UoCs from achieving SG100.		
c	**Guidepost**		There is evidence that the strategy is being implemented successfully.	There is clear evidence that the strategy is being implemented successfully.
	Danish seine		Y	Y
	Purse seine		Y	Y
	Hooks and lines		Y	Y
	Gillnets		Y	Y
	Demersal trawl		Y	Y
	Pots		Y	Y

<table>
<tr><th colspan="2">PI 2.3.2</th><th colspan="3">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.</th></tr>
<tr><td></td><td>Justification</td><td colspan="3">ICES, IMR and NINA conduct research and monitoring of the populations of marine mammal and seabirds. Their results are afterward reviewed by OSPAR and NAMMCO.
The habitats Directive (in place in EU waters) was established in 1992, protecting several ETP species. Norwegian specific management measures such as landing obligation of all species, area closures, move on rules, return to sea of alive elasmobranchs, use of specific scaring devices such as streamers (by longlines) and pingers (by gillnets), the recording system by the reference fleet and a robust enforcement system serve as a clear evidence that the strategy is being implemented successfully. All UoCs reach SG100.</td></tr>
<tr><td rowspan="8">d</td><td>Guidepost</td><td></td><td></td><td>There is evidence that the strategy is achieving its objective.</td></tr>
<tr><td>Danish seine</td><td></td><td></td><td>Y</td></tr>
<tr><td>Purse seine</td><td></td><td></td><td>Y</td></tr>
<tr><td>Hooks and lines</td><td></td><td></td><td>N</td></tr>
<tr><td>Gillnets</td><td></td><td></td><td>N</td></tr>
<tr><td>Demersal trawl</td><td></td><td></td><td>N</td></tr>
<tr><td>Pots</td><td></td><td></td><td>Y</td></tr>
<tr><td>Justification</td><td colspan="3">The monitoring of interactions with the fishery (conducted by the Norwegian reference fleet), and the monitoring of elasmobranchians, marine mammal and seabird populations by ICES, IMR and NINA, would serve to detect any increase in the risk posed by these populations due to the Norwegian North Sea demersal fishery. Data by the reference fleet show negligible interactions with ETP species by the Danish seine fleet, and nil by the purse seine, and pots vessels. This low level of interactions serves to justify that the strategy is achieving is objective as regards these fishing gears. The Danish seine, purse seine, and pots UoCs achieve SG100.
As regards the demersal trawl, gillnet and hooks and line fleets, the level of interactions reported by the reference fleet together with the higher risk of interactions, prevent these UoCs from achieving SG100, as at present is not possible to asseverate that these fleets are achieving the objective of minimizing interactions with ETP species.</td></tr>
<tr><td colspan="2">References</td><td colspan="3">http://www.ices.dk/community/groups/Pages/WGFTFB.aspx
http://www.ecolex.org/details/legislation/act-no-37-of-2008-relating-to-the-management-and-conservation-of-living-marine-resources-marine-living-resources-act-lex-faoc082017/?
http://www.ecolex.org/details/legislation/regulation-no-1475-on-the-ban-from-catch-of-sharks-in-2012-lex-faoc115522/
Northridge (1988)
http://artsdatabanken.no/Files/13973/Norsk_r_dliste_for_arter_2015_(PDF)
CITES Appendix I
www.ospar.org
The Norwegian red list of endangered species.
Mandelman, J.W., and M.A. Farrington. 2007a. The estimated short-term discard mortality of a trawled elasmobranch, the spiny dogfish (Squalus acanthias). Fisheries Research 83 (2007) 238–245.</td></tr>
</table>

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.

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	**90**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	**90**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**90**
CONDITION NUMBER (if relevant):	**N/A**

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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N
	Justification	The ICES, IMR and NINA institutions collect information on sharks, marine mammals and seabird populations. Landing obligation, implemented in 1987, should serve to detect any increase in landings of ETP species. Besides, the reference fleet has a comprehensive system of recording all interactions by these vessels, including interactions with ETP species. The team considers that the use of both information on casualties recorded by the reference fleet and population status on ETP species serve to provide sufficient information to quantitatively estimate the impact of fishing activity on ETP species. SG80 is met by all UoCs. The lack of a comprehensive recording system of all interactions with ETP species prevent the UoA from achieving SG100.		
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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N

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.		
	Justification	Even though all fatal interactions are recorded by the fleet, the lack of records on non-fatal interactions prevent the fishery from gaining SG100, as so far injuries or other non-fatal impacts cannot be measured. However, it is considered that the information collected is sufficient to determine whether the fishery may be a threat to the protection and recovery of ETP species, as information on fatal interactions is collected both by e-logbooks and the reference fleet and there is research undertaken by different institutions such as ICES, IMR and NINA on the status of different ETP populations. Information on interactions and information on stock status is considered sufficient to determine whether the fishery is a threat to protection and recovery of ETP species. All UoCs achieve SG80.		
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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawl	Y	Y	N
	Pots	Y	Y	N
	Justification	The team considers that the volume of data provided by ongoing monitoring programs by NINA, IMR and ICES on ETP species, as well as landing records from the reference fleet and from the fishery's e-logbooks, are adequate to measure trends and support a full strategy to manage the fatal impacts that the fishery may have on ETP species. It could also serve to evaluate if the strategy is achieving its overall objective. However, the lack of records of non-fatal interactions which could result in injuries on ETP species prevent the fishery from reaching SG100. All UoCs achieve SG80.		
References		Landing records http://www.ecolex.org/details/legislation/act-no-37-of-2008-relating-to-the-management-and-conservation-of-living-marine-resources-marine-living-resources-act-lex-faoc082017/? http://www.ecolex.org/details/legislation/regulation-no-1475-on-the-ban-from-catch-of-sharks-in-2012-lex-faoc115522/ Northridge (1988) http://artsdatabanken.no/Files/13973/Norsk_r_dliste_for_arter_2015_(PDF) CITES Appendix I www.ospar.org ICES advice on spurdog in NEA		
OVERALL PERFORMANCE INDICATOR SCORE: Danish seine				**80**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine				**80**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines				**80**

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.**	
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets		**80**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers		**80**
OVERALL PERFORMANCE INDICATOR SCORE: Pots		**80**
CONDITION NUMBER (if relevant):		**N/A**

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.
	Danish seine	Y	N	N
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawl	Y	N	N
	Pots	Y	Y	Y

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
	Justification	According to VMS maps by the Directorate of Fisheries, the demersal fisheries take place mostly in the area that goes from the Norwegian coast to the coast of Scotland, this is, the Fladen Ground but also the Utsira High and the area by the Norwegian Trench. Common encountered habitats in the region are sandy and muddy bottoms, but also some small rocky and reef areas. The demersal fisheries include several UoC (which include different fishing gears). While Danish seines and demersal trawls are expected to disturb the seafloor, other gears such as purse seines, hooks and lines, gillnets and pots are expected to have very limited impact on the seafloor, mainly produced by the local impact caused by anchors. Impacts of pots are also expected to be limited, due to the light weight of the pots but also due to the limited areal impact when compared with the bottom habitat. The team concludes that it is highly unlikely that the mentioned gears (purse seines, hooks and lines, gillnets and pots) will have any significant impact on the seafloor, as this would only happen in case of gear loss, which is un rare event which is avoided when possible by the crew by choosing smooth fishing grounds. If a gear is lost efforts will be made to recover it. Impacts on sedimentary bottoms, if any, would have a minimum effect on habitat structure and function, far from being serious or irreversible. The evidence to support the statement that these gears do not reduce the structure and function of habitats encountered (if any), would be its design and testing on testing pools, which show that interactions with the seafloor are not expected. The UoCs that include purse seine, hooks and lines, gillnets and pots achieve SG100. As regards demersal gears that actively touch the seafloor (such as Danish seine and demersal trawls), Kaiser et al. (2006) concluded that otter trawling produces a significant, negative, short-term effect on muddy habitats, but interestingly there was also a longer-term positive effect on the response variables to this impact. Impacts on muddy and sandy bottoms are considered lighter than on harder bottoms, and the areas easier to recover. According to Meenakumari et al (2008), and Gordon et al (2002) sandy habitats can recover after trawling disturbance in less than 5 years. While the team considers that the common habitats affected by these gears (muddy and sandy grounds) would not produce any irreversible harm, there are other overlapping habitats which host vulnerable species which would be affected by demersal gears. There are several MPA in the North Sea which were designated to protect different species such as corals, but also birds or marine mammals. The VMS on board serves the Directorate of Fisheries to ensure that these areas are not entered by the fleet. The Directorate of Fisheries reported no infringements as regards the Norwegian fleet accomplishment of management measures in MPAs with designated management measures. Notwithstanding this, it is noteworthy to mention that, at least in the UK EEZ, not all MPA have associated management areas such as area closures to protect benthic habitats. Besides, Figures 12 and 16 show that the demersal fisheries fishing grounds overlap with OSPAR vulnerable species such as seapens and burrowing megafauna. The team considers that fishing gears such as Danish seines and demersal trawls are unlikely to produce serious or irreversible harm to habitat structure and function, as recovery of common encountered habitats is expected to take less than 5 years if the fishery were to stop. Notwithstanding this, it should also be highlighted that the North Sea has been intensively fished over the last century with heavier fishing gears, and its habitat has been altered completely. Even if all fisheries in the area were to cease, fully recovery to its pre-existing state would not be expected. SG60 is met by Danish seines and demersal trawls. However, there are reservations as regards the impacts that these gears may cause on vulnerable habitats such as seapen communities which are present (and not protected) in the fishing grounds and may overlap VMS tracks. According to available maps, the demersal fisheries do not overlap with other vulnerable species such as sponges or corals. Overlapped maps of fishing activities by Danish seine and demersal trawlers and MPA and OSPAR vulnerable habitats would help the team in scoring this PI. SG80 is not met for Danish seines and demersal trawls.
References		VMS maps OSPAR threatened habitats maps Meenakumari, B., Bhagirathan, U. and Pravin, P. Impact of Bottom Trawling on Benthic Communities: A Review. Fishery Technology 2008, Vol. 45(1) pp: 1 – 22. https://www.researchgate.net/publication/259979122_Impact_of_bottom_trawling_on_benthic_communities_a_review Kaiser et al, 2006. Kaiser, M. J., Clarke, K. R., Hinz, H., Austen, M. C. V.,

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
	Somerfield, P. J., and Karakassis, I. 2006. Global analysis of response and recovery of benthic biota to fishing. Marine Ecology Progress Series, 311: 1 –14. Gordon, Donald C. Jr., Ellen L.R. Kenchington, Kent D. Gilkinson, Gordon B.J. Fader, Gordon B.J. Fader, Cynthia Bourbonnais-Boyce, Kevin G. MacIsaac, David L. McKeown, Lea-Anne Henry and W. Peter Vass. Summary of the Western Bank otter trawling experiment (1997-1999): Effects on benthic habitat and communities. Can. Tech. Rep. Fish. Aquat. Sci. 2822: vii + 70 p. http://www.dfo-mpo.gc.ca/Library/336797.pdf Hiddink J.G., Jennings S., and Kaiser M.J (2006). Indicators of the Ecological Impact of Bottom-Trawl Disturbance on Seabed Communities. Ecosystems (2006) 9: 1190– 1199. https://link.springer.com/content/pdf/10.1007%2Fs10021-005-0164-9.pdf

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	**60**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	**100**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**100**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**100**
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawlers	**60**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**100**
CONDITION NUMBER (for Danish seine and demersal trawls UoCs.)	**COND 3**

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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	Y
	Pots	Y	Y	Y
	Justification	The Norwegian MAREANO program, which maps depth, topography, sediment composition, contaminants, biotopes and habitats in Norwegian waters, serves as a valuable tool to manage habitat types in Norwegian waters, and has help to establish no fishing zones in Norwegian waters, which has been designed mainly to protect cold corals which are mostly located near the shore line, with the exception of two protected areas in more open waters. The mandatory VMS in place serves to verify that these regulations are followed. As regards fishing grounds which do not fall under the Norwegian jurisdictions, these are studied by the European's Union Natura Directive (http://natura2000.eea.europa.eu/#), the OSPAR Commission (www.ospar.org) and the Mapping European Seabed Habitats portal (www.searchmesh.net). These areas are protected by the Habitats and Nature 2000 Directives in waters which fall under the EU jurisdiction. Both the Norwegian and the European Union management tools have designated protected areas for the protection of sensitive habitats in their respective waters. Norwegian and EU enforcement systems, along with the mandatory use of VMS in the fishing fleet, serve to assure the accomplishment of these regulations. All UoC achieve SG100.		
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.
	Danish seine	Y	N	N
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y

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		
	Demersal trawls	Y	N	N
	Pots	Y	Y	Y
	Justification	The research undertaken in the status of benthic habitats by different institutions such as the OSPAR Commission, the MAREANO program or the JNCC (UK Joint Nature Conservation Committee), along with the establishment of protected areas based on these results serve to provide an objective basis of confidence that the management strategy will work. Vessels carry VMS which serve to monitor their position and accomplishment of regulation measures as regards Marine Protected Areas. Enforcement is carried out by the Norwegian Coast Guard and by EU Fisheries Inspection vessels. No infringements were reporting regarding entrance in area closures. However, some of the designated MPAs in the area (especially in UK waters) are not yet completely managed, as area closures have not been established yet and fishing in them is still permitted. It is not expected that pelagic gears as purse seines and hooks and lines, and demersal fixed gears such as gillnets and pots will cause any irreversible harm in the seafloor. The research showing the limited effects of these gears on bottom habitats gives high confidence that the strategy will work. SG100 is met for these fishing gears. As regards fishing gears such as Danish seine and demersal trawlers, these are expected to have an impact on vulnerable habitats. Although existing management measures are considered likely to work to protect most managed vulnerable habitats, the fact that the fishery takes place in fishing grounds in which vulnerable habitats have been identified but are not yet protected rests confidence that the strategy will work. SG80 is not met for Danish seine and demersal trawlers. SG60 is met for these fishing gears.		
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.
	Danish seine		Y	N
	Purse seine		Y	N
	Hooks and lines		Y	N
	Gillnets		Y	N
	Demersal trawls		Y	N
	Pots		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	There is evidence of the establishment of protected areas to protect vulnerable benthic species both in Norwegian and European waters. There is also evidence on the enforcement systems taking place in both these jurisdictions, through each European nation enforcement system. The Norwegian Directorate of Fisheries has been consulted in order to know the range of infractions by the Norwegian fleet, and this resulted in an infraction ratio below 5% (for any type of infraction, not only those related to MPAs). The team considers that the establishment of MPAs and the enforcement system in the place serve as some quantitative evidence that the partial strategy on protecting main habitat types of the North Sea fishing grounds is successfully implemented. However, certain areas (especially in UK waters) have been identified and designated for the protection of vulnerable habitats, but haven't yet implemented measures such as area closures. The lack of management measures in these sites prevent the fishery from achieving SG100. SG 80 is met for all fishing gears.		
d	Guidepost			There is some evidence that the strategy is achieving its objective.
	Danish seine			N
	Purse seine			N
	Hooks and lines			N
	Gillnets			N
	Demersal trawls			N
	Pots			N
	Justification	There is evidence that the Norwegian fishing fleet is not entering protected areas in Norwegian waters. However, fishing techniques which damage the seafloor are still allowed in designated protected areas in the UK. Besides, there is no evidence as yet of the recovery of vulnerable habitats following area closures. SG100 is not met.		
References		http://jncc.defra.gov.uk/page-4524 http://jncc.defra.gov.uk/page-6476 http://jncc.defra.gov.uk/pdf/Fisheries%20Options%20Paper_Central%20Fladen_20150204.pdf http://jncc.defra.gov.uk/PDF/Central_Fladen_Site_Summary_Document_July14.pdf		
OVERALL PERFORMANCE INDICATOR SCORE: Danish seine				75
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine				90
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines				90
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets				90
OVERALL PERFORMANCE INDICATOR SCORE: Demersal trawls				75

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	
OVERALL PERFORMANCE INDICATOR SCORE: Pots		**90**
CONDITION NUMBER (for Danish seine and demersal trawls UoCs.)		**COND 4**

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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	Y
	Pots	Y	Y	Y
	Justification	The location of all fishing activities can be known thanks to VMS in place. There is broad information as regards the distribution of habitat types in the North Sea. This information has been collected through the MAREANO Program, the EU Natura Directive (http://natura2000.eea.europa.eu/#), the OSPAR Commission (www.ospar.org) and the European Marine Observation and Data Network (http://www.emodnet-seabedhabitats.eu/) with its mapping European Seabed Habitats program. These maps provide information on the type of substrate, the seafloor topography, the biota present in the area, the location of vulnerable habitat types and the physical variables in the area. All UoCs achieve SG100.		
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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	N
	Pots	Y	Y	Y

PI 2.4.3		Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types		
	Justification	As regards specific impacts that each gear type has, it is known that trawling activity generates disturbance on any type of sediments. Effects such as bottom damage, seabed relief, sediment sorting and species survival, abundance and recovery have been studied in different research programs. According to Kaiser et al (2006), Gordon et al (2002) and Meenakumari et al (2008), soft grounds such as muddy and sandy bottoms are expected to recover quickly, and in a timeframe smaller than 5 years once the disturbance is stopped. It is acknowledged that the composition of the benthic communities may swift favoring more resilient species, but the overall structure and function of the habitats remains. Effects or hard substrate have also been studied and are considered far more harmful. The effect of pelagic gears on sensitive habitats has not been quantified other than by the general observation that such physical impact is avoided by the fishermen as it could generally damage the net, and also by trials of pelagic gears on trial pools showing no interactions with the seafloor. The quantification of physical impacts of bottom fixed gears can be calculated by the study of the number, size and distribution of these gears, and the proportion of affected area versus the North Sea area. It is therefore considered that sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified, and that there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear. Although effects of the bottom trawl gears have been studied in different research papers, its effects in the affected fishing grounds have not been quantified fully yet, although information available should be sufficient to do so. Bottom towed gears such as trawlers and Danish seines achieve SG80. The confidence on the lack of interactions between the pelagic trawls and the seafloor serve to quantify these interactions as nil. The limited interactions of bottom fixed gears and the seafloor serve to quantify these interactions as minimal. Purse seine, hooks and lines, gillnets and pots achieve SG100.		
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.
	Danish seine		Y	N
	Purse seine		Y	N
	Hooks and lines		Y	N
	Gillnets		Y	N
	Demersal trawls		Y	N
	Pots		Y	N
	Justification	Information on habitats continues to be collected through the MAREANO Program, the EU Natura Directive (http://natura2000.eea.europa.eu/#), the OSPAR Commission (www.ospar.org), the European Marine Observation and Data Network (http://www.emodnet-seabedhabitats.eu/) with its mapping European Seabed Habitats program and other research institutions such as the Joint Nature Conservation Committee. The combination of VMS maps and habitat maps serve to determine the risk that a fishery may have for the habitat of a certain area. SG80 is met. However, the measure of changes in habitat distributions over time would require of habitat maps on the same area that date back time enough to measure trends. SG100 is not met.		

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
References	VMS maps. http://jncc.defra.gov.uk/page-1586 MAREANO Program EU Natura Directive (http://natura2000.eea.europa.eu/#) OSPAR Commission (www.ospar.org) European Marine Observation and Data Network (http://www.emodnet-seabedhabitats.eu/) Joint Nature Conservation Committee. Gordon, Donald C. Jr., Ellen L.R. Kenchington, Kent D. Gilkinson, Gordon B.J. Fader, Gordon B.J. Fader, Cynthia Bourbonnais-Boyce, Kevin G. MacIsaac, David L. McKeown, Lea-Anne Henry and W. Peter Vass. Summary of the Western Bank otter trawling experiment (1997-1999): Effects on benthic habitat and communities. Can. Tech. Rep. Fish. Aquat. Sci. 2822: vii + 70 p. http://www.dfo-mpo.gc.ca/Library/336797.pdf Kaiser, M. J., Clarke, K. R., Hinz, H., Austen, M. C. V., Somerfield, P. J., and Karakassis, I. 2006. Global analysis of response and recovery of benthic biota to fishing. Marine Ecology Progress Series, 311: 1 –14. Meenakumari, B., Bhagirathan, U. and Pravin, P. Impact of Bottom Trawling on Benthic Communities: A Review. Fishery Technology 2008, Vol. 45(1) pp: 1 – 22. https://www.researchgate.net/publication/259979122_Impact_of_bottom_trawling_on_benthic_communities_a_review

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Bottom trawls	**85**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**95**
CONDITION NUMBER (if relevant):	**N/A**

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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	Y
	Pots	Y	Y	Y

PI 2.5.1	The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function	
Justification	This is a mixed fishery in which the catch of the targeted saithe, cod, haddock and haka account for approximately 90% of the catch for the different gears under assessment. Catches of the different species are subject to TAC which is established following ICES advice for the different species in the fishing grounds. ICES advice takes into consideration the predatory needs by other fish species present in the ecosystem. The trophic relation species of the different species under assessment have been investigated through different ecosystem models, such as the Mackinson, S. and Daskalov, G., (2007) Ecopath with Ecosim model, the model for trophic interactions in the North Sea for 1981 (Christensen, V., 1995), the larval transport models for the North Sea (https://odnature.naturalsciences.be/remsem/ecosystem-modelling), and others. All targeted species under assessment have trophic levels above 4. The above mentioned models show that there are other species, such as juvenile rays, skates and sharks, or other fish species such as flounder, whiting, megrim, gunards, turbot, monkfish, halibut, or other gadoids fish species, which hold the same high position in the North Sea trophic chain. Saithe, cod, haddock and hake prey upon a variety of fish and invertebrate species and, in turn, are preyed by larger species such as seals, toothed whales and possibly even some baleen whales (sei whale: sei = saithe). Thus, they have their part to play but there is no evidence that they are keystone links within the system. The North Sea is characterized by episodic changes in the productivity of key components of the ecosystem, described as regime shifts. There have been reports of a shift from pelagic to benthic production. Phytoplankton, zooplankton, and demersal and pelagic fish have all exhibited such cycles in variability, which are also expected for the future (Mackinson, S. and Daskalov, G., 2007). According to (Beaugrand, G., 2004), the cause for the ecosystem regime shift which took place in the North Sea during the period 1982–1988 was likely to be related to pronounced changes in large-scale hydro-meteorological forcing. This serves to justify that the system responds well to ecosystem changes. The Marine Resources Act makes it an explicit requirement that an ecosystem approach is taken to all aspects of marine resource management. It is highly unlikely therefore that the fishery at the current level will disrupt ecosystem structure or function. Given the mentioned rationale, the team considers that the UoA 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. The evidence to support such argument would be fact fat catch if taken according to TAC, the numerous species in the same trophic level and the North Sea availability to respond to ecosystem regime shifts. SG100 is met for all UoCs.	
References	Beaugrand, G. 2004. The North Sea regime shift: Evidence, causes, mechanisms and consequences. Progress in Oceanography 60. 245-262. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2013/2013/mult-NS.pdf Christensen, V., 1995 Lewy and Vinther, 2004 Mackinson, S. and Daskalov, G., 2007	
OVERALL PERFORMANCE INDICATOR SCORE: Danish seine		**100**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine		**100**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines		**100**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets		**100**
OVERALL PERFORMANCE INDICATOR SCORE: Bottom trawls		**100**

PI 2.5.1	The fishery does not cause serious or irreversible harm to the key elements of ecosystem structure and function	
OVERALL PERFORMANCE INDICATOR SCORE: Pots		**100**
CONDITION NUMBER (if relevant):		**N/A**

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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	Y
	Pots	Y	Y	Y
	Justification	Both Norwegian waters and European waters are subject to management measures which seek both profit from the fishery and the protection of the fishing resources. This is done by the establishment of fishing quotas, mesh limitations and technical measures, closed areas, enforcement effort, landing obligation, and continue monitoring of many species present in the ecosystem. Both the Norwegian Marine Resources Act and the European Common Fisheries Policy are established strategies which should address all main impacts of the fishery on the ecosystem. Both strategies base their measures on data gathered through different research institutions (including IMR), ICES advice on fish stocks (which is based on SMS modelling, which includes prey-predator relationships), ICES Advisory Committee on Ecosystems (ACE) and habitat mapping programs (MAREANO Programme), OSPAR Commission (www.ospar.org), EU Natura Directive (http://natura2000.eea.europa.eu/#) the Mapping European Seabed Habitats portal (www.searchmesh.net.)), and the MAREANO mapping programme, inter alia. Besides, Norway has developed a suite of regional seas management plans (for the Barents Sea, the Norwegian Sea, and the North Sea and Skagerrak Sea) that are aimed at monitoring and safeguarding the status of the marine environment. There are fishery biological and technical conservation measures for safeguarding stocks and managing fisheries and the interactions with other animals, such as the "Firth of Forth" closure to ensure prey availability for seabirds, the "sprat box" closure to protect juveniles of herring, or the "Norway pout box", introduced in 1977 in north-east Scotland where fisheries with small-meshed trawls were banned. In the Norwegian economic zone, the Patch Bank was closed permanently in 2002, and in 2008 the fishing season was restricted. Furthermore, legislation is in place to protect species and habitats under the Habitats and Birds Directives, OSPAR, BONN Convention, BERN Convention and CITES as well as various EC fisheries regulations and Norway-EU agreements. All management measures are backed up by a rigorous enforcement regime. The team considers that all these management measures conform a plan to ensure that the fishery does not pose a risk of serious or irreversible harm to the ecosystem structure and function. SG100 is met for all UoCs.		

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		
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.
	Danish seine	Y	Y	N
	Purse seine	Y	Y	N
	Hooks and lines	Y	Y	N
	Gillnets	Y	Y	N
	Demersal trawls	Y	Y	N
	Pots	Y	Y	N
	Justification	Different management measures, such as quota allocations, enforcement system, and fishing closures of certain areas to prevent depletion of other stocks, are examples of implemented measures to address main impacts of the fishery in the ecosystem. The mentioned measures are based on a comprehensive collection of information on fish stocks, fishing removals, research undertaken by different research institutions, ICES annual or biennial advice of fishing options, and also from estimations derived from the different North Sea ecosystem models. As mentioned above, Norway has developed a suite of regional seas management plans (for the Barents Sea, the Norwegian Sea, and the North Sea and Skagerrak Sea) that are aimed at monitoring and safeguarding the status of the marine environment of the different marine ecosystems in Norwegian EEZ. The Norwegian Marine Resources Act has an explicit requirement to take an ecosystem approach to resource management and exploitation. The objective of the North Sea Ecosystem Programme is to generate knowledge that will provide a basis for developing advice for the authorities in all areas that concern resources and the environment in the North Sea. SG80 is met for all UoCs. Although it is implicit that this objective will serve to restrain impacts of the Norwegian fisheries on the North Sea ecosystem, ensuring that the fishery does not cause serious or irreversible harm, to date certain impacts (such as those to bycatch species, ETP species or VME habitat types) are not fully addressed. SG100 is not met for all UoCs		
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.

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		
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	Y
	Pots	Y	Y	Y
	Justification	The comprehensive collection of information of fish stocks, fishing removals, the research undertaken by different research institutions, ICES annual or biennial advice of fishing options, the information obtained from the different North Sea ecosystem models, along with the allocation of fishing quotas, the rigorous enforcement system, and the fishing closures of certain areas to prevent depletion of other stocks, give confidence that the North Sea and Skagerrak management plan will work in ensuring the long term sustainability of the North Sea ecosystem. Specific example of this success would be the effective recovery of the North Sea cod stock after the implementation of the cod rebuilding management plan in 2008, or the closure at the Firth of Forth area to ensure prey availability to dependant seabirds in the area. SG100 is met for all UoCs.		
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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	Y
	Pots	Y	Y	Y
	Justification	The different measures have been implemented through different means, for a considerable period so far. These means include banning bycatch, the obligation of the use of VMS, regulating closed areas both for the protection of juveniles and for the protection of vulnerable habitats, establishing procedures for the weighing and sampling of landings, promoting marine research, establishing quotas for different marine stocks in accordance with marine research, and establishment a strong enforcement system through the Directorate of Fisheries and the EU fisheries inspections bodies that assure the accomplishment of the different measures. Infringements are reported to be negligible. SG100 is met for all UoCs.		
References		http://www.miljodirektoratet.no/old/klif/publikasjoner/2927/ta2927.pdf https://www.imr.no/forskning/programmer/okosystem_nordsjoen/en		

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
	https://ec.europa.eu/fisheries/cfp/fishing_rules/multi_annual_plans_en Norwegian Marine Resources Act European Common Fisheries Policy Birds and Habitats Directives Marine Strategy Framework Directive, ICES advice ICES Advisory Committee on Ecosystems (ACE) MAREANO Programme OSPAR Commission (www.ospar.org), EU Natura Directive (http://natura2000.eea.europa.eu/#) Mapping European Seabed Habitats portal (www.searchmesh.net.) Convention on the Conservation of Migratory Species of Wild Animals (*Bonn Convention*). *Convention on* the Conservation of European Wildlife and Natural Habitats (Bern Convention). http://www.oecd.org/tad/fisheries/North%20Sea%20Cod%20Fisheries.pdf CITES EU Council Regulation (EC) No 1342/2008 of 18 December 2008 establishing a longterm plan for cod stocks and the fisheries exploiting those stocks and repealing Regulation (EC) No 423/2004.

OVERALL PERFORMANCE INDICATOR SCORE: Danish seine	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Bottom trawls	**95**
OVERALL PERFORMANCE INDICATOR SCORE: Pots	**95**
CONDITION NUMBER (if relevant):	**N/A**

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.	
	Danish seine	Y	Y	
	Purse seine	Y	Y	
	Hooks and lines	Y	Y	
	Gillnets	Y	Y	
	Demersal trawls	Y	Y	
	Pots	Y	Y	
	Justification	Key elements of the ecosystem, such as primary and secondary productivity, and predator-prey relationships, have been studied through different ecosystem models in the North Sea, such as the Ecopath and Ecosim model by Mackinson, S. and Daskalov, G., (2007), a model for trophic interactions in the North Sea for 1981 (Christensen, V., 1995), larval transport models for the North Sea or the North Sea Stochastic Multispecies Model (SMS Model; Lewy and Vinther, 2004), in which ICES species advice is based. The North Sea ecosystem, where the fishery takes place, is studied by ICES on a continuous basis. SG80 is met for all UoCs.		
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.
	Danish seine	Y	Y	Y
	Purse seine	Y	Y	Y
	Hooks and lines	Y	Y	Y
	Gillnets	Y	Y	Y
	Demersal trawls	Y	Y	Y
	Pots	Y	Y	Y

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
	Justification	Direct fishery interactions are reasonably well understood and indirect effects can be inferred, often from direct experience or comparison with similar species and areas elsewhere. Stock–recruitment relationships are a focus of detailed attention in many stocks, including the targeted saithe, cod, haddock and hake. Ecosystem modelling is an on-going aspect of IMR investigations. The different models and projects mentioned in SIa serve IMR to investigate main impacts and interactions between the UoCs and the different ecosystem elements, such as fishery biomass removal, trophic interactions and prey relationships or impacts on the seabed. SG100 is met for all UoCs.		
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.
	Danish seine		Y	N
	Purse seine		Y	N
	Hooks and lines		Y	N
	Gillnets		Y	N
	Demersal trawls		Y	N
	Pots		Y	N
	Justification	The long-established and long-term research programmes have built a database that ensures that the main functions of the components in the ecosystem are known. Different ecosystem models (mentioned in SIa) provide a broad knowledge of the impacts that the fishery has on the targeted species and dependent predators. Impacts of the fishery on target and retained species are quantified and monitored. Although the landing obligation would require all species to be landed, there is an exemption to it which allows discarding of certain shark species. The lack of records of interactions with those discarded species, along with the lack of records on non-fatal interactions with ETP species make it difficult to assure that main functions of these components in the ecosystem are understood. All UoC meet SG80.		
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.
	Danish seine		Y	Y
	Purse seine		Y	Y
	Hooks and lines		Y	Y
	Gillnets		Y	Y
	Demersal		Y	Y

PI 2.5.3		There is adequate knowledge of the impacts of the fishery on the ecosystem		
	trawls			
	Pots		Y	Y
	Justification	The long-established and long-term research programmes have built a database that ensures that interactions with fish, bird and mammal components can be inferred even if they cannot be quantified explicitly. Such information is central to an ecosystem approach, as required by the Marine Resources Act. Demersal species such as saithe, cod, haddock and hake have been subject to fishery research by ICES WGNSSK (Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak) for many decades throughout the North Sea. Available information gathered by landing records and sampling, research investigation and ecosystem modelling are considered adequate to allow the main consequences for the ecosystem to be inferred. SG100 is met for all UoCs.		
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.
	Danish seine		Y	Y
	Purse seine		Y	Y
	Hooks and lines		Y	Y
	Gillnets		Y	Y
	Demersal trawls		Y	Y
	Pots		Y	Y
	Justification	Detailed information is obtained through landing obligation, landing records and sampling, VMS tracks on fishing grounds, ICES advice on different fishing stocks, IMR research trips and programmes, monitoring of marine mammals and bird populations, studies on climate change impacts, sampling on benthic communities and mapping of the North Sea seabed, along with the enforcement system and monitoring of protected areas, are considered to provide adequate information to detect any increase in risk levels. SG80 is met. The associated database is considered sufficient to support the development of strategies to manage ecosystem impacts. SG100 is met for all UoCs.		
References		IMR Institute for Marine Research Norwecom.E2E project. http://www.ices.dk/community/groups/Pages/WGNSSK.aspx		
OVERALL PERFORMANCE INDICATOR SCORE: Danish seine				95
OVERALL PERFORMANCE INDICATOR SCORE: Purse seine				95
OVERALL PERFORMANCE INDICATOR SCORE: Hooks and lines				95
OVERALL PERFORMANCE INDICATOR SCORE: Gillnets				95

PI 2.5.3	There is adequate knowledge of the impacts of the fishery on the ecosystem
OVERALL PERFORMANCE INDICATOR SCORE: Bottom trawls	95
OVERALL PERFORMANCE INDICATOR SCORE: Pots	95
CONDITION NUMBER (if relevant):	N/A

Principle 3

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 <u>a framework for cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and <u>organised and effective cooperation</u> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and <u>binding procedures governing cooperation with other parties</u> which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	(Y)	(Y)	(Y)

<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>Justification</td><td colspan="3">Norway has a well-established system for fisheries management, which has evolved over more than a century and is now codified in the 2008 Marine Resources Act and secondary legislation. The Act applies to all catch and use of marine resources and their genetic material (§ 3) and covers issues such as bioprospecting (Chapter 2), catch levels and quotas (Chapter 3), catch and use of marine resources (Chapter 4), arrangements on the fishing fields, liability for damage and local regulations (Chapter 5) and monitoring, enforcement, sanctions and criminal liability (Chapters 6–12) (see PI 3.2.3 below).
The Marine Resources Act is a framework law, which in the main authorizes the Government to issue specific regulations within designated fields. The most important rules are found in the Regulation on the Execution of Marine Fisheries, which is updated annually. The Regulation contains rules for mesh size, selection and limitations on the use of specific catch gear (Chapters II–V), seasonal restrictions (Chapter VI), bycatch (Chapters VII–VIII), minimal fish size (Chapter IX), discard ban (Chapter X), restrictions on the use of trawl in specific areas (Chapters XI–XII), protection of coral reefs (Chapter XIII), documentation on hold volumes (Chapter XIV), marking of vessels and gear (Chapters XV–XVI), loss of gear (Chapter XVII) and fish welfare (Chapter XVIII). Other important legal instruments are the 1999 Act on the Right to Participate in Fisheries, the 2015 Act on First-Hand Sales of Wild Catch of Marine Resources, the 2016 Regulation on Participation in Fisheries, the 2016 Regulation on Licencing and the 2016 Regulation on Landing and Sales Notes. All Regulations are subject to running modifications and additions through so-called J-orders, which are distributed to the fishing fleet electronically. This includes dedicated and regularly updated annual regulations for the fishery of each specific species, including separate regulations for cod, haddock and hake.
The executive body at governmental level is the Ministry of Trade, Industry and Fisheries, while the practical regulation of fisheries is delegated to the Directorate of Fisheries. Enforcement at sea is taken care of by the Coast Guard, which is part of the Royal Norwegian Navy, but performs tasks on behalf of several ministries, including the Ministry of Trade, Industry and Fisheries. Scientific research is performed by the Institute of Marine Research. Fisheries management authorities coordinate their regulatory work with that of other bodies of governance, for instance the Ministry of Climate and Environment and the Norwegian Environmental Agency, which are responsible for the implementation of the integrated management plans for different marine areas.
Management of shared stocks in the North Sea is regulated through a framework agreement on fisheries cooperation between Norway and the EU from 1980 (in force 1981). Six stocks are identified as ‘joint stocks’ which are jointly managed (among them cod and haddock), while four stocks are considered ‘shared stocks but not jointly managed. In 2017, EU and Norway agreed to treat hake as a new joint stock.
The national legal documents refer to and are in compliance with relevant international agreements, such as the 1982 Law of the Sea Convention and the 1995 Fish Stocks Agreement. The system at both national and international level is considered to be effective insofar as it constitutes a coherent set of binding rule-making practices. SG 100 is 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>(Y)</td><td>(N)</td></tr>
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<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>Justification</td><td colspan="3">At the national level in Norway, there is an effective, transparent dispute resolution system in place, as fishermen can take their case to court if they do not accept the rationale behind an infringement accusation by enforcement authorities, or the fees levied against them. Verdicts at the lower court levels can be appealed to higher levels. There are instances from recent years that management authorities have lost cases against fishermen and accepted the verdict, which is a clear demonstration that the system works. At the international level, the EU–Norway Agreement prescribes consultations between the parties in the case of dispute (Art. 8). After nearly 40 years of actual dispute resolution in the running EU–Norway negotiations without any major problems, this arrangement can be considered effective in the sense that it is appropriate to the context of the fisheries. SG 80 is met However, the system has not been tested and proven to be completely effective in resolving all disputes, e.g. on the sharing of fishing opportunities, as evidenced by occasional delays in reaching mutually agreeable solutions between Norway and the EU.
Additional mechanisms for dispute resolution exist through the international courts of justice, such as the International Court of Justice (ICJ) and the International Tribunal for the Law of the Sea (ITLOS), or bring a dispute before the Permanent Court of Arbitration (PCA). At the regional level, the North-East Atlantic Fisheries Commission (NEAFC) in 2004 adopted a recommendation for compulsory dispute settlement. None of these mechanisms have so far been widely used as means for solving fisheries disputes, and hence they cannot be considered tested and proved to be effective in the context of the present fishery. SG 100 is not met.</td></tr>
<tr><td rowspan="3">d</td><td>Guidepost</td><td>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.</td><td>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.</td><td>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.</td></tr>
<tr><td>Met?</td><td>(Y)</td><td>(Y)</td><td>(Y)</td></tr>
<tr><td>Justification</td><td colspan="3">At the regional level, the NEAFC Convention states as its objective to ensure the long-term conservation and optimum utilization of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits (Art. 2). The Norwegian system for fisheries management includes various mechanisms that generally respect and observe the rights of the coastal population along the country’s northern, western and southern coast. For the most important species, significantly and proportionately larger quota shares are allotted to coastal fisheries than to the ocean going fleet (see, for instance, the Regulation on Participation in Fisheries for an overview), with particular attention to smaller fisheries that are particularly dependent on fishing for livelihood, including the coastal Sami population in the northernmost part of the country. The Sami Parliament, which is a consultative body for the indigenous Sami population on Norwegian territory, is consulted on all management measures, including the distribution of the national quota, related to species of particular historic importance to the Sami. The Government has formally committed to this through the 2005 Royal Decree on Consultations with the Sami Parliament. SG 100 is met.</td></tr>
<tr><td colspan="2">References</td><td colspan="3">Agreed Records of Fisheries Consultations between Norway and the European Union for 2017, 2 December 2016.
Agreement on Fisheries between the European Economic Community and the Kingdom of Norway, signed 27 February 1980, in force 16 June 1981.
Convention on Future Multilateral Cooperation in North-East Atlantic Fisheries, 2006.
Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).
Interview with representatives of the Directorate of Fisheries and Ministry of Trade, Industry and Fisheries during the site visit.</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.**	
	J-30-2017: Forskrift om landings- og sluttseddel (landingsforskriften), 2017 (Regulation on Landing and Sales Notes). J-142-2017: Konsesjonsforskriften, 2017 (Regulation on Licencing). J-191-2017: Forskrift om regulering av fiske etter sei i Nordsjøen og Skagerrak i 2017 (Regulation on the Fishery for Saithe in the North Sea and Skagerrak in 2017). J-205-2017: Deltakerforskriften, 2017 (Regulation on Participation in Fisheries). J-207-2017: Forskrift om regulering av fiske etter torsk i Nordsjøen og Skagerrak i 2017 (Regulation on the Fishery for Cod in the North Sea and Skagerrak in 2017). J-209-2017: Utøvelsesforskriften, 2017 (Regulation on the Execution of Marine Fisheries). Lov om førstehandsomsetning av viltlevande marine ressursar (fiskesalslagslova), LOV-2015-06-19-65, 2015 (Act on First-Hand Sales of Wild Catch of Marine Resources). Lov om forvaltning av viltlevande marine ressursar (havressurslova), LOV-2008-06-06-37, 2008 (Marine Resources Act). Meld.St. 10 (2010–2011) Oppdatering av forvaltningsplanen for det marine miljø i Barentshavet og havområdene utenfor Lofoten, 2011 (Update of the [Integrated] Management Plan for the Marine Environment in the Barents Sea and the Marine Area outside Lofoten). Meld. St. 37 (2012–2013) Helhetlig forvaltning av det marine miljø i Nordsjøen og Skagerrak (forvaltningsplan), 2013 (White Paper on the Integrated Management Plan for the North Sea and Skagerrak).	
OVERALL PERFORMANCE INDICATOR SCORE:		**95**
CONDITION NUMBER (if relevant):		

Evaluation Table for PI 3.1.2

PI 3.1.2		**The management system has effective consultation processes that are open to interested and affected parties.** **The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties**		
Scoring Issue		SG 60	SG 80	SG 100
a	**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	The most important organizations involved in Norwegian fisheries management are government bodies such as the Ministry of Trade, Industry and Fisheries, the Directorate of Fisheries and the Coast Guard, sales organizations such as the Norwegian Fishermen's Sales Organization, fishermen's organizations such as the Norwegian Fishermen's Association and environmental NGOs such as WWF, Greenpeace and the Norwegian Society for the Conservation of Nature. The Sami Parliament is consulted in the management of fisheries that are of historical importance to the Sami people. The roles, functions and responsibilities of the various actors are clearly defined in longstanding practice and are now codified in the Marine Resources Act and secondary legislation. According to interviews at the site visit, roles, functions and responsibilities are well understood by all involved entities in all areas of responsibility and interaction. 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)	(Y)

<table>
<tr><td colspan="2">PI 3.1.2</td><td colspan="3">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</td></tr>
<tr><td></td><td>Justification</td><td colspan="3">Norway has a long tradition of including non-governmental organizations in fisheries management, with continuous consultation and close cooperation between governmental agencies and user-group organizations, in particular the Norwegian Fishermen’s Association, but also the more specialized organizations such as the fishermen’s sales organizations. As these organizations have regional branches, whose representatives are actively involved in policy-making, ensuring that local knowledge is also taken into consideration in the management process. So-called Regulatory Meetings are organized twice a year are open to all; user-group organizations and NGOs attend on a regular basis. In addition there is day-to-day contact by telephone and email between authorities, user groups and other interested parties. Distribution of the national quota between different gear and fishing fleets has in practice been delegated to the Norwegian Association of Fishermen, which includes all fishermen from the smallest coastal vessels to ocean-going trawlers. Hence, the inherent conflict of interest between different vessel types is handled at the level of the Fishermen’s Association, and the outcome is formalized by the Ministry or Directorate after agreement has been reached within the Association. Technical regulation measures are to a large extent decided upon in direct consultations ‘over the table’ between authorities and user groups at the Regulatory Meetings. As mentioned under SI 3.1.1 d) above, the Sami Parliament is formally consulted in the management of fisheries that are of historical importance to the Sami population.
In addition to formal and informal consultation on the running regulation of the fisheries, user-group organizations and authorities work together – e.g. in designated working groups – to tackle new and emerging challenges to the fishery, such as conflicts with the petroleum sector, marine litter, ghost fishing and other threats to the marine environment.
User groups such as the Norwegian Fishermen’s Association also participate in the annual negotiations conducted between Norway and other countries, including with EU. Norwegian management authorities actively seek advice from user groups in preparation for all international consultations and negotiations, and user groups are included in the Norwegian delegation.
Consultation processes are inclusive and transparent, and according to views expressed by user-group representatives and individual fishermen during the site visit, authorities explain how the information is used or not used. SG 100 is met.</td></tr>
<tr><td rowspan="3">c</td><td>Guidepost</td><td></td><td>The consultation process provides opportunity for all interested and affected parties to be involved.</td><td>The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.</td></tr>
<tr><td>Met?</td><td></td><td>(Y)</td><td>(Y)</td></tr>
<tr><td>Justification</td><td colspan="3">As follows from SI 3.1.2 b) above, the consultation processes provide ample opportunity for all interested and affected parties to be involved in discussions about fisheries management. All interested parties are given the opportunity to participate in the Regulatory Meetings, which is the most important formal arena for interaction between fisheries management authorities and the public in Norway. Meetings are announced publicly and all relevant stakeholders are well informed about where and when the meetings take place. The fact that the distribution of quota shares between different vessels are in effect decided within the Fishermen’s Association before being formalized by the authorities, and that many technical regulations are agreed upon at the Regulatory Meetings, goes to show that authorities give user groups sufficient opportunity and encouragement and actively facilitate their effective engagement.</td></tr>
<tr><td colspan="2">References</td><td colspan="3">Interview with representatives of the Directorate of Fisheries, representatives of the Norwegian Fishermen’s Association and individual fishermen during the site visit.
Lov om førstehandsomsetning av viltlevande marine ressursar (fiskesalslagslova), LOV-2015-06-19-65, 2015 (Act on First-Hand Sales of Wild Catch of Marine Resources).
Lov om forvaltning av viltlevande marine ressursar (havressurslova), LOV-2008-06-06-37, 2008 (Marine Resources Act).
Referat fra reguleringsmøtet 2. og 3. november 2016, Directorate of Fisheries, 2015 (Minutes from the Regulatory Meeting 2 and 3 November 2016).</td></tr>
</table>

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**
	Prosedyrer for konsultasjoner med Sametinget, Kgr. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
OVERALL PERFORMANCE INDICATOR SCORE:	**100**
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)	(Y)
	Justification	The 2008 Marine Resources Act requires that Norwegian fisheries management be guided by the precautionary approach, in line with international treaties and guidelines (§ 7 a)), and by an ecosystem approach that takes into account habitats and biodiversity (§ 7 b)). The same objectives are found in the most relevant policy documents, such as the integrated management plan for the North Sea and Skagerrak. Since they are codified at the level of law, they are required by management policy. SG 100 is met.		
References		Lov om forvaltning av viltlevande marine ressursar (havressurslova), LOV-2008-06-06-37, 2008 (Marine Resources Act). Meld. St. 37 (2012–2013) Helhetlig forvaltning av det marine miljø i Nordsjøen og Skagerrak (forvaltningsplan), 2013 (White Paper on the Integrated Management Plan for the North Sea and Skagerrak).		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.1.4

PI 3.1.4		The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing		
Scoring Issue		SG 60	SG 80	SG 100
a	**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)	(Y)
	Justification	The management system provides for negative incentives designed to prevent fishers from violating regulations (see PI 3.2.3 on the enforcement system for details), designed to meet the outcomes expressed by MSC Principles 1 and 2 (see PIs 3.1.3 and 3.2.1 on the objectives of the general and fishery-specific management systems, respectively). These incentives are subject to regular internal review of enforcement policies. A risk-based framework aimed at utilizing resources to optimize compliance at any given moment is applied, implying that priorities are regularly amended. The management system does not include any subsidies that contribute to unsustainable fishing or ecosystem degradation. Subsidies to the fishing fleet were terminated in 1990 following the agreement between the European Free Trade Area signatories, negotiated in preparation of the European Economic Area Agreement. Since incentives are explicitly reviewed on a regular basis, and no subsidies exist in the fishery, SG 100 is met.		
References		Interviews with representatives of the Directorate of Fisheries, representatives of the Norwegian Fishermen's Association and individual fishermen during the site visit. Lov om forvaltning av viltlevande marine ressursar (havressurslova), LOV-2008-06-06-37, 2008 (Marine Resources Act).		
OVERALL PERFORMANCE INDICATOR SCORE:				**100**
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	Well defined and measurable short and long-term objectives consistent with achieving the outcomes of MSC Principle 1 are explicit in the Norwegian Marine Resources Act and supporting legislation, as well as the management plans of the respective stocks. This includes the overarching objective to maintain stocks at sustainable levels and the specific objectives defined in management plans and regulatory documents. Objectives related to Principle 2 issues are relatively well-defined and measurable for bycatch, but less so for ETP species and habitats. Hence, a partial score is achieved at SG 100.		
References		J-191-2017: Forskrift om regulering av fiske etter sei i Nordsjøen og Skagerrak i 2017 (Regulation on the Fishery for Saithe in the North Sea and Skagerrak in 2017). J-207-2017: Forskrift om regulering av fiske etter torsk i Nordsjøen og Skagerrak i 2017 (Regulation on the Fishery for Cod in the North Sea and Skagerrak in 2017). J-209-2017: Utøvelsesforskriften, 2017 (Regulation on the Execution of Marine Fisheries). Lov om forvaltning av viltlevande marine ressursar (havressurslova), LOV-2008-06-06-37, 2008 (Marine Resources Act). Meld. St. 37 (2012–2013) Helhetlig forvaltning av det marine miljø i Nordsjøen og Skagerrak (forvaltningsplan), 2013 (White Paper on the Integrated Management Plan for the North Sea and Skagerrak). Recovery and Long Term Management Strategy for Cod, Annex I to Agreed Records of Fisheries Consultations between Norway and the European Union for 2017, 2 December 2016. Long-Term Management Strategy for Haddock, Annex II to Agreed Records of Fisheries Consultations between Norway and the European Union for 2017, 2 December 2016. Long-Term Management Strategy for Saithe, Annex III to Agreed Records of Fisheries Consultations between Norway and the European Union for 2017, 2 December 2016.		
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	Established decision-making procedures at national level in Norway – evolved over several decades and now codified in the 2008 Marine Resources Act and secondary legislation – ensure that strategies are produced and measures taken to achieve the fishery-specific objectives. This applies to the saithe fisheries as it does to Norwegian fisheries in general; see PIs 3.1.1 and 3.1.2 above. The Ministry of Trade, Industry and Fisheries decides on policy and regulatory schemes, while the Directorate of Fisheries acts as a technical body with a main responsibility for secondary legislation. The Directorate and the Coast Guard perform compliance control, on shore and at sea respectively. The decision-making processes include the allocation of national quotas to different fleet groups according to an elaborate distributional scheme based on vessel groups defined by gear and length of the vessels. Further, technical regulations are defined by the Directorate of Fisheries, after consultations with user groups and other stakeholders. The enforcement system is further described under PI 3.2.3 below. SG 80 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)	(Y)
	Justification	The well-established decision-making procedures in the Norwegian system for fisheries management respond to issues identified in research, monitoring, evaluation or by groups with an interest in the fishery through the arenas for regular consultations between governmental agencies and the public. This happens first and foremost at the Regulatory Meetings, further through ad hoc consultation with the industry and other stakeholders (see PI 3.1.2 above). In addition, there is close contact between authorities and scientific research institutions, primarily between the Directorate of Fisheries and the Institute of Marine Research. Both scientists and user-group representatives claim that the relevant governmental agencies are open to any kind of input at any time. They feel that the authorities' response is transparent and timely and that the ensuing policy options take adequate account of their advice. One recent example is how Norwegian authorities immediately took action when the seapen challenge was identified (see discussion under P2 above). It is a principal challenge to claim that absolutely 'all' issues are responded to, which is required to achieve a 100 score on this SI, but from an opposite point of view, we cannot see that there issues that are not responded to in this fishery. SG 100 is 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	Decision-making processes are based on scientific recommendations from ICES and the Institute for Marine Research. The Norwegian Marine Resources Act, which applies to the capture of all marine species, requires fisheries management to be based on the precautionary approach (see PI 3.1.3 above). SG 80 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)	(Y)
	Justification	The Ministry of Trade, Industry and Fisheries submits annual reports to the Parliament on behalf of the entire system for fisheries management (see PI 3.2.5 below). Other involved agencies, such as the Institute of Marine Research, the Directorate of Fisheries and the Coast Guard, produce annual reports that are available to the public on request. In these reports, actions taken or not taken by the relevant authority are accounted for, including those proposed on the basis of information from research, monitoring, evaluation and review activity. The website of the Directorate of Fisheries contains detailed and updated information on quotas and catches broken down to individual vessels, species and gear, among other things. In the opinion of the assessment team, this counts as formal reporting appropriate to the context of the fishery, as much as letters to stakeholders would have done. SG 100 is met.		
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)	(Y)

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.
	Justification	The Norwegian system for fisheries management is not subject to continuing court challenges. When occasionally taken to court by fishing companies, the management authority complies with the judicial decision in a timely manner. There are, for instance, recent examples of authorities losing court cases and immediately accepting the verdict. However, the management authority works proactively to avoid legal disputes. This is done partly through the tight cooperation with user groups at the regulatory level (see PI 3.1.2 above), ensuring as high legitimacy as possible for regulations and other management decisions. Regulatory and enforcement authorities offer advice to the fleet on how to avoid infringements, on request but often on their own initiative (see PI 3.2.3 below). For example, Coast Guard inspectors work in a dedicated manner to communicate with fishers on the fishing grounds, keeping them updated on changes in regulations and explaining the rationale of the rules in an attempt to increase their legitimacy. In 2012, the enforcement agencies were given the authority to issue administrative penalties for minor infringements (serious enough to be met by a reaction above a written warning), thus referring only the more serious cases to prosecution by the police and possible transfer to the court system. SG 100 is met.
References		Interviews with representatives of the Directorate of Fisheries, the Institute of Marine Research, the Ministry of Trade, Industry and Fisheries and the Norwegian Fishermen's Association as well as individual fishermen during the site visit. Lov om forvaltning av viltlevande marine ressursar (havressurslova), LOV-2008-06-06-37, 2008 (Marine Resources Act). Referat fra reguleringsmøtet 2. og 3. november 2016, Directorate of Fisheries, 2016 (Minutes from the Regulatory Meeting 2 and 3 November 2016).
OVERALL PERFORMANCE INDICATOR SCORE:		**100**
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)

PI 3.2.3	**Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with**
Justification	The 2008 Marine Resources Act contains provisions in Chapter 6 on fishermen's duties to contribute to an effective control (see, e.g., § 36 and § 39 on catch log and sales notes requirements, respectively); in Chapter 7 on authorities' responsibilities for control and enforcement (including, in § 48, the sales organizations' control obligations); in Chapter 8 measures to combat illegal, unreported and unregulated (IUU) fisheries (including § 50 on the ban to land IUU catch); and in Chapter 9 on illegally caught fish. The Marine Resources Act places the overall responsibility for monitoring, control and surveillance in Norwegian fisheries with the Directorate of Fisheries (§ 44). The 1997 Coast Guard Act provides the Coast Guard with the authority to conduct inspections in waters under Norwegian jurisdiction, within the fields covered by the Marine Resources Act and secondary legislation given with statutory authority in that Act (§ 9). Hence, MCS in Norwegian fisheries is taken care of through shared responsibility and close collaboration between the Directorate of Fisheries, the Coast Guard and the regional sales organizations. The Directorate of Fisheries keeps track of how much fish is taken of the quotas of individual vessels, different vessel groups and other states at any given time, based on reports from the fishing fleet. Norwegian vessels are required to have electronic logbooks, or more specifically Electronic Reporting Systems (ERS). This implies that real-time data are forwarded to the Directorate of Fisheries, with the possibility to make corrections of data submitted each day within 12 hours into the next day. Norway has agreements in place with a number of other countries about exchange of ERS data, including the EU. The self-reported catch data can be checked at sales operations through the sales organizations, which have monopoly on first-hand sale of fish in Norway, and through physical checks performed by the sales organizations, the Directorate of Fisheries and the Coast Guard. The sales organizations are required to record all landings of fish in Norway and keep track of how much remains of a vessel's quota at any given time, on the basis of the landings data. This information is compared to the figures provided by the vessels to the Directorate of Fisheries through the electronic logbook. The value of any catch delivered above a vessel's quota is retained by the sales organization and used for control purposes. The sales organizations have their own inspectors who carry out physical controls of landings. They check, among other things, weighing equipment, quantity and size distribution of the catch, the quality of the fish and documentation. The Directorate has seven regional offices along the coast, staffed with inspectors that carry out independent physical control of the fish at the point of landing, including total volume, species and fish size. All landings have to be reported six hours in advance in order to give the inspectors the possibility to check the landed catch. The landed volumes are compared to the volumes reported to the Directorate through the logbooks. Both landing and at-sea control is conducted using a risk-based framework aimed at utilizing resources to optimize compliance at any given moment. As mentioned under PI 3.1.1 a) above, the Coast Guard is administratively part of the Norwegian Navy but performs tasks on behalf of several ministries, including the Ministry of Trade, Industry and Fisheries. Its most important field of work in practice is fishery inspections. Coast Guard inspectors board fishing vessels and control the catch (e.g. catch composition and fish size) and fishing gear (e.g. mesh size) on deck and the volume of fish in the holds. Using the established conversion factors for the relevant fish product, the inspectors calculate the volume of the fish in round weight and compare this with the catches reported to the Directorate through the logbooks. As part of the UoA catch is landed in Denmark, the EU and national Danish enforcement systems also have to be assessed. The EU system for fisheries control is laid out in the Control Regulation, which entered into force on 1 January 2010. The Regulation applies to all activities covered by the CFP carried out on the territory of member states or in EU waters, and by EU fishing vessels or nationals of a member state (Art. 2). It requires all member states to adopt appropriate measures, allocate adequate financial, human and technical resources and set up all administrative and technical structures necessary for ensuring control, inspection and enforcement of activities under the CFP (Art. 5). The Regulation contains Titles ('sections' above chapter level) on, among other things, access to waters and resources (Title III), control of fisheries (Title IV), control of marketing (Title V), surveillance (Title VI), inspections and proceedings (Title VII), enforcement (Title VIII) and common control programmes (Title IX). Among the substantial requirements are that member states operate a vessel monitoring system (VMS) and an automatic identification system (AIS), to be generally applied by vessels above 12 and 15 meters, respectively (Art. 9, 10), and that they make the use of fishing logbooks mandatory for all vessels above 10 meters (Art. 14) and electronic logbook for all vessels above 12 meters (Art. 15). The Regulation also introduces an obligation of member states to employ real-time closure of fisheries (Art. 51-54).

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
	Justification	Further, member states are obliged to carry out monitoring of fishing activities by inspection vessels or surveillance aircraft (Art. 71) and physical inspections of fishing vessels (Art. 74-77); in addition to national inspectors, a pool of Community inspectors shall also be set up (Art. 79). Procedures are established for situations where infringements are detected (Art. 82-88), including enhanced follow-up when infringements are serious, such as misrecording of catches of more than 500 kg or 10 % of what is reported in the logbook (Art. 84). Further, provisions are given for proceedings (Art. 85-88) and sanctions (Art. 90-93) (see PI 3.2.3 b) below). The legal basis for enforcement of Danish fishery regulations is found in the Fisheries Act's Chapter 22 (§§ 117–129) and the Regulation on Fisheries' Chapter 21 (§§ 176–179). Monitoring, control and surveillance is in the main taken care of by the Fisheries Control, which has been subordinate to the Agricultural Agency after AgriFish was dissolved and fisheries policy transferred to the Ministry of Foreign Affairs in August 2017. The Fisheries Control has seven regional offices: three on Western Jutland (Fisheries Control West) and Fisheries Control East (Eastern Jutland, Sjælland and Bornholm). A Fisheries Monitoring Centre (FMC), which is a constituent part of the Fisheries Control, is located in Kolding, Eastern Jutland. The Fisheries Control's offices are deliberately located outside the important fishing towns in order to avoid problems for the inspectors in their private sphere, but still within a distance that makes it possible to reach them in 1-2 hours. With the FMC as implementing as implementing body, the Fisheries Control keeps track of how much fish is taken from the quotas of different vessels at any time, based on electronic haul-by-haul catch information provided by the fishing vessels every 24 hours. Electronic logbook and VMS are mandatory for all vessels above 12 meters. Estimated landings, irrespective of landing country, are reported to Danish enforcement authorities before landing. Copies of sales notes are forwarded to the Fisheries Control, where they are used for official registration of quota uptake and control against information provided in the logbooks. There is an extensive exchange of information (e.g. inspection data) among the North East Atlantic states, bilaterally and multilaterally through the NEAFC control and enforcement scheme. Hence, any infringements revealed by Danish enforcement authorities in the UoA fishery are reported to Norwegian authorities. As follows, there are a number of possibilities for enforcement authorities to physically check whether the data provided by fishers through self-reporting are correct. In addition, VMS data enables control of whether area restrictions are observed, among other things. Hence, a comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures; see SI 3.2.3 c) below on compliance. SG 100 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)	(Y)

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
	Justification	Statutory authority for the use of sanctions in the event of infringements of fisheries regulations is given in Chapters 11 and 12 of the Marine Resources Act. Intentional or negligent violations are punished with fines or prison up to one year (§§ 60–63), while infringements committed with gross intent or negligence may be punished with prison up to six years. In the judgment of the seriousness of the infringement, the economic gain of the violation, among other things, is to be taken into consideration (§ 64). Alternatively, catch, gear, vessels or other properties can be confiscated (§ 65). The Norwegian enforcement agencies use a graduated sanctioning system, with sanctions ranging from oral warnings, written warnings and administrative fines to formal prosecution. If the fishers do not accept the fines issued by the enforcement or prosecution authority, the case goes to court. The decision of a lower-level court can then be appealed to higher-level courts. In accordance with the EU Control Regulation, member States are required to ensure that appropriate measures are systematically taken when violations of fishing regulations are detected, including administrative action or criminal proceedings, in order to provide effective deterrence (Art. 89). For serious infringements, a point system is to be applied (Art. 92), whereby fishermen are given a specified number of points for different kinds of violations. When a specific number of points is reached, the fishing license shall be automatically suspended for a period of at least two months, increasing with repeated violations. At national level in Denmark, the Fisheries Act provides the legal basis for the use of penal (§§ 130–132) and administrative (§§ 133–134) sanctions. Unless the infringement falls under the Penal Code, it is punished through fines or confiscation of fish and/or gear. In addition, the EU point system is applied. When a specific number of points is reached, the fishing licence shall be automatically suspended for a period of at least two months, increasing with repeated violations. If the fishers do not accept a sanction, they can take their case to court. The decision of a lower-level court can then be appealed to higher-level courts. The comprehensive enforcement system (see PI 3.2.3 a) above) combined with the high level of compliance (see PI 3.2.3 c) below) makes it reasonable to conclude that the system demonstrably provides effective deterrence. This is corroborated in interviews with skippers at the site visit as well as in social science literature on compliance in Norwegian fisheries, also based on extensive interview studies among fishers.		
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)	(Y)

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with		
	Justification	Enforcement authorities report the level of compliance in the fishery to be high. In 2016, the Coast Guard carried out 1599 inspections at sea. 74 inspections (4.6 %) resulted in a fine or prosecution. The Directorate of Fisheries performed 2549 inspections in 2016, of which 1048 were in the cod, haddock and saithe fisheries. Infringements leading up to a fine or prosecution were found in 30 inspections of the latter category (2.9 % %). In Denmark, 219 infringements were registered in 2016, following 2809 inspections in port, 560 at sea and 95 based on automated cross-checks. This gives an infringement ratio of 6.3 %. However, the majority (66 %) are minor violations of reporting requirements that do not lead to any sanctions beyond a warning. No points for serious infringements were given in 2016 (down from 14 in 2014 and 2 in 2015). As follows from SIs 3.2.3 a) and b) above, the fishery has in place a comprehensive system for monitoring, control and surveillance, including physical checks of fishing operations, catch and gear, as well as a fine-meshed sanctioning system. In addition to these coercive compliance mechanisms, various forms of norm-, legitimacy- and communication-related mechanisms have also proved effective to deliver compliance in Norwegian fisheries. First, there is a degree of social control in the small coastal communities from which the fishery takes place, and the high level of user-group involvement (see SI 3.1.2 above) may provide regulations with a degree of legitimacy that increases fishermen's inclination to comply with them. The same applies to the relationship between fishermen and enforcement officers, which is reported to be good. Inspectors are trained to approach the fishermen in as forthcoming a manner as possible and perceive themselves as having a guidance-providing and not only a policing role towards the fishing fleet. The MSC Fisheries Standard does not give any specific guidance as to what level of compliance is required to conclude that fishers 'comply with the management system under assessment'. Nor would that be reasonable since the absence of infringements in inspection statistics might as well imply that inspectors are not competent (or willing) enough to detect non-compliance, or that they focus attention on those parts of the fishery where compliance is highest; cf. the note on risk-based control above. Hence, compliance statistics can only give an indication, and must be seen in relation to other factors, such as the comprehensiveness of the enforcement system, the legitimacy of the management system as such, assumptions on the reliability of data provided by the enforcement authorities and other anecdotal evidence of compliance. It is the qualitative judgment of the assessment team that the requirement that fishers 'comply with the management system' is met in this fishery – this does not imply that infringements never take place (which is probably not the case in any fishery), but that most rules are generally respected. The requirement that fishers provide information of importance to the effective management of the fishery is definitely met. So the question remains whether fishers are 'generally thought to comply' (required for a 60 score), whether 'some evidence exists' that they comply (required for an 80 score), or whether there is 'a high degree of confidence' that they comply (required for a 100 score). Clearly *some evidence exists*, so SG 80 is met. The reliability of inspection data from the Norwegian Directorate of Fisheries and Coast Guard is generally considered to be very high, and the inspections scheme very thorough. The level of compliance in at-sea inspections is, in a wider context, high. Inspection data from port control indicate a higher level of non-compliance. Nevertheless, 91 % of infringements revealed relate to one specific type of infringements (gear), so the general compliance in the fishery is still high, not least as far as quota control is concerned. Since the degree of certainty is considered to be high in this case, SG 100 is met.		
d	Guidepost		There is no evidence of systematic non-compliance.	
	Met?		(Y)	

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with	
	Justification	As demonstrated under PI 3.2.3 c) above, there is no evidence of systematic non-compliance in the fishery.	
References		Bekendtgørelse af lov om fiskeri og fiskeopdræt (fiskeriloven) (Notification of the Act on Fisheries and Aquaculture (Fisheries Act)), LOV nr. 568 af 21/05/2014, Folketinget (Danish Parliament), last revised 2017. Bekendtgørelse om regulering af fiskeriet I 2014–2020 (Notification on Regulation of Fisheries in 2014–2020), BEK nr 212 af 01/03/2017, AgriFish (Denmark), last updated 2017. COMMISSION REGULATION (EC) No 1010/2009 of 22 October 2009 laying down detailed rules for the implementation of Council Regulation (EC) No 1005/2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing. COUNCIL REGULATION (EC) No 1224/2009 of 20 November 2009 establishing a Community control system for ensuring compliance with the rules of the common fisheries policy, amending Regulations (EC) No 847/96, (EC) No 2371/2002, (EC) No 811/2004, (EC) No 768/2005, (EC) No 2115/2005, (EC) No 2166/2005, (EC) No 388/2006, (EC) No 509/2007, (EC) No 676/2007, (EC) No 1098/2007, (EC) No 1300/2008, (EC) No 1342/2008 and repealing Regulations (EEC) No 2847/93, (EC) No 1627/94 and (EC) No 1966/2006. Email correspondence with representatives of the Coast Guard and the Directorate of Fisheries. Fiskerikontrol 2016: Erhverv og rekreativ, kontrol og resultatet (Fisheries Control 2016: Commercial and Recreative, Control and Results), Copenhagen: Ministry of Environment and Food, Denmark, 2017. Gezelius, S.S. (2003/2012), Regulation and Compliance in the Atlantic Fisheries: State/Society Relations in the Management of Natural Resources, Dordrecht: Springer. Hønneland, G. (2000/2012), Coercive and Discursive Compliance Mechanisms in the Management of Natural Resources: A Case Study from the Barents Sea Fisheries, Dordrecht: Springer. Hønneland, G. (2013), Making Fishery Agreements Work: Post-Agreement Bargaining in the Barents Sea, Cheltenham: Edward Elgar. Interview with representatives of the Directorate of Fisheries during the site visit. J-215-2015: Forskrift om posisjonsrapportering og elektronisk rapportering for norske fiske- og fangstfartøy (Regulation on Reporting of Position and Electronic Reporting for Norwegian Fishing and Catch Vessels). Lov om forvaltning av viltlevande marine ressursar (havressurslova), LOV-2008-06-06-37, 2008 (Marine Resources Act). Lov om førstehandsomsetning av viltlevande marine ressursar (fiskesalslagslova), LOV-2015-06-19-65, 2015 (Act on First-Hand Sales of Wild Catch of Marine Resources). Lov om kystvakten (kystvaktloven), LOV-2015-06-19-65, 1997 (Coast Guard Act). NEAFC Scheme of Control and Enforcement, London: NEAFC, updated as per 9 February 2017 (https://www.neafc.org/scheme). REGULATIONS COMMISSION IMPLEMENTING REGULATION (EU) No 404/2011 of 8 April 2011 laying down detailed rules for the implementation of Council Regulation (EC) No 1224/2009 establishing a Community control system for ensuring compliance with the rules of the Common Fisheries Policy.	
OVERALL PERFORMANCE INDICATOR SCORE:			**100**
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	Research is undertaken by the IMR, enabling the achievement of objectives consistent with MSC's Principles 1 and 2. SG 60 is met. A research plan, does not consist of one single document, but of a multitude of strategic research plans within the IMR, is in place which provides management authorities with a strategic approach to research and reliable and timely scientific knowledge. SG 80 is met. The research plan can be classified as comprehensive, but it does not include P3 issues, so SG 100 is not met.		
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	Research results are available to all interested parties in publicly accessible reports and journal articles. SG 60 is met. They are occasionally distributed by post or email, but their accessibility online meets the requirement of dissemination to all interested parties in a timely fashion, in the opinion of the assessment team. SG 80 is met. This is, however, not the case with the research plan, so SG 100 is not met.		
References		Annual report IMR, 2016		
OVERALL PERFORMANCE INDICATOR SCORE:				**80**
CONDITION NUMBER (if relevant):				

Evaluation Table for PI 3.2.5

PI 3.2.5		**There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives** **There is effective and timely review of the fishery-specific management system**		
Scoring Issue		SG 60	SG 80	SG 100
a	**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)	(N)
	Justification	There are various mechanisms in place to evaluate key parts of the fishery-specific management system, but at varied levels of ambition and coverage. At the Regulatory Meetings that take place twice a year (see PI 3.1.2 above), management authorities receive feedback on management practices from the industry and other interested stakeholders, including NGOs. The scientific research component of the fisheries management system is reviewed in ICES reports and advice. The enforcement component is subject to continuous evaluation at meetings between the various bodies involved in enforcement activities, where priorities are hammered out on the basis of risk-based monitoring of past experience. The international side to the Norwegian fisheries management system is reviewed by the Parliament upon submission by the Government (through the Ministry of Trade, Industry and Fisheries) of annual reports on the agreements concluded with other states for the coming year, and the previous year's fishing in accordance with such agreements. The Office of the Auditor General conducts annual reviews of the financial performance of the fishery management system. Hence, the fishery has in place mechanisms to evaluate key parts of the management system, so SG 80 is met. It is a principal challenge to claim that absolutely 'all' parts of a fisheries management system are subject to review, but it seems reasonable to expect some sort of a holistic evaluation of the system as such. The Office of the Auditor General regularly carries out holistic reviews of different sectors of the Norwegian bureaucracy (so-called 'management audits', as opposed to the more traditional, annual financial audits). Such a review of the general fisheries management system was undertaken in 2003–2004. At the initiative of the Russian Auditor General, a parallel audit of the Norwegian and Russian management systems for the Barents Sea fisheries was carried out in 2006–2007 and updated in 2011. The first management review of fisheries management in the North Sea was carried out in 2017. While this SI, as opposed to SI 3.2.5 b) below, asks about the *extent* of the reviews and not their *frequency*, it is the opinion of the assessment team that some level of regularity and consistency in initiative, intent and approach must be present for a series of two or more reviews to qualify as reflecting a 'mechanism […] to evaluate **all** parts of the fishery-specific management system', which is the requirement for a 100 score on this SI. Hence, SG 100 is not 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)	(Y)
	Justification	The fishery-specific management system is subject to various forms of internal self-evaluation within the Norwegian bodies of governance (see PI 3.2.5 a) above); these take place on a regular basis. Hence, the requirement for a 100 score is met as far as internal reviews are concerned. The system is also subject to various mechanisms for external review. The international component – Norway's fishery agreements with other states, including with the EU – is annually reviewed by Parliament following the submission of status reports by the Ministry of Trade Industry and Fisheries. Since reviews by the legislative of the executive branch of governance counts as external, and since these reviews are performed on a regular basis, SG 100 is met.		

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**
References	Forvaltning og kontroll av fiskeressursene i Barentshavet: en parallelrevisjon mellom norsk og russisk Riksrevision, Office of the Auditor General, Oslo, 2007 (Management and Control of the Fish Resources in the Barents Sea: A Parallel Audit between the Norwegian and Russian Auditors General). Meld. St. 20 (2015–2016) Noregs fiskeriavtalar for 2016 og fisket etter avtalane i 2014 og 2015, 2016 (White Paper on Norway's [International] Fisheries Agreements and Fishing in Accordance with the Agreements in 2014 and 2015). Riksrevisjonens oppfølging av parallellrevisjonen med Den russiske føderasjons riksrevisjon om forvaltningen av fiskeressursene i Barentshavet og Norskehavet, Dokument 3:8 (2010-2011), Office of the Auditor General: Oslo, 2011 (The Office of the Auditor General's Follow-up of the Parallel Audit with the Auditor General of the Russian Federation on the Management of the Fish Resources in the Barents Sea and the Norwegian Sea). Riksrevisjonens undersøkelse av forvaltninen av fiskeressursene, Dokument nr. 3:13 (2003–2004), Office of the Auditor General, 2004 (The Office of the Auditor General's Investigation on the Management of Fish Resources). Riksrevisjonens undersøkelse av fiskeriforvaltningen i Nordsjøen og Skagerrak, Dokument 3:9 (2016–2017), Office of the Auditor General, 2004 (The Office of the Auditor General's Investigation on Fisheries Management in the North Sea and Skagerrak).
OVERALL PERFORMANCE INDICATOR SCORE:	**90**
CONDITION NUMBER (if relevant):	

Appendix 1.3 Conditions

Table 51 Condition 1
North Sea cod in Division 7d, Subarea 4 and subdivision 20 (Skagerrak)

Performance Indicator	**1.1.1b The stock is at or fluctuating around its target reference point.**
Score	70
Rationale	The North Sea cod stock has been depleted and is now recovering (Figure 3) The long variation is therefore at a level well below Blim and any target that is considered relevant in a management context, e.g. based on MSY. Therefore 1.1.b SG80 is not met
Condition	The Client shall demonstrate that management decisions are consistent with the management plan and that the management plan aims at rebuilding the stock to a level consistent with PI 1.1.1 objectives, e.g. MSY
Milestones	**Year 1-4:** The Client fishery shall t each SA document that they are working with relevant stakeholders through the proposed action plan with the objective of exploiting the North Sea cod stock at FMSY or a similar objective consistent with MSC PI 1 objectives. PI 1.1.1.b shall be rescored when it is demonstrated that the stock is stable and is varying around target levels consistent with the PI 1.1.1 objectives.
Client action plan	Action 1.1 NFA is an active stakeholder partner with management authorities in questions regarding North Sea fisheries. This includes ongoing consultations and hearings, participation at regulatory meetings and as participants to international quota negotiations. NFA is also a part of the Norwegian delegation to the EU-Norway meetings. NFA will, in this context, remain in support of the continued rebuilding of North sea cod and exploitation at FMSY or objective consistent with MSC objectives, until the stock is at a level where it can be scored at 80 or above on PI 1.1.1 b).
Consultation on condition	This condition relies on NFA's well-established role as a stakeholder and its "lobby role" in support of the ongoing rebuilding.

Table 52 Condition 2
Northern hake in Subareas 4, 6, and 7, and in divisions 3.a(Skagerrak), 8.a–b, and 8.d

Performance Indicator	**1.2.2.a(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.**
Score	75
Rationale	The Management plan and the embedded harvest control rule is based on reference points that are no longer considered appropriate for this stock. Therefore, it is not known whether the HCR is consistent with the harvest strategy generally applicable for EU fish stocks and whether the harvest rate will be reduced as appropriate if limit reference points are approached. SG80 is not met
Condition	The management plan should be revised. The Client shall urge authorities and industry colleagues to give priority to this revision. The condition can be closed when the management plan is revised and ICES has found that this plan is in accordance with precautionary principles
Milestones	**Year 1-4**: The Client shall at each SA document evidence that he has been proactive in revising the management plan.
Client action plan	Action 2.1 NFA will consult the IMR to discuss and assess the status of the present management plan for the hake stock and the reference points that are seen as no longer relevant for the stock. Liaising with EU marine research institutions may also be relevant as more competence on the hake stock may reside outside the IMR. Based on the information gained, NFA will urge the

	authorities to send a request to ICES to revise the management plan and reference points of the stock. This may also be done in cooperation with EU clients certified for the Northern hake stock, if appropriate. By SA4 a new management plan with appropriate reference points shall be in place, allowing for a rescoring of this PI to 80 or above**.**
Consultation on condition	None. The relevant parties here are the Directorate of fisheries and IMR. As all scoring under principle 3 for these fisheries confirms, these three parties have close co-operation with NFA, as well as the larger Norwegian seafood industry. Through both formal and informal channels during the year, NFA provides input on management priorities, research projects. Although successful outcomes cannot be guaranteed, NFA input has heavy emphasis, and there is vast empirical evidence of this. This standing practice in Norwegian management gives the largest degree of credibility to the action plan possible. Should DoF or IMR, in- spite of this, not be able to provide input due to e.g. resource constraints, the condition opens for the use of other private entities to be consulted.

Table 53 Condition 3
Danish seine and Demersal trawl UoC's

Performance Indicator	**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.** **SIa: The fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.**
Score	60
Rationale	According to VMS maps by the Directorate of Fisheries, the demersal fisheries take place mostly in the area that goes from the Norwegian coast to the coast of Scotland, this is, the Fladen Ground but also the Utsira High and the area by the Norwegian Trench. Common encountered habitats in the region are sandy and muddy bottoms, but also some small rocky and reef areas. Demersal gears such as Danish seine and demersal trawling actively touch the seafloor, and are expected to cause an impact on it. Kaiser et al. (2006) concluded that otter trawling produces a significant, negative, short-term effect on muddy habitats, but interestingly there was also a longer-term positive effect on the response variables to this impact. Impacts on muddy and sandy bottoms are considered lighter than on harder bottoms, and the areas easier to recover. According to Meenakumari et al (2008), and Gordon et al (2002) sandy habitats can recover after trawling disturbance in less than 5 years. While the team considers that the common habitats affected by these gears (muddy and sandy grounds) would not suffer any irreversible harm, there are other overlapping habitats which host vulnerable species which would be affected by demersal gears. The team considers that fishing gears such as Danish seines and demersal trawls are unlikely to produce serious or irreversible harm to habitat structure and function, as recovery of common encountered habitats is expected to take less than 5 years if the fishery were to stop. Notwithstanding this, it should also be highlighted that the North Sea has been intensively fished over the last century with heavier fishing gears, and its habitat has been altered completely. Even if all fisheries in the area were to cease, fully recovery to its pre-existing state would not be expected. SG60 is met by Danish seines and demersal trawls. There are several MPA in the North Sea which were designated to protect different species such as corals, but also birds or marine mammals. The VMS on board serves the Directorate of Fisheries to ensure that these areas are not entered by the fleet. The Directorate of Fisheries reported no infringements as regards the Norwegian fleet accomplishment of management measures in MPAs with designated management measures. Notwithstanding this, it is noteworthy to mention that, at least in the UK EEZ,

	not all MPA have associated management measures such as area closures to protect benthic habitats. Besides, Figures 12 and 16 show that the demersal fisheries fishing grounds may overlap with OSPAR VME species such as seapens and burrowing megafauna. There are reservations as regards the impacts that these gears may cause on these VME which are present are not protected in the fishing grounds, and which may overlap VMS tracks. According to available maps, the demersal fisheries do not overlap with other VME species such as sponges or corals. Overlapped maps of fishing activities by Danish seine and demersal trawlers and MPA and OSPAR VME would help the team in scoring this PI. SG80 is not met for Danish seines and demersal trawls.
Condition	The SG80 requirements for SIa must be met. By the fourth surveillance audit necessary conservation and management measures for all vulnerable marine habitats in the UoC fishing grounds shall be in place and implemented, such that the UoC does not cause serious or irreversible harm to structure and function of vulnerable habitats (as described by OSPAR). The fishery will also need to provide overlapped maps of Danish seine and demersal trawling activity and OSPAR threatened or declining habitats.
Milestones	Year 1: There shall be evidence of the Client's plan to evaluate potential damage to seapens, deep-sea sponge aggregations or corals, appropriate to this UoC. There shall be evidence of engagement with the Marine Research Institute (MRI) with the goal of evaluating potential damage to all vulnerable habitats by fishing activities of these UoCs. If MRI is unable to provide support for the implementation of the plan, the fishery shall prepare the plan on the basis of other means (e.g. independent consultants or scientists or other means as appropriate). The plan may include an Environmental Impact Assessment or other similar analysis. Score 60. Year 2: By the end of Year 2 there shall be evidence of ongoing work towards the implementation of the plan; i.e. developing options for conservation and management measures to all vulnerable habitats affected by the UoCs, such that the fishery does not cause serious or irreversible harm to habitat structure, on a regional or bioregional basis, and function. These options may be developed with the support of IMR, or may be developed within the client group, as appropriate. Options may include closed areas, move on thresholds or other actions as appropriate, but should be sufficient to ensure that there serious and irreversible harm to seapens, sponges, and coral gardens is highly unlikely. The client shall provide overlapped maps of VMS records and OSPAR threatened or declining habitats. Score 60. Year 3: Evaluate the options developed in year 2. Consider suggested modifications if needed, and finalise and agree on conservation and management measures for the protection of seapens or other vulnerable species overlapping with the fishery, regardless of this occurring in Norwegian or EU waters. These measures can be taken either at client group level or at a higher level. Score 60. Year 4: Implement the agreed measures necessary to show that the UoCs are highly unlikely to reduce structure and function of vulnerable habitats to a point where there would be serious or irreversible harm. A formal commitment to the agreed upon conservation and management measures shall remain in place for the duration of the certification period. The client shall provide overlapped maps of VMS records and OSPAR threatened or declining habitats, to show avoidance on vulnerable habitats. Score 80.

Client action plan	Action 3.1 NFA will, with IMR and Directorate of Fisheries – or third parties if necessary- perform VMS data analysis of bottom- gear affected area and probable overlap with VME habitats. The analysis shall include models of rate of destruction and regeneration times. Action 3.2 NFA will review the results of the study and consult management authorities regarding any needs for protective measures that may arise from the study. Completed by SA2. Action 3.3 Depending on the outcomes of Action 3.1 and 3.2; if further management measures are identified as necessary, NFA will promote implementing them in official Norwegian management or at a client group level if this takes place in EU waters. An implementation process can then be reported at SA3, and evaluated at SA4 at which point the fishery impacts shall be at a PI level of 80 or above.
Consultation on condition	See condition 2

Table 54 Condition 4
Danish seine and Demersal trawl UoC's

Performance Indicator	**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.** **SIb: There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.**
Score	75
Rationale	The research undertaken in the status of benthic habitats by different institutions such as the OSPAR Commission, the MAREANO program or the JNCC (UK Joint Nature Conservation Committee), along with the establishment of protected areas based on these results serve to provide an objective basis of confidence that the management strategy will work. Vessels carry VMS which serve to monitor their position and accomplishment of regulation measures as regards Marine Protected Areas. Enforcement is carried out by the Norwegian Coast Guard and by EU Fisheries Inspection vessels. No infringements were reporting regarding entrance in area closures. However, some of the designated MPAs in the area (especially in UK waters) are not yet completely managed, as area closures have not been established yet and fishing in them is still permitted. Fishing gears such as Danish seine and demersal trawlers are expected to have an impact on vulnerable habitats. Although existing management measures are considered likely to work to protect most managed vulnerable habitats, the fact that the fishery takes place in fishing grounds in which vulnerable habitats have been identified but are not yet protected rests confidence that the strategy will work. SG80 is not met for Danish seine and demersal trawlers. SG60 is met for these fishing gears.
Condition	The SG80 requirements for SIb must be met. By the fourth surveillance audit the client shall present evidence of the implementation of management measures directed to the protection of vulnerable species that are at present not protected in the fishing grounds, in order to achieve the Habitat Outcome 80 level of performance.
Milestones	Year 1: There shall be evidence of the Client's plan to evaluate the

	establishment of potential management measures directed to the protection of vulnerable species such as seapens, deep-sea sponge aggregations or corals, appropriate to these UoCs. There shall be evidence of engagement with the Marine Research Institute (MRI) with the goal of evaluating potential measures to avoid such damage by the Danish seine and demersal trawl fleets. If MRI is unable to provide such support, the fishery shall prepare the potential measures on the basis of other means (e.g. independent consultants or scientists or other means as appropriate). Score 75. Year 2: By the end of Year 2 there shall be evidence of ongoing work towards the election and implementation of the most appropriate management measures to protect vulnerable habitats which are at present not protected in the the UoCs fishing grounds (i.e. developing options for conservation and management measures to all vulnerable habitats affected by the UoCs, such that the fishery does not cause serious or irreversible harm to them. These options may be developed with the support of MRI, or may be developed within the client group, as appropriate. Options may include closed areas, move on thresholds or other actions as appropriate, but should be sufficient to ensure that there serious and irreversible harm to seapens, sponges, and coral gardens is highly unlikely). Score 75. Year 3: Evaluate the options developed in year 2. Consider suggested modifications if needed, and finalise and agree on conservation and management measures for the protection of seapens or other vulnerable species overlapping with the fishery, regardless of this occurring in Norwegian or EU waters. These measures can be taken either at client group level or at a higher level. Score 75. Year 4: Implement the agreed measures necessary to show that the UoCs are highly unlikely to reduce structure and function of the vulnerable habitats to a point where there would be serious or irreversible harm. A formal commitment to the agreed upon conservation and management measures shall remain in place for the duration of the certification period. By the 4th surveillance audit the client shall provide overlapped maps of VMS records and: - OSPAR threatened or declining habitats, - designated MPA in the fishing grounds. Score 80.
Client action plan	(Joint action plan with condition 3) Action 4.1 NFA will, with IMR and Directorate of Fisheries – or third parties if necessary-perform VMS data analysis of bottom- gear affected area and probable overlap with VME habitats. The analysis shall include models of rate of destruction and regeneration times. Action 4.2 NFA will review the results of the study and consult management authorities regarding any needs for protective measures that may arise from the study. Completed by SA2. Action 4.3 Depending on the outcomes of Action 3.1 and 3.2; if further management measures are identified as necessary, NFA will promote implementing them in official Norwegian management management or at a client group level if this takes place in EU waters. An implementation process can then be reported at

	SA3, and evaluated at SA4 at which point the fishery impacts shall be at a PI level of 80 or above.
Consultation on condition	See condition 2

Table 55 Recommendation

Performance Indicator	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.
Recommendation	It is recommended that the different UoCs in the fleet keep a record of non-fatal interactions with ETP species. This record should reflect not only the specie interacted but the vessel's position and date. The maintenance of this record is especially important for UoCs with higher interactions, such as gillnets and hooks and lines. These recording would serve in the future to increase the knowledge of the impact of the different gear types on the different ETP populations, but also to increase the knowledge on the status of such populations.

NORGES FISKARLAG
FISKARLAGETS SERVICEKONTOR AS

DNV GL

Vår dato	Vår referanse	Vår saksbehandler	Deres referanse
10.01.2018		Tor Bjørklund Larsen/	

Client Action Plan for meeting the certification conditions for the Norway North Sea demersal fisheries – reassessment.

The Norwegian Fishermen's Association (NFA) submits this action plan for meeting the conditions for the reassessment of the Norway North Sea demersal fisheries, which includes saithe, cod, haddock and hake.

NFA agrees to make a good faith effort to meet the intent of the conditions set forth by the conformity assessment body DNV GL in their client review draft report in December 2017. This report determines that, with a total of four conditions, the fishery is sustainable and well-managed in accordance with the MSC principles and criteria for sustainable fisheries.

The Norwegian Seafood Industry has set up a permanent formal advisory committee working with environmental and eco-labelling issues, reporting to the boards of NFA, the fisherman's sales organizations, the Norwegian Seafood Export Council and the Norwegian Seafood Federation. The Norwegian Ministry of Trade, Industry and Fisheries is a permanent observer to the group. This ensures that all certification decisions, including this action plan, are supported and accepted among all the parties involved directly or indirectly in the fisheries.

In the following sections we will address each of the conditions individually in the table format laid out by the CAB.

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APPENDIX 2 PEER REVIEW REPORTS

Peer Reviewer Information				
Contact Name	*First*	PR1	*Last*	

Fishery Assessment Details	
Fishery	Norway North Sea demersal fisheries

Summary of Peer Reviewer Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes**	**CAB Response**
Justification: The assessment team concluded that the fishery be certified. The overall determination that this fishery should be certified according to the MSC principles and criteria is appropriate and correctly based on the findings of this assessment.		No comment required

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]	**No**	**CAB Response**
Justification: Condition 3 and 4: These conditions demand that by the fourth surveillance audit necessary conservation and management measures for all vulnerable marine habitats in the UoC fishing grounds shall be in place and implemented. This is somewhat in contrast with the client action plan that states that impacts and overlay with vulnerable habitats will be investigated. It seems appropriate to include in the condition that impacts will be further investigated and that measures will be taken if it is concluded that this is necessary.		There are no changes in the rationale nor the scoring of this PI. However, there is a small change in the milestones and CAP of both Conditions 3 and 4, to include that, if needed, management measures will be implemented also in EU waters (at a client group level). Regarding the IF clause, the CAP already states that “If further management measures are identified as necessary, NFA will promote their implementation”.

If included:

Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]	**No**	**CAB Response**
Justification: Condition 4: The action plan states that if further management measures are identified as necessary, NFA will promote implementing them in official Norwegian management. The fishery however also takes place in EU waters and there is also overlap with vulnerable habitats in EU waters.		There are no changes in the rationale nor the scoring of this PI. However, there is a small change in the milestones and CAP of both Conditions 3 and 4, to include that, if needed, management measures will be implemented also in EU waters (at a client group level). Regarding the IF clause, the CAP already states that “If further management measures are identified as necessary, NFA will

	promote their implementation”.

Performance Indicator Review

Table 56 For reports using one of the default assessment trees:

Performance Indicator	**Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	**CAB Response**
1.1.1 Saithe	Yes	Yes	NA		No comment required
1.1.2 Saithe	Yes	Yes	NA		No comment required
1.2.1 Saithe	Yes	Yes	NA		No comment required
1.2.2 Saithe	No	No	NA	Sentence in rational for SG100b broken off. No rational for SIc is provided.	The scoring remain unchanged. The text has been revised. A scoring justification for Sic has been inserted
1.2.3 Saithe	No	No	NA	No rational provided for SIa and SIb.	The scoring remain unchanged. The text has been revised. A scoring justification for Sia and SIb have been inserted
1.2.4 Saithe	Yes	No	NA	It is not completely clear that the review as part of the advice formulation process is external.	The scoring remain unchanged. The text has been revised for better clarity.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1 Cod	Yes	Yes	Yes		No comment required
1.1.2 Cod	Yes	Yes	NA	Sentence referring to section …. broken off.	Text has been reviewed.
1.1.3 Cod	No	Yes	NA	The rational for SG100a does not conclude that rebuilding will take place within the specified time frame. It is not clear which timeframe was defined.	Scoring remain unchanged. The justification text has been clarified. The discussion on the rate of recovery is inserted against scoring of SIb
1.2.1 Cod	Yes	Yes	NA		No comment required
1.2.2 Cod	Yes	Yes	NA		No comment required
1.2.3 Cod	Yes	Yes	NA		No comment required
1.2.4 Cod	Yes	Yes	NA		No comment required

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1 Haddock	No	No	NA	SIa: ICES advice 2017 states that recruitment is relatively low in recent years and that SSB has been near or at Blim several times. Therefore is seems more appropriate to conclude that only SG80 is met. Lower recruitment levels could partly be induced by lower SBB levels. SIb: MSC recommends that to achieve an assumed status of B_{MSY}, F should have been at or below F_{MSY} for at least 1 Generation Time (GT) from a starting point close to B_{pa} or $B_{trigger}$, and 2 generation times from a starting point close to B_{lim} (Carruthers and Agnew 2016). Since F is not fluctuating around Fmsy also the stock is not fluctuating around its target reference point. SG80b is not met.	Scoring is unchanged. I regret to disagree with the reviewer 1. The agrument is around how to interpret the high variability in the recruitment. The expected F(2017) (December 2017) is 0.183 based on the ICES revised advice for 2018 This is below FMSY = 0.194. Because of the history and the current status (2017-2018) scoring SIa remain unchanged. SIa: The haddock stock has been above MSY Btrigger since 2003 except for a minor deep below in 2016, The stock is by nature highly variable – due to high inter annual variability in the recruitment. The current status suggests that the stock is well above PRI reference points. Sib: The SSB is fluctuating around 1.7*MSY Btrigger (average 2003-2017) which is sufficient to assure that the stock is around MSY. The stock takes a deep in some years but returns to higher value within 1-2 years, a reflection of the variability in the haddock recruitment.

Performance Indicator	**Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	**CAB Response**
1.1.2 Haddock	No	Yes	Yes		Without further comments the score is maintained
1.2.1 Haddock	No	No	NA	The rational for SG80b states that the management plan is achieving its objectives by maintaining the stock above Bmsy trigger. However Bmsy trigger is not a target level. which should not be interpreted by CABs as a target reference point equal in intent and outcome to BMSY. Rather MSY Btrigger is considered the lower bound of spawning–stock biomass fluctuation around BMSY. It is a biomass reference point that triggers a cautious response. SG80b is not met. The last part of the rational states that there is no management plan which conflicts with the statement above.	The scoring remain unchanged. The harvest strategy was based on references points only revised in 2016, where the target fising mortality was set at 0.3 and the average F for the period 2003-2016 is 0.29, i.e. the target as it were is met. The reference points prior to 2016 were accepted by ICES.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.2 Haddock	No	No	NA	Table 36 refers to the DFPO Haddock fishery. However in 2017 PI 1.2.2 has been rescored for this fishery and a condition has been formulated for this PI (Acoura, 2017, third surveillance audit). It was concluded that with the the change in stock area designation (the stock in the North Sea and the Skagerrak are now considered one stock) , ICES has stated that "Management plans (or management plan proposals) for Subarea IV, Division IIIaN, and Division VIa are not relevant for the newly defined stock." The condition is adressing the appropriateness of the response of management to this change. The implications of this new stock definition for the harvest control rule should be considered in the rational and harmonsation should take place..	The DFPO surveillance report January 2017 scores condition 9 on 1.2.2 at 80 and thus close this condition. The adopted HCR until a revised management plan is in place is the ICES MSY framework. The advices for 2016, 2017 and 2018 have been based on this approach, see ICES (2017) Haddock advice Table 7a. The assessment is based on the June 2017 ICES advisory report which is based on the stock structure Subarea 4, 6a and 20 (Skagerrak). The most recent available surveillance report for DPPO Haddock is January 2017 which does not leave any conditions behind target indeed they are all closed. However, a harmonisation exercise may be warranted based on the surveillance in January 2018, report not yet available (February 2018).

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.3 Haddock	Yes	Yes	NA		No comment required
1.2.4 Haddock	Yes	Yes	NA		No comment required
1.1.1 Hake	Yes	Yes	NA		No comment required
1.1.2 Hake	Yes	Yes	NA		No comment required
1.2.1 Hake	Yes	Yes	NA		No comment required
1.2.2 Hake	Yes	Yes	Yes		No comment required
1.2.3 Hake	Yes	Yes	NA		No comment required
1.2.4 Hake	Yes	Yes	NA		No comment required

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.1.1	No	No	NA	Saithe, Cod, Haddock and Hake are target species in their UoCs. However for instance in the Saithe UoCs Cod, Haddock and Hake have to be considered as (main) retained species and this is also the case for all other UoCs. Since different scoring elements are defined the scoring of this PI should be based on the elemenst approach. If some elements reach 100 and others reach 80 the score should be 90. If most reach 100 the score awarded should be 95.	Saithe, cod, haddock and hake have now been considered as retained species and all species have been scored using the element approach. Most UoCs have increase the score of PI 2.1.1.
2.1.2	No	No	NA	See remark above. If the other target species are considered as retained species in the UoC that is targetting a specific species, there will be main retained species in most UoC's.	Saithe, cod, haddock and hake have now been considered as P2 species. While the wording and rationale of PI 2.1.2 has been reviewed there are no changes in scoring.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.1.3	No	No	NA	See remark above. If the other target species are considered as retained species in the UoC that is targetting a specific species, there will be main retained species in most UoC's. The scoring per UoC should be based on the elements approach (Table C2). Some minor species score 100 whilst others score 80 and therefore the score should be above 80 (see Table C2).	Saithe, cod, haddock and hake have now been considered as P2 species. While the wording and rationale of PI 2.1.3 has been reviewed there are no changes in scoring. There is detailed scientific infomration on all main retained species and on some minor species. PI 2.1.3 has not been scored using the scoring elements approach.
2.2.1	No	NO		SIa: skates, rays and sharks are considered as bycatch species but some elasmobranch species (i.e.starry ray & common skate) should be considered as ETP species. SIc: the SI does not only concern main bycatch species but all bycatch species.	CR 104/2015 has now been taken into account and thornback ray, starry ray and tope shark are now considered as ETP species. No changes in the scoring or rationale of SIa. As regards Sic, to the team's knowledge, minor bycatch species shall only be considered in the SG80-SG100 framework. Scoring and rationale remains unchanged.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.2.2	Yes	Yes	NA		No comment required
2.2.3	Yes	Yes	NA		No comment required
2.3.1	No	No	NA	Elasmobranchs like Common skate, starry ray and tope are protected under Article 12 of Regulation 2015/104 and are considered by MSC as ETP species. For the Ekofish, Osprey and CVO plaice fisheries conditions have been formulated concerning the impact of demersal trawling on the starry ray population (PI 2.3.1) and on ETP species information (PI 2.3.3). It should therefore considered under PI 2.3.1 if the demersal trawl UoC has an impact on the species mentioned in article 12 of Regulation 2015/2015 (that are considered ETP species).	Common skate was already considered as an ETP species. Some unidentified skates remain to be assessed as bycatch species. CR 104/2015 has now be included and the ETP table has been updated to include all species listed in CR104/2015. Thornback ray, starry ray and tope shark are now considered as ETP species. Impacts on these species by the different gear types in the reference fleet during 2016 were as follows: Danish seine: 1 thornback ray Purse seine: No impacts. Longline: 1 thornback ray and 1 stary ray

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
					Demersal gillnet: 6 starry ray, 3 thornback ray and 2 tope sharks Demersal trawls: 2 thornback ray and 1 starry ray Pots: No impacts. The rationale in 2.3.1 (direct impacts) has been reviewed to include the impacts that the reference fleet had on tope shark and thornback and starry ray. Tope shark and thornback ray are distributed in the southern part of the North Sea, and landings by Norway are minimal. As regards starry ray, there is limited information on its distribution. Most catches by the reference fleet were with gillnets, where the species is expected to have a higher survival rate. The rationale of 2.3.1 has been reviewed and scoring remains unchanged.
2.3.2	Yes	Yes	NA		No comment required

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.3.3	No	No	NA	See comments on PI 2.3.1. It should be considered if there is sufficient information to evaluate the impact on ETP species like Common skate and starry ray.	There is ICES advice (regardless of it been a limited advice) on most ETP species, including starry and common skate. Besides, there is comprehensive information on interactions by the Norwegian reference fleet. The rationale and scoring of 2.3.3 has been reviewed but remains unchanged.
2.4.1	Yes	Yes	No	See comments on Conditions above.	There are no changes in the rationale nor the scoring of this PI. However there is a small change in the milestones and CAP of the associated condition (Condition 3) to include that, if needed, management measures will be implemented also in EU waters (at a client group level).

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.4.2	Yes	No	NA	SIa for demersal trawl and Danish seine: since it is concluded that the fishery overlaps with vulnerable habitats and it is concluded under SId that trawling is allowed in protected areas a score of 100 for SIa seems to high for these metiers.	For demersal trawl and Danish seine: 2.4.2.a asks about if there is a management strategy in place, while b, c and d are about if there is confidence that the strategy will work, if it is already implemented successfully and if it is achieving its objective. As explained in the rationale, both Norway and EU have strategies to manage fisheries impacts on bottom grounds, regardless of these strategies not been fully updated on the identification and location of VME which require protection. Score of 2.4.2.a remains unchanged at 100 (strategy exists), and 2.4.2.b, c and d remain unchange at 80 (as there are doubts regarding its effectivenes).

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.4.3	Yes	No	NA	Under PI 2.4.1 it is concluded that there are reservations as regards the impacts that demersal may cause on vulnerable habitats such as seapen communities which are present (and not protected) in the fishing grounds and may overlap VMS tracks In the client action plan it is stated that IMR will investigate these impacts and the analysis shall include models of rate of destruction and regeneration times. It seems therefore that SG80b is not met for demersal trawls. Additional information is needed to assess the impact of demersal trawls on Outcome status. This information would show whether additional management measures are needed.	SGb 80 states: "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". As explained in the rationale, there is detailed information on the VMS tracks, and more general information regarding the loation of VME indicator species such as seapens. Information exists, but physical impacts of the gear have not been quantified fully because there is no detailed research undertaken as yet to determine which and where are the impacts that demersal gears are potentially causing. It is expected that after completing the research tasks in the CAP 2.4.3.b could score 100. Score and rationale remains unchanged.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.5.1	Yes	Yes	NA		No comment required
2.5.2	Yes	No	NA	SIb: In order to score 100 there should be a plan in place that is based on well understood functional relationships between the fishery and the components and elements of the ecosystem. That means that the plan should also address impacts on bycatch species, ETP species and Habitats. The conclusion of the rational that the "it is implicit that this objective will serve to restrain impacts of the Norwegian fisheries on the North Sea ecosystem" supports a 80 score but not allows for the conclusion that a full strategy is in place. An overall score of 100 for this PI seems to high. It would imly that all impacts are addressed appropriate in both EU en Norwegian waters.	As mentioned in the rationale, Norway has developed a North Sea and Skaggerak Sea management plan, which is based on broad knowledge of the different components and elements of the ecosystem and their relationships. However, the peer reviewer is right in highlighting that, to date, not all impacts on bycatch, ETP and habitat types are addressed on the best plausible manner. Besides, the fishery does not only take place in Norwegian waters but also in EU waters where the Norwegian North Sea management plan has no jurisdiction. Score of SIb has been lowered from 100 to 80.

Performance Indicator	**Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	**CAB Response**
2.5.3	Yes	No	NA	The rational for SG100b merely supports a 80 score. In order to score 100 it should also be concluded that the main interactions between the fishery and the ecosystem have been investigated.	Rationale has been reviewed and slightly modified. Score of SIb remains unchaged at SG100.
3.1.1	Yes	No	NA	It is not stated in the rational that SG100a is met.	This has now been amended.
3.1.2	Yes	Yes	NA		No comment required
3.1.3	Yes	Yes	NA		No comment required
3.2.1	Yes	Yes	NA		No comment required
3.2.2	Yes	Yes	NA	It is not clearly concluded in the rational that SG100b is met.	This has now been amended.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.3	Yes	No	NA	The rational for SIb concludes that the comprehensive enforcement system makes it reasonable to assume that the system provides effective deterrence. This would suggest that only SG80 is met It is not concluded that sanctions demonstrably provide effective deterrence nor that SG100 is met.	The team upholds the 100 score here and has amended the text accordingly. 'Demonstrably' documenting compliance is a challenging task in any fishery; hence the more careful original wording in the justification. That said, in a wider context compliance in this fishery is very high, and documentation to that effect is more convincing than in most other large-scale fisheries. Hence the 100 score.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.4	No	No	NA	The rational for SG80a states that there is a research plan for the North Sea. This statement is merely repeating the scoring issue but the research plan is not mentioned in the body of the report nor in the references. Some further explication is necessary.	The research plan does not consist of one single document, but of a multitude of strategic research plans within the IMR, which is not uncommon in a large-scale fishery within a 'mature' management context (where systems for research planning have evolved over decades – in this case for more than a century – hence, appropriate to the context of the fishery). The text in the rationale has been amended.
3.2.5	Yes	Yes	NA		No comment required

Peer Reviewer Information

Contact Name	*First*	PR2	*Last*	

Fishery Assessment Details

Fishery	Norway North Sea demersal fisheries

Summary of Peer Reviewer Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	**Yes**	**CAB Response**
Justification: This was a complex assessment involving four separate species and six different gears. The results of the assessment are well summarized in Table 48 of the report and details of the PI results for each species in Sections 6.2.1 to 6.2.4 in the report. I agree with all the conclusions regarding a pass for all species and all gears, some Conditional.		No comment required

Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]	**Yes**	**CAB Response**
Justification: Four Conditions have been correctly identified in relation to observed weaknesses against the standard. Two are management issues in relation to P1 for cod and hake and two are related to seabed habitat impact for two of the gears.		No comment required

If included:

Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]	**Yes**	**CAB Response**
Justification: The details of the clients proposed actions are satisfactory. Some of their requirements are complex and will need very careful monitoring at each audit.		A slight modification has been made to the wording of the milestones and CAP in condition 3 and 4 to highlight the need to also take action if the impact on VME happens to be in EU waters.

Performance Indicator Review

Table 57 For reports using one of the default assessment trees:

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1 Saithe Cod Haddock Hake	 No No No No	 Yes Yes Yes No	 N/A Yes N/A N/A	Saithe More explanation of the basis for the point of recruitment impairment is required here. Cod Describe how Blim is set. As for saithe put in the 95% CIs for SSB and F in the Table from SAM. That is the information which strongly supports the Condition Haddock Put the 95% CI's for SSB and F in the Table to support the 90 score as clearly they provide the evidence that SG 100 is not met at Si b Hake At Si a the comments are all about MSY B trigger when this scoring issue is about Blim so discuss it here. Scoring issue b is OK. CI's for SSB and F have been mentioned. If they are available then they should be in the Table in support of the score	Saithe: Text Table giving the technical basis for the reference points – including the PRI point – is inserted into the text. Cod: Concerning Blim see Table 21; "SSB associated with the last above-average recruitment (1996 year class)". See Figure 3 suggesting that this remain the last seen above average years class The confidence limits are added to the Scoring Table Haddock: Confidence limit for SSB has been added to the Scoring Table Hake: A text Table presenting the reference points – revised in 2016 – is inserted in the text. Confidence limits for SSB are added to the justification Table. A sentence explaining the difference between Blim and MSY Btrigger has been inserted in the Justification for SIa

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.2 Saithe Cod Haddock Hake	 Yes Yes Yes Yes	 Yes Yes Yes Yes	 N/A N/A N/A N/A	Saithe Ref Points available via a well established ICES process Cod Score 100 well supported Haddock Score 100 correct Hake Score 100 OK	No comment required
1.1.3 Saithe Cod Haddock Hake	 N/A Yes N/A N/A	 N/A Yes N/A N/A	 N/A N/A N/A	Cod A well evidenced score of 90 for rebuilding the stock	No comment required
1.2.1 Saithe Cod Haddock Hake	 Yes Yes Yes Yes	 Yes Yes Yes Yes	 N/A N/A N/A N/A	Saithe Well supported 100 score by the evidence Cod An issue at Si b, which needs time to resolve has been correctly identified to reduce score to 95 Haddock As for cod Si b identifies the reduced score at 95 Hake Comments as for cod.	No comment required

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.2.2 Saithe Cod Haddock Hake	 Yes Yes Yes Yes	 Yes Yes Yes Yes	 N/A N/A N/A Yes	Saithe Uncertainties identified at Si b to reduce score to90 Cod Uncertainty which has not been taken into account has been identified at Si b which reduces score to 90. Haddock Same comment as above for cod Hake In the absence of an agreed MP/HCR this correctly fails to meet SG 80 at scoring issue a and thus generates an appropriate Condition with a 75 score	No comment required
1.2.3 Saithe Cod Haddock Hake	 No Yes Yes Yes	 No Yes Yes Yes	 N/A N/A N/A N/A	Saithe There is no text against any of the scoring issues for this PI which is careless Cod Well evidenced information in the scoring comments and text for 100 score Haddock Same comment as above for cod. Hake All information presented to support 100 score.	Saithe: Text has been inserted.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	**CAB Response**
1.2.4 Saithe Cod Haddock Hake	 No No No Yes	 No Yes Yes Yes	 N/A N/A N/A N/A	Saithe At Si a lets have SAM mentioned in a bit more detail. At si c there is enough uncertainty described in the report for an N at SG 100 Reduce score to 95 Cod As for saithe SAM should be mentioned here detailing its strengths and weaknesses in spite of the detail at Si c. Score correct Haddock More information here and in the text of the report regarding TSA would be welcome rather than relying heavily on references. Hake This unusual length based model has to be used because of the well known problem of ageing hake with false rings on the otolith. I am not familiar with the model but it has been endorsed by ICES – score of 95 is correct.	Saithe: Footnote providing some information on the SAM method inserted into the text. The assessment method has been extensively tested. The robustness is built into the moethod as this more slowly reacting – a feature of the state space medel framework. Scoring remain unchanged. Cod: See footnote for saithe on SAM Haddock: The report text section 3.3.3.3 has been extended with a short description of TSA and its advanatges in the context of haddock assessment.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.1.1	Yes	Yes	N/A	Comprehensively covered both here and in the text of the report for all gears. Weaknesses are identified and the different scores are appropriate.	Following PR 1 comment PI 2.1.1 has now been scored using the scoring element approach. Scores of most UoCs have increased by 5 points.
2.1.2	Yes	Yes	N/A	As 2.1.1 above	Received with thanks. No major changes in the rationoale nor the scoring.
2.1.3	Yes	Yes	N/A	As 2.1.1 above	Received with thanks. No major changes in the rationale nor in the scoring.
2.2.1	Yes	Yes	N/A	Only minor by-catch species are identified – no major species. The lack of information related to all the gears correctly scores 80	Received with thanks.
2.2.2	Yes	Yes	N/A	As above for all gears	Received with thanks.
2.2.3	Yes	Yes	N/A	Information on catches is lacking for all gears. Score 85 appropriate	Received with thanks.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.3.1	Yes	Yes	N/A	The information on ETPs both here and in the text of the report is comprehensive and supports a score of 95 for all gears apart from Hooks and Lines, and Gill nets which score 85. In spite of a reasonable score the team have correctly identified the need for a reccomendation here in an attempt to improve the situation with those two gears with the reccomendation to record all non fatal interactions with ETP species..	Received with thanks.
2.3.2	Yes	Yes	N/A	Similar to 2.3.1 above there is an identified weakness related to the strategy for Hooks and Lines, and Gill nets with a reduced score to 85 (90 for the other gears)	Received with thanks.
2.3.3	Yes	Yes	N/A	Well supported score of 85 for all gears, her and in the report.	Received with thanks.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.4.1	Yes	Yes	Yes	The Danish seine and Demersal trawls are clearly the only gears under comnsideration which have a significant sea bed habitat impact. The information to support the neccessity of a Condition here, for those gears, is comprehensive and well supported by maps in the report.	Received with thanks . A minor change has been made to the wording of the milestones and CAP on condition 3 and 4. There are no changes to the rationale nor the score of this PI.
2.4.2	Yes	Yes	Yes	The issue related to Danish Seines and Demersal trawls and the lack of a plausible strategy to deal with the problem is clearly identified here. Good evidence is provided here and in the text of the report in support of the 75 score for those two gears with a resultant Condition. The other gears correctly score 90	Received with thanks . A minor change has been made to the wording of the milestones and CAP on condition 3 and 4. There are no changes to the rationale nor the score of this PI.
2.4.3	Yes	Yes	N/A	A wealth of information has been presented here and in the text of the report in support of the 95 score for all gears.	Received with thanks.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.5.1	Yes	Yes	N/A	Well supported score of 100 for all gears	Received with thanks.
2.5.2	Yes	Yes	N/A	The information provided in support of the 100 score is comprehensive.	Following a comment by PR 1, the score of PI 2.5.2.b has been lowered from 100 to 80. Final score of 2.5.2 has been lowered from 100 to 95.
2.5.3	Yes	Yes	N/A	An interesting argument in support of the reduced score (95) related to the impact of all gears on the target, by catch, retained and ETP species and their function in the ecosystem. I do not disagree with the rationale.	Received with thanks.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.1.1	Yes	Yes	N/A	I am surprised that this does not score 100 at scoring issue b because the mechanisms are there but have just not been widely used.	While upholding the score, which the peer reviewer does not seem to object to, the team understands and to a large extent shares his/her view on dispute resolution mechanisms at the international level. As he/she rightly points out, the mechanisms are there; they just haven't been used to any large extent in disputes related to fisheries management per se. The argument is, just like the case with similar systems at the national level, that one cannot blame the system for not having been tested and proven to be effective as long as there has not been any need for such a mechanism so far. In order to harmonize with other fisheries in the region, however, the team has chose a precautionary score at 80.
3.1.2	Yes	Yes	N/A	Well supported score of 100	No further comments.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.1.3	Yes	Yes	N/A	The Marine Respources Act and North Sea nd Skaggerak management plans strongly support this 100 score	No further comments.
3.1.4	Yes	Yes	N/A	Please note that this template did not include 3.1.4. No issues with the comments or score	No further comments.
3.2.1	Yes	Yes	N/A	A partial score at SG 100 is well supported and comprehensively referenced.	No further comments.
3.2.2	Yes	Yes	N/A	The decision making process and systems to resolve disputes are all very well established in Norway and have been proven to work effectively.	No further comments.
3.2.3	Yes	Yes	N/A	Ample information and supporting references to justify the score of 100 for what is renowned as an exemplary system of MCS.	No further comments.

Performance Indicator	Has all available relevant information 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. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.4	Yes	Yes	N/A	This is a constant problem with this PI. Lots of relevant research is carried out related to P1 and P2 but rarely in relation to P3 issues – why would you?. Wide dissemination of research results is also a problem in terms of the definition of "wide". Score of 80 appears to be the norm for this PI!	The peer reviewer agrees with the score and justification, so no change in the report is needed. The team does not quite understand the peer reviewers question, which might imply that he/she thinks research on P3 issues in not necessary. If that is correctly understood, the team disagrees. However, this is not the place for any further discussion of the provisions of the MSC standard.
3.2.5	Yes	Yes	N/A	Please note that this template did not include 3.2.5. The N at SG 80 (SI a) is very well supported by a very knowledgeable and experienced P3 assessor. Score 90 correct.	Noted with thanks!

APPENDIX 3 HARMONISATION

1. ACOURA FISHERIES

From: Acoura Fisheries
To: Chaudhury, Sandhya
Subject: RE: North Sea Cod (DFPONSCod)
Date: torsdag 12. april 2018 12:13:57

Thanks, Sandhya.

Billy Hynes
MSC Fisheries Manager

Tel: +44 (0)131 335 6662

Web: www.acoura.com

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Acoura are part of the Lloyd's Register group and provide a range of specialist services and solutions aimed at protecting businesses who operate across the food and drink supply chain. For more information visit www.acoura.com or email info@acoura.com.

SAVE PAPER - Please do not print this email unless absolutely necessary.

From: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Sent: 12 April 2018 11:07
To: Acoura Fisheries <fisheries@acoura.com>
Subject: RE: North Sea Cod (DFPONSCod)

Dear Billy,

Noted and the changes will be there in the Final Report.

Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com
Mobile +47 404 00 404

From: Kiseleva, Anna
Sent: tirsdag 10. april 2018 16:12
To: Acoura Fisheries <fisheries@acoura.com>
Cc: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Subject: RE: North Sea Cod (DFPONSCod)

Hi Billy and sorry for the late replay.

I have forwarded your request to the project manager and we will get in touch if any comments.

BR;
Anna

From: Acoura Fisheries [mailto:fisheries@acoura.com]
Sent: 20. mars 2018 11:01
To: Chrissie Sieben <chrissie.sieben@me-cert.com>; Kiseleva, Anna <Anna.Kiseleva@dnvgl.com>
Subject: North Sea Cod (DFPONSCod)

Hello Both,
Regarding harmonisation for:

- DFPO Denmark North Sea & Skagerrak cod & saithe
- Norway North Sea demersal
- Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea cod

1.1.1 Chrissie, you'll be happy to hear that the team has agreed to the approach applied in the scoring of 1.1.1 to bring it up to 70 and have rescored accordingly and removed the condition as 1.1.3 was triggered (i.e. applying the MSC interpretation on if and when a condition is needed for 1.1.1).
Anna, I've had to publish our surveillance report today as the deadline was crunching. You've scored 100 for 1.1.1a versus MEC and ourselves (now) scoring 80. It doesn't make a material change to the scoring but is worth considering.

1.2.1 Condition closed.
Anna, note that in the harmonisation section in your PCDR you've harmonised with our DFPO Denmark North Sea & Skagerrak cod & saithe fishery for Saithe but have missed it in your Cod harmonisation table.

That's us done for this year I think.

Best,

Billy

Billy Hynes
MSC Fisheries Manager

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Web: www.acoura.com

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Edinburgh
EH12 9DQ

2. ME Certification

From: Hugh Jones
To: Chaudhury, Sandhya
Subject: RE: 2432_MSC_SFSAG saithe
Date: torsdag 26. april 2018 10:37:18

Thanks Sandhya appreciate the effort last night.

Hugh

From: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Sent: 25 April 2018 18:59
To: Hugh Jones <hugh.jones@me-cert.com>
Cc: Robin Cook <robin.cook@strath.ac.uk>; Hans Lassen <hans.lassen@lassen.mail.dk>
Subject: RE: 2432_MSC_SFSAG saithe

Dear Hugh,

The skype meeting today with Robin Cook, Hans Lassen and the undersigned came to the following conclusion:

Based on the fact that the plaice is an EU fishery while the DNV GL North sea demersal fishery comes under the EU-Norway agreement there is no call for harmonization.

Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com
Mobile +47 404 00 404

From: Hugh Jones [mailto:hugh.jones@me-cert.com]
Sent: mandag 23. april 2018 13:16
To: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Cc: Chrissie Sieben <chrissie.sieben@me-cert.com>; Cora Seip <cora.seip@me-cert.com>; Kiseleva, Anna <Anna.Kiseleva@dnvgl.com>
Subject: RE: 2432_MSC_SFSAG saithe

Thanks Sandhya,
I really need a decision this week, can we squeeze a meeting in at all?

Hugh

From: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Sent: 23 April 2018 12:11

To: Hugh Jones <hugh.jones@me-cert.com>
Cc: Chrissie Sieben <chrissie.sieben@me-cert.com>; Cora Seip <cora.seip@me-cert.com>
Subject: RE: 2432_MSC_SFSAG saithe

Dear Hugh,

Both me and our P1 expert Hans Lassen are available on: Wednesday 3 May 9-13 and Thursday 4 May 9-16 (all CET).

Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com
Mobile +47 404 00 404

From: Hugh Jones [mailto:hugh.jones@me-cert.com]
Sent: mandag 23. april 2018 11:02
To: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Subject: RE: 2432_MSC_SFSAG saithe

No dramas, appreciate this isn't easy but appreciate the haste with clients on our backs

H

From: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Sent: 23 April 2018 10:01
To: Hugh Jones <hugh.jones@me-cert.com>
Subject: Re: 2432_MSC_SFSAG saithe

Sorry for the delay. Have feedback from our expert now. Will confirm in a couple of hours . In between flights now!

Sent from my Samsung Galaxy smartphone.

-------- Original message --------
From: Hugh Jones <hugh.jones@me-cert.com>
Date: 23/04/2018 10:52 (GMT+01:00)
To: "Chaudhury, Sandhya" <Sandhya.Chaudhury@dnvgl.com>
Cc: Chrissie Sieben <chrissie.sieben@me-cert.com>, Cora Seip <cora.seip@me-cert.com>
Subject: RE: 2432_MSC_SFSAG saithe

Chaudhury,
Sorry to bother you again I am under pressure with timelines for a client re this haddock score, can you suggest a suitable time for a harmonisation discussion on this issue please.

Regards

Hugh

From: Hugh Jones
Sent: 19 April 2018 14:15
To: 'Chaudhury, Sandhya' <Sandhya.Chaudhury@dnvgl.com>
Cc: Chrissie Sieben <chrissie.sieben@me-cert.com>; Cora Seip <cora.seip@me-cert.com>
Subject: RE: 2432_MSC_SFSAG saithe

Chaudhury,

Thanks for your reply, I have been in contact with our P1 assessor on this and although they can understand the reasoning for the SG80 score based on the agreed score because this is done on an ad hoc basis (e.g. no pre-agreed share arrangement) there is no guarantee that this will hold into the next year. I also note that a similar scenario for this exists for NS plaice which has been through the same issue and after 3 harmonisation meetings in the past year it was agreed between ACOURA, MRAG and MEC that SG80 could not be met.

To move forward on this we need to arrange a harmonisation discussion. Of note at this point is that with FCR 2.1 about to come into force (summer 2018) when CABs cannot agree on a common score then the more precautionary score should be taken.

Can you suggest a good time for this please?

Hugh

From: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Sent: 17 April 2018 11:00
To: Hugh Jones <hugh.jones@me-cert.com>; Robin Cook <robin.cook@strath.ac.uk>
Cc: Chrissie Sieben <chrissie.sieben@me-cert.com>; Cora Seip <cora.seip@me-cert.com>
Subject: RE: 2432_MSC_SFSAG saithe

Dear Hugh,

Sorry for the late reply. DNV GL comments are in red.

1. Table 33 has the SFSAG certificate for haddock as being held by acoura, it is MEC's: DNV GL: Table 33 corrected

2. The expedited assessment of this certificate includes Hake but not Cod. Cod is held in a separate certificate https://fisheries.msc.org/en/fisheries/scottish-fisheries-sustainable-

accreditation-group-sfsag-north-sea-cod/@@view, I note the harmonisation and no need for further action. DNV GL: NS Cod harmonisation is included in the first column in Table 33 and scores in Table 35

3. Re Hake please add this to the table under the Haddock expedited assessment, I note the harmonisation meetings in Jan have taken care of this, no further action required. DNV GL: Hake added to Table 33 and scoring in Table 37

4. SFSAG saithe certificate is missing from your harmonisation table https://fisheries.msc.org/en/fisheries/scottish-fisheries-sustainable-accreditation-group-sfsag-saithe/@@assessments. Scores are still harmonised no further action required. DNV GL: NS saithe harmonisation is included in the first column in Table 33 and scores in Table 34

5. The Expedited assessment of haddock is at the PRDR stage and there P1 assessor has indicated that 1.2.2 a will not meet the SG80, while you score it at SG80, we will need to harmonise on this PI.: DNV GL: Concerning the scoring of the UoA 1 Haddock, this is based on the Agreed record of 1 December 2017 for 2018, see attached document section 5.18. According to this agreement the ICES MSY HCR has replaced the HCR given in annex II as noted in the DNV GL justification. EU does not have a management plan in place but the overall TAC is agreed based on the ICES MSY advice and the relative stability distribute the quotas. The distribution between 6a and subarea 4 is defined in the agreed record.

I hope the above answers your comments satisfactorily but please feel free to revert, if required.

Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com
Mobile +47 404 00 404

From: Hugh Jones [mailto:hugh.jones@me-cert.com]
Sent: tirsdag 13. mars 2018 12:34
To: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>; Robin Cook <robin.cook@strath.ac.uk>
Cc: Chrissie Sieben <chrissie.sieben@me-cert.com>; Cora Seip <cora.seip@me-cert.com>
Subject: 2432_MSC_SFSAG saithe

Sandhya,

Thank you for bringing the PCDR to my attention. I need to note a couple of minor errors in the harmonised section of the report which I hope hope will be easily amended. Table 33 has the SFSAG certificate for haddock as being held by acoura, it is MEC's. The expedited assessment of

this certificate includes Hake but not Cod. Cod is held in a separate certificate https://fisheries.msc.org/en/fisheries/scottish-fisheries-sustainable-accreditation-group-sfsag-north-sea-cod/@@view, I note the harmonisation and no need for further action. Re Hake please add this to the table under the Haddock expedited assessment, I note the harmonisation meetings in Jan have taken care of this, no further action required.
SFSAG saithe certificate is missing from your harmonisation table https://fisheries.msc.org/en/fisheries/scottish-fisheries-sustainable-accreditation-group-sfsag-saithe/@@assessments. Scores are still harmonised no further action required.

The Expedited assessment of haddock is at the PRDR stage and there P1 assessor ahs indicated that 1.2.2 a will not meet the SG80, while you score it at SG80, we will need to harmonise on this PI. Our Score is based on the following grounds:

UoA 1 – Haddock - Advice provided by ICES is based on standard HCR that reduces fishing mortality when the SSB falls below B_{pa}. The rule assumes F_{MSY} is the maximum fishing mortality rate. Hence SG60 is met. Unfortunately, not only has the stock area been changed but ICES made errors in the 2015 assessment and revised the reference points which has prevented managers from following the agreed EU-Norway management plan for the North Sea. Hence SG 80 is not met as there is no current agreed management plan in operation.

Can I please ask that arrangements are made by DNV to set up harmonisation for this PI our P1 assessor is @Robin Cook . From a MEC assessment point Robin is also P1 on the NS demersal project which is harmonised with SFSAG scoring above.

Best Regards

Hugh Jones

From: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Sent: 12 March 2018 17:52
To: Hugh Jones <hugh.jones@me-cert.com>
Cc: Acoura Fisheries <fisheries@acoura.com>; Kiseleva, Anna <Anna.Kiseleva@dnvgl.com>
Subject: FW: 2432_MSC_SFSAG saithe

Dear Hugh,

Please refer to the PCDR published on 06.03.2018 at the following link:
https://fisheries.msc.org/en/fisheries/norway-north-sea-demersal/@@view

Please feel free to revert in case of any further questions.

Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com

Mobile +47 404 00 404

From: Hugh Jones [mailto:hugh.jones@me-cert.com]
Sent: mandag 12. mars 2018 10.28
To: Acoura Fisheries <fisheries@acoura.com>; OSL, DNV Certification Norway <dnvgl.certification.norway@dnvgl.com>
Subject: 2432_MSC_SFSAG saithe

Dear CAB,

MEC announced the surveillance yr 4 of the SFSAG saithe certificate on 8th March 2018 to which you have harmonised fisheries. The fisheries are harmonised on P1 for stock :
Saithe (Pollachius virens) in subareas 4 and 6, and in Division 3.a (North Sea, Rockall and West of Scotland, Skagerrak and Kattegat)
http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/pok.27.3a46.pdf

There are currently no conditions on P1.
Can you please advise of the latest scoring for your fisheries which share the same stock, and whether any further harmonisation meetings are required.
https://fisheries.msc.org/en/fisheries/scottish-fisheries-sustainable-accreditation-group-sfsag-saithe/@@view

Regards

Dr Hugh Jones

MSC Fisheries Assessment Manager

Office: +44 (0) 1590 613007
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Email: hugh.jones@me-cert.com

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APPENDIX 4 STAKEHOLDER SUBMISSIONS

STAKEHOLDER COMMENT: WWF GERMANY / NORWAY.

From:	Chaudhury, Sandhya
To:	Philipp.Kanstinger@wwf.de
Cc:	fmyhre@wwf.no; Hans Lassen; Lucia Revenga; Geir Honneland
Subject:	RE: Stakeholder comment PCDR Norwegian North Sea demersal- DNV GL response
Date:	torsdag 26. april 2018 10:30:00
Attachments:	DNV GL response to WWF NF NS Demersal Fishery.pdf

Dear Dr. Kanstinger,

Firstly, I would like to apologise for the length of time our response has taken, but a number of sources have been involved confirming the validity of your comments.

Enclosed is the DNV GL assessment team response.

Please feel free to revert.

Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com
Mobile +47 404 00 404

From: Chaudhury, Sandhya
Sent: mandag 9. april 2018 07:43
To: Philipp.Kanstinger@wwf.de
Cc: fmyhre@wwf.no
Subject: RE: Stakeholder comment PCDR Norwegian North Sea demersal

Dear Mr. Kanstinger,

This is to confirm that DNV GL has received your stakeholder comments to the Public Comment Draft Report for the North Sea Demersal fisheries. The assessment team will respond once we have processed and handled your comments.

Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com
Mobile +47 404 00 404

Dr. Philipp Kanstinger
Program Officer Seafood Certifications
WWF Deutschland
Internationales WWF-Zentrum fürMeeresschutz
Mönckebergstraβe 27
20095 Hamburg
Germany

Date:
26.04.2018

Your reference:
Comments dt. 06.04.2018

Dear Dr. Kanstinger,

The DNV GL assessment team would like to thank WWF for their input and interest in or assessment process of the Norway North Sea Demersal Fisheries.

The assessment has the following response to them:

1. According to WWF, scores for the ETP species PIs do not accurately reflect the known impacts on ETP elasmobranch species from the gear types under consideration.

   WWF makes reference to different publications on ETP species in the North Sea. However, much of these publications refer to general threats to elasmobranch populations. While this can provide relevant background information, they are not arguments about what "specific" threats to the population are posed by the Norwegian fisheries for saithe, cod, haddock and hake.
   Specifically, WWF makes reference to the following publications:
   - European red list of marine fishes: The team agrees with the publication that overfishing is the main threat to marine fishes in Europe, both in targeted fisheries and as by-catch, but again we are not assessing here the impact on marine fishes in Europe, but on ETP species in the Northern part of the North Sea by Norwegian vessels. This statement is too broad to take it into account in this MSC assessment.
   - ICES WGEF Report (2017): The team agrees with ICES WGEF Report (2017) that elasmobranchs are caught as bycatch in mixed demersal fisheries for ground-fish. In the case of this assessment, the CAB is not assessing the impacts of general demersal fisheries on elasmobranchs in the broad area of the North Sea, but the impact of the Norwegian fleet on ETP species identified in northern areas of the North Sea, mostly inside Norwegian waters. Again, the statement is too broad to be considered in the present MSC assessment.
   - ICES's Stock Annex for spurdog (2015): The team agrees with ICES conclusion (that an increasing proportion of the total spurdog landings are taken as bycatch in mixed demersal trawl fisheries). However again the statement is too broad to penalise the UoA of this assessment. Moreover, ICES WGEF (2017), page 70, shows that, although nearly unnoticeable, the spurdog stock has increased in the past recent years from a historical minimum.
     Figure 1: Northeast Atlantic spurdog. Comparison with the assessment from WGEF (2014). Source:

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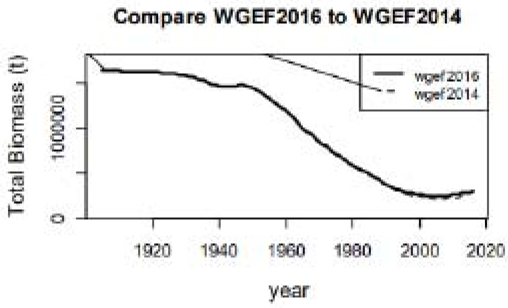
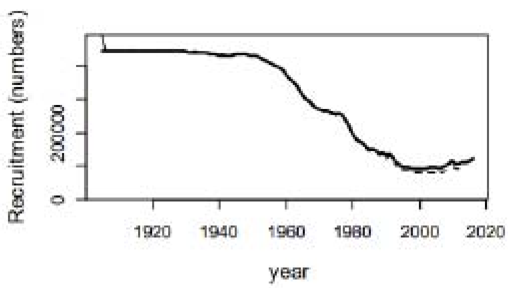
http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2017/WGEF/04%20WGEF%20Report%20-%20Section%2002%20Spurdog.pdf





- ICES Celtic Seas Ecosystem Overview (2016): The team considers that the reference to this fishing area is of no relevance to the fishery under assessment.
- Gibson et al. (2008): The author highlights that certain species (white skate and common skate, among others) are highly susceptible to trawling activities and are threatened in the Northeast Atlantic. The team agrees with the statement but considers it too broad to penalise the fishery under assessment.
- Philippart (1998): Philippart (1998) publication refers to events that happened more than 50 years ago, in the Southern part of the North Sea. Fishing gears, including otter trawlers, have since then improved and become lighter. Specifically, the client has changed the ropes of demersal trawlers recently to make them lighter and is working on the development of lighter doors. Again, the team does not find this information relevant to the assessment of this fishery.
- Both Philippart (1998) and Piet et al. (2009) publications talk about a broad range of fish species and not necessarily about ETP species. The team agrees that demersal trawlers can be inefficient in catching the targeted species, but this issue is covered in a different PI (bycatch), with different MSC requirements.
- Regarding the UoA interactions with ETP species such as tope shark, angel shark, spurdog, common skate, white skate, common skate, and other ETP species, these have already been taken into consideration in the assessment of the fishery. As mentioned in the answer to peer reviewer A, specifically, tope shark and

thornback ray are not expected in the Northern part of the North Sea, where the fishery takes place.

- The assessment team would like to highlight the publications on elasmobranchs survival to fishing activity. As remarked in ICES WGEF (2017), page 40 (Discard survival), low mortality has been reported for spurdog caught by trawl when tow duration was <1 h, with overall mortality of about 6% (Mandelman and Farrington, 2007; Rulifson, 2007), with higher levels of mortality (ca. 55%) reported for gillnet-caught spurdog (Rulifson, 2007).
- The fishery under assessment is subject to a discard ban since 2007. However, some species are exempted from this obligation as long as there is certain chance of survival. The Norwegian coast guard control is strict and there is no reason to believe that there is systematic noncompliance. Information directly provided by the Norwegian Directorate of Fisheries shows that this is a relatively clean fishery conducted in areas where the targeted species are dominant. Neither the Directorate of Fisheries, the Norwegian Coast Guard, nor IMR consulted scientists have shown specific concerns regarding the impacts of the fishery on ETP species nor on the compliance with the relevant management measures.

Overall, the team has agreed to recognise that there is room for improvement on the available degree of certainty on which are the impacts of the different gear types on the different ETP species. In response to your comments, the team has lowered the scores of all PI 2.3.1 and PI 2.3.3. The scores of PI 2.3.2 for demersal trawlers has also been lowered from 90 to 85, as demersal trawlers have now been considered as gear types with higher risks for ETP species, as well as hooks and lines and gillnets.

2. According to WWF, data from the Norwegian reference fleet are not adequate to accurately estimate overall bycatch rates of ETP sharks and rays in the UoA.

   The team agrees with the 2011 "Evaluation of the Norwegian References Fleet" Report that there is room for improvement as regards the collection of biological information by the reference fleet. The team is aware that ETP species are (by definition) scarce but is not clear about how the Fock (2014) reference on the reduction of thornback rays in the eastern central North Sea between 1902 and 1930 is related to the fishery under assessment.
   Data from the reference fleet, showing all catches by reference fleet vessels, was given to the CAB by IMR, and disaggregated by gear type, inshore or offshore fishing grounds, and latitude north and south 62ºN. A summary of such data is given in the background section of the report.
   The team agrees with Pennington & Helle (2011) that the bigger the size of the reference fleet the better and more representative data provides.

   Notwithstanding all the above mentioned, the reference fleet data has been used as a broad estimate of expected impacts. Main conclusions were based on landings data provided by the Norwegian Directorate of Fisheries (based on logbooks, landing records and sales notes), as well as compliance data provided by the Norwegian Coast Guard. While there can be some misreporting on certain species (since fishermen cannot distinguish all of them all accurately), elasmobranchs are a legal bycatch in Norway, that fishermen will normally be paid for, so incentives for discarding are relatively low. Thus, the direct catch data provided by the Directorate of Fisheries, that was a basis for this assessment, are relatively good.

Again, neither the Directorate of Fisheries, the Coast Guard, nor IMR scientists showed specific concern regarding the impact of the UoA on ETP species nor on the compliance with management requirements.
Regarding the possibility of use of the RBF framework, this is the 2nd reassessment of the North Sea saithe (now demersal species, including cod, hake and haddock), and the team does not see the need of using the RBF on a reassessment (moreover when using the same version of MSC FCR).

The team would like to remark that not all elasmobranchs are ETP species, but only those recognised by national or international legislation or agreements.

3. According to WWF, scoring of ETP species performance indicators is not harmonized with overlapping MSC certified North Sea demersal fisheries.

According to MSC v1.3 CR CI3.1, "CABs assessing overlapping fisheries shall ensure consistency of outcomes so as not to undermine the integrity of MSC fishery assessments. MSC defines overlapping fisheries as two or more fisheries which require assessment of some, or all, of the same aspects of MSC Principles 1, 2 and/or 3 within their respective units of certification".

According to MSC FCR Guidance, Annex CI, "in July 2007 the TAB (Table Advisory Board) released requirements and guidance on the processes that CABs were to undertake in the case of overlapping assessments. The requirements and guidance specifically addressed harmonisation between two fisheries starting the assessment process at about the same time. The TAB has now reviewed and revised this to provide guidance for harmonisation where a fishery in assessment overlaps with an already certified fishery. The MSC expects that the outcome of any given assessment, particularly the overall result that is achieved (whether a pass or a fail) and the setting of conditions, will be consistent between overlapping fisheries in assessment and certified fisheries".

According to FCR v1.3, CI 3.2.3.1, "where an assessment overlaps with a certified fishery or fishery in assessment that a CAB has already scored, the team shall base their assessment on the rationale and scores detailed for the previously scored fishery".

While harmonization activities might be straight forward for Principle 1 and Principle 3 PIs, for P2 PIs, harmonization activities should only be considered when referring to the same gear types in the same fishing grounds.

WWF refers to the Ekofish, Osprey and CVO plaice fisheries. Both the Ekofish Group: North Sea twin-rigged otter trawl plaice and the Osprey trawlers North Sea twin-rigged plaice take place in the central area of the North Sea. The CVO pulse sole and plaice takes place in the southern area of the North Sea.

All these 3 fisheries take place outside Norwegian waters and target flat fish, while this UoA takes place in Northern waters of the North Sea targeting demersal fish. And while both flatfish and demersal fish are caught using trawlers, there are differences in the features of the gear types as there are differences in the location of the fish in the water column.

Bearing this is mind, it makes more sense that the present UoA should take into consideration the results of the assessment of the Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea cod and the DFPO Denmark North Sea and Skagerrak cod and saithe, as they both take place in the Northern part of the North

Sea. The results of the previous Norwegian North Sea saithe assessment may also be taken into consideration.

However, the SFSAG North Sea cod fishery has been assessed using MSC FCR v2.0, which requires taking into account cumulative impacts which are not assessed under MSC v1.3. Therefore, there is no requirement for harmonization with this fishery. As regards the DFPO Denmark North Sea and Skagerrak cod and saithe fishery, this is assessed using MSC v1.3 and achieves a score of 80/80/80 for the three ETP PIs.

Notwithstanding the above mentioned justification on the possibility to harmonise scores with the DFPO Denmark North Sea and Skagerrak cod and saithe fishery, there is room for different scoring as fishing operations (which depend on the vessel's master) may differ greatly from one vessel to another. Moreover, it would also make sense to harmonise with the fishery's previous score as fishing gear, fishing areas and fishing practice remain unchanged from those assessed 5 years ago.

The score of PI 2.3.3 has been lowered from 85 to 80. Regarding the possibility to collect more information on ETP interactions, a recommendation has been set in PI 2.3.1 covering this issue.

The RA report of 2013 specifies the status of the conditions and their closure in TABLE 27 where the closure of condition 2 (bycatch) is based on: Norwegian legislation now requires that all fish species caught are recorded and landed, and all bird and mammal interactions should also be recorded. Also, IMR observers embarked on reference-fleet vessels record any occurrence of marine mammal (ETP) by-catch and henceforth will also record bird (ETP) by-catch. No specific problems relating to retained or by-catch species have been identified.

4. Regarding other issues highlighted by WWF:
    a. The list of vessels in the UoA has been updated and contains all vessels involved in the NEA saithe and North Sea Demersal fisheries. It is a common list for both fisheries, reflecting the fact that many vessels operate in both fisheries. The ambiguity in the earlier list was caused by a number of duplications in the list, which is very dynamic and subject to sporadic changes.
    b. The reference to the Fisheries overview ICES(2017) is in the Reference list and is referred to in the beginning of the section on p. 15. However, to make the reference clear a line has been inserted under the heading for the section on p. 15 '(Based on ICES (2017) Fisheries Overview of the Greater North Sea)'
    c. WWFs raises a valid point in the definition of gears. This seems to a "heritage language" going back to old reports. The report has been amended to clarify that "hooks and lines" include both longline and jigging.
    d. I find the term "handline" to be superfluous, since "jigging" already encompasses it. Whether or not the line is retrieved by hand or with a jigging machine is fairly irrelevant.
    e. The report has been updated to include the recently released EU CR 120/2018 on species which are prohibited to fish in EU waters.
    f. The report (https://www.riksrevisjonen.no/rapporter/Sider/Fiskeriforvaltningen.aspx) has the general observation that there is a general assumption that discarding does take place in the North Sea fisheries and that it is difficult to monitor and enforce the discard ban. There is no documentation of discard taking place, but reference to ICES' general assessments of discard in the North Sea. The only

place the comment could potentially influence scoring is SIs 3.2.3 c) and d) on compliance. However, there is lacking documentation that discard is actually taking place. More importantly, all 3.2 PIs are about the fishery-specific management system, and assumptions about discard practice in the North Sea in general cannot be attributed to the UoA as long as there is no evidence to that effect. In other words, to the extent that there are indications of discards in the North Sea in general, we cannot know that it is caused by the UoA fleet. Regarding the conclusions by The Office of the Auditor General of Norway, on the lack of management of coastal cod and coastal sprat, the team is aware of specific management measures directed to the protection of coastal cod. Surely there is room for improvement on the protection of coastal cod, sprat and on ETP species, and is the work of The Office of the Auditor to highlight where these management measures can be improved. It is expected that after such conclusion the Fisheries Directorate will take note and make the appropriate changes.

Final scores for ETP PIs:

	2.3.1	2.3.2	2.3.3
Danish seine	85 (old score 95)	No change (90)	80 (old score 85)
Purse seine	85 (old score 95)	No change (90)	80 (old score 85)
Hooks and lines	80 (old score 85)	No change (85)	80 (old score 85)
Gillnets	80 (old score 85)	No change (85)	80 (old score 85)
Demersal trawls	80 (old score 95)	85 (old score 90)	80 (old score 85)
Pots	85 (old score 95)	No change (90)	80 (old score 85)

References:

- ICES WGEF Report (2017): Spordog in the NE Atlantic. http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2017/WGEF/04%20WGEF%20Report%20-%20Section%2002%20Spurdog.pdf
- Mandelman, J. W. & Farrington, M. A. 2007. The estimated short-term discard mortality of a trawled elasmobranch, the spiny dogfish (Squalus acanthias). Fisheries Research 83, 238–245.
- Rulifson, R. A. 2007. Spiny dogfish mortality induced by gill-net and trawl capture and tag and release. North American Journal of Fisheries Management 27, 279–285.

Sincerely

for DNV GL Business Assurance Norway AS
The Assessment team for the Norway North Sea Demersal Fisheries

Mrs. Sandhya Chaudhury
Principal Specialist

E-mail sandhya.chaudhury@dnvgl.com
Mobile +47 404 00 404

From: Philipp.Kanstinger@wwf.de [mailto:Philipp.Kanstinger@wwf.de]
Sent: fredag 6. april 2018 13:59
To: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Subject: Stakeholder comment PCDR Norwegian North Sea demersal

Dear Mrs. Chaudhury,

we would like to comment on the PCDR of the Norway North Sea demersal fishery. Please find attached our comments. We believe that the assessment of the elasmobranch bycatch could be improved.
Thank you for consideration and best regards
Philipp Kanstinger

Dr. Philipp Kanstinger
Referent Seafood Zertifizierungen
Program Officer Seafood Certifications

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Internationales WWF-Zentrum für Meeresschutz
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20095 Hamburg

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philipp.kanstinger[at]wwf.de

WWF Comments on the Reassessment (PCDR) of the Norway North Sea demersal fisheries

Comments regarding impacts on ETP elasmobranch species

WWF would like to address 3 major issues in regards to ETP elasmobranch species in the Public Comment Draft Report (PCDR) for the Norway North Sea demersal fisheries. These are:

1. Scores for the ETP Species PIs do not accurately reflect the known impacts on ETP elasmobranch species from the gear types under consideration;
2. Data from the Norwegian reference fleet are not adequate to accurately estimate bycatch rates of ETP sharks and rays in the Unit of Assessment (UoA);
3. Scoring of ETP species performance indicators are not harmonized with overlapping MSC certified North Sea demersal fisheries;

In addition, we also address some minor issues, collectively presented under "Other Issues" at the end of our stakeholder comments.

1. Scores for the ETP Species PIs do not accurately reflect the known impacts on ETP elasmobranch species from the gear types under consideration

The scoring for PI 2.3.1 does not adequately reflect the known gear impacts on elasmobranchs and other ETP species. In particular, it is not clearly demonstrated for the demersal trawl and gillnet UoCs that the fishery should receive aggregate scores of 95 and 85, respectively, for PI 2.3.1 and 85 for PI 2.3.3. These scores are not justified given the large uncertainties regarding population status and bycatch quantification of elasmobranchs and the known impact of demersal fisheries on these stocks. . Also for the gill nets and long lines there are large uncertainties regarding bycatch of sharks and rays. Example: We know that the fishing industry are underreporting the bycatch of the endangered spurdog (*Squalus acanthias*)[1].

It is generally acknowledged that elasmobranchs are caught regularly as bycatch in demersal fisheries, and the "European red list of marine fishes"[2] identifies overfishing as the main threat to marine fishes in Europe, both in targeted fisheries and as by-catch. The ICES WGEF Report 2017[3] states that that demersal elasmobranchs and skates are caught as a bycatch in the mixed demersal fisheries for roundfish. On species level, this is holds true for, e.g., tope shark (*Galeorhinus galeus*), that is taken as bycatch in trawl, gillnet and longline fisheries, and angel shark (*Squatina squatina*), which may be a very occasional bycatch in some trawl and gillnet fisheries. In addition, ICES's Stock Annex for spurdog (*Squalus acanthias*) (2015)[4] reports that an increasing proportion of the total spurdog landings are taken as bycatch in

[1] Information given by the Norwegian Fisherman Association at a meeting about spurdog at the Directorate of Fisheries the 15th of March, 2017.

[2] http://cmsdata.iucn.org/downloads/iucn_european_red_list_of_marine_fishes_web_1.pdf

[3] http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2017/WGEF/01%20WGEF-Report%20of%20the%20Working%20Group%20on%20Elasmobranch%20Fishes.pdf

[4] ICES Stock Annex Spurdog in the NE Atlantic and adjacent waters, 2015,

mixed demersal trawl fisheries. The ICES ecosystem overview of the Celtic Seas ecoregion[5] mentions that spurdog and the common skate complex are caught as bycatch in mixed demersal trawl fisheries and gillnet fisheries. Gibson et al. (2008)[6] report that a number of demersal species which are highly susceptible to trawling activities and have vulnerable life histories are threatened in the Northeast Atlantic. These include white skate (*Rostroraja alba)* and common skate (*Dipturus batis)*, both of which are Critically Endangered in the Northeast Atlantic.

The impact of demersal trawling on the stocks of elasmobranchs has been investigated. Philippart (1998)[7] found that many elasmobranch stocks decreased by up to more than 75% in the south-eastern North Sea in the period between 1945 and 1960, when otter trawling was the predominant catch method. Philippart (1998) demonstrated that otter trawls have a high catch efficiency of long-lived species such as sharks, rays and skates and they caught large numbers of by-catch species. A model developed by Piet et al. (2009)[8] provides evidence that many non-target species in the demersal fish community of the North Sea have been, and are being, impacted by demersal trawl fisheries to an extent that is in some cases higher than the species specifically targeted by fisheries. Their model suggested that on average about half the standing-stock biomass of larger-bodied elasmobranchs was removed annually by fisheries.

In light of these findings we do not believe that available data is sufficient to show that the fishery does not pose a risk of serious or irreversible harm to ETP species and is highly unlikely not to hinder recovery of the stocks of demersal elasmobranchs rated as ETP species, such as common skate, thornback ray (*Raja clavata*), starry ray (*Amblyraja radiate*), spurdog, porbeagle (*Lamna nasus*) and tope shark.

This issue is also relevant to harmonization with other MSC certified fisheries for PI 2.3.1 and 2.3.3 as discussed under our 3rd point below.

The ETP species PIs 2.3.1 and 2.3.3 should be re-scored, at minimum for the demersal trawl, longline and gillnet UoAs as it is not currently demonstrated that these UoCs meet the SG80 scoring guideposts.

2. Data from the Norwegian reference fleet are not adequate to accurately estimate overall bycatch rates of ETP sharks and rays in the UoA

The Norwegian reference fleet has been developed collaboratively between the fisheries and Norway's Institute of Marine Research (IMR) and is instrumental in collecting data for fisheries management. However, compared to the total size of the Norwegian fishing fleet (5,390 vessels in 2017[9]), the reference fleet is composed of a small number of fishing vessels (in total 38 vessels; 14 large offshore vessels and 24 smaller coastal vessels[10]). This corresponds to approximately 0.7% of the total fleet and, the coverage levels are likely to be even smaller for certain gear types. It is therefore arguable whether the reference fleet can provide repre-

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5 ICES Ecosystem Overviews, Celtic Seas Ecoregion, 2016, http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/Celtic_Sea_Ecoregion-Ecosystem_overview.pdf

6 Gibson, C, Valenti, SV, Fordham, SV & Fowler, SL (2008) The Conservation of Northeast Atlantic Chondrichthyans: Report of the IUCN Shark Specialist Group Northeast Atlantic Red List Workshop. viii + 76 pp, http://cmsdata.iucn.org/downloads/shark_report_1.pdf

7 Philippart, CJM (1998) Long-term impact of bottom fisheries on several by-catch species of demersal fish and benthic invertebrates in the south-eastern North Sea. ICES Journal of Marine Science, 55: 342–352

8 Piet GJ, Van Hal R, Greenstreet SPR (2009) Modelling the direct impact of bottom trawling on the North Sea fish community to derive estimates of fishing mortality for non-target fish species. ICES J Mar Sci 66: 1985–1998

9 Register of Norwegian fishermen, https://www.fiskeridir.no/content/download/8257/102009/version/26/file/aktive-fiskeflaaten.xlsx

10 https://www.hi.no/temasider/referanseflaten/en

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sentative data to estimate the overall catch of non-target species by the UoA, in particular with regard to bycatch rates of ETP species which are notoriously variable and determined by a combination of many biotic and abiotic factors. In particular, by definition ETP species are normally at very low abundance levels and have a patchy distribution, therefore bycatch rates from a small sample of vessels are not appropriate for extrapolation to fleet-wide levels. This was also one of the conclusions of the *"Evaluation of the Norwegian References Fleet"*[11]. The 2011 Report notes the following:

> *"It should be noted that the reliability of the Reference Fleet information on by-catch and discards has not been confirmed. In addition, it is also unclear whether the Reference Fleet vessels behave the same, in terms of discarding, as the majority of the fleet. [...]*
>
> *It should be further noted that the methodology of how to raise the Demersal Offshore Reference Fleet fish by-catch and discard data to the overall fleet has not been fully developed. Without complementary port sampling of length (and age) distribution, the Demersal Offshore Reference Fleet is unlikely to provide any reliable method of estimating overall by-catch and discards for commercial species."*

Fock (2014)[12] demonstrated a significant range reduction of thornback rays (*Raja clavata*) in the eastern central North Sea, between 1902 and 1930, before fishing pressure ultimately caused their extirpation. Fishing pressures forced the species to use habitats of poorer quality but of apparently lower risk of being caught as they were less related to preferred fishing grounds. These findings also highlight that it is virtually impossible to extrapolate a limited number of bycatch data from rare species to a large fleet, inter alia because individuals are not evenly distributed.

In addition, data from the reference fleet are not publically available which hampers any objective evaluation of these data by stakeholders. For example, it is not known where the reference fleet is operating, e.g., if they focus on the Norwegian Sea or if their effort is also covering the North Sea. These data must be made available to in order for stakeholders to accept the bycatch rates of ETP species from the reference fleet as a valid indicator to estimate bycatch rates of the UoA.

Other authors have also found that the sampling scheme of the reference fleet could be improved with regard to target species as well. Pennington & Helle (2011)[13] investigated the purse seine reference fleet and found that the survey precision could only be improved by increasing the number of boats in the reference fleet. They also noted that that the reference fleet could only be representative for the entire fleet if they were chosen randomly.

Therefore the sole reliance on data from the Norwegian reference fleet to estimate the potential bycatch rates of ETP species in the vessels of the UoA is not an adequate approach.

To account for the large uncertainties regarding population status and by-catch quantification of elasmobranchs, PI 2.3.1 and PI 2.3.3 should be re-scored and conditions set for improved performance under these PIs. Alter-

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[11] Bowering, R, Storr-Paulsen, M, Tingley, G, Bjerkan, M, Velstad, JH, Gullestad, P & Lorentsen, E, 2011, https://www.imr.no/filarkiv/2011/10/evaluation_of_the_norwegian_reference_fleet_final_report_august_2011_final_rev_l_090.pdf/en

[12] Fock, H (2014) Patterns of extirpation. I. Changes in habitat use by thornback rays *Raja clavata* in the German Bight for 1902–1908, 1930–1932, and 1991–2009. Endang Species Res 25: 197–207

[13] Pennington H, Helle K (2011) Evaluation of the design and efficiency of the Norwegian self-sampling purse-seine reference fleet. ICES Journal of Marine Science (2011), 68(8), 1764–1768. doi:10.1093/icesjms/fsr018

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natively, these PIs should be scored using the MSC Risk Based Framework (RBF). For several elasmobranch species there are no requirements for protection and rebuilding of ETP species provided through national ETP legislation while their status is data deficient.**

3. Scoring of ETP species performance indicators is not harmonized with overlapping MSC certified North Sea demersal fisheries

The MSC FCR v1.3 at CI3.2.3.2 requires that to achieve harmonisation with overlapping MSC certified fisheries, CABs shall achieve consistent conclusions with respect to evaluation, scoring and conditions. Further, at CI3.2.3.3 the team must explain and justify any difference in the scores in the scoring rationale for relevant PIs. In section 4.1 of the PCDR the CAB has only included a harmonization analysis for Principle 1 indicators. No harmonization activities appear to have been conducted for Principle 2 indicators, in particular for ETP species PIs. Reviewer 1 has also drawn attention to the different treatment of ETP species in other MSC certified demersal North Sea fisheries. For the Ekofish, Osprey and CVO plaice fisheries conditions have been formulated concerning the impact of demersal trawling on the starry ray population (PI 2.3.1) and on ETP species information (PI 2.3.3) – see Table 1 below. The CAB has not adequately addressed these peer reviewer comments. The CAB has only documented the ETP species interactions with the reference fleet and no estimates of estimates of fleet-wide bycatch for ETP species are given in the PCDR. Also **note that the CAB response is not fully included in the peer reviewer 1 table** (PCDR p. 226).

Table 1. Compilation of scores for PI 2.3.1 and 2.3.3 for other MSC certified demersal trawl fisheries in the North Sea.

Fishery	CVO	Ekofish	Osprey	Norway demersal
PCR	Intertek Moody 2012[14]	Acoura 2016[15]	Acoura 2016[16]	DNV-DL 2018
Gear	twin rig, outrig	twin rig otter trawl		demersal trawl
PI 2.3.1	80	70 /cond.	70 / cond.	95
PI 2.3.2	80	80	80	90
PI 2.3.3	70 /cond.	65 /cond.	65 /cond.	85

The need for the re-scoring of these PIs such that conditions for improvement are set has also been documented under our first point above.

The initial assessment of the Norwegian saithe fishery from 2008 set a condition for the fishery relating to bycatch. In the initial surveillance reports it is not mentioned that this condition has been closed (only that the fishery is on track), however the subsequent RA-report (2013) states that all conditions were closed. While we are aware that this was a matter of the former certification, this issue is relevant and important to the points raised in these comments and must be clarified.

[14] https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=fxtXyqN7xQCUIEZjoHowOoNc7gPAsv2NqaWOoOzfeV5depW/Msu/DtWzLK1dE8om
[15] https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=Uc7dALCttmKy8VaoBf26RV46WVaMI5K7x7K+Y57e2DfDknDu4WuNXoJt4U1z8f5p
[16] https://cert.msc.org/FileLoader/FileLinkDownload.asmx/GetFile?encryptedKey=rGWIA/oYGBt/GII885PRPYcmkRTYEhP81WjkaJlxNTIRjNvjjzxpuqDdMFAS/fqJ

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Given the obligation for all Norwegian fishing vessels to report landings of all commercial and red list species, there is a surprising lack of information on the bycatch of sharks and rays. The reference fleets should be required to collect data on the condition and other biological information of ETP species released alive at sea. This lack of information is even more surprising as the MSC states on its website[17] with regard to the Norwegian demersal fishery:

> *"Since the Norwegian saithe fisheries first engaged with the MSC program in 2006, several developments have taken place. Additional research on bottom impacts was conducted, and understanding of bycatch and interaction with endangered threatened and protected (ETP) species has further improved."*

However, this information is not available to the public, nor has it been used in the PCDR.

In summary, an additional condition should be raised for ETP sharks and rays. A condition should be raised for PI 2.3.3 and information now collected from the fishery should be adequate to accurately quantify the extent of interactions. Where interactions are found to be unacceptable, the fleet should implement appropriate actions to minimize interactions or eliminate mortalities of the affected elasmobranch species (e.g. time-area closures to avoid concentration areas or gear modifications to avoid capture of these species).

Other Issues

The number of vessels in the UoA is unclear. The PCDR mentions that the Norwegian North Sea fleet is composed of about 1,585 vessels (p. 16). The overall Norwegian fleet is composed of 5,390 vessels[18] (2017), but the vessels listed in Appendix 6 add up to approximately 9,700 vessels.

This contradiction needs to be clarified.

We also have to mention that nearly the whole 1st paragraph on p. 16 is taken from ICES's 2017 Fisheries Overview of the Greater North Sea Ecoregion[19], without giving credit to the authors.

There is some ambiguity relating to the gear(s) assessed under the UoC "hooks & lines". While the initial assessment of 2008 only included "handline (hook & lines)" as a separate UoA, the re-assessment of 2013 included "jigging & longline" and "others". The current PCDR includes the UoA "hooks and lines (not specified)", and it is only on p. 15 that it is further specified that the assessed fisheries include longliners and jiggers, but no handlines. **The gear under assessment should be more clearly defined in the framework of the UoA.**

Note also that EU CR 104/2015 has been meanwhile superseded by EU CR 2018/120, with Article 13 listing the prohibited species.

Note also that The Office of the Auditor General of Norway has made many conclusions in its management review of fisheries management in the North Sea and Skagerrak in 2017[20] about the practice of illegal discard in the North Sea and also about significant lack of management for several species, especially for coastal species like some of the ETP species. Also a lack of management for coastal cod and

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[17] https://fisheries.msc.org/en/fisheries/norway-north-sea-demersal/about/

[18] https://www.fiskeridir.no/content/download/8257/102009/version/26/file/aktive-fiskeflaaten.xlsx

[19] http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/Greater_North_Sea_Ecoregion_Fisheries_Overview.pdf

[20] https://www.riksrevisjonen.no/rapporter/Documents/2016-2017/Fiskeriforvaltningen.pdf

coastal sprat is being highlighted by the Office of the Auditor General of Norway.

Oslo, 6.4.2018

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APPENDIX 5 SURVEILLANCE FREQUENCY

There are 4 conditions and 1 recommendation on this fishery.

Table 58 Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
1	On-site audit	2 auditors on-site	The 4 conditions on this fishery all require feedback from various stakeholders including the management authorities in addition to the Client, and it is considered essential to hold the surveillance audit on-site in year 1 with the option to review in later years.

Table 59 Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	Expected June 2018	June 2019	1 calender year after certificate issue.

Table 60 Fishery Surveillance Program

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 6	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit

APPENDIX 6 OBJECTIONS PROCESS

Following the publication of the Final report, the MSC allows 15 working days for stakeholders to file intent for objection to the Final report. No formal objection to the assessment were raised and accepted by an independent adjudicator as defined in the MSC Certification Requirements.

In this objection period the following comment was received from WWF:

To: Sandhya Chaudhury
Principal Specialist
DNV GL Business Assurance Norway AS

(via email)
Cc: Rupert Howes MSC Chief Executive, ASI

Date: 1 June 2018

SUBJECT: WWF response to the DNV GL decision to the recertify the Norway North Sea Demersal Fishery

Dear Mrs. Sandhya Chaudhury:

WWF is submitting this letter regarding the determination by ME Certification (MEC) that the Norway North Sea demersal fisheries should be certified according to the Principles and Criteria for Sustainable Fisheries set by the Marine Stewardship Council. Having reviewed the Final Report, WWF is very concerned that the CAB has not fully addressed the scoring issues raised by WWF regarding ETP elasmobranch species in our comments on the Public Comment Draft Report (PCDR). The scoring for these Performance Indicators (PIs) still does not accurately reflect either the likely impact of the fishery on these species or the level of information available to assess this impact. We note that many of these issues were also raised during the peer review and were not adequately addressed at this stage of the assessment either. In addition, the CAB has made procedural errors in the assessment of the ETP and Habitat outcome and information PIs by not using the elements approach to scoring. Because of this procedural error the rescoring of ETP species PIs between the PCDR and Final Report is arbitrary and has not been properly substantiated. These scoring and procedural errors were material to the assessment of the fishery and therefore an objection to the recertification of the Norway North Sea demersal fisheries is warranted. However, in the case of this assessment, WWF is not willing to pay the 5000 GBP objection fee and the additional personnel costs involved to merely repeat our earlier findings and to highlight procedural errors made by the CAB. Such clear errors should have been identified and corrected through the checks and balances of the MSC system (i.e. independent CAB, peer review, MSC technical oversight). It should not be incumbent upon eNGO stakeholders to remedy these errors through the MSC objections process. Therefore WWF has chosen to document these issues for the record instead of entering the formal MSC objections process. In the sections below we review the major issues raised in our original PCDR comments and address the CAB response (or lack thereof) in the Final Report.

1. **Scores for the ETP Species PIs do not accurately reflect the known impacts on ETP elasmobranch species from the gear types under consideration.**

In our PCDR comments WWF stated that the ETP species PIs 2.3.1 and 2.3.3 should be re-scored, at minimum for the demersal trawl and gillnet UoAs, as it is not currently demonstrated that these UoCs meet the SG80 scoring guideposts. In response, the CAB has "agreed to recognise that there is room for improvement on the available degree of certainty on which are the impacts of the different gear types on the different ETP species," and lowered the scores for ETP species outcome and information PIs. However, WWF continues to maintain that the fishery does not meet the 80 scoring guidepost for all PI 2.3.1 and 2.3.3 scoring issues and therefore conditions should be set for these PIs. The CAB has still not clearly demonstrated in the Final Report that it has used the scoring elements approach to score the fisheries as required by MSC FCR v1.3 **27.10.7** and sub-clauses. It is also required at FCR 27.10.6 that to contribute to the scoring of any PI, the team shall verify that each scoring issue is fully and unambiguously met. Without fully documented scoring rationales for each scoring issue as required by FCR v1.3, stakeholders and other reviewers cannot be sure that the new scores accurately reflect the current level of certainty for impacts on each ETP elasmobranch species by the relevant gear types.

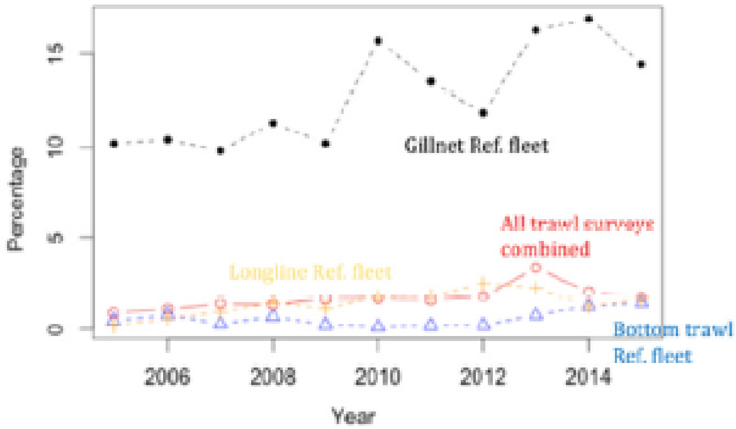

Figure 2.35. Northeast Atlantic spurdog. Percentage occurrence of spurdog in sampled Norwegian commercial catches from each year and from each major fishery groups.

For example, the team acknowledges in the PCDR that records from the reference fleet show significant interactions with spurdog (*Squalus acanthias*). The team states that it agrees with ICES conclusion that an increasing proportion of the total spurdog landings are taken as bycatch in mixed demersal trawl fisheries. However, the team then dismisses this concern as "too broad to penalize the UoA of this assessment." The CAB's response completely fails to address information given by the Norwegian Fisherman Association at a meeting about spurdog at the Directorate of Fisheries the 15th of March, 2017 that the fishing industry are underreporting the bycatch of the endangered spurdog. This information should have been thoroughly followed up by the CAB in response to WWF comments. The team instead cites a figure provided by the ICES WGEF (2017) demonstrating a slight increase in spurdog biomass and recruitment for the Northeast Atlantic. This figure clearly does not address the question of the impact of the fisheries under assessment, as it presents broad trend data for the entire Northeast Atlantic stock. Instead, the team should address the specific spurdog catch trends for individual gear types in the Norwegian fisheries. Trend data for these fisheries are shown in Figure 2.35 of WGEF 2017 (included below) where the percentage occurrence of spurdog in the catch is shown to be increasing over the recent decade. WWF also notes that the frequency of occurrence is only a measure of the presence or absence of spurdog in each haul and does not indicate the volume of the catch, further underscoring the lack of information available to accurately assess the impact of each gear type.

The DNV GL response that the fishery should not be penalized because the evidence presented is too broad to be applicable to this fishery is clearly a scoring error. In addition, the CAB's conclusion fails to acknowledge that the information available for the Norway North Sea Demersal Fisheries is not adequate to show that these fisheries do not hinder the recovery of ETP species (see also Point 2 below).

In the Final Report the CAB did not adequately address the deficiencies in the PCDR by appropriately applying the scoring elements approach as required by MSC FCR v1.3 **27.10.7** and sub-clauses**.** Application of the scoring elements approach for ETP species would have clearly demonstrated that some elements (i.e. species such as spurdog, starry ray and common skate) do not meet the SG 80 scoring guideposts for PIs 2.3.1 and 2.3.3 and therefore a binding condition for improvement should be set. By not using the scoring elements approach as required by FCR v1.3 **27.10.7** the CAB has also made a procedural error in the assessment of the fishery.

2. Data from the Norwegian reference fleet are not adequate to accurately estimate bycatch rates of ETP sharks and rays in the Unit of Assessment (UoA).

The CAB's response and overall arguments for ETP species outcome and information PIs state that the reference fleet is used as "*a broad estimate of expected impacts*" and that the main conclusions were based on landings data. However the CAB's contention that landings data provide an accurate measure of ETP species catch is weak and contradicts statements made by management agencies and the fishing industry itself. Neither in the PCDR (narrative and scoring tables), nor in their response to the WWF comments, does the CAB adequately address the fundamental issues that a) the coverage of the reference fleet is non-random and too small to be representative, and b) that there is catch of ETP elasmobranchs by the reference fleet that must be considered as an index of the level of impact for the entire Norway North Sea Demersal Fishery (i.e. all UoCs). In the Final Report the CAB appears to infer that the catch by the reference fleet is small enough that it shouldn't have an impact without clearly discussing the potential impact at the level of the entire fleet. For example, in the PI 2.3.1 scoring rationale for spurdogs, the report states: "*The team considers that the 7 tonnes caught by the Norwegian North Sea reference fleet are highly unlikely to create unacceptable impacts on the stock of spurdogs.*" It is scientifically inappropriate not to consider the implications of what this level of catch would be if it were raised to the level of the entire fleet.

The CAB's response to information presented from the Norway OAG report regarding evidence of discarding is inadequate and does not demonstrate a precautionary approach. The absence of evidence should not be taken as evidence of absence, especially in the case of discards at sea. The fact that the government entities involved in the audit expressed a real and immediate concern regarding the discarding issue should be sufficient cause for the CAB to investigate this issue in much greater detail and where necessary require that appropriate information is collected through a condition for improvement. WWF Norway can provide quotes from the meeting cited above at the Directorate of Fisheries with WWF, the Norwegian Fisherman Association, the Institute of Marine Research and the Ministry of Industry, Trade and Fisheries regarding a management plan for the endangered shark species. It was discussed at the meeting that bycatch of spiny dogfish/spurdog is being discarded by vessels without being reported. This highlights the need for additional measures for collecting data on spurdog and other elasmobranch species such as starry ray and common skate. It should also be stated that Norway has mandated a precautionary approach to management when there are uncertainties in the management measures for fisheries. This is stated in all management plans for Norwegian ocean areas and the CAB must also follow the stated mandate by the MSC to employ a precautionary approach as well.

3. Scoring of ETP species performance indicators are not harmonized with overlapping MSC certified North Sea demersal fisheries.

WWF considers that the CAB has taken a restrictive approach to defining the need to harmonize ETP species with other MSC certified North Sea fisheries. Neither the MSC program or the conservation and management of North Sea fisheries is well served by this approach. In regards to harmonization with the Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea cod fishery, the CAB's rationale is based on the FCR v2.0 requirement to assess cumulative impacts that did not exist under FCR v1.3. It is interesting to note that in the SFSAG North Sea cod fishery assessment, the CAB (ME Certification) determined that there were no other MSC v2.0 certified fisheries and therefore they did not assess cumulative impacts; in effect the two fisheries assessments were directly comparable in regards to ETP species. Conditions were set for each of the ETP species PIs (2.3.1, 2.3.2 and 2.3.3) due to interactions with ETP elasmobranch species (starry ray, common skate).

Regarding harmonization with the previous saithe fishery scores as recommended by the CAB, WWF notes that neither the original bycatch condition nor subsequent recertification recommendation, both of which addressed ETP species, have resulted in adequate information to assess impacts on ETP species. WWF considers this a repetitive failure to meet the requirements of the MSC Standard. This should be addressed through conditions set for the ETP Outcome and Information PIs as discussed above.

In conclusion, it is clear that the scoring and procedural errors were material to the assessment of the Norway North Sea demersal fisheries and that an objection to the certification of the fisheries would be appropriate. However, as stated above, WWF is not willing to invest the financial and personnel resources in the MSC objections process when these errors should have been corrected earlier in the MSC assessment process.

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Date:
11.06.2018

Your reference:
Comments dt. 01.06.2018

Dear Dr. Kanstinger,

Thank you for the comments. WWF claims that DNV GL has not fully addressed the scoring issues regarding ETP elasmobranch species raised by WWF and that DNV GL has made procedural errors regarding the scoring of ETP species (PI 2.3) and habitats (PI 2.4) by not scoring PI 2.3 and PI 2.4 using an element approach. DNV GL notes that WWF does not, however, intent to file an objection.

DNV GL permits itself to recall that the assessment uses the default assessment tree as set out in the MSC CR v1.3. DNV GL has already in response to the review and WWF comments (6 April 2018) addressed the same issues as raised in the WWF letter of 1 June 2018 and refers the reader to DNV GL responses in appendix 2 and appendix 4 of the PCR for details and amendments made in the original Draft Report. In particular, DNV GL draws your attention to our letter dated 26 April 2018.

Scoring based on an element approach

Concerning the scoring based on an element approach, DNV GL notes that the assessment scores the different gear types individually, both for PI 2.3 (ETP species) and 2.4 (Habitats).
The ETP species are considered individually as set out in the justifications for 2.3 PIs. The ETP species included as specified in Evaluation Table for PI 2.3.1 are: Golden redfish, Porbeagle, Thornback ray, Starry ray, Tope shark, Spurdog, Razorbills, Harbour porpoise and Common harbour seal. For scientific names see PCR Table 31.

The scoring Tables for 2.4 distinguishes habitats and VMEs and reach a joint score by gear type in accordance with the default assessment tree as set out in the MSC CR v1.3 which was used for this re-assessment.
The presentation seems to be less transparent than desired by WWF and DNV GL apologises for any inconveniences this may have caused.

ETP Species

WWF raises two specific issues with the scoring of the ETP species:

1. The PI 2.3 scorings (ETP species) do not accurately reflect the known impacts on the ETP elasmobranchs species from the gear types under consideration
2. Data from the Norwegian reference fleet are not adequate to accurately estimate bycatch rates of ETP sharks and rays in the Unit of Assessment

DNV GL wishes to draw to attention the following:

The impacts on the ETP populations are judged based on data on the catch of the ETP species in relation to the overall fisheries catch of these species and their general status. The Norwegian fisheries operate under strict restrictions established to protect the species. Essentially, with no or very little catch there is no unacceptable impact on the ETP populations.

The Norwegian fisheries are subject to a discard ban (landing obligation). This landing obligation was implemented in Norway in 1987. It is not total, but applies to a long list of species, including all commercially-important species. It is permitted to discard fish if they have a reasonable chance of survival (such as in the case of elasmobranchs). Also, elasmobranchs are legal bycatch that fishermen will normally be paid for, so incentives for discarding are low.

Data provided by the Directorate of Fisheries, Tables 25 – 30 for 2015 and 2016, do not show any threatening catch of ETP species, ref text in report. The Norwegian coast guard control is strict and there is no reason to believe that there is systematic non-compliance. The Norwegian reference fleet data supports the view of very little ETP catch and also that a good share of that can be returned alive to the sea. Furthermore, catch of elasmobranchs are rare events and the confidence limits of an estimate as proposed by WWF would be substantial. Hence the data from the Norwegian reference fleet is not used to estimate the catch accurately, but is used in combination with the landing statistics to demonstrate that the ETP catch is small and not causing unacceptable or serious impacts. This conclusion is specific for the Norwegian demersal fisheries in the North Sea.

As a side remark, it may be observed that this is the third assessment of the saithe demersal fishery that has been MSC certified since 2008 and this is the same fleet of the same boats with the same gear as originally assessed. The ETP species impact has been considered at these earlier assessments and there is no substantial change in the impact.
WWF's use of a single quote, without context, from an NFA member in a closed meeting about under-reporting in the fishing industry cannot be considered objective documentation of a phenomena at national fishery level.

Scoring of ETP species performance indicators are not harmonized with overlapping MSC certified North Sea demersal fisheries.

As noted in section 4.1 in the report, relevant fisheries to look at would be the Scottish and Danish cod/haddock/saithe fisheries and possibly the German North Sea trawl fishery:

a) DFPO Denmark North Sea & Skagerrak saithe & cod fishery
b) Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea cod fisher
c) German North Sea Saithe trawl fisheries

According to FCR v1.3, CI 3.2.3.1, "where an assessment overlaps with a certified fishery or fishery in assessment that a CAB has already scored, the team shall base their assessment on the rationale and scores detailed for the previously scored fishery". While harmonization activities might be straight forward for Principle 1 and Principle 3 PIs, for P2 PIs, harmonization activities should only be considered when referring to the same gear types in the same fishing grounds.

Please note that the management in 2.3.2 differs between the Scottish and German fisheries (managed under EU CFP) and the Norwegian fishery. Furthermore, that the ETP conditions relate to data deficiencies with the specific fishery.

Also, the Norwegian North Sea Demersal fisheries, the DFPO Denmark North Sea & Skagerrak saithe & cod fishery and the German North Sea Saithe trawl fisheries are assessed using MSC FCR v1.2/v1.3 while the SFSAG North Sea cod fishery has been assessed using MSC FCR v2.0. The latter requires an account of cumulative impacts which are not assessed under MSC v1.x. Therefore, harmonization with the SFSAG North Sea cod fishery is not straight forward.

Principle 2.3 (ETP species)

	Norwegian North Sea Demersal Trawl fisheries	DFPO Denmark North Sea & Skagerrak saithe & cod fishery	Scottish Fisheries Sustainable Accreditation Group (SFSAG) North Sea cod fishery See also haddock	German North Sea Saithe trawl fisheries
MSC FCR	V1.3	V1.3	V2.0	V1.2
Source	DNV GL Under assessment	Acoura Marine 6th Surveillance Report	MEC (Control Union Pesca Ltd.)	Acoura Marine 4th Surveillance Report
2.3.1	80	80	75	100
2.3.2	80	80	75	75
2.3.3	80	80	75	85
Comments		Original conditions 2, 3 and 4 closed at SA2 and SA3. Recommendation 3 Completed at SA4	Data deficiencies for starry ray and Common skate.	Condition 1: Observer data on starry ray suggest that the ETP strategy is not implemented effectively

Sincerely
for DNV GL Business Assurance Norway AS
The Assessment team for the Norway North Sea Demersal Fisheries

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APPENDIX 7 LIST OF VESSELS

Regmerke	Vessel name	Regmerke	Vessel name	Regmerke	Vessel name
ZZ1149ZZ	-	LBX649		SF0055A	ATLØY VIKING
LAP0106	-	LBX863		SF0066G	SILENE
LAE0024	-	LCGG		SF0068SU	VIKTOR
LBU0075	-	LDNX	STRAUMINGEN	SF0069SU	BARSTEIN
LBH0724	-	LF5045		SF0071SU	PLØY
LBT0166	Nelly	LG3934		SF0075B	FRØYBAS
LBU0332	-	LG5471		SF0100SU	SULEBAS
LAH0762		LG6165		SF0130S	STORMHAV
LAM0620	-	LG6345		SF0160A	VESTPYNT
LBU0003	Mossa	LG6452		SF0161S	ARGO SENIOR
LBU0816	-	LG7804		SP4326	BELOMORSK
LBW0612	Tobias	LG9068		ST0001B	VASØYGUTT
LAB0488	-	LG9165		ST0001F	JAN HALVAR
VAG0278	-	LGMG		ST0001OL	KRISTINE
LAT0955	-	LH2222		ST0001R	TYR
ZZ1119ZZ	-	LI4148		ST0001RS	FRENGEN
LBW0784	Sjøvåk	LJ4172		ST0002A	LORINE
ZZ1145ZZ	Våganes	LJAM		ST0002AA	VITO
ZZ1146ZZ	-	LK2230		ST0002F	PONTUS
ZZ1101ZZ	-	LK6701		ST0002H	VEDØEN
ZZ1142ZZ	-	LK7903		ST0002HE	LIV MARVIN
ZZ1224ZZ	-	LK9018		ST0002O	DJUPASKJÆR
R0172K	Torino	LM2781		ST0002OL	RYDNINGEN
R0002G	Ronny	LM5323		ST0002SK	BOREAS
R0007SK	Martor	LM5357	ARGUS	ST0003AA	ALBION
R0014KP	Sindre	LM8944		ST0003B	VASØYFISK
R0112K	Seiskjer	LM9458		ST0003O	RAMSØY
R0063K	Anna Christine	LN5427		ST0003OL	BORGENFJORD
VA0041K	Monsun	M0001AV	RUBEN	ST0003R	PERLEN
VA0033K	Sigjo	M0001K	TOR	ST0003T	AUKNES
R0066K	Elvira	M0001SM	KARDINAL	ST0004F	NORDHOLMEN
R0012B	Jarstein	M0001VS	MALIN	ST0004H	VERONIKA
R0020K	Molinergutt	M0002AE	ÆRLING	ST0004OL	KRISTINE
R0790K	Eskimo	M0002AV	BRIM	ST0004RS	SILDJO
H0067B	Sjøfalk	M0003AE	TUSTNATIND	ST0004Ø	MARIA HELEN
R0003TV	Krolei	M0003GS	EVA	ST0005AA	NINA
R0014K	Athena	M0003HS	SNORRE	ST0005F	FRØYSTEIN
R0059ES	Øyestein	M0003VN	HAUGEN	ST0005H	WILMA
R0009HM	Labrus	M0004EE	JAN ÅGE	ST0005SI	VIKING
R0018SO	Optimist	M0005AE	BJØRNHOLM JUNIOR	ST0005SK	SELDA

R0020ST	Teis	**M0005AK**	SIGGEN	**ST0005T**	HVITSAND SENIOR
R0022SK	Mersey	**M0005AV**	GULARØY	**ST0006AA**	STJERNTIND
R0042K	Jim	**M0005M**	FANGST	**ST0006R**	VIKAGUT
R0060ST	Trio	**M0005SM**	TOR HARALD	**ST0006SI**	VIKASKJÆR
R0048SK	Ann Kristin	**M0005VN**	RAGNHILD EMILIE	**ST0006Ø**	RØKKEBUEN
R0036TV	Langøysund	**M0006HD**	ONSØYGUTT	**ST0007R**	RINGSKJÆR
R0009ST	Silver II	**M0006SM**	VANJA	**ST0007T**	EMIL
H0061B	Bølgen	**M0007G**	TOPAS	**ST0008H**	MEGRUNN
R0062ES	Tråsavik	**M0008AV**	ORFJORD	**ST0008O**	RAV
R0047K	Kvartnes	**M0008G**	ODA	**ST0008T**	TORSHAV
H0060B	Santos	**M0008GS**	ROAR	**ST0008Ø**	POLARLYS
R0058K	Matel	**M0008SM**	EVELYN	**ST0009AA**	MAGNUS
R0037K	Janne	**M0009GS**	BERNHARD	**ST0009F**	SOLØY
R0005K	Holm	**M0009HØ**	REMØYBUEN	**ST0009O**	SJØSTJERNA
H0064B	Havøy	**M0009K**	IDA MARIE	**ST0010B**	HAVBRIS
R0157K	Skude	**M0010AE**	TUFSE	**ST0010R**	MASKOT
R0051ES	John Junior	**M0010AV**	TERNUNG	**ST0010Ø**	MORILD
R0847TV	Mix	**M0010GS**	BJØRN ROBIN	**ST0011B**	HELLEM JR
R0013ES	Caprice	**M0010RA**	CHEVY	**ST0011F**	FRØYVÆRING
R0045K	Solglytt	**M0010SM**	FRØY	**ST0011R**	HELETO
R0024B	Vågan	**M0012AV**	HAVBUEN	**ST0011T**	MJØLNER
R0005V	Terna	**M0012K**	SJØSTJERNA	**ST0012F**	TEIST
R0087K	Skårholm	**M0012VN**	HAUGEN SENIOR	**ST0012H**	SJØSVANEN
R0133K	Erly	**M0012ØG**	VARING	**ST0012R**	HAMNAHOLM
H0098B	Stokkøy	**M0013AV**	MATHILDE	**ST0013O**	CONAN
R0784K	Silvervåg	**M0014SM**	JULIAN	**ST0013R**	SENIOR
R0023B	Kansas	**M0015AE**	HAVGUTT	**ST0013T**	KAI OVE
R0002ES	Ebenezer	**M0015SM**	KVITHOLMEN	**ST0014F**	TOBIAS
R0011TV	Nesbuen	**M0016AE**	VALØY	**ST0014T**	FARK
R0002HM	Madelen	**M0016F**	RINGO	**ST0015F**	ORMSKJÆR
R0004B	Nilssabas	**M0016K**	LINHAV	**ST0015R**	MONA
AA0090A	Starlight Rays	**M0016SM**	OLSØYVÆRING	**ST0015T**	MAREN
R0019ES	Eline	**M0017SM**	STEINARSON	**ST0016F**	FRIDA
R0077SK	Vestavind	**M0018A**	SELBJØRNSFJORD	**ST0016R**	SIV
VA0017F	Hidraskjær	**M0018AE**	VALØY	**ST0017H**	MATHILDE
R0182K	Vicma	**M0018K**	SOFIE MARI	**ST0017O**	HAVELLA
R0003ES	Guldringnes	**M0018SM**	ODD EINAR	**ST0017R**	VIMAX
R0409K	Jens	**M0019A**	ATLANTIC	**ST0017Ø**	HUGNAD
R0002H	Andungen	**M0019AE**	KNOTT	**ST0018F**	EDNA SYNNØVE
R0009K	Olter	**M0019K**	SINDRE	**ST0018O**	ØYASKJÆR
VA0086LS	Astrid Emilie	**M0020A**	SØRØYFISK	**ST0018R**	SKAGEN
R0020ES	Svanen	**M0020AV**	SANDØYSUND	**ST0018T**	THEA
R0024HA	Vestri	**M0020K**	JOHN SENIOR	**ST0019H**	ANDRE
R0022K	Lyn	**M0020VD**	BJØRN MARTIN	**ST0020F**	FESKARGUTTEN

H0037SO	Teist	**M0021AV**	MØRE	**ST0020O**	ANITA
R0023ES	Silje	**M0022AK**	AUKRAVÆRING	**ST0021F**	SNOOPY
R0333K	Salvøy	**M0024SM**	OLE	**ST0021H**	ARES
N0060H	Vestskjær	**M0025AE**	PÅL MAGNAR	**ST0021R**	LOTHE
R0002TV	Neskvikken	**M0025AV**	NYBROTT	**ST0022F**	MATHIAS
R0033K	Veiflu	**M0025EE**	SEIFLU JR	**ST0022H**	AUKAN
R0049K	Waarøy	**M0025SM**	ORHOLM	**ST0023F**	VESTASKJÆR
M0042A	Klondyke	**M0026AV**	SIMON SENIOR	**ST0024B**	MAILEN
R0065K	Bukkøy	**M0026EE**	SEIFLU	**ST0024H**	EINVIKBUEN
M0005VS	Ragnhild	**M0027K**	HAVTERNA	**ST0025A**	MADELEN
R0069ES	Ulken	**M0028AE**	VIRO	**ST0025F**	ADRIAN
R0010S	Abyss	**M0029AV**	SATURN	**ST0025H**	SANDRA
R0001V	Tollak	**M0029SM**	PALMA	**ST0025T**	RAVN
R0022B	Håflu	**M0030AV**	IRIS EIRIN	**ST0026B**	GRIMSØY
R0856K	Olter	**M0030K**	LUIS	**ST0026F**	HEGE ANITA
R0029ES	Svåholm	**M0031GS**	RØDNEBB	**ST0026R**	GEIR
R0014SK	Hastverk	**M0031SM**	MELODI	**ST0027H**	STARFISH
R0005SA	Roger	**M0032A**	MARIANN	**ST0027R**	KÅPA
R0017HA	Vågen	**M0032AE**	EIDSHOLM	**ST0028F**	RUNAR
R0018K	Ikato	**M0032SM**	SJØLIV	**ST0028R**	MOEN
H0183AV	Eikholmen	**M0033A**	NAPP	**ST0029AA**	LANGHOLM
R0019HA	Vågsbuen	**M0033K**	PAULINE	**ST0029T**	BÅTSMANN
R0005HM	Jøsnesbuen	**M0034AV**	PRØVEN	**ST0030F**	MONA
VA0001FS	Bakkan	**M0034SM**	TILIA	**ST0030R**	BRANDY
R0031K	Eggøy	**M0035AV**	VIKING	**ST0031O**	TERNEN
R0029K	Mina-M	**M0035SM**	ELIAS	**ST0031RS**	TRØNDERHAV
SF0277V	Havfluna	**M0039SM**	IRIS ANETTE	**ST0033F**	EINES
R0012ES	Hansvik	**M0040AV**	MARITA	**ST0033H**	TALYN
H0322AV	Mersey	**M0040K**	GUNNAR EGIL	**ST0033T**	RITA MARIE
R0039ES	Vårsol	**M0041AE**	MORILD	**ST0034H**	ØYHOLM
H0002F	Ligrunn	**M0041F**	ROYAL	**ST0034R**	WILMANN SEN
H0014B	Havlys	**M0041K**	MARØYSUND	**ST0035F**	FRAM
H0142B	Katrine	**M0042AE**	MARIE	**ST0035O**	BROR
R0029B	Liten	**M0042AV**	SANDRA KRISTIN	**ST0036O**	THORY
VA0330S	Hellevig 1	**M0042SM**	BJØRN STEINAR	**ST0039T**	BÅTSMANN III
R0018HM	Mareis	**M0044SM**	HOPAVÅG	**ST0040F**	FROAN
R0112ES	Tobias	**M0045AE**	VESLEMØY	**ST0040O**	HEPSØFJORD
R0028B	Nelly	**M0045AV**	DINO	**ST0041F**	KARI
R0052K	Fjordtrål	**M0046AV**	BRATTHOLM	**ST0043AA**	BERGEBUEN
R0032K	Elvira	**M0047AV**	GULLFISK 2	**ST0044H**	JUTINA
H0088AV	Magnarson	**M0047K**	TIKI	**ST0044T**	VARNA
R0007TV	Baus	**M0048AV**	GALIA	**ST0044Ø**	TJONGEN
R0034ES	Sirafisk	**M0050A**	SKLINNABANKEN	**ST0046O**	ØYSJARK
H0185AV	Skipsholmen	**M0050AE**	HANS-R	**ST0048F**	FRØYMANN

R0027B	Våganes	**M0050AV**	PIT	**ST0048O**	BUHOLMSKJÆR
R0001B	Mira	**M0050G**	STORNES	**ST0049T**	TRØNDERFISK
R0088K	Marvi	**M0051AV**	LADY ALUDIA	**ST0051F**	HAVGUTT
R0067ES	Terje	**M0051K**	MARTIN	**ST0051T**	SJØ-LIV
R0001TV	Nesbuen	**M0053GS**	HUGNAD	**ST0052H**	HITTERVÆRING
M0020S	Stålegg	**M0053HØ**	STINA	**ST0054F**	KYA
M0135F	Ragnhild	**M0054HØ**	STORHAV	**ST0055H**	HITTERØ
R0030K	Pålstikk	**M0054SM**	JUANITA	**ST0055T**	PHILIP
R0001KV	Kvednå	**M0055AV**	HERMON	**ST0056R**	HØVDING
R0149ES	Ekko	**M0056SM**	IRIS ANETTE	**ST0056Ø**	RAGNA ELIN
R0013HA	Alf Magne	**M0060HØ**	KYSTFISK	**ST0058F**	JANN GEORG
VA0081LS	Storvig	**M0061SØ**	HARTO	**ST0058O**	ONSØYGUTT
H0313AV	Caprice	**M0062HØ**	SKOGLIJENTA	**ST0060H**	HENRIK
R0040K	Elvira	**M0064MD**	EMMA	**ST0060O**	SKIPSON
R0007HM	Prince	**M0065AV**	BRATTHOLM	**ST0060R**	FJORDBAS
R0041K	Veafisk	**M0066AE**	HANNE MARIE	**ST0060T**	TYFON
R0146K	Glimt	**M0066SM**	BRATTVÆRING	**ST0062F**	SULØY
H0039SO	Teist	**M0068A**	OCEAN JR	**ST0063F**	TUNGVÅG
AA0002L	Høvågtrål	**M0069SM**	LAKSBERG	**ST0064F**	JOHAN HÅKON
VA0016F	Hidra	**M0071AV**	SUNBEAM	**ST0067H**	STINE SOFIE
R0101K	Linda	**M0072AE**	ANNY LOVISE	**ST0070F**	TELLUS
R0017R	Høvring	**M0072SJ**	VERNING	**ST0071F**	HAVBØEN
R0057K	Anna Christine	**M0072SM**	LILLY	**ST0072F**	HØVIK
R0038K	Eggøy	**M0075K**	JANTO	**ST0074F**	FRIDA
R0097K	Falcon	**M0080AV**	BJØRNES	**ST0075F**	SOLAN
R0071B	Taifun	**M0081AV**	GULLFISK	**ST0075R**	EIVÆRING
R0055ES	Småen	**M0081H**	CINDY	**ST0080H**	MJØLNER 2
R0070ES	Nyskjær	**M0081SM**	GULLFISK	**ST0080O**	SKIPSON
R0031ES	Skadberg	**M0082H**	REIDAR	**ST0081F**	HALTENFISK
R0018ES	Krabben	**M0084AV**	RATTO	**ST0082F**	SATURN
R0151ES	Vidar	**M0084K**	LANGHOLMBUEN	**ST0083H**	MONICA
R0001SS	Anne - Katharina	**M0084SM**	ARKTOS	**ST0084F**	VESTØY
R0030S	Vassøybuen	**M0085AV**	ARKTOS	**ST0085H**	TINE MERETHE
R0009SK	Teodor	**M0085SM**	VERONICA	**ST0088F**	ÅRVAK
R0014HA	Nita	**M0087SM**	RANGNES	**ST0090H**	NORDFJELL
R0022HA	Tonny	**M0089HØ**	BUØY SR.	**ST0093F**	BRAKAR
R0001KP	Gunny	**M0090MD**	MIFJORD	**ST0094AA**	STORSTEIN
R0001RB	Havsol	**M0094H**	HARHAUG I	**ST0094F**	HELLEFISK
R0008F	Fossekallen	**M0094K**	HØLINGEN	**ST0096F**	SJØROSA
R0021R	Tordenskjold	**M0095K**	TRYGVASON	**ST0096T**	RANDI-HELEN
R0036KV	Leiabu	**M0100AV**	HOLMEN	**ST0100F**	LEON OLAI
R0020B	Vågholm	**M0100SM**	PETTERSON	**ST0103F**	ANN KATHRIN
R0041TV	Sjøstjerna	**M0103SM**	VIKING I	**ST0105H**	FRODE
R0043SD	Flyndrå	**M0104AV**	NESABUEN	**ST0106F**	HILMARSON

R0070TV	Palmer	**M0105SM**	LUTON	**ST0111O**	BÅTSKJÆR
R0069K	Veiding	**M0112AE**	MENTEL	**ST0111RS**	SWANSEA
R0002K	E.j.k	**M0115AV**	ASLAK	**ST0121H**	PÅL
R0053K	SJØGLIMT	**M0115SJ**	SIWA	**ST0122F**	ØYAVÅG
R0055K	Hopvåg	**M0115SM**	BARRY	**ST0124F**	HAVNEVÅG
R0061K	Terje	**M0116HØ**	VESTBAS	**ST0130F**	NORDVIK
R0035K	Gunner	**M0118SM**	MEA	**ST0145F**	SULVÆRING
R0072K	Repsøy	**M0119AE**	RUSKEN	**ST0147F**	OLAV JUNIOR
R0068K	Åkrabuen	**M0121A**	RUNING	**ST0165F**	CAPRI
R0051K	Syrebuen	**M0124H**	SEIR	**ST0177H**	BOGØYVÆRING
R0056V	Lomvi	**M0131AE**	IMARSUND	**ST0185F**	FILIP
R0002V	Vestmøy	**M0132AE**	SIKA	**ST0185R**	JENNY
H0013SO	Svint	**M0144SM**	RAMSØYFJORD	**ST0188H**	MARTHE
R0011KV	Tjeld	**M0147AV**	LANGØYSUND	**ST0201F**	SOLVÆR
H0015AV	Kremmervik	**M0150AV**	NYBØEN	**ST0202F**	NYSTUBUEN
H0069S	Krossfjord	**M0150SM**	FRANK	**ST0214F**	MIKAEL
H0003F	Liafjord	**M0152AV**	FRIGG	**ST0220F**	VIGRUNN
R0015K	Cetus	**M0155AV**	HANS	**ST0227H**	HJERTØYBUEN
H0005AV	Morten Einar	**M0158SM**	DYRNESVÅG	**ST0231F**	ASKATI
M0101SM	Fiskebank	**M0195MD**	HAVSNURP	**ST0234F**	SJØBLOMSTEN
H0004B	Lønnøy	**M0200A**	HAVSKJER	**ST0264F**	TONJE
VA0095K	Piraja	**M0200HØ**	SKÅRUNGEN	**ST0265F**	WÅGØY
AA0056A	Astrid Ann	**M0200SM**	PLUTO	**ST0270H**	AMALIE
VA0196K	Horisont III	**M0202AV**	THEA	**ST0300F**	JONAS
VA0019F	Athena 2	**M0208SM**	NÆSSFLU	**ST0307F**	LANOFISK
R0344K	Toya	**M0211AE**	PEDER J	**ST0312F**	FALK
R0168K	Strand	**M0218SM**	FISKEBANK I	**ST0333F**	NEPTUN
R0111K	Rima	**M0221SM**	LEON	**ST0348H**	ELIJENTA
R0005S	Sangis	**M0232AE**	SIKA	**ST0400F**	MEHOLM
FR0059	Golden Gain	**M0249F**	VITO	**ST0488F**	ARILDSON
F0001L	HERMES	**M0270AV**	ODDEN	**ST0491F**	VESTASKJÆR
F0004BD	GADUS POSEIDON	**M0287A**	OLAV SELVÅG	**ST0500F**	MERCUR
F0017H	DOGGI	**M0333SM**	ASBJØRN JOHAN	**ST2017UK**	UNGDOMSKVOTE
F0025A	ARCTIC SWAN	**M0345SM**	FALKEN	**ST9000H**	
F0038H	RYPEFJORD	**M0400AK**	O. SOLEM	**ST9000HE**	
F0055BD	GADUS NEPTUN	**M0406SM**	KORALL	**ST9000R**	
F0107BD	KONGSFJORD	**M0515MD**	NYSKJER	**ST9000Ø**	
F0110BD	BÅTSFJORD	**M0520A**	HAVFISK	**ST9300F**	SKOLEBÅT
F0111BD	ATLANTIC STAR	**M2017UK**	UNGDOMSKVOTE	**T0001BG**	FLÆSBUEN
F0130HV	STORMHAV	**M9000AV**		**T0001K**	NORA
F0202BD	DELFIN	**M9000K**		**T0001L**	SLETTIND
H0002B	RØKSUND	**M9000TV**		**T0001S**	KARL WOLMAR
H0002O	ELIAS	**M0100**	KOKSHAYSK	**T0001SK**	CECILIE
H0005FJ	STORDING	**M0183**	DISTINKT	**T0001SL**	GRYLLEFJORD

H0008S	RAUNEFJORD	**M0192**	TOR	**T0001T**	BARSUND
H0011AV	GRANIT	**M0215**	SEVERYANIN 2	**T0001TK**	ULA
H0015B	FYRHOLM	**M0216**	KAPITAN NAUMOV	**T0002B**	SNETIND
H0017B	KLIPTON	**M0226**	GULDRANGUR	**T0002KD**	NORDNES
H0062S	BOGASKJÆR	**M0228**	PROEKT	**T0002L**	FUGLØYFJORD
H0082S	TEINESKJÆR	**M0239**	MELKART	**T0002N**	STORENGBUEN
H0123AV	ØSTERFJORD	**M0254**	KORUND	**T0002S**	SMÅBAS I
M0001EE	LIANES	**M0258**	VLADIMIR ZAGOSKIN	**T0002SK**	NYSTART
M0001N	RAYMITA	**M0264**	BOREY	**T0002T**	HAUNES
M0001S	FLORA	**M0269**	STRELETS	**T0002TK**	MÅNES
M0001SJ	SEIGUTT	**M0328**	YAGRY	**T0002TN**	TRANØYJENTA
M0001VD	RAMOEN	**M0337**	VIKING	**T0003BG**	BEN HUR
M0001VN	MATS	**M0347**	MARK LIUBOVSKII	**T0003H**	ELLEN
M0002EE	TEISTKLUB	**M0349**	KAPITAN DOLGIKH	**T0003I**	BALLSTADØY
M0002G	VALDERØY	**M0350**	MELKART-3	**T0003K**	BIRGITTE
M0002HD	KLETT	**M0351**	ZVEZDA MURMANA	**T0003KD**	TINGANES
M0002M	RANDI SOFIE	**M0410**	KAPITAN GROMTSEV	**T0003KF**	FRISCO
M0002S	HAUGSTAD	**M0418**	MELKART 2	**T0003N**	REISAVÆRINGEN
M0002SK	FANT	**MK0240**	SEVRYBA-1	**T0003S**	SEGLVIK
M0002SØ	ONING	**MK0270**	ALMAK	**T0003SA**	NEPTUN
M0003F	HELLSKJÆR	**MK0277**	ALFERAS	**T0003SD**	EKENBORG
M0003RA	SKÅLVIK	**MK0354**	KAPITAN VARGANOV	**T0003SK**	NICO
M0003S	FRANTS	**MK0356**	RYBAK	**T0004K**	STEINNESVÆRING
M0003SA	BALDER	**MK0357**	VITUS BERING	**T0004KF**	BJØRNHAV
M0003VS	ØYBAS	**MK0361**	VASILIY GOLOVNIN	**T0004LK**	ALISA
M0004F	SIMEN	**MK0369**	MARTHA ARENDSEE	**T0004N**	LITEN JUNIOR
M0004GS	SJØGUTT	**MK0381**	MIRAKH	**T0004SA**	BREMSJØ
M0004VN	HAVBÅRA	**MK0411**	TAURUS	**T0004T**	ODD LINDBERG
M0005H	HOVE ODDMUND	**MK0473**	KHOLMOGORY	**T0004TK**	KASPERSON
M0005HD	VINGHOLM	**MK0474**	ORVAR	**T0005BG**	FJORDFANGST
M0005VD	HAVBLÅ	**MK0542**	PROEKT 1	**T0005K**	JANNE-MARIE
M0006A	SYLTEBAS	**MK0547**	SAAMI	**T0005KF**	WILLYSON
M0006GS	ISINGVÅG	**MK0549**	KAPITAN GERASHCHENKO	**T0005LK**	EINARSON
M0006HØ	RANITA	**N0001AH**	SJØLIV	**T0005S**	LUNA
M0006M	SJARKE	**N0001B**	NORDFISK	**T0005SA**	GLADIATOR
M0007HØ	KAMPEN	**N0001BL**	ØYVÆR	**T0005SK**	JOHANNE
M0007U	BRAVO	**N0001BR**	TONNY MARIE	**T0005T**	SKJERODDEN
M0007VD	RAMOEN	**N0001BØ**	SKARHOLMEN	**T0005TN**	LOMSTIND
M0008F	LISJEBAS	**N0001DA**	KAIA	**T0006H**	KJELL OTTO
M0008HØ	LANGAARD	**N0001FE**	STAR	**T0006I**	VALLY

M0008SK	FJORDFISK	**N0001G**	ARNEY	**T0006K**	HAVGLIMT
M0008VD	HARALD JR.	**N0001HR**	CAMILLA	**T0006KD**	YLVA
M0009AK	TORNADO	**N0001L**	NESØYFJORD	**T0006KF**	SALTIND
M0009F	JUNO	**N0001LF**	STRAUMBERG	**T0006KN**	STRØMØY
M0009VN	JALLA	**N0001ME**	STØTTFJORD	**T0006L**	CONVOY
M0010A	KNAPPEN	**N0001SO**	OLAGUTT	**T0006SA**	MONSUN
M0010F	NYSTAD	**N0001TN**	HILDRINGEN	**T0006SK**	GEIR
M0010H	BRIS	**N0001VA**	SINGSHOLM	**T0006TK**	SIFJORD
M0010M	ORKAN	**N0001Ø**	MELØYJENTA	**T0007D**	SPURVEN
M0010SA	FISKENES	**N0002AH**	FJORDEGG	**T0007G**	FANAS
M0010ØG	STORSEISUND	**N0002B**	STORMHAV	**T0007H**	KASFJORD
M0011A	VOLSTAD	**N0002BL**	LAUVGRUND	**T0007K**	BIRGITTE
M0011AV	LIAHOLM	**N0002BR**	HEIDI	**T0007KD**	BASSØY
M0011F	ELNESFISK	**N0002BØ**	UTFLÆSA	**T0007S**	HAVGLIMT 3
M0011G	SYLVIA	**N0002DA**	VIRGO	**T0007SA**	HARMONI
M0011HØ	IDA	**N0002F**	JENNY	**T0007SK**	ROCKMANN
M0011RA	FJORDING	**N0002G**	SJØBAS	**T0007TK**	FRIDA
M0011SK	STORHOLM	**N0002H**	HINNØY	**T0007TN**	SARNES
M0012AK	FINDUS	**N0002HR**	LURINGEN	**T0008BG**	BERGLIBUEN
M0012G	LORAN	**N0002L**	TUVA	**T0008H**	BERGSVÅG
M0012H	GEIR II	**N0002ME**	OLEA	**T0008I**	NORDSILD
M0012HØ	LEANE	**N0002MS**	HÅVARD. A	**T0008K**	SJÅVIKNES
M0012S	ELDORADO	**N0002TN**	THORSHAVET	**T0008KD**	IVAN
M0013U	STRAUMSUND	**N0002V**	INGO	**T0008KF**	KRISTINE
M0014A	SAFIR	**N0002VS**	PARS	**T0008LK**	LARS-AINA
M0014HØ	VOLDSUNDFISK	**N0002VV**	BRANDSHOLMBØEN	**T0008N**	TRYGVE
M0014MD	MIDØY VIKING	**N0002Ø**	RAGNI	**T0008S**	ARNØYTIND
M0014SA	RUSKEN	**N0003A**	FISKERINNEN	**T0008SA**	EDVARD SENIOR
M0014U	HUSLA	**N0003AH**	MARITHA	**T0008T**	FAGERVÆR
M0015F	MORILD	**N0003B**	CHARLOTTE	**T0008TK**	MONIKA
M0015G	GODØYGUTT	**N0003BØ**	ANDHOLMEN	**T0009B**	FRØY
M0015HD	FALKVINGE	**N0003F**	SIVELAND	**T0009BG**	BRINGTIND
M0015HØ	TONO	**N0003FE**	ØRNA	**T0009H**	VERA MARIA
M0015SA	BUSTER	**N0003G**	LEIF-OLAI	**T0009K**	VANNØYVÆRINGEN
M0015U	VÅGEBRIS	**N0003L**	ELINE	**T0009KD**	HENRY
M0016EE	RINGO	**N0003LF**	FLOING	**T0009SD**	BJØRNØY
M0016H	HILDRING	**N0003ME**	GLIMT	**T0009T**	OCEAN BLUE
M0016HØ	ARGO	**N0003N**	INA II	**T0010B**	ANN-HELEN
M0017AV	GÅRDEN SENIOR	**N0003R**	DIANA	**T0010G**	SALTIND
M0018F	SØRHAV	**N0003RT**	SJØDRØM	**T0010H**	SEA QUEST
M0018GS	LANGSKJÆR	**N0003SA**	VÅRBRIS	**T0010L**	MIRIAM
M0018M	MOAGUTT	**N0003SG**	MAYLENE KAMILLA	**T0010LK**	AUSTBRIS
M0019M	VÅGAR	**N0003SO**	HARDHAUS	**T0010SD**	SULEGGA
M0020EE	TRAMSEGG	**N0003TN**	TROLLFJELL	**T0010SK**	SVANEN

M0020VS	MARIANN
M0021F	SKARNER
M0021G	GUTTA
M0021SA	TOR
M0021U	BRANDUNGEN
M0022F	MYRBØ JUNIOR
M0022HD	UNN
M0022VN	HAVBÅRA
M0022VS	KVALVIK
M0023A	THOIS
M0023F	JANBU
M0024F	KOBBEN
M0024HØ	VENTURA
M0024U	HASUND
M0025A	KÅRBØBAS
M0025F	MALIN
M0025HØ	LEINEFISK
M0025K	GRIPAR
M0025SA	B-VÅG
M0026HØ	SKÅRUNGEN
M0026MD	MIDSUNDJENTA
M0026VN	HAVPRINS
M0028A	HEMINGWAY
M0028HØ	GRØNHOLM
M0030EE	TRAMSEGG
M0030H	ODIN
M0030HØ	AKONO
M0030S	AGATHE
M0030SA	BØLGEN
M0030SØ	HAAVÆRBUEN
M0030VN	SMÅLINER
M0031A	PLUTO
M0031HØ	GOLLENES
M0032EE	FRIDA
M0032G	AASE
M0033HØ	WESTHAV
M0033MD	HUSAR
M0033S	BRUSØY
M0034F	VÅGØY
M0034G	BRIS
M0035F	ALF SENIOR
M0035HØ	VATTØYFJORD
M0035MD	GANGSTAD JR
N0003VV	BALLSTADØY
N0003Ø	TOR JONNY
N0004B	STORBØEN
N0004BL	LAILA-ANITA
N0004BØ	BØBAS
N0004DA	RAPTUS
N0004F	GERHARD JAKOBSEN
N0004G	EVA MARIE
N0004L	STORØY
N0004MS	KIM ROGER
N0004RT	TERJE ROAR
N0004SG	SKREIEN
N0004SO	ROALD SENIOR
N0004TF	HAUKØYFJORD
N0004VR	CHRISTINE
N0004VV	IDA
N0005A	PRØVEN
N0005AH	CINITA
N0005B	SILJA
N0005BG	SKARSTADVÆRING
N0005BØ	NORBUEN
N0005F	HARALD JOHAN
N0005HR	ESBEN ANDERS
N0005LF	RANDI ELISE
N0005LN	CATO
N0005ME	BARSTIND
N0005SA	TJØNNØYFISK
N0005SF	NYVOLL
N0005TF	JUNE
N0005TN	TRÆNHAVET
N0005VN	FANDANGO
N0005VV	SVANA
N0005Ø	LEANDER
N0006B	VESTFISK
N0006BR	LYNGVÆR
N0006F	LENA-BEATE
N0006G	DEMRING
N0006H	RØSNESVÅG
N0006HM	BREMHOLMEN
N0006L	ALDRA
N0006LF	TRITON
N0006NA	FLO
N0006RT	ALF-JENS
T0010T	WIOL
T0010TK	THOR
T0011B	VETA LUCIA
T0011L	TAMPEN
T0011LK	BRENNÅJENTA
T0011SK	ØRA
T0011T	MARI
T0011TK	FRODE
T0012B	ALICE ANDREA
T0012BG	LAILA
T0012H	BERGSVÅG
T0012KF	SNUTAN
T0012KN	ODD JONNY II
T0012L	FJORDBAS
T0012LK	BLÅFJELL
T0012N	SOIANA
T0012S	SJARKE
T0012SA	STORVIKBUEN
T0012TK	EIDEGUTT
T0013S	HAUKØY
T0014I	ANNBIDA
T0014K	MARIANNE
T0014L	KYSTFESK
T0014LK	LEIF-HELGE
T0014N	SIGNE
T0014SA	SJÅNES
T0014SD	PERHOLM
T0014T	BØVÆRING
T0014TK	EIDEGUTT
T0015BG	FRØGRUNN
T0015H	ALTEVAAG
T0015K	RAGNHILD EMILIE
T0015KN	ELISABETH
T0015S	LISTER
T0015SA	HAVØRNA
T0015T	SMÅVÆR
T0015TK	HAVBRYN
T0016BG	POLO
T0016H	KÅRE
T0016I	SPURVEN
T0016K	LIPELLA
T0016KD	BEKKA
T0016L	SOFUS

M0037G	ROALDNES	N0006SF	FRØKNA	T0016S	SJØVERK
M0037HØ	NOTØYGUTT	N0006SG	HAVBRIS	T0016SA	HAVØRNA
M0038HØ	BØFJORD	N0006SO	HAVSULA	T0016SK	LANGBÅEN
M0038VN	SMÅSKJER	N0006TF	ELVINE	T0016T	HÅR-BÅEN
M0039G	ORBIT	N0006VA	KJELLØY	T0017BG	FRØGRUNN
M0040AK	BRØDRENE SOLEM	N0006VN	LEDØY	T0017K	VARG
M0041HØ	PERLON	N0006VV	NORDTIND	T0017L	DELFIN
M0042HØ	HAVSOL	N0007B	HAVLEIK	T0017N	VALLY
M0043A	MARI	N0007BL	TOOTSIE	T0017S	SKJERVØYFISK
M0044AK	RAGNHILD KRISTINE	N0007BR	ANNA THERESE	T0017T	AKSEL B
M0044G	SØKERN	N0007BØ	VIKANØY	T0018H	HARSTADVÆRING
M0044HØ	TØFFEN	N0007F	TAMARA	T0018K	MIE
M0045HØ	ODIN	N0007G	HAVTOR	T0018LK	HUSØYSUND
M0046K	ASPHOLM	N0007H	RØSNESVÅG	T0018N	TOR-M
M0050HØ	HAVSTEIN	N0007L	BREMNES	T0018S	LEA ELINA
M0050SA	HAUGEFISK	N0007LN	IDA	T0019K	HAVNES
M0052S	LILLANN	N0007N	SAGA	T0019SA	KARL MARTIN
M0053F	BUABAS	N0007R	TERNA	T0019T	SJØTUN
M0053G	ARTHUR	N0007RT	CELINA	T0020G	HAVSULA
M0053SA	SOFFE	N0007SF	TENNSKJÆR	T0020H	BLÅTIND
M0054G	LAUNES	N0007SG	FJORDBRIS	T0020I	DRIVAR
M0055HØ	NÆRØYBUEN	N0007V	ØYNES	T0020L	SARA KARIN
M0055SA	STRANDBAKKEN	N0007VA	TOMMY ANDRE	T0020LK	VIKABUKT
M0055VN	GEKO	N0007VV	HELENA	T0020SA	NORSUND
M0056S	MYRA	N0007Ø	RØSTAD	T0020T	TERNINGEN
M0057HØ	SIGNAL	N0008A	MJÅSUND	T0020TK	BRIAN
M0058A	CAPELLA	N0008AH	SVINØY	T0020TN	KONVOY
M0058SA	BJØRNAR	N0008B	MEHOLMEN	T0021I	DRIVAR
M0058VN	HAUGEN JUNIOR	N0008BL	PELLE	T0021K	MT SENIOR
M0059G	GUNN ANITA	N0008BR	SATURN	T0021L	FJORDBUEN
M0059HØ	KRÅKØYSUND	N0008BØ	SANDRA	T0021LK	TRAPANI
M0060A	BJØRNHOLM	N0008F	ODDGEIR	T0021LV	PER ARVID
M0060U	FISKAREN	N0008FE	KARINA	T0022H	KAROLINE
M0063HØ	HUGNAD	N0008L	EMBLA	T0022I	ØYGUTT
M0066F	SPRINT	N0008LN	GANAS	T0022KN	NÆVERNES
M0067HØ	RAV	N0008ME	SKARSFJORD	T0022LK	HUSØYVÆRING II
M0068F	OLEMANN	N0008MS	IDA	T0022S	ULØYBUEN
M0068G	ATLANTIC VIKING	N0008N	VARGEN	T0023B	NILS EIVIND
M0069G	MOLNES	N0008R	STIG	T0023BG	MALOGUTT
M0069MD	MARIE	N0008RA	HAVBRIS	T0023S	SK JUNIOR
M0070AK	JANTO JR	N0008RT	RØSTBANKEN VEST	T0023SD	MARIT MARIE
M0070AV	TOJAKO	N0008SO	RYPA	T0023T	SKAGØYSUND
M0071A	SKARSTEIN	N0008TN	UTVÆR	T0024H	RIRO

M0071G	NESBAKK	**N0008V**	JUNGMANN	**T0024KN**	RØSTJENTA
M0071HØ	ROGNEGUTT	**N0008VA**	VALLSJØ	**T0024LK**	MICHELLE
M0071SA	GETO	**N0008VN**	NORDSTADBUEN	**T0024N**	LOMSØY
M0073G	ANNIKEN	**N0008VR**	MIDNATSOL	**T0024S**	FINNVIK
M0073HØ	FREDØY	**N0008VS**	INNVÆR	**T0024T**	SKARVØY
M0074HØ	FROMAR	**N0008VV**	STORHOLM	**T0025BG**	NINA IREN
M0074SØ	STRANDAR	**N0008Ø**	RYPA	**T0025H**	STIG MAGNAR
M0075G	LINDA	**N0009AH**	ØRNØY	**T0025K**	SJØLILL
M0076G	VEIDAR 1	**N0009B**	HAVDUR	**T0025LK**	ØYLINER
M0076HØ	ØSTGUTT	**N0009BR**	BAMSE	**T0025SA**	TORSKEN
M0078F	GULVÅG	**N0009BØ**	HAVBRYN	**T0026B**	MÅRFJELL
M0078G	NYTERTEN	**N0009DA**	ANNA LOVISE	**T0026BG**	HEGE THERESA
M0078HØ	VESTFISK	**N0009F**	VIBEKE CATHRIN	**T0026K**	BLANKFISK
M0078MD	HOMARUS	**N0009L**	ANDFJELL II	**T0026L**	EDELFISK
M0079G	BROTTSJØ	**N0009ME**	JULIE M	**T0026N**	ØYÅD
M0079HØ	GENESIS	**N0009R**	HAVBUEN	**T0026S**	KAMØ
M0080HØ	MATHILDE	**N0009SF**	START	**T0026T**	HELGE VIDAR
M0080SJ	SEA HUNTER	**N0009SG**	GAUTE	**T0026TK**	NYBÅEN
M0080SØ	SMIHAV	**N0009TN**	MAY	**T0027K**	RIKKE
M0081F	BUAGUTT	**N0009V**	SOFIE	**T0027L**	GLIMT
M0083M	RASK	**N0009VA**	KATHARINA	**T0027LK**	WENCHE P
M0083SA	SULAHAV	**N0009VN**	ANITA	**T0027S**	KAMPEN
M0084HØ	BØTIND	**N0009VV**	POLARIS	**T0027T**	SLETTHAV
M0085G	NORDSTAR	**N0009Ø**	VICTORIA	**T0027TK**	FRIDA
M0088F	ØYBUEN	**N0010A**	BØRHELLA	**T0027TN**	FRIDA
M0088H	BJØRNHAUG	**N0010AH**	KARINA	**T0028H**	SIMEN H
M0088SØ	VONAR	**N0010B**	REMSKJÆR	**T0028KF**	LYSÅ JR.
M0089G	FORSØK	**N0010BR**	FLUA	**T0028L**	SUKANYA
M0090F	NYMØRE	**N0010DA**	SØRVIKING	**T0028LK**	VIKAGUTT
M0090SJ	EMILIE H	**N0010G**	MARIT	**T0028N**	KARL OSKAR
M0092HØ	MAKA	**N0010HR**	NYHAV	**T0028SK**	HARSTADKYST
M0093AK	RESABUEN	**N0010L**	GERD JORID	**T0028T**	JAN-KJETIL
M0095G	LANGENES	**N0010ME**	BOLGA	**T0029K**	ADA-SOFIE
M0096G	FRØY	**N0010R**	MARIUS	**T0029LK**	STORM
M0096SA	URKEVIK	**N0010RT**	SJØSTJERNA	**T0030BG**	REIERT
M0098A	SOKRATES	**N0010TF**	VÅGLAKS	**T0030N**	HELENA
M0098HØ	ALEX	**N0010TN**	HAVELLA	**T0030S**	RAGNHILD
M0098SA	PER	**N0010TS**	SYNØY	**T0030T**	ROSKJÆR
M0099HØ	REMØY	**N0010V**	BOY-ANGEL	**T0030TK**	FISKENES
M0100A	MACABO	**N0010VN**	STORMGUTT	**T0031BG**	JOHAN H
M0106H	KORALEN	**N0010VR**	VESTERNES	**T0031K**	MAIBLOMSTEN
M0110G	ATLANTIC STAR	**N0011A**	TONJE	**T0031KD**	GREI
M0110SM	NY-VIKING	**N0011AH**	SKAGØY	**T0031LK**	BRINGTIND
M0111G	ATLANTIC STAR	**N0011B**	LILLE BREIVIKBUEN	**T0031T**	ATINA

M0111HØ	TOPAS	**N0011BØ**	ROGUTT	**T0031TK**	KARL ROBIN
M0114HØ	MARIELLE	**N0011DA**	AGNETHA	**T0032K**	ARYA-ELEA
M0115HØ	SIWA	**N0011F**	REGATE	**T0032LK**	JM SENIOR
M0117HØ	SARAH	**N0011G**	SØRFJORD	**T0032T**	TEISTEN
M0124G	TOPAS	**N0011H**	JOHN SVERRE	**T0033D**	VESTERBØEN
M0127HØ	FEIRVIK	**N0011HR**	ANNE-IDA	**T0033KD**	SOLSTRANDJENTA
M0128G	NYVOLL SENIOR	**N0011L**	LINAS	**T0033KN**	FLYFISK
M0130A	FALKEN	**N0011LN**	NYLON	**T0033L**	VAGGAS
M0134F	MARILENA MI	**N0011ME**	KLOMPEN	**T0033N**	JIM
M0134H	RØRSTAD	**N0011MS**	FJORDFISK	**T0033T**	LOFOTVÆRING
M0138HØ	KNAUSEN	**N0011N**	ANN HELEN	**T0034K**	KARLUF
M0148HØ	CHRISANDER	**N0011R**	RUBIN	**T0034LK**	LEGØY
M0149F	FREKØY	**N0011RT**	JUNIOR	**T0034S**	BJØRNTIND
M0149HØ	ELLIE	**N0011SG**	FREYA	**T0034TN**	ROGNKAILN
M0156HØ	ARITA	**N0011SO**	SJØLIV	**T0035B**	NYFLØ
M0161AV	O.HUSBY	**N0011TN**	BOLGA	**T0035K**	VIKANES
M0174AV	PAUL SENIOR	**N0011VR**	HÅREK	**T0035KN**	MAJA SOFIE
M0176EE	RAYON	**N0011VV**	HAVGUTT	**T0035LK**	ERATO
M0179F	TRYM	**N0011Ø**	VÅRHEIM	**T0035N**	MAJA SOFIE
M0181HØ	IREN	**N0012A**	EMBLA	**T0035S**	CHARLOTTE
M0182HØ	BØNES	**N0012AH**	KARL EMIL	**T0035TK**	SENJALAND
M0183F	STEMLINGEN	**N0012B**	LYNGØY	**T0036LK**	HUSØYSUND
M0185G	NORDØRN	**N0012DA**	ANNA	**T0036T**	ØRNFLØY
M0187F	KRISTINA	**N0012H**	SANDNESJENTA	**T0037KF**	BITS
M0192SØ	KATO	**N0012HR**	EMILIAN	**T0038TK**	JOHNNY DAG
M0196HØ	JANSON	**N0012L**	BØLGEN	**T0039BG**	MONSNES
M0206H	HALTENTRÅL	**N0012MS**	DYPFJORD	**T0039D**	DYRØY
M0210HØ	HAVLEIK	**N0012R**	IVAR JUNIOR	**T0039K**	DINA
M0214HØ	MULØYBUEN	**N0012RT**	TRØAN	**T0039KD**	ÅRØYBUEN
M0218HØ	NORBRIS	**N0012SF**	MELITA	**T0039LK**	ØYANES
M0219G	AMANDA	**N0012SG**	TOR HUGO	**T0039S**	SNØGGEN
M0225H	HAVSTRAND	**N0012V**	KAMILLA	**T0039SK**	ØYA
M0232HØ	FLUMA	**N0012VR**	CELINE	**T0040K**	CHUBBA
M0267F	ANNA MARIA	**N0012VV**	STRANDFLÆSA	**T0040KN**	NYLAND
M0269HØ	DELFIN	**N0013G**	HAVSKØY I	**T0040S**	ODA
M0278SA	SJØSTJERNEN	**N0013H**	MARTHE	**T0040T**	IDA THERESE
M0285G	NORDBAS	**N0013ME**	JOHN-IVAR	**T0041L**	ANNE-LISE
M0325H	HAVBRYN	**N0013MS**	BUNES	**T0041LK**	JOHAN MARTIN
M0328G	SVALEN	**N0013R**	ISAK OLAI	**T0041S**	IDUNSON
M0340HØ	SKAGEN	**N0013SG**	MONSBØEN	**T0041T**	ÅRNES
M0345A	STOREGG	**N0013V**	PETRA	**T0042H**	NORDBUEN
M0350SM	SØRBØEN	**N0013VV**	FJORDBØEN	**T0042LK**	KVITHOLMEN
M0359HØ	NORDØYTRÅL	**N0013Ø**	TOBIAS R	**T0042T**	ASBJØRN SELSBANE
M0393HØ	SKOGLIGUT	**N0014A**	KLÆVTIND I	**T0043K**	LARISSA

M0406H	KORALHAV	**N0014BL**	RØINGEN	**T0043LK**	GULLFESKEN
M0494HØ	SANDER	**N0014DA**	BÅREGUTT	**T0043S**	LOPPHAV
M0505HØ	LEINEBRIS	**N0014HR**	KVIKKEN	**T0043T**	IDA
M0555HØ	LEINEBRIS	**N0014ME**	SEBASTIAN	**T0044BG**	SARI
M0566HØ	VESLEPER	**N0014MS**	HELLVÅG	**T0044K**	ODD YNGVE
N0010H	HAVTIND	**N0014SG**	SPANTA	**T0044LK**	SKREIGRUNN
N0013F	NESHEIM	**N0014V**	SJARKEN JUNIOR	**T0044N**	TOVE MARIE
N0030H	VESTTIND	**N0014VA**	REMY	**T0044TN**	SOLSIG
N0050SO	HOLMØY	**N0015A**	MÅTIND	**T0045H**	STOREGUTT
N0087B	SJØGUTT	**N0015B**	SIRENE	**T0045K**	LYKKELITEN
N0100A	ANDENESFISK I	**N0015BØ**	TUSSBØEN	**T0045L**	GULLFJELL
N0100Ø	SUNDERØY	**N0015G**	ISELIN	**T0045LK**	STUFUNES
N0125VV	GADUS NJORD	**N0015HR**	SPANSHOLMEN	**T0045T**	TÅRNØY
N0176VV	KONGSFJORD	**N0015MS**	MOT	**T0046BG**	MAGNARSON
N0194VV	GADUS POSEIDON	**N0015R**	GANNFLÆSA	**T0046H**	AUNEGUT
N0445Ø	PRESTFJORD	**N0015TF**	VESLA	**T0046K**	ADA-SOFIE
R0021H	VIGDIS	**N0015V**	GAUTIND	**T0046LK**	ØYFJORD
R0040H	RADAR	**N0015VA**	SJÅVIKBUEN	**T0047BG**	BRINGTIND
R0071H	ØYMON	**N0015VR**	KRUSNING	**T0047K**	JANNE-MARIE
SF0001F	NEMO	**N0015VV**	JANNE	**T0047S**	IDUN
SF0002F	J.R. MARITA	**N0016AH**	HØLAGUTT	**T0047T**	ÅMØY
SF0003A	ALBACORE	**N0016B**	NYTIND	**T0049BG**	MARITA
SF0006A	SJØVÆR	**N0016F**	ØYGUTT	**T0049K**	EIRIK
SF0007F	SKJONGHOLM	**N0016G**	NORDNESFISK	**T0049LK**	FRANK
SF0009V	ATLANTIC	**N0016L**	STRAUMEN	**T0049S**	OTELIE
SF0010V	HENDANES	**N0016ME**	POLARHAV	**T0050K**	TORSHAV
SF0019B	LINEBAS	**N0016MS**	NIKLAS	**T0050L**	THULE
SF0022F	LINDSJØ	**N0016NA**	ALSØYJENTA	**T0050LK**	SEGLA
SF0025F	FANØYVÅG	**N0016R**	SØRVÅGSUND	**T0050T**	CARDINAL
SF0025S	ROSØY	**N0016RT**	RUNA ALICE	**T0051K**	BURØY
SF0030B	STORMHAV	**N0016SO**	IDUN	**T0051S**	GRY JANNE
SF0048F	HETLEVIKING	**N0016TN**	NOAH ANDRE	**T0051T**	FURBÅEN
SF0051V	HADRIAN	**N0016V**	SULØY	**T0052K**	NINA MARI
SF0060F	BREIVIK JUNIOR	**N0016VR**	KRISTIAN MICHEL	**T0052SA**	JENS BERG
SF0062S	STÅLHOLM	**N0016Ø**	TUVA	**T0052T**	SKARTIND
SF0071F	TAIFUN	**N0017AH**	DØNNLAND	**T0053BG**	KIM ROBIN
SF0086S	HAVBRIS	**N0017BR**	CASPER	**T0053KD**	FRAM
SF0090S	FJELLMØY	**N0017DA**	MINA MARIE	**T0053SA**	KALLEMANN
SF0100B	SMÅSUND	**N0017HM**	DRONNINGA	**T0053T**	TOM ARNE
SF0100V	SMÅSUND	**N0017HR**	FØYKEN	**T0054H**	VÅGAR
SF0112V	HAVFLUD	**N0017ME**	HELLØY	**T0054N**	SJØPYNT
SF0212V	HAVFLUD	**N0017RT**	FLINK	**T0054S**	VARDEN
SF0213S	ODIN	**N0017SG**	BEATE	**T0054T**	MORTENVIK
ST0001O	HEPSØHAV	**N0017V**	LINN S	**T0055BG**	BREITIND 1

T0001H	J.BERGVOLL	**N0018B**	NORDSTJERNEN	**T0055H**	ODIN
T0002H	TØNSNES	**N0018BL**	RIKO	**T0055I**	STRAUMVÆRING
T0002LK	ROLF ASBJØRN	**N0018DA**	HØLABUEN	**T0055K**	DÅSA
T0005H	OLE-ARVID NERGÅRD	**N0018F**	OCEAN	**T0055LK**	HUSØY
T0019H	KÅGTIND II	**N0018FE**	KRISTINA	**T0055S**	TUR
T0035I	LANGENES	**N0018L**	RISØYFJORD II	**T0055T**	KAPP LAILA
T0095I	LANGENES	**N0018LN**	LYKKEN JUNIOR	**T0056K**	ANNE-MERETE
T0189T	NESHOLMEN	**N0018ME**	VARANGERJENTA	**T0056LK**	SANDERMAN
VA0001M	ANTILDE	**N0018MS**	KARI ANNE	**T0056T**	NONSTIND
VA0009K	BROSMA	**N0018SG**	ANETTE	**T0058K**	BURØYVÆRING
VA0011F	FJORDBUEN	**N0018TN**	BOYSEN	**T0058LK**	MARINA
VA0011LS	BELL-ROCK	**N0018V**	RAMONA	**T0058T**	MARIUS
VA0015M	RISØY	**N0018VA**	KIRKØYBUEN	**T0058TK**	SENJAGUTTEN
VA0050S	LOTTA	**N0018VV**	MARTHE	**T0059K**	HAVSJØ
VA0087LS	NESEJENTA	**N0019AH**	SIRIANNA	**T0059L**	VÅGAGUTT
VA0134M	SKOGSØYJENTA	**N0019G**	JAKOBSSON	**T0059T**	EMI
Ø0004R	ÅREFJORDFISK	**N0019HR**	MONIKA	**T0060H**	CADO
Ø0112S	HAVFLUD JUNIOR	**N0019L**	ORION	**T0060LK**	EMILIE
H0070AV	Aarfisk	**N0019ME**	AMIGO	**T0060T**	ØYVÆRING
H0138AV	Aarland	**N0019MS**	ANNA-SOFIE	**T0061K**	ELISE MARIE
H0008B	Agøy	**N0019R**	SOLBRIS	**T0061LK**	LEAH
H0038AM	Almor	**N0019RT**	HAVSULA VEST	**T0062LK**	JENSEGUTT
H0008ØN	Alvøy	**N0019SG**	VERSLA	**T0062T**	SOLSKJÆR
H0045B	Andrine	**N0019TN**	BLÅMYRA	**T0063K**	NYSTADBUEN
H0026BN	Anfield	**N0019V**	SOFIE	**T0063LK**	PIA
H0300B	Anglevik	**N0019VS**	KEN-ELIN	**T0064K**	PAUL KJETIL
SF0096B	Anna	**N0019Ø**	SEGLVIK	**T0064SA**	AUD-JORUNN
SF0142V	Anne Katrin	**N0020A**	TRONDGRUND	**T0064T**	SANDVÆR JUNIOR
SF0037B	Annjo	**N0020BØ**	GLIMØY	**T0066K**	ASTRID II
SF0005FL	Aralden Junior	**N0020F**	SIRIUS	**T0067T**	VÅRBRIS
SF0020S	Argo Junior	**N0020G**	FLEINBUEN	**T0068I**	MALOFISK
SF0054V	Atina	**N0020HM**	ØYGUTT	**T0068K**	SIMSON
H0022T	Austbris	**N0020L**	NARGTIND	**T0068T**	SKAGA
H0049ØN	Austvåg	**N0020MS**	BERNT OSKAR	**T0069KD**	KÅFJORD
H0024ØN	Baracuda	**N0020R**	SPUTNICK	**T0069S**	APOLLO
SF0156V	Beate	**N0020RT**	STAMNESVÆRING	**T0070KN**	DUNVIK
H0117S	Berggylt	**N0020SO**	OCEAN	**T0070LK**	ARNØYBAS
SF0017A	Bergøy	**N0020TN**	IDA KONTANSE	**T0070T**	CONNY
H0045K	Birger Jr	**N0020V**	SOLVÆR	**T0070TN**	ELRITA
H0071S	Bogagutt	**N0020Ø**	SJØTIND	**T0071K**	TUEBAS
H0035K	Bonito	**N0021B**	ELLEN C	**T0071T**	ANDREAS
H0020FS	Borganes	**N0021BR**	MASTER	**T0072H**	VARØYTIND
H0021R	Bragd	**N0021BØ**	KRASEN	**T0072KD**	STRØNVIK

SF0035B	Brem	**N0021DA**	OSKAR	**T0072S**	OLDERFJORD
H0099B	Brenning	**N0021H**	HANNE	**T0073B**	VESLE-SISSEL
H0009FS	Britt Evelyn	**N0021ME**	LYNGØY	**T0073LK**	MALOGUTT
SF0174V	Brodd	**N0021MS**	HELLODDEN	**T0073T**	ØYBAS
SF0094A	Brufjord	**N0021R**	KVALVIK	**T0074H**	HØKEN
SF0002SD	Bukken	**N0021RT**	KAIA CICILIE	**T0074K**	KAIA
H0038K	Bunesen	**N0021SG**	MÅKØY	**T0075BG**	SANDVIKBUEN
H0229B	Bærøyfisk	**N0021V**	MAY	**T0075LK**	LEX GRANDE
TAY0048	Campella	**N0021Ø**	NORDBØEN	**T0076BG**	AKSELSON
SF0083V	Caro	**N0022AH**	SJØBLOMSTEN	**T0076H**	ELJAN
RAQ0620	Combi	**N0022B**	FJORDFANGST	**T0076K**	AMATØR
SF0161F	Dagur	**N0022BØ**	KRUSHOLMEN	**T0076LK**	PAX
SF0048V	Dan	**N0022DA**	LILLEGUTT	**T0076T**	VILDE
SF0076S	Djupavik	**N0022F**	VALKYRIEN	**T0077LK**	JUVEL
SF0218V	Dragon	**N0022G**	OLASKJÆR	**T0078BG**	TURID
H0015O	Dybai	**N0022HR**	ISABELL	**T0078T**	SIGVALDSON
H0012F	Edvart	**N0022ME**	LENA	**T0079S**	THINA IRENE
SF0168V	Ekko	**N0022MS**	ANNE-METTE	**T0079TN**	PER-IVAR
H0087B	Elianne	**N0022SO**	LIV ODDNY	**T0080H**	SOLBRIS
H0052AV	Emil	**N0022VV**	UREGUTT	**T0080I**	STRAUMVANG
SF0137A	Eva Karin	**N0023A**	SJØSTJERNA	**T0080K**	ALISE
H0116B	Evengutt	**N0023B**	ROCKHOPPER	**T0080L**	FJORDHUNTER
N0056F	Fangtind	**N0023BR**	MUDDVÆRING	**T0080T**	RANDI HELENE
H0015AM	Fisk	**N0023F**	GJØA	**T0081L**	SVEBÅEN
SF0060B	Fiskaren	**N0023H**	MONICA	**T0081LK**	FJORDFANGST
SF0014A	Fix	**N0023HR**	INGMUNDSON	**T0081T**	ARCTIC OCEAN
H0114B	Fjordbris	**N0023L**	ØYGUTT	**T0082T**	BJØRNES
H0001KM	Fjordbris	**N0023LF**	KENT-RUNE	**T0083S**	ÅRNES
H0001U	Fjorden	**N0023LN**	LODEK	**T0084K**	ESPEN
H0098O	Fjordglans	**N0023ME**	SEKA	**T0084T**	FJORDFISK
H0007BN	Flyfisk	**N0023R**	SVEBØEN	**T0085H**	TOMMY
H0005L	Fløssvik	**N0023RT**	BUVÆR	**T0085I**	SVANFJELL
RCB0336	Flåten	**N0023SG**	POSEIDON	**T0085K**	ØYBAS
H0007AM	Fonnes Jr	**N0023SO**	ERLAN	**T0085N**	HÅREK
SF0035F	Forsøk	**N0023V**	ELISE	**T0085S**	SKOGNES
H0009S	Frida	**N0023VV**	EGGLAND	**T0085T**	H. LINDRUP
H0096K	Fritid	**N0024BR**	LISA BELL	**T0086H**	MARIA
LG8397	Frøy	**N0024DA**	ØYNES	**T0086I**	ENGENESVÆRING
RCL0810	Frøya	**N0024F**	SKARVHOLMEN	**T0086LK**	SENJAFJELL
SF0001S	Frøyanes	**N0024H**	OLE HARTVIG	**T0086T**	MARION HELEN
SF0014S	Frøyanes Senior	**N0024HR**	EDITH HELENE	**T0087K**	SUTIND
H0021AV	Furbas	**N0024L**	ØYAN	**T0087T**	VESLEMØY
SF0032V	Furen	**N0024LF**	KLUBBEN	**T0088B**	MAIKEN
SF0018B	Førde	**N0024ME**	SELVÅG SENIOR	**T0088LK**	HAVTERNA

RCK0808	Glimt
H0053B	Grimsøy
SF0088B	Grotle
H0027B	Gry Marita
H0102B	Gullbas
WAL0383	Gullfisk
H0108A	Gullskjær Jr.
H0110AV	Hallvard
H0105AV	Hammrabas
SF0008B	Hannah V
H0055AV	Hanne
LDVN0054	Hardsjø
SF0088V	Havbåra
H0266B	Havheld
H0095AM	Havleik
SF0012V	Havset
SF0042V	Havskåren
H0114S	Havsul
SAN0312	Havørn
H0121B	Havørn I
SF0009F	Hedda
H0022AM	Hegmar
H0012AM	Heilo
SF0017V	Hendanes
H0140K	Hopholm
H0055L	Hosøybuen
H0144AV	Hugin
H0004S	Høylandsgutt
H0124AV	Ida
SF0008V	Ida Marie
SF0175B	Igland
H0089O	Isbjørn
H0029K	Isobar
H0011O	Jaktavik
H0282AV	Jane
SF0019F	Janica
H0222AV	Jojo
SF0099G	Jomar
H0015T	Juma
SF0007S	Kamaro
H0008A	Karina
H0055K	Karsten
H0008R	Karven
SF0023V	Keltic
N0024MS	KARIDA
N0024RT	VYTIS
N0024SO	ADINE
N0024TF	HAUKØY
N0025B	URHOLM
N0025BR	WEST COAST 1
N0025BØ	HEBE
N0025DA	JULIUS
N0025F	SNOP
N0025G	HAVBRYN
N0025H	BERDINE
N0025HM	SUKANYA
N0025L	MUSTANG
N0025ME	EINAR ERLEND
N0025MS	JUVEL
N0025R	ROSØY
N0025RT	HELLSKJÆR
N0025TN	HILDE HELENE
N0025V	KNUT P
N0025VA	KVITHOLMEN
N0025VS	INGRID-KRISTINE
N0025VV	SKOLMEN
N0026A	JAN OSKAR
N0026AH	ÅKERØYVÆRING
N0026BØ	RØSTVÆR
N0026L	LILL-GRETHE
N0026LN	BRATTLAND
N0026ME	MELØYTIND
N0026SA	MARINAT
N0026SG	BRANNØY
N0026SO	RÆKA
N0026VA	SIGNAL
N0026VV	VIKSTJERNA
N0027AH	ANNE-MARIE
N0027BØ	BØFJÆRING
N0027DA	ELLA OLINE
N0027MS	SVABERG
N0027R	NESØYFISK
N0027RT	STAVØY
N0027SF	MARIA
N0027SG	VENUS
N0027SO	KRISTINE
N0027V	EDMONSON
N0027VV	NY-GLIMT
T0088N	SOLVÆR
T0088T	K.AMALIE
T0089K	STANGNES
T0089LK	RUNDSKJÆR
T0089T	MAGNARSON
T0090N	TORNADO
T0090T	SOMMARØYBUEN
T0090TK	TOR HELGE
T0091K	VALAJENTA
T0091T	STIAN JR
T0092LK	KRAVIK
T0092S	BIRGERSON
T0093B	MALANGVAAG
T0093K	LUNDE
T0094K	EDEL VIND
T0094KN	RENATO III
T0094LK	MARIANNE
T0094T	M. JENSEN
T0095LK	JOPPE
T0095T	FALKEN
T0097K	NINA MARI
T0097T	LILLEBAKK
T0098K	NOAH
T0098LK	PER
T0098N	STABBEN
T0098S	STØAGUTT
T0098T	SVERRESON
T0098TK	KARIN
T0099K	GULLE
T0099LK	FJORDCAT
T0099T	TOR-HENRIK
T0100K	KAROLINE
T0100L	STIAN-ANDRE
T0100LK	LISE-BEATE
T0100T	BÅRAGUTT
T0100TN	SENJAGUTT
T0101K	OTTERN
T0101LK	SKJEGGESTEIN
T0101T	HAVBÅEN
T0103TK	LOKE
T0104LK	ROGER
T0104T	HERSØY
T0105L	RAMONA
T0105S	BRIS

SF0148F	Kjeholm	**N0027Ø**	MORGENSTJERNE	**T0105TK**	TRYGG
H0006ØN	Kompis	**N0028AH**	URTIND	**T0106LK**	FRYDHOLMEN
H0014S	Krossfjordfisk	**N0028B**	WANJA	**T0106T**	JUBÅEN
H0016B	Kvikk 2	**N0028BR**	PLUTO	**T0107LK**	RENNEBUEN
H0009B	Lady	**N0028BØ**	KIMA	**T0108S**	ÅRVIKGUTT
H0170B	Laila	**N0028DA**	TANJA KARIN	**T0110K**	SKOGARØY
H0179AV	Larius	**N0028F**	THAIFISK	**T0111K**	SNOKEN
H0038MF	Lasse	**N0028G**	JOHANNE	**T0111S**	ODIN
H0002A	Lea	**N0028HM**	NORDLYS	**T0111T**	SKULBAREN
H0018L	Leika	**N0028L**	HAZARD	**T0112K**	VALAGUTT
SF0222B	Lending	**N0028LN**	HESTEN	**T0112S**	JAN TORE
SF0055F	Lennart	**N0028ME**	VANGSBUEN	**T0114T**	FRUHOLMEN
SF0019S	Liko	**N0028SG**	RAYWAN	**T0115LK**	SENJAFJORD
H0006AM	Lill Beth	**N0028TN**	TRÆNAGUTT	**T0115T**	TRANØY
SF0051B	Linda	**N0028V**	AURORA	**T0116K**	AURORA
SF0001B	Lindholm	**N0028VV**	BALLSTADJENTA	**T0116T**	ANNE
SF0033S	Lindisfarne	**N0028Ø**	EMIL LEANDER	**T0117K**	VIKING
H0226B	Line	**N0029A**	EMMA	**T0117T**	CAMILLA
H0015FJ	Lobster	**N0029AH**	FJORDVÅG	**T0118S**	ISBÅEN
H0059K	Lotte	**N0029BR**	DAG-MONA	**T0118T**	ØYTIND
H0054AV	Lukko	**N0029BØ**	SJØGUTTEN	**T0119KN**	NYEGGA
H0052B	Luna	**N0029F**	SOLSKJÆR	**T0119T**	BENTSJORDTINDEN
SF0024A	Magnus	**N0029HM**	SPENNING	**T0120I**	MAJA IREN
H0030MF	Maren	**N0029LN**	ÅTA	**T0120T**	FRU JANNE
H0008MF	May	**N0029ME**	KAMERATEN	**T0121TK**	JOHAN F
H0028MF	Maya	**N0029R**	POLARVIND	**T0122TK**	AMANDA
SF0027F	Merkur	**N0029SO**	LAGUN	**T0123K**	VARØY
SF0015A	Milla	**N0029TF**	MAJA	**T0124LK**	DALGÅRD
H0164AV	Mio	**N0029V**	HORNSUND	**T0125L**	NJORD
LM7198	Monita	**N0029VR**	TORE GØRAN	**T0125LK**	BREIVIK SENIOR
H0569B	Mostein	**N0030A**	ANDØYFISK	**T0126S**	TOYA
H0021B	Mostring	**N0030BR**	BESTEFAR	**T0126T**	REBBENES JR
H0145AV	Munin	**N0030DA**	ÅKERSKJÆR	**T0127L**	BRIS
SF0152S	Myklen	**N0030HM**	ØYVÆRING	**T0127T**	SKOGØY
H0033R	Måken	**N0030HR**	FRYDHOLMEN	**T0128S**	FIA
H0028ØN	Nappen	**N0030ME**	SMARAGD	**T0128T**	OTERNES
H0117B	Nappholm	**N0030R**	RØDØYVÆRING	**T0129LK**	RAMPEN
SF0220B	Nigardsøy	**N0030RT**	HAVHESTEN	**T0129T**	SJÅBÅEN
H0025AV	Njåfisk	**N0030SO**	MATHEUS	**T0130LK**	HAVFLORA
H0142AV	Njåfisk II	**N0030V**	HAVPRYD	**T0130T**	ROBIN
H0076AV	Njågutt	**N0030VR**	SØRVIK	**T0131T**	ARIEL
H0285AV	Njåsund	**N0030Ø**	SOMMARØY	**T0132K**	SANDNES
SAN0025	Nordfjord	**N0031A**	MJØLNER	**T0132T**	MARJELLA
SF0227V	Nyken	**N0031F**	VEINES	**T0133K**	BURØYVÆRING

H0002E	Odin	**N0031ME**	LYSVOLD JR	**T0134T**	RØSNES
SF0110B	Ole Cato	**N0031MS**	TORILD	**T0135K**	LAUNES
SF0026F	Ole Erik	**N0031R**	MARITA	**T0135N**	MERETHE II
SF0021A	Ole Morten	**N0031RT**	HAVHESTEN	**T0135S**	ANITA
SF0133A	Oriana	**N0031TN**	TRÆLBØEN	**T0136T**	ANFIELD
SF0056F	Orion	**N0031V**	VÅGØYSKJÆR	**T0137T**	MAGGAN
H0010FS	Osing	**N0031VR**	HAVGLØTT	**T0138LK**	EMMA-SOFIE
H0002ØN	Osund	**N0031VV**	ALEXANDRA	**T0138S**	KATLA
SF0044A	Ottobas	**N0031Ø**	GÅSØY	**T0139L**	RUBIN
H0005O	Peragutt	**N0032A**	NORDENG	**T0139T**	KVITBJØRN
RCI0664	Perfekt	**N0032B**	MARGRUNN	**T0140LK**	HANS-LUDVIG
H0017A	Pixi	**N0032BØ**	ÅSAN	**T0140T**	KOBBA
LBP0877	PøbbåBasar	**N0032DA**	ØYVÅGEN	**T0141K**	LABAN
H0043KM	Ramona	**N0032R**	STORMOJENTA	**T0141KN**	SKIMRING
SF0038B	Randi	**N0032SO**	SKARTIND	**T0141LK**	ANNE SOFIE
H0071B	Rask	**N0032VV**	BRUTUS	**T0141T**	BREMSUND
H0166B	Rasken	**N0032Ø**	OLAFUR	**T0142LK**	STØBUEN
SF0024B	Raya	**N0033B**	HERR OLSEN	**T0142S**	RALINA
H0050FS	Reidar	**N0033DA**	KINE JOHANNE	**T0142T**	ARNT IVAR
SAD0141	Rita	**N0033F**	STJERNTIND	**T0143K**	ALANGEN
H0188AV	Rito	**N0033L**	MARKUS	**T0143LK**	VARNES
H0004AM	Rusken	**N0033ME**	BILISKNIR	**T0144T**	JUNIOR
H0008BN	Ruth	**N0033SG**	TOBAC	**T0146LK**	HEKKINGEN
H0078B	Rymann	**N0033SO**	SANDRA	**T0147K**	VARNA
SF0008FL	Sandskjær	**N0033VV**	ÆRVIK	**T0148T**	MJØLNER
SF0285V	Saturn	**N0033Ø**	KRILEN	**T0149LK**	SMÅVÆR
SF0050S	Seljefisk	**N0034A**	TROLLTIND	**T0150K**	NINA MARI
SF0270B	Shanty	**N0034AH**	FRØGRUNN	**T0151K**	TROY ARON
H0009FJ	Siglevik	**N0034B**	SJØBRIS	**T0151T**	TENNHOLMEN
H0011FJ	Siglodden	**N0034F**	BRATTHOLMEN	**T0152K**	TERNA
H0006K	Silver Boy	**N0034H**	SVANEN	**T0152T**	VÅGAR
H0066BN	Sissel Alise	**N0034HM**	UTVÆR	**T0154T**	HEIDI
SF0016A	Sjøblomst	**N0034RT**	PASAT	**T0155T**	KVALØYGUTT
SF0046B	Sjøbrem	**N0034V**	ALINE	**T0157K**	SJØTUN
SF0139A	Sjøflu	**N0034VA**	ØYVÆRING	**T0157T**	LØKSTIND
H0054F	Sjøgutt	**N0034VV**	MADELEN	**T0158L**	SLETTENBERG
H0089AV	Sjøgutt	**N0035A**	MILIAN	**T0160LK**	STORMEN SENIOR
H0011B	Sjølivet	**N0035AH**	ANN-RITA	**T0161LK**	FORTUNA
SF0067A	Sjømann E	**N0035G**	SANDSØY	**T0161T**	HAVSOL
H0053AV	Skarten	**N0035ME**	CATHRINE	**T0162T**	PLUTO
SF0019SU	Skarøy	**N0035RT**	VERONICA	**T0163K**	STENALINE
SF0041S	Skjold	**N0035SG**	ENGELØYVÆRING	**T0164T**	MORTENVIK
SF0209B	Skom	**N0035SO**	RADI	**T0165T**	DRAGEN
ZZ1439ZZ	Skulebas	**N0035V**	MATHILDE	**T0166T**	ØYVÆRING

H0034S	Skårungen	**N0035Ø**	MARNA	**T0167KD**	BUKTAGUTT
SF0031F	Småen	**N0036B**	MACH I	**T0167T**	VARNES
SF0020F	Sol Mar	**N0036BR**	LANGNES JR	**T0168LK**	GUBBEN
H0008FS	Solbakken	**N0036F**	STRANDVÆRING	**T0169LK**	ELISE KRISTIN
SF0020SU	Solglytt	**N0036G**	ISELIN	**T0170K**	SKARSTEIN
SF0038SU	Sollys	**N0036L**	VIVI	**T0172T**	VESLEVÅG
H0012FJ	Solmai	**N0036RT**	MIKAEL	**T0173LK**	TROLLVIK
H0058MF	Solvik	**N0036TN**	HAVFRUA	**T0173T**	SKARSTEIN
H0028FJ	Soløybas	**N0036V**	ANNE MARIE	**T0174T**	KYSTBAS
SF0017B	Sonja	**N0036VV**	BØRRESEN JR	**T0176B**	LARS-ANDREAS
H0037B	Spring	**N0036Ø**	VÅGEN	**T0176T**	BJØRNES
N0555BØ	Stattegg	**N0037BØ**	NORDGRUNN	**T0177K**	VEST-TIND
N0055VR	Stattegg	**N0037DA**	JIM ROGER	**T0177T**	JOHN YNGVE
M0052AV	Stattegg	**N0037F**	KRABBEN	**T0178K**	TUNFISK
H0013K	Stauper	**N0037HR**	ISABELL	**T0178SA**	EMMA-MARI
SF0130A	Stavfjord	**N0037LF**	JADEN	**T0179T**	ALEXANDRA
SF0042S	Sterling	**N0037LN**	NYVON	**T0180KD**	HELENE
H0066S	Strilagutt	**N0037ME**	KOLBJØRN M	**T0180LK**	GRIM
H0012O	Strønøy	**N0037MS**	EVRO	**T0180T**	FIDEL
SF0205SU	Sulegutt	**N0037TF**	UNNI	**T0181S**	BROTT
SF0040SU	Sulingen	**N0037TN**	HAVFLORA	**T0182BG**	MEFJORD
H0003S	Sundfisk	**N0037V**	KARL-VIKTOR	**T0182K**	VÅGAR
SF0042B	Svanen	**N0037VA**	LISØYSUND	**T0182T**	TRÅLFISK
H0008O	Svinten	**N0037VR**	BUHOLMEN	**T0183T**	IRINA MARIE
H0015BN	Sølvberg	**N0037VV**	DYNSKJÆR	**T0184K**	VATNAN
H0002S	Sørvest	**N0038A**	NORSOL	**T0186T**	TINA
SF0001GR	Tea	**N0038B**	LING	**T0188LK**	VEBJØRN
H0087S	Teinegutt	**N0038DA**	JON-VIKTOR	**T0188S**	SØRHOLMEN
H0025FS	Tempo	**N0038F**	ODD-ARVID	**T0188T**	MARIT-KRISTINE
SF0018V	Terje Viken	**N0038H**	BENEDICTE	**T0189LK**	SENJAVÆRING
H0112B	Terna	**N0038ME**	BAS	**T0190T**	KLEIVA
H0035O	Terten	**N0038RT**	CONQUEST	**T0192T**	FRAM
SF0101A	Tet	**N0038SG**	LOMWI	**T0193T**	ISAC ALEXANDER
SF0011V	Tin	**N0038SO**	ARIEL	**T0195LK**	H LARSEN
SF0047F	Tom-Robert	**N0038V**	VITO	**T0195T**	TINA KRISTINE
H0007F	Tomina	**N0038VR**	LEISKJÆR	**T0196S**	MARTINE
H0005K	Tone	**N0038Ø**	SYNNØVE	**T0196T**	MIA
H0120B	Tor	**N0039F**	SJØNAPP	**T0198K**	ROLF-ÅGE
SF0131A	Tore	**N0039H**	MAJA	**T0199K**	MJØNES
SF0085V	Torill	**N0039L**	FINN-ERIK	**T0199T**	BAIAS
H0018O	Torstein	**N0039MS**	HARDHAUS	**T0200K**	SKOGSFJORDINGEN
H0129S	Torøy	**N0039SO**	ANNIE	**T0200T**	GIGGEN
H0023S	Trellevik	**N0040A**	STEFFEN	**T0201K**	DUSJA
H0011F	Tressnes	**N0040B**	KRISTIN-ANITA	**T0202H**	ADMIRAL F.

H0001E	Trixi	**N0040BR**	SALHUSVÆRING	**T0202N**	SKOGSHOLMEN
SF0055B	Trollgutt	**N0040BØ**	EVA SOFIE	**T0202T**	MJOSUND
SF0206A	Trone Heidi	**N0040F**	NORDTINN	**T0203T**	STEIN JIMMY
H0195AV	Trulte	**N0040H**	TERNA	**T0205T**	JORUNN B
H0096S	Turid	**N0040HR**	HUSVÆRSUND	**T0212K**	EINAR MAGNUS
SF0070SU	Tårnskjer	**N0040ME**	MELØYSUND JR	**T0212T**	VIKING
TAB0618	Ulla	**N0040SO**	SKAVIK	**T0214T**	AMIGO
H0013S	Uredd	**N0040V**	SANDER	**T0215T**	HOLMBØEN
H0152AV	Valutt	**N0040VA**	KILVÆRFJORD	**T0218T**	SLOGMÅSEN
SF0075F	Veibas	**N0040VV**	MATHEA	**T0219T**	GRØTØY
SF0072B	Verning	**N0040Ø**	RANTON	**T0220T**	MARKUS
H0008AM	Vestbris I	**N0041B**	NYBAS	**T0221K**	KARLO
SF0110V	Vester	**N0041BØ**	BITTE	**T0221T**	ÅRVIKSAND
SF0210V	Vester Junior	**N0041F**	MARIELL	**T0222T**	GRIMEN
T0003LK	Vestfisk	**N0041L**	KLEPPABAS	**T0223T**	LILLEFJORD
SF0170V	Vestgutt	**N0041ME**	MELØYSUND JR	**T0224K**	ANN TOVE
SF0005S	Vestliner	**N0041R**	STORM	**T0226T**	MINIBANKEN
H0083O	Vestrevåg	**N0041VV**	THEA	**T0227K**	ROHIT
H0096B	Vestskjer	**N0041Ø**	FLID	**T0230T**	SOLBU
SF0020B	Veststeinen	**N0042B**	NYHAV	**T0231LK**	PÅL-STIAN
SF0050B	Vestvær	**N0042BØ**	DYPINGEN	**T0232T**	RIVALEN
SF0221V	VI-2	**N0042F**	VIKTORIA	**T0234T**	STØDIG
H0017F	Vicky	**N0042G**	KORAL	**T0241T**	HAVGULL
H0022ML	Victoria	**N0042H**	MARGARET	**T0248T**	BAKKEBÅEN
SF0267V	Victoria May	**N0042MS**	BØLGEN	**T0250TK**	KRISTOFFER
H0001A	Vikingfjord	**N0042RT**	KAROLIUSSEN	**T0251KN**	PLUTO
H0028O	Viktor	**N0042SA**	NORBAS	**T0253K**	FRANKLIN
SF0034F	Vilde	**N0042SG**	GENERAL	**T0254T**	ØRNES
SF0220V	Vito	**N0042SO**	TERESA	**T0255T**	VÅGSTRAND
SF0022V	Vito II	**N0042VV**	ALEXANDRA	**T0256T**	VÅGSTRAND
H0032MF	Vågen	**N0043B**	WÅGØY JR.	**T0258K**	SOLGLIMT
SF0027G	Zico	**N0043F**	ELIDA	**T0258S**	FAVORITT
H0006O	Øien	**N0043H**	SELMA	**T0260T**	ØYVÆRING 1
H0048FS	Øyavåg	**N0043RT**	MARINA	**T0266K**	BRATTHOLMEN
H0006A	Øybas	**N0043SO**	TORBÅEN	**T0269T**	HAVBRIS
SF0007SU	Øygutt	**N0043TN**	SANNAGUTT	**T0270K**	KNOTTIND
H0028B	Øystrand	**N0043V**	SKARVEN	**T0271S**	RØDØY
SF0078B	Øyvind	**N0043VV**	KROGH SENIOR	**T0271TK**	HAVBUEN
WAU0273	Øyvær	**N0043Ø**	GUNNAR	**T0275T**	MARIE LIE
A0004F	SMÅEN	**N0044A**	HAVBRÅTT I	**T0276K**	LANGNES
A0005AS	Trygg	**N0044BR**	HARMFJORD	**T0278K**	LANGNES
A0005F	Tærna	**N0044BØ**	SYCLON	**T0282T**	TONEBØEN
A0010F	Constance	**N0044F**	NY-TROFAST	**T0284T**	BREMNES
A0011F	Fjellvik	**N0044L**	TUNSKJÆR	**T0288T**	NOATUN

AA0001A	Ålen	**N0044ME**	ENGØY	**T0289L**	UNNI
AA0003G	Bluepearl	**N0044MS**	PIA	**T0290T**	ALM
AA0003T	Sandøyjenta	**N0044RT**	AAGE STEINAR	**T0294S**	NORDFISK
AA0004R	DEPPA	**N0044SO**	VÅGSBUEN	**T0297LK**	HEIDI KRISTIN
AA0005R	LINA	**N0044V**	NICOLINE	**T0299T**	HUGIN
AA0006G	Kjetil	**N0044VV**	T. SIVERTSEN	**T0300T**	STORHOLMEN
AA0006R	Tiril	**N0045B**	HILMARSON	**T0301T**	SKAGØY
AA0007L	FARMANN	**N0045BR**	THEA	**T0303T**	MYRNES SENIOR
AA0008G	OSKAR	**N0045F**	TURBO	**T0305T**	TAIFUN
AA0009G	Valø	**N0045H**	INGVILD	**T0311K**	SNOKEN
AA0010G	SURTSEY	**N0045ME**	TINDVÆR III	**T0311T**	TOPPEN
AA0010R	Linn	**N0045MS**	KEN STIAN	**T0313T**	JARA
AA0012T	KARI	**N0045SG**	VIKSTJERNA	**T0322T**	DAGFINN
AA0015R	Luro	**N0045VV**	HAUGSJØ	**T0330K**	ERGO
AA0015T	Moby Dick	**N0046B**	VÅGAR	**T0330T**	REMO
AA0017G	Måsnes	**N0046BL**	DAG	**T0338K**	NOJUS
AA0017L	NEBB	**N0046BØ**	BASTUS	**T0338T**	RADIAN
AA0021G	MATHEA	**N0046F**	SPURVEN	**T0343T**	OTTERØY
AA0023A	Terna	**N0046H**	KORALL	**T0350LK**	MALANGSFJORD
AA0028L	Tøtta	**N0046MS**	VARIANT	**T0350S**	HAVÅL
AA0029R	Nils Erik	**N0046RT**	ORION	**T0353T**	TOROLV
AA0030L	Sabben	**N0046SO**	SOFIE	**T0364K**	GEIRONGEN
AA0035L	Guldfisken	**N0046V**	RAVNØY	**T0371K**	NIKE
AA0040L	Randi II	**N0046VV**	VILDE	**T0373T**	RENNEBÅEN
AA0050T	Teistholm	**N0046Ø**	MØYSALEN	**T0378T**	JON ÅGE
AA0055G	Astor	**N0047B**	FLØHAV	**T0381S**	KIMMEN
AA0056G	ATO	**N0047F**	SEGELSTEIN	**T0384K**	LOBO
AA0057A	Lise	**N0047HR**	SANDØY	**T0390K**	SJØHESTEN
AA0062A	Anfield	**N0047SO**	NIKE	**T0392K**	MALIN AMANDA
AA0063A	Jalito	**N0047V**	SKALLEBANKEN	**T0395K**	SKOGNES
AA0065G	MIDNATTSOL	**N0047VV**	TORGVÆRING	**T0399K**	LENA
AA0066L	Hedvig	**N0048BR**	SOLEY	**T0400T**	KURT-ENDRE
AA0066R	Jano	**N0048HM**	EGERDAL	**T0404LK**	BREITIND
AA0076G	Cielo Azul	**N0048LN**	RINØY	**T0405T**	BØLGEN
AA0085L	Dennis	**N0048ME**	LINAS	**T0408T**	LEIF HARALD
AA0091A	Kjelsvik	**N0048MS**	ELIAS	**T0420LK**	TOR-MORTEN
Ø0001RD	SJØPRINS	**N0048SO**	IDA	**T0441K**	TORGEIRSON
O0002O	Røynetassen	**N0048V**	JANN YNGVE	**T0447LK**	VÆRING
Ø0003M	Ringskjær	**N0048VA**	JUSIKA	**T0464LK**	YAMAHA
Ø0006HD	August	**N0048VV**	GRYTHOLM	**T0475T**	BERG SENIOR
Ø0006RD	BÅTSKJÆR	**N0049L**	LOVUNDGUTT	**T0481K**	BLÅTIND
Ø0007M	Kuling	**N0049LN**	PRIMA	**T0490T**	ALM
Ø0008F	Teddy	**N0049ME**	KASPER	**T0499T**	LANGØY
Ø0014F	Vigdis	**N0049R**	FJORDFISK	**T0500LK**	HALLVARDSON

Ø0022F	ELLEN
Ø0050H	Sonbas Senior
Ø0123H	ANN SOFIE
Ø0150H	Spjæringen Senior
R0003SK	Dani
R0033SK	Sandsbuen
TK0001K	PANDAEN
TK0001P	Mi17
TK0002BL	Mostein
TK0017BL	SVANEN 2
TK0022BL	Jolla
TK0023BL	Orion
TK0025P	Barracuda
TK0028BL	Leo
TK0042K	Skomring
TK0059BL	Lunik
TK0063BL	Vindrosa
TK0076BL	FABIAN
V0003HS	Obelix
V0003S	Stigar
V0005S	Nani B
V0007HS	Havduen
V0010S	Kazan
V0030S	Tarefrime
V0039L	Ulagutten
V0098L	SIGFRED I
VA0001K	Husvær
VA0002LS	SJØSKVETT
VA0003F	Linn
VA0003K	Musti
VA0003M	SIKO
VA0004K	Kvistholm
VA0004M	VALLØY
VA0005FS	Lene Mari
VA0005K	FLANDER SR.
VA0007F	HALLVARD
VA0007LS	Marie Emilie
VA0008LS	SJØSPRØYT
VA0009S	Neptun
VA0010M	Seiko
VA0011K	Pitbull
VA0012K	Sjarke
VA0012LD	Agathe
VA0012M	Lillekveita
N0049RT	KINE MARTINE
N0049SO	ELAN
N0049V	BLUE MASTER
N0049VV	IVERSEN JUNIOR
N0050AH	ULVANGSØY
N0050BR	STIAN
N0050DA	ENGEVIK JUNIOR
N0050F	TAMARA
N0050G	SVENDSEN SENIOR
N0050HR	SJØFISK
N0050RT	HAVØRN
N0050SG	RANDI HELENE
N0050TN	MATHILDE
N0050V	SKUVINGEN
N0050VV	BALLSTADGUTT JR
N0050Ø	KAMILLA GRANDE
N0051A	VIKAFISK
N0051F	JOSBERG
N0051L	RELØYGUTTEN
N0051ME	MELØYFJORD
N0051MS	KYSTVÆRING
N0051VR	ODIN
N0051VV	GURATIND
N0051Ø	STABBEN
N0052A	ODD JUNIOR
N0052B	JAN ROBERT
N0052F	BJØRNSON
N0052G	PRIKKEN
N0052H	LINNEA
N0052ME	STORTIND
N0052R	HANNA CAROLINE
N0052SO	JULIANE
N0052V	VICKI
N0052VR	TORA
N0053A	MEA
N0053F	NORØY
N0053G	FAGERSKJÆR
N0053RT	SKOMVÆRFISK
N0053V	NO PROBLEM II
N0053VV	TATIND
N0053Ø	KYSTFISK JR.
N0054A	VILJAR
N0054B	NORDLYS
N0054BR	ODIN SENIOR
T0501LK	HALLVARDSON
T0507T	STINE MARLEN
T0531T	LØVENG
T0537T	NYTUN JUNIOR
T0551T	ODD KRISTIAN
T0610T	GLIMT
T0657T	TYRIHANS
T0691T	EISTEBÅEN
T0701T	GODØNES
T0720T	BROR
T0734T	SØRVIK
T0758T	LINN-PIA
T0771T	ANNE GRETHE
T0825T	TERNA
T0845T	OLDERVIK
T0891T	VENGSØYVÆRING
T0898T	BRUNVOLL
T0909T	HAVELLA
T0960T	ØYBÅEN
T0999T	SALTBÅEN
T1104T	STANGNES
T1129T	MILDRID
T1468T	BRIS
T2017UK	UNGDOMSKVOTE
T9000H	
T9000LK	
T9000T	
T9000TN	
T9300LK	SKOLEBÅT
T9300T	HELMER HANSSEN
T9301T	JOHAN RUUD
T9800T	
TAA154	
TAA335	
TAC530	
TAD080	
TAD962	
TAF605	
TAG825	
TAH260	
TAI028	
TAI313	
TAI382	
TAI542	

VA0013K	Cobra Fish	**N0054F**	SUNDMANN	**TAJ458**
VA0013M	Østvik	**N0054H**	NETTO	**TAJ482**
VA0013S	Tamara	**N0054MS**	RALLAREN	**TAK911**
VA0014F	Merethe	**N0054RT**	SJØTUN	**TAL257**
VA0014M	Hjelmen	**N0054V**	SEINGEN	**TAL679**
VA0015K	Streif	**N0054VR**	DAG-SENIOR	**TAN634**
VA0015LS	Romero	**N0054VV**	KONGSHOLM	**TAO067**
VA0016M	HENRIK	**N0054Ø**	NORLINER	**TAS162**
VA0016S	KARI	**N0055BØ**	JAN-TANITA	**TAS542**
VA0017K	Inger	**N0055F**	ERIKSEN SENIOR	**TAT358**
VA0017M	MARIELL	**N0055HR**	DELFIN	**TAU295**
VA0018F	Daniana	**N0055ME**	STINE MAYA	**TAU380**
VA0018K	Randøyjenta	**N0055RT**	RØSTVÆRING	**TAU426**
VA0018S	TEMPO	**N0055SG**	TORIL	**TAV170**
VA0020F	HAVSUND	**N0055VV**	GILL	**TAV260**
VA0020K	Karuna	**N0055Ø**	DALBUEN	**TAV489**
VA0021FS	Eggland	**N0056BR**	FJELL	**TAV755**
VA0021K	Lomvien	**N0056BØ**	ANNE	**TAV790**
VA0023M	BERTA	**N0056ME**	VARDAR	**TAW281**
VA0024F	Varnes	**N0056V**	VIKSKJÆR	**TAW541**
VA0025K	MARIE	**N0056VV**	BUKSNESFJORD	**TAW696**
VA0026M	Ternen	**N0057A**	SEISKJÆR	**TAW824**
VA0027K	Kalimas	**N0057BR**	SANDRA	**TAX189**
VA0027M	FORABUEN	**N0057F**	FRYDHOLMEN	**TAX266**
VA0030M	Bolette II	**N0057H**	TRYGG	**TAX415**
VA0032M	Angell	**N0057L**	STRAUMVANG	**TAX573**
VA0034K	ALMA	**N0057ME**	BRUTUS	**TAX860**
VA0036K	Certina	**N0057SO**	KOMET	**TAY030**
VA0040K	Aase	**N0057VR**	LINE MARIE	**TAY205**
VA0041M	LOVISE	**N0057VV**	SJØBRIS	**TAY362**
VA0041S	Lillegutt	**N0057Ø**	ORION	**TAY619**
VA0042S	HAVLYS	**N0058A**	NORDFLU	**TAY887**
VA0043M	Pion	**N0058BR**	MÅSØYGUTT	**TAZ168**
VA0044M	Rosenvoll	**N0058BØ**	CHRISIDA	**TAZ264**
VA0045S	TURBO	**N0058HR**	KEVIN	**TAZ396**
VA0047M	Lillegutt	**N0058L**	HALDORSON	**TAZ445**
VA0049M	Munaas	**N0058ME**	POLAR ATLANTIC	**TAZ621**
VA0050K	Bøygen	**N0058SO**	TOR-KÅRE	**TAZ645**
VA0051S	Sleipner	**N0058V**	NIKITA	**TAZ671**
VA0056K	Iris	**N0058Ø**	MARTYNA	**TAZ952**
VA0056M	Trine	**N0059A**	NORHAV	**TBA038**
VA0056S	Bella	**N0059B**	NYBRÅTT	**TBA093**
VA0057K	SILJANN III	**N0059F**	OMEGA	**TBA094**
VA0066F	Flubas	**N0059L**	HOLMSUND	**TBA099**

VA0071M	Brattholm	**N0059ME**	ICE	**TBA105**	
VA0076K	Trygg	**N0059RT**	KÅRE MARTIN	**TBA114**	
VA0076LS	Lillehavn	**N0059SG**	ØKSSUND	**TBA131**	
VA0077M	KVEITA	**N0059TN**	STERO	**TBA150**	
VA0078K	Pålita	**N0059Ø**	LANGNESVÆRING	**TBA163**	
VA0081F	Måken	**N0060B**	SENIOR	**TBA171**	
VA0082K	Havørn	**N0060BØ**	LENØY	**TBA175**	
VA0083F	Ramona	**N0060DA**	KYSTFISK	**TBA258**	
VA0085S	Sørland	**N0060F**	ANGELSEN JUNIOR	**TBA287**	
VA0086M	Inger	**N0060L**	HAFBJØRG	**TBA408**	
VA0087K	Frieda	**N0060R**	VALVÆRGUTT	**TBA554**	
VA0087M	MERSEY	**N0060RT**	STINE HELEN	**TBA594**	
VA0088M	ANNA	**N0060V**	SVINØYVÆRING	**TBA667**	
VA0088S	Tobias	**N0060VA**	STORMLEIK	**TBB093**	
VA0090M	Hillesund	**N0060VR**	NORDTIND	**TBB139**	
VA0098K	OLAGUTT	**N0060VV**	SEBASTIAN	**TBB194**	
VA0111K	OLAGUTT	**N0060Ø**	ØYLAND	**TBB263**	
VA0111M	Knappen	**N0061A**	SIGURD	**TBB625**	
VA0111S	BRIS	**N0061BØ**	ASKELADDEN	**TBB632**	
VA0113K	FISH HUNTER	**N0061F**	RONNY N	**TBB654**	
VA0114K	Tomalie	**N0061R**	LAXEN	**TBB686**	
VA0116F	Elfi	**N0061SA**	EGON	**TBB744**	
VA0116K	MALENA	**N0061V**	ANN	**TBC007**	
VA0118M	Randi	**N0061VV**	STRATOS	**TBC059**	
VA0135K	Ringskjær Sør	**N0062A**	RENATE	**TBC134**	
VA0138K	MARIUS	**N0062B**	SIRIUS II	**TBC215**	
VA0148M	Strandbuen	**N0062F**	TOMMY JUNIOR	**TBC224**	
VA0174FS	Blue Bird II	**N0062H**	FRITHJOFSON	**TBC255**	
VA0180F	Sabb	**N0062MS**	ARNE	**TBC260**	
VA0198FS	Jølle	**N0062RT**	SANDRIAN	**TBC390**	
VA0217K	LYSEMA	**N0062VR**	NORDHAVN	**TBC405**	
VA0256K	Toya	**N0062VV**	IJA	**TBC465**	
VA0269K	Betzy	**N0063AH**	SEA-LADY	**TBC483**	
VA0311F	Tarzan	**N0063B**	J.A. SENIOR	**TBC619**	
3YRI	AMOR	**N0063H**	VANJA ANITA	**TBC733**	
A0001B	HØGHOLMEN	**N0063ME**	VOGIN	**TK0014P**	ELLINORA
A0001V	RØSTØY	**N0063RT**	GRIMSØYVÆRING	**TK0025BL**	SANTOS
A0002AS	BERINGHAV	**N0063SG**	MHAUKØY	**TR0001B**	HAVFISK
A9000A		**N0063V**	FJORDBAKK SENIOR	**TR0001NR**	STORBÅEN
AA0012A	HAVØRN	**N0063VV**	SANDER	**TR0001SK**	BIRGSI
AA0021A	TALVI	**N0064BØ**	HANNAH	**TR0001V**	KJAPP
AA0027T	OLAV	**N0064FE**	ARIEL	**TR0001Ø**	MÅNESTRÅLE
AA0081A	HAVSULA	**N0064H**	MEA	**TR0003NR**	LILJEN
AAJ216		**N0064V**	ARIEL	**TR0004NR**	BENTE SENIOR

AAL172	
ABC521	
ABN040	
ABN771	
ABO184	
AK0738	ARKHANGELSK
AK0751	ACHINSK
AK0752	VETLUGA
AK0777	IZUMRUD
BAK166	
BAL140	
BBE703	
BBG524	ISMATHO
BBK585	
BBM068	
BD0001D	NORDHOLMEN
CAT022	
CAY311	
CBA606	
CBQ430	
CBT408	
CBU263	
EA312	BJØRGULFUR
EAA269	
EAD913	
F0001A	GURI MARIE
F0001B	HAVPRINS
F0001G	SOLRAND
F0001H	SEILAND
F0001KD	SJØGUTT
F0001LB	POLARLINER
F0001P	FJORDBUEN
F0001TN	JOHN ANDREAS
F0001V	NORDVÅG
F0002B	NORBANKEN
F0002BD	KOLLBEIN
F0002HV	BRATTHOLMEN
F0002N	VARJJAT
F0002NK	TOMBA
F0002P	HAVPRINS II
F0002SV	ELISABETH II
F0002V	VANGEN
F0002VS	KAROLINE
F0003B	ANNE G
N0064VV	ELIAS
N0065B	ØYLINER
N0065F	GJØA
N0065L	JULIE
N0065ME	ØYGUTT
N0065RT	JØRN-HARALD
N0065TN	SKAGEN
N0065V	PERLEN
N0065Ø	SVEIN JOHAN
N0066BØ	TOVE
N0066F	SCHELDRUPSON
N0066MS	ROWENTA
N0066SO	TIRIL
N0067A	THEO
N0067F	SOLBUEN
N0067HR	FISKØY
N0067L	KATRINE
N0067LF	LEIRFJORDVÆRING
N0067MS	MARIO
N0067RT	RØSTHAVET
N0067SO	THEO
N0067VV	FISKØY
N0067Ø	MATS BØRGE
N0068A	BRAKEN
N0068BØ	LOKKØYVÆRING
N0068DA	SUNDSVÆRING
N0068F	DYVÅG
N0068H	TROLLHOLMEN
N0068L	FANGST
N0068MS	ELENA MARIE
N0068R	VARDEN
N0068RT	BELLA MARINA
N0068V	MB NJORD
N0068VR	ELLBØEN
N0068VV	SEIBUEN
N0068Ø	EVA MARITA
N0069B	TENNSKJÆR
N0069ME	EMILIE
N0069V	JUNI
N0069VV	BØRØY II
N0069Ø	GLIMT
N0070A	GRO-HEIDI
N0070L	SIV
N0070MS	PEDER B
TR0005LA	LEKNESBUEN
TR0006T	AUKNES
TR0017AA	MANIN
TR0020V	RÅHOLM
TR0042F	KARI
TR0110V	SULAVÅG
TR0161V	AUNSKJÆR
TR0345V	LILLESKJÆR
TR9301F	SKOLEFARTØY FRU INGER
UAA337	
UAA467	
UAA550	
UAA558	
UAB663	
UAC039	
UAC621	
UAE580	
UAE755	
UAF296	
UAF539	
UAF573	
UAG088	
UAG476	
UAI565	
UAI754	
UAM865	
UAP225	
UAP466	
UAQ529	
UAQ864	
UAR496	
UAS087	
UAS391	
UAS392	
UAS405	
UAS444	
UAS455	
UAS463	
UAS465	
UAS564	
UAS724	
UAS785	
UAS796	
UAS931	

F0003BD	RUBIN
F0003KD	ELIN
F0003M	TROLLSUND
F0003P	TVIBURDAR
F0003SV	ÅRSTEINNES
F0003TN	VASSANA
F0003V	TERNEN
F0004B	GUSTAV
F0004G	MILTON
F0004H	BJARNE NILSEN
F0004HV	HAAGRUNN
F0004LB	JAKOB
F0004M	GULLSKJÆR
F0004SV	VIKAN
F0004V	SOLTIND
F0005B	JOHANNE
F0005L	GERD-ELI
F0005M	KASPER
F0005SV	BUGØYFISK
F0005TN	SKARDHOLMEN
F0005VS	MARTE
F0006B	NEMO
F0006BD	INGVALDSON
F0006G	NARTIND
F0006H	KJELL STEINAR
F0006HV	HARVESTER
F0006M	MARITA KATHRIN
F0006N	AILIDA
F0006P	FJORDBRIS
F0006SV	FEIESKJÆR
F0006TN	AKOM
F0006V	LINN-TORRY
F0006VS	SARA
F0007B	VESTHAVET
F0007BD	TANJA
F0007G	CHARMI
F0007KD	UMA
F0007LB	ØRNTIND
F0007M	SANDNES
F0007N	VARANGERJENTA
F0007NK	KRISTIAN GERHARD
F0007P	PORSANGVÆRING
F0007SV	ESTHER
N0070R	SJÅVIKNES
N0070TN	TOPAS
N0070VV	BALLSTADVÆRING
N0070Ø	MEA
N0071G	M-SVENDSEN
N0071RT	ROSØY
N0071SO	EWA
N0071V	LYKKENS PRØVE
N0071VR	SKANTI
N0072BØ	KRISTINA
N0072F	RAMSEVIK
N0072H	HANSVIK
N0072V	ARNE-JOHANNE
N0072VV	STAMSUNDVÆRING
N0072Ø	ELISABETH
N0073BR	MONICA M
N0073H	MAGNUSSEN
N0073ME	JOHAN R
N0073MS	TINDSBUEN
N0073SO	MAGNUSSEN
N0073VV	HØTTEN
N0073Ø	HAVSULEN
N0074A	JAN OSKAR
N0074B	LYSTIND
N0074R	HÅVARD
N0074SO	FRIDA SOFIE
N0074V	TOYA
N0074VR	VÆRØYBUEN
N0074VV	OLE INGE
N0075A	RIKARDSON
N0075BØ	JUNO
N0075F	JENNY 2
N0075L	LYNGØYSKJÆR
N0075ME	KAROLIUS
N0075MS	LENNART
N0075SG	PÅLSTIKK
N0075SO	ANNIKA
N0075V	DENTAX SENIOR
N0075VR	ØYVÆR
N0076B	GLUNTEN
N0076BR	ANNA THERESE
N0076RT	HAVFRØKNA
N0076SG	BROTT
UAT037	
UAT107	
UAT278	
UAT547	
UAT559	
UAT594	
UAT922	
UAT950	
UAT952	
UAT964	
UAU059	
UAU075	
UAU091	
UAU423	
UAU427	
UAU428	
V0014L	KVALVÅG
V0045S	LØVEN
V0068L	GULLIVER
V0088L	GULLIVER
VA0005LS	ØYSTEINSON
VA0007FS	HAVBRIS
VA0010FS	RØDLAND
VA0027LS	SCANTI
VA0038FS	SUSANN
VA0039FS	FALCON
VA0040M	ARCTIC
VA0066LD	ORION
VA0076M	SOLFUGLEN
VA0097FS	ELDORADO
VAA095	
VAB235	
VAB555	
VAB731	
VAC076	
VAC159	
VAD793	
VAE010	
VAE355	
VAE911	
VAE952	
VAF804	
VAG423	

F0007TN	CLARA	N0076SO	NEMINE	VAG563
F0007V	THEA DALWHINNIE	N0076TN	HEIDI ANITA	VAG911
F0007VS	PARTNER	N0076V	SMÅEN	VAH628
F0008A	KORSNESVÆRINGEN	N0076VV	EGGUMSVÆRING	VAI457
F0008B	HAVSJY	N0076Ø	TORAN	VAJ191
F0008BD	HAFDIS	N0077BR	HUGIN	VAJ193
F0008HV	SKARVEN	N0077BØ	PIRAYA	VAJ542
F0008KD	REPPARFJORD	N0077LN	VESTFLU	VAJ613
F0008M	STEINRYGGEN	N0077ME	CAROLINE	VAJ718
F0008V	JUNE	N0077R	ISBJØRN	VAJ755
F0008VS	DØNNING	N0077SG	SAGAGUTT	VAJ805
F0009A	INGER LISBETH	N0077V	MARITA-O	VAJ962
F0009G	SØLVI	N0077VV	ULA	VAK149
F0009L	BÅRABUEN	N0077Ø	HAVBÅRA	VAK375
F0009NK	EMILY	N0078B	NYHAV	VAK431
F0009P	EMMA	N0078H	HARPAREN	VAK432
F0009SV	CINDY	N0078L	HAVBRIS	VAK446
F0009V	LINDA SOFIE	N0078MS	ELIAS	VAK447
F0009VS	SOLVARDEN	N0078SG	HAVELLA	VAK458
F0010A	SILJA	N0078TN	SANDFLÆSA 2	VAK476
F0010B	DYPFJORD	N0078V	RAGNI MERETHE	VAK479
F0010BD	MAY LIS	N0078VV	STRØMØY	VAK484
F0010G	MEA	N0078Ø	CAPELLA	VAK503
F0010HV	NOVOS	N0079BØ	NORDLYS	VAK615
F0010KD	LINDA MERETE	N0079F	BAASGRUNN	VAK637
F0010LB	JOHN-REIDAR	N0079HR	MARIANNE	VAK661
F0010N	LINNEA	N0079MS	RASMUSS	VAK695
F0010NK	STRØNSTADVÆRING	N0079SG	FESTUS	VAK742
F0010SV	KLAR-SELIN	N0079TN	SANDFLÆSA	VAK753
F0010TN	EMMY	N0079VR	VESTERBØEN	VAK800
F0010V	IDA-MARI	N0079VV	MARIANNE	VAK818
F0010VS	NOBEL	N0079Ø	RICHARD	VAK835
F0011B	REINBØEN	N0080B	RÅNES	VAK850
F0011BD	PER ROGER	N0080F	GISLØYVÆRING	VAL031
F0011H	UNNUR	N0080LN	KANSTADBUEN	VAL054
F0011HV	IEVA	N0080ME	HAUGHEI	VAL066
F0011L	FISKETIND	N0080V	THEA 2	VAL068
F0011M	GRØTEN	N0080VA	HOLMBØEN	VAL086
F0011TN	JUNE	N0080VR	SMÅHAUG SENIOR	VAL140
F0011V	RUNE	N0080VS	KILBUEN	VAL146
F0011VS	ANDFJORD	N0080VV	ØYBUEN JR	VAL157
F0012BD	ENJA	N0081ME	SOLØY	VAL204

F0012G	REMY	**N0081SO**	FRIDE SOFIE	**VAL215**
F0012H	ROALD JR.	**N0081Ø**	HAVBRYN	**VAL226**
F0012KD	NORODD	**N0082A**	TRITON	**VAL238**
F0012M	INGØYVÆRING	**N0082B**	NAUTIC	**VAL240**
F0012NK	SOA	**N0082BR**	ERFJORDBUEN JUNIOR	**VAL280**
F0012TN	STANGNESTIND	**N0082F**	PILEN	**VAL282**
F0012V	BALDER	**N0082H**	BREITIND	**VAL289**
F0013G	CAVARO	**N0082RT**	AURORA	**VAL293**
F0013HV	HOLMEN	**N0082SO**	CELINN	**VAL296**
F0013VS	BIFANGST	**N0082V**	SVERRE JUNIOR	**VAL299**
F0014A	STEFJORD	**N0083A**	BERNT STEINAR	**VAL353**
F0014B	FISKESKJÆR	**N0083BR**	HARMONI	**VAL413**
F0014L	VESLEMØY	**N0083BØ**	WENCHE	**VAL462**
F0014N	DIXI	**N0083F**	FJORDGUTT	**VAL464**
F0014NK	KONFLIKT	**N0083RT**	FÆRØYFISK	**WAA131**
F0014V	LARVIKGUTEN	**N0083V**	ANDENESVÆRING	**WAA381**
F0015A	PER GUNNAR	**N0083VV**	HANNA	**WAA895**
F0015G	BØEN	**N0083Ø**	FIRST	**WAA940**
F0015L	INGRID MARIE	**N0084A**	MARIA	**WAB171**
F0015LB	BÅRDFJORD	**N0084B**	HAGTIND	**WAB681**
F0015M	ROJOMA	**N0084F**	BREITIND	**WAB753**
F0015N	TROND	**N0084MS**	SKJÆRBUEN	**WAB975**
F0015NK	JUNE	**N0084V**	LANGBÅEN	**WAC124**
F0015V	LØKKI	**N0084VV**	SPLEIS	**WAC175**
F0016A	MEA	**N0084Ø**	MÅKEN	**WAC315**
F0016B	SIMEN	**N0085A**	LUDVIK	**WAC319**
F0016BD	WIJAFISK	**N0085F**	PROPELLA	**WAC333**
F0016H	HANNA INGEBORG	**N0085L**	HAZARD	**WAC531**
F0016HV	FELIX	**N0085MS**	NOREGG	**WAC648**
F0016LB	STOKKVIK	**N0085RT**	HAVUR	**WAC773**
F0016NK	HORNGRUNN	**N0085V**	OLE OSKAR	**WAC810**
F0016SV	AKTIV 2	**N0085VV**	AASHEIM	**WAC921**
F0016TN	BØME	**N0085Ø**	RØSTAD	**WAD006**
F0016V	KENNETH	**N0086AH**	JUSTAD JUNIOR	**WAD123**
F0016VS	ODIN	**N0086B**	FUGLØYFISK	**WAD201**
F0017B	KENNETH JOHAN	**N0086BR**	HELLEFISK	**WAD246**
F0017G	CAROLINE	**N0086HR**	RAYON	**WAD351**
F0017M	ROY-ANETT	**N0086MS**	REINEFANGST	**WAD365**
F0017VS	DOGGEN	**N0086RT**	ESPEN CATO	**WAD393**
F0018A	HERMANN	**N0086SG**	VALSVÆRING	**WAD526**
F0018G	HALLINGEN	**N0086V**	VATERFJORD	**WAD658**
F0018L	KORSHOLM	**N0086VR**	KIM RICHARD	**WAD749**
F0018N	HÅREK	**N0086VV**	JOKER	**WAD798**

F0018NK	SOLTIND	N0086Ø	JUSTAD JUNIOR	WAD927
F0018P	TROLLABUEN	N0087BØ	OTTARSON	WAE029
F0018V	VÅRSOL	N0087L	DINABØEN	WAE216
F0019A	PILEN	N0087ME	STRØMØYGUTT	WAE231
F0019B	VAQUERO	N0087MS	MIRO	WAE327
F0019H	NORDLYS	N0087SO	GO-LINER	WAE645
F0019HV	VILKAS	N0087VV	MAJA 1	WAE653
F0019M	TIN	N0087Ø	SEGELSTEIN	WAE727
F0019NK	ISRYPA	N0088BR	FANGST	WAE767
F0019V	NITTAYA	N0088F	BØRFJELL	WAE804
F0019VS	NORDVÅG	N0088H	LAGUN	WAF084
F0020A	SAFIR	N0088L	HAVSTRAUM	WAF141
F0020B	TRIN EVEN	N0088MS	WENCHE MERETHE	WAF170
F0020BD	RONJA-MATHEA	N0088RA	SYREN	WAF175
F0020G	ALF-SIGMUND	N0088SO	FLØYFISK	WAF269
F0020H	POLARSTJERNA	N0088V	SPRUTEN	WAF595
F0020HV	EVEN	N0088VA	EIDEM SENIOR	WAF815
F0020N	TOR EINAR	N0089BØ	HAVBRYN	WAG030
F0020NK	VILJEN	N0089F	JENNEGGA	WAG112
F0020P	CELINE	N0089SO	ODDVAR JUNIOR	WAG482
F0020SV	SJØSPRØYT	N0089V	LENE MARIE	WAG775
F0020V	FORTUNE	N0089VV	MARINA	WAG822
F0021A	THERESE	N0089Ø	BRASØY	WAG907
F0021BD	GRIMSHOLM	N0090L	MARY JANE	WAG954
F0021G	LANGNES	N0090ME	HORNTIND	WAH074
F0021H	SULVÆRING	N0090MS	REINEBUEN	WAI293
F0021KD	VÅRSOL	N0090V	RUTH KRISTIN	WAI348
F0021LB	UTSIKTEN	N0090Ø	HAVELLA	WAI668
F0021M	FISKUR	N0091BR	BJØRN	WAI807
F0021N	JIM HÅVARD	N0091F	NAPPSGUTT	WAJ164
F0021NK	ANITA	N0091HR	BJØRNSVIK	WAJ322
F0021SV	BUGØY	N0091L	DENNIS OLAI	WAJ353
F0021TN	LAKSNES	N0091MS	NORDHOLMEN	WAJ482
F0021VS	SOLØY	N0091V	MARLEN	WAK005
F0022A	JAN BØRRE	N0091VR	ISLOMEN	WAK228
F0022H	ELINE	N0091Ø	OPPMYRBUEN	WAK254
F0022HV	PILEN	N0092MS	LISS-EVA	WAK331
F0022N	POLARVIND	N0092SO	TROND	WAK508
F0022NK	BØRNES	N0092VR	KRISTIN MARITA	WAK870
F0022P	RIINAKAISA	N0093A	JUNITA	WAK953
F0023A	TEIST	N0093BR	PRØVEN	WAL022
F0023BD	TOM LAURITZ	N0093F	HILMARSON	WAL383
F0023LB	FJORDHEKSA	N0093ME	KJØNSKJÆR	WAL459
F0023TN	UNNUR	N0093VV	IDA ANGELICA	WAL520

F0024BD	BJØRKÅSBUEN	N0093Ø	MØYSALEN	WAL543
F0024G	SEIVIKBUEN	N0094A	WESTEGG	WAL560
F0024KD	LILLEGUTT	N0094BØ	NORDFLU II	WAL760
F0024NK	EWUNIA	N0094L	HÅLØYGER	WAL837
F0024P	EDITH	N0094MS	HAAKON-JR	WAM090
F0024TN	VÅGEN	N0094V	NYBERG	WAM682
F0024V	SIRIUS	N0094Ø	EIDSFJORD	WAM904
F0025BD	LEIKA	N0095F	VIKSKJÆR	WAM960
F0025H	STRØMSHAV	N0095HR	RAGNARSON	WAN082
F0025HV	BÅRSELVFISK	N0095V	VICTORIA	WAN110
F0025LB	KAROLINE	N0095VV	OLE-JOHAN	WAN131
F0025M	NJORD	N0095Ø	VICTORIA	WAN155
F0025N	BARSNES	N0096A	STRAUMGUTT	WAN583
F0025NK	RAPPEN	N0096B	ØYASUND	WAN736
F0025TN	NORWASTERN	N0096HR	SOLVÆRØY	WAO175
F0026B	TORSTEIN	N0096ME	HAVNÆRINGEN	WAO251
F0026HV	KLO	N0096R	STEN TORE	WAO310
F0026M	SONJA	N0096RT	NORDFANGST	WAO367
F0026N	IDA	N0096SO	ÅKERNES	WAO399
F0026NK	RAMBO II	N0096V	JYLDNER	WAO546
F0026SV	INE MARITA	N0096VV	MORTSUNDVÆRING EN	WAO875
F0026V	MARCUS	N0096Ø	DAINORA	WAO937
F0026VS	NEPTUN	N0097ME	GLITTERTIND	WAO958
F0027M	HTIND	N0097MS	MAGNUS	WAP063
F0027NK	OLASDATTER	N0097VA	AJAX	WAP394
F0027V	SARTE	N0097VV	ROY-MAGNE	WAP496
F0027VS	STEFFEN JUNIOR	N0097Ø	TULIPAN	WAP907
F0028A	NORLYS	N0098B	EROS	WAQ021
F0028G	GULLONGEN	N0098BØ	SJARK 1	WAQ244
F0028N	AMANDA	N0098L	STRAUMØY	WAQ369
F0028NK	EMMA-V	N0098VA	MINOR	WAQ545
F0028SV	RIDDU	N0098Ø	HELLA	WAQ602
F0028V	TOMMI MARI	N0099BØ	VIKSKJÆR	WAQ758
F0028VS	LUNA	N0099SG	FRØYTOR	WAR123
F0029G	KVITNAKKEN	N0099SO	KARINE	WAR169
F0029H	HAVØRNA	N0099V	HAVØRN	WAR311
F0029L	SKJERM	N0099VV	BALLSTADØY	WAR818
F0029LB	LUNHEIM SENIOR	N0100BR	BJØRNSON	WAR836 (tom)
F0029SV	TIIRA	N0100F	FALKEN	WAR960
F0029V	HAVSULA	N0100L	LOVUNDVÆRING	WAS236
F0030B	MARGARETH	N0100R	ÆGIR	WAS472
F0030BD	SOLHEIM	N0100SO	LANGØY	WAS507
F0030G	BISPEN	N0100VV	OVESEN JR	WAS552

F0030HV	POMOR	**N0101B**	NYHAV	**WAS673**
F0030L	EINAR-ANDRE	**N0101H**	MØYSALFISK	**WAT217**
F0030N	MYSTIC OCEAN	**N0101HR**	POLARGUTTEN	**WAT300**
F0030NK	TORA B	**N0101VV**	VERONICA	**WAT453**
F0030V	STØA	**N0101Ø**	STIG JUNIOR	**WAT487**
F0030VS	VARANGERGUTT	**N0102MS**	KVALVIK JR	**WAT573**
F0031A	HAVØRNA	**N0102VV**	TRINE	**WAT689**
F0031G	ALDIS LIND	**N0103MS**	TINDSTØ	**WAT816**
F0031H	BR. ISAKSEN	**N0103VV**	TØTTA	**WAU237**
F0031LB	POSTNES	**N0104MS**	THOMAS ALEXANDER	**WAU253**
F0031NK	LINN	**N0104VV**	HAVGULL	**WAU316**
F0031P	BARJO	**N0104Ø**	LISE	**WAU321**
F0032BD	GADUS POSEIDON	**N0105A**	STIG INGE	**WAU576**
F0032G	TOR EIRIK	**N0105MS**	DAG VIGGO	**WAU689**
F0032HV	SANDVIKNES	**N0105V**	HARINGBUEN	**WAV062**
F0032L	KOMET	**N0105VV**	ROHOLMEN	**WAV068**
F0032LB	VARFJELL	**N0105Ø**	BENTE	**WAV077**
F0033A	VARGSUNDVÆRIN G	**N0106R**	INGER-ANN	**WAV173**
F0033G	AKSEL ANDRE	**N0106V**	FISKØRN	**WAV303**
F0033H	FANGST	**N0106VV**	SJØTUN	**WAV488**
F0033HV	NORA	**N0106Ø**	NESSIE	**WAV544**
F0033M	ROLVSØYVÆRING	**N0107SF**	PLUGGEN	**WAV551**
F0033N	FJORDBAS	**N0107VV**	SKAGODDEN	**WAV556**
F0033NK	LUNA	**N0107Ø**	SAN MIDTBU	**WAV567**
F0034BD	TORE	**N0108VV**	NOREGGA	**WAV979**
F0034N	JAN GUNNAR	**N0109A**	MATS-ERIK	**WAW119**
F0034SV	STANGNES	**N0109BØ**	NYGRUNN	**WAW120**
F0034VS	TONE	**N0109V**	OLAV-BØRRE	**WAW199**
F0035BD	ERNA	**N0109VR**	HAVGLIMT	**WAW234**
F0035G	NERO	**N0110B**	ERATO	**WAW254**
F0035HV	SILHAV	**N0110L**	SLETTHOLMEN	**WAW279**
F0035M	MARELIUSSON	**N0110Ø**	OLAV NILSEN	**WAW312**
F0035NK	LINEFISK	**N0111F**	FREMTID	**WAW323**
F0035TN	RAGNI ELISE	**N0111ME**	SIGRID	**WAW466**
F0035V	MESKJÆR	**N0111R**	HELØYGUTT	**WAW485**
F0035VS	DELFIN	**N0111VR**	TINDSKJÆR	**WAW626**
F0036A	IDA	**N0111VV**	INGRID MARIE	**WAW761**
F0036B	TONJE	**N0112F**	GULLFISK	**WAW798**
F0036BD	ARK	**N0112R**	HELØYGUTT II	**WAW850**
F0036HV	NORDLYSFISK	**N0112VV**	TROMFLU	**WAX022**
F0036LB	NENNIK	**N0112Ø**	SØRHOLMEN	**WAX114**
F0036NK	RONJA	**N0113F**	SIW	**WAX270**

F0036P	CHRISTINA	N0113V	OLE EINAR	WAX585
F0036VS	VÅRIN	N0113VV	RUBY	WAX610
F0037B	ERLEND	N0114BØ	DØNNVÆR	WAX843
F0037H	VEROSY	N0114L	LURØYBAS	WAX922
F0037L	STENSØ	N0114MS	SKRINE	WAX994
F0037M	TRELLEFISK	N0114V	SJØLEIK	WAY030
F0037NK	DELFIN	N0114VV	TINA	WAY032
F0037SV	SKOGERØY	N0115BØ	REMI ANDRE	WAY177
F0037V	LINDFISK	N0115HR	OLE EINAR	WAY208
F0038G	SKJÅNES	N0115V	VESLA	WAY246
F0038M	SEGLSTEIN	N0115VR	GEIR MAGNE	WAY256
F0038NK	LANGSKJÆR	N0115Ø	OSKAR S	WAY270
F0038TN	OSVIK	N0116BR	KVÆRSTEIN	WAY285
F0039A	FJELLTIND	N0116V	ALBATROSS III	WAY313
F0039BD	KORSNES	N0116Ø	BÅRHOLMEN	WAY385
F0039NK	LØNNEGGA	N0117B	FAGERTING	WAY387
F0039V	KING MARCUS	N0117VV	FJORDPRINS	WAY392
F0040A	CARINA	N0117Ø	VILMA	WAY590
F0040BD	FRØYA	N0118A	DRØM	WAY687
F0040G	NORDSTJERNA	N0118LN	RØDHOLMEN	WAY703
F0040LB	REMI	N0118MS	SOLBJØRN	WAY761
F0040M	KYSTFISK	N0118V	ALBATROSS	WAY835
F0040NK	SOLENG SENIOR	N0118VR	STAR VIKING	WAY847
F0040SV	ANDREA	N0118Ø	NORDSILD	WAY869
F0040V	CLEO	N0119F	LYSBØEN	WAY883
F0041G	VIKTORIA LIF	N0119VV	SENJASUND	WAY898
F0041HV	ØRNA	N0120BØ	MÅRSUND	WAY900
F0041LB	MARITA	N0120F	BJØRNTIND	WAY902
F0041SV	DANSKEN	N0120L	FRIDTJOF K	WAY916
F0041V	SILEGG	N0120MS	FJORDBRIS	WAY919
F0041VS	MAGNHILD	N0120Ø	FRIDTJOF K	WAY924
F0042A	BIRK	N0121B	NORDHAV	WAY926
F0042B	BERLEVÅGJENTA	N0121ME	TULIPAN	WAY927
F0042BD	SOLØY	N0121VR	VÆRØYBUEN	WAY930
F0042G	HELLØY	N0122F	ULVSTIND	WAY935
F0042HV	VEMA	N0122R	VÅGASKJÆR	WAY955
F0042LB	KLUBBEN	N0122VA	LOMSØY	WAY956
F0042M	HJELMSØY	N0123BR	MARNA	WAY957
F0042P	RAMGRUNN	N0123F	SKOTTIND	WAY958
F0042V	ROBIN	N0123VA	MÅØYSUND	WAY959
F0042VS	BØLGEN	N0123VV	ROKKAN	WAY961
F0043B	KVALVIK SENIOR	N0124B	NORDSUND	WAY972
F0043BD	ANDOPSVÆRING	N0124BR	TINE	WAY974
F0043G	ELINA	N0124ME	ROBIN	WAY983

F0043HV	PEIK	N0124V	LINDA	WAY986
F0043LB	NORDMANNSET	N0124VV	HAVSULA	WAZ002
F0043NK	BRITA	N0124Ø	FALKEN	WAZ006
F0043P	SAIBMA	N0125ME	NEPTUN	WAZ010
F0043TN	SAVE K	N0125Ø	MYREFISK	WAZ012
F0044BD	DADDI	N0126R	SMÅEN	WAZ013
F0044G	IRENE	N0127BØ	BØRINGEN	WAZ025
F0044HV	RÅSA	N0127F	LITJ SKJÆRET	WAZ045
F0044TN	SEIDA	N0127L	SIGVE	WAZ049
F0044V	VÅGAR	N0127MS	STJERNEN	WAZ056
F0044VS	HANS ROBERT	N0127VV	TRYM-AKSEL	WAZ058
F0045A	VIGRUNN	N0129V	SJØHEIM	WAZ060
F0045B	OLE HENDRIK	N0130R	RISØYBØEN	WAZ061
F0045G	SVERRIR	N0130VR	HAVBØEN	WAZ067
F0045HV	MANTAS	N0131A	AMALIE	WAZ085
F0045N	GRETA	N0131B	VESTVARDEN	WAZ090
F0045NK	KARL VILMAR	N0131BØ	SNARSETVÆRING	WAZ099
F0045P	YVONN	N0131F	VEINES	WAZ123
F0045V	IDA SYNNØVE	N0131VV	TERNINGEN	WAZ125
F0045VS	BALDER	N0132A	ANDHELLA	WAZ151
F0046A	VARGEN	N0132Ø	OLAFUR II	WAZ167
F0046BD	HAVSULA	N0133VV	HAVBRIS JR	WAZ172
F0046HV	ZIKU	N0134B	VESTVARDEN	WAZ178
F0046KD	SANDERGUTT	N0134BØ	SNARSETVÆRING	WAZ179
F0046P	MARELLA	N0134LN	SVENSGAM	WAZ189
F0046SV	LUSKIN	N0134V	BÅRSKJÆR	WAZ190
F0046V	ELLA	N0134VV	NORPYNT	WAZ242
F0046VS	JOFFRE	N0134Ø	RAINER	WAZ302
F0047A	CHRISTINA	N0135F	NY-TERJE	WAZ318
F0047BD	ORIGO	N0135SO	LAILA V	WAZ331
F0047HV	SIRIUS	N0135VV	HAVJO	WAZ361
F0047P	VITO	N0136VV	LOBO	WAZ370
F0047V	GLUECIFER	N0136Ø	VORNESVÆRING	WAZ409
F0048BD	SOLEY	N0137VV	TOMINE	WAZ430
F0048LB	SJARKE	N0138L	KVITBJØRN	WAZ442
F0048M	JENNI SOFIE	N0138VV	ANDERSSON	WAZ534
F0048N	SÆTERBØEN	N0140B	ØYVIKING	WAZ548
F0048P	FORTUNA	N0140V	KRANEGUTT	WAZ621
F0048V	MAIKEN-JENTA	N0141BØ	BØTIND	WAZ686
F0049BD	BRYNDIS	N0141HR	KARI	WAZ691
F0049HV	ANN-FRIDA	N0141V	SVANEN	WAZ697
F0049P	FRAMMEN	N0141Ø	BJØRNSTEIN	WAZ699
F0049SV	SUNNIVA	N0142L	SØRHOLMEN	WAZ709
F0049VS	HOLMEN	N0142RT	SJARM	WAZ711

F0050A	POMOR	**N0142SO**	TRYGVE B	**WAZ748**	
F0050H	T.A SENIOR	**N0142Ø**	HAVBRIS	**WAZ781**	
F0050HV	TENNESSEE	**N0143B**	ROS	**WAZ793**	
F0050L	KNERTEN	**N0143SG**	FIX	**WAZ804**	
F0050LB	SVAVIK	**N0143V**	IDA BEATE	**WAZ828**	
F0050N	MEA	**N0144MS**	VALTIN JR	**WAZ896**	
F0050NK	STIG ARILD	**N0144V**	INGO	**WAZ933**	
F0050TN	ASTRID	**N0144VV**	LAGUN	**WAZ951**	
F0050V	SAMANTA	**N0145H**	NYGRUND	**WBA006**	
F0051BD	MÅRNES	**N0145VR**	JOHAN BERG	**WBA152**	
F0051VS	LENA-ELIAS	**N0145VV**	JIM-ROGER	**WBA161**	
F0052HV	AURORA J	**N0146F**	JUVEL	**WBA190**	
F0052LB	TØMMERVIK	**N0147MS**	ODD ROGER	**WBA202**	
F0052M	VÅRLINER	**N0147VR**	VICTORIA	**WBA214**	
F0052P	DRONNINGA	**N0147VV**	BORGVÆR	**WBA246**	
F0052TN	TORHOPJENTA	**N0147Ø**	LANGNESVÆRING	**WBA265**	
F0052V	FAKTURA	**N0148SG**	AKTERØY	**WBA271**	
F0053H	FANGST	**N0148V**	AGNETHE	**WBA287**	
F0053HV	FURØY	**N0148VV**	UNSTAD JUNIOR	**WBA304**	
F0053LB	RISVIK	**N0148Ø**	AURORA	**WBA343**	
F0053NK	BASTUS	**N0149VV**	LEO	**WBA345**	
F0053P	ADA MARIE	**N0150A**	FREDRIK	**WBA353**	
F0053V	KAJA	**N0150V**	KYSTEN	**WBA355**	
F0053VS	LAGERTHA	**N0151B**	LENE K	**WBA367**	
F0054A	HELLVÆRING	**N0151BØ**	SOLSTRÅLEN	**WBA407**	
F0054HV	HOLMEN	**N0151L**	ØYBUEN	**WBA412**	
F0054V	NETTO	**N0151MS**	NY-MÅTIND	**WBA415**	
F0055A	KEESIE	**N0151VV**	KLOGRUNN	**WBA430**	
F0055HV	GUNN-RANDI	**N0152A**	HEIDRUN	**WBA443**	
F0055M	BIRTU-LIAS	**N0152MS**	DEMRING	**WBA458**	
F0055P	STRØMSNES	**N0152VA**	FLATSKJÆR	**WBA481**	
F0055V	VILIJA	**N0152Ø**	SKUMRING	**WBA594**	
F0055VS	VARANGERBUEN	**N0153V**	ARIADNE	**WBA607**	
F0056BD	RAGNAR LODBROK	**N0153VV**	FESKARGUTTEN	**WBA657**	
F0056HV	LINA	**N0155VV**	MONICA	**WBA689**	
F0056LB	SKAGANES	**N0155Ø**	BRUTUS	**WBA746**	
F0056TN	TONY	**N0156B**	SJØBRIS	**WBA747**	
F0057G	FJORDBUEN	**N0156MS**	IVI	**WBA777**	
F0057H	JUNI	**N0156V**	ANNE	**WBA793**	
F0057HV	KARINA	**N0156Ø**	ELIAS	**WBA824**	
F0057LB	DÆNG	**N0157F**	NYBØEN	**WBA861**	
F0057M	LEANDER	**N0157MS**	ODDNY	**WBA887**	
F0057NK	ROY MAGNE	**N0157V**	LINE	**WBA893**	
F0057TN	VILDE	**N0158V**	STRANDVÆR	**WBA909**	

F0057V	LINDFISK		N0158VV	KLOBUEN		WBA911
F0058A	FRAM		N0159MS	CARINA		WBA918
F0058G	TARDIS		N0159V	KJARTAN K.		WBA922
F0058LB	REYNIR		N0160DA	EMILIE		WBA929
F0058N	BELLA MARI		N0160MS	VESTHOLM		WBA952
F0058NK	TRONDALSON		N0160VV	VESLA		WBA976
F0059LB	MÅRØYSUND		N0160Ø	ØKSNESVÆRING		WBA978
F0059M	ROLVSØYHAV		N0161BØ	SNARSETVÅG		WBA979
F0059NK	KJETIL		N0161V	JUNI		WBA986
F0059V	TIN		N0161Ø	EKKO		WBA992
F0060A	ASTRID		N0162BØ	REINSBÅEN		WBA994
F0060G	BISPEN		N0162V	HÅVARD		WBA999
F0060H	SJØGUTTEN		N0162VR	VÆRØYGUTT		WBB015
F0060LB	PARTNER		N0162VV	STRAUMEN		WBB032
F0060P	ODIN		N0164B	ØRA		WBB046
F0061G	AUSTHAVET		N0164BØ	KIM RUNE		WBB050
F0061LB	SARA		N0164VA	LILJA		WBB060
F0061NK	JR SENIOR		N0164VV	EMMA GISKE		WBB069
F0061P	HÅTIND		N0165H	STRANDEGGA		WBB081
F0061SV	NORDSTRAND		N0165MS	SANDVÆR		WBB088
F0062BD	ANDUNGEN		N0165VV	NIKKO		WBB105
F0062G	REIPNAKKEN		N0165Ø	OLINE		WBB110
F0062NK	KLAUDIA		N0166F	SKJELHOLM		WBB141
F0062TN	SWONA		N0166MS	SOLVANG		WBB230
F0063G	DØNNING		N0166VV	MATHIAS		WBB285
F0063NK	STIG-RUNE		N0167A	OLE ELVAN		WBB322
F0063V	MARIE BANG		N0168Ø	MYREBUEN		WBB383
F0064G	RYSTADBUEN		N0169F	ASTRID MARIE		WBB415
F0064HV	SUNNIVA		N0169Ø	MYREBAS		WBB426
F0064M	ODD-EGIL		N0170V	SIRO		WBB440
F0064NK	KRISTINE		N0170VV	SANDHOLMEN		WBB450
F0065G	VIKAJENTA		N0171L	BRINCA		WBB491
F0065M	BASNES		N0171R	NESØYVÆRING		WBB503
F0065NK	FISKESKJÆR		N0171VV	HAVGUTT I		WBB509
F0066BD	KILDIN		N0172F	BØLGEN		WBB513
F0066TN	VAGGE		N0173A	THERESE		WBB517
F0066V	KRISTJAN		N0173Ø	SILJE		WBB528
F0067B	ROSA JADE		N0174ME	FLØSKJÆR		WBB546
F0067LB	OKSEFJORD		N0174VV	MORTSUNDVÆRING		WBB547
F0067NK	STÅL TROND		N0175B	REMSKJÆR		WBB559
F0068G	MULAN		N0175VV	RØAGUTT		WBB562
F0068HV	BAILOTT		N0175Ø	LEX GRANDE		WBB570
F0068N	SOLGLØTT		N0176V	EIEVÆRING		WBB574
F0068NK	ANDANTE		N0176Ø	DAINORA		WBB576

F0068SV	HAVBRIS	**N0177F**	SIMAR	**WBB586**
F0069BD	TARVIKBØEN	**N0178VV**	K.R. SENIOR	**WBB592**
F0069NK	STAR	**N0178Ø**	EMMY	**WBB594**
F0070BD	HAVØY	**N0179H**	ALF MARTIN	**WBB596**
F0070G	SANDØRA	**N0179Ø**	VIVA	**WBB601**
F0070VS	NOBEL	**N0180B**	REMI	**WBB603**
F0071G	CESAR	**N0180F**	SUNDMANN	**WBB604**
F0071HV	LAGUN	**N0180MS**	ERIK ANDRÉ	**WBB609**
F0071LB	HAMNØY	**N0180V**	CECILIE	**WBB610**
F0071N	KLØVNESJENTA	**N0180VV**	NONSTIND	**WBB611**
F0071VS	LEODEGAR	**N0180Ø**	SKOGSØYBUEN	**WBB613**
F0072BD	ØYTIND	**N0181BØ**	VARDEN	**WBB614**
F0072H	JOAKIM	**N0181H**	LILLEGUTT	**WBB616**
F0072HV	ØYFJORD	**N0181ME**	GRØNØYTRÅL	**WBB623**
F0072N	MISS CROSBY	**N0181VV**	NYBAKK SENIOR	**WBB631**
F0072NK	BENONI	**N0182ME**	MIRA	**WBB640**
F0073A	LINN-JOHANNE	**N0182Ø**	NORHAVET	**WBB646**
F0073H	FRIDA K	**N0183VV**	EMIL ANDRE	**WBB648**
F0073HV	KNUT M	**N0183Ø**	MIRA	**WBB663**
F0073LB	KASPARA	**N0184F**	ANGELSEN SR.	**WBB667**
F0073M	FRIDA K	**N0185Ø**	BÅR-SAMUEL	**WBB671**
F0073V	OLUF	**N0187VV**	BRITT	**WBB686**
F0073VS	HAVBRIS	**N0188F**	BØRFJELL	**WBB688**
F0074A	KRISTINE	**N0188ME**	MELØYBAS	**WBB689**
F0074BD	DUKAT	**N0188V**	FRANK INGAR	**WBB697**
F0074G	FOMA	**N0189VV**	SANDØY	**WBB700**
F0074V	KRISTIAN	**N0190BR**	MÅKEN	**WBB702**
F0075BD	WILFREDSON	**N0191A**	SOLTIND	**WBB714**
F0075G	KROSSANES	**N0191SO**	SENHOLMBUEN	**WBB719**
F0075HV	RUBICON	**N0195VV**	ASIA	**WBB745**
F0075M	HAVØY	**N0196B**	BARSKIÆR	**WBB800**
F0075V	FLIPPER	**N0196Ø**	TORBÅEN	**WBB832**
F0076LB	OKSEVÅG II	**N0197B**	GIVÆR	**WBB899**
F0076NK	BORGAFELLI	**N0197V**	SARAH	**WBB979**
F0076V	HAVELLA	**N0197VV**	VÅRBRIS	**WBB995**
F0077A	RAGNHILD	**N0198A**	SANDVÆR	**WBC049**
F0077LB	SIMON	**N0200A**	ANDØYGUTT	**WBC061**
F0077M	KEILA	**N0200BØ**	SNARSETVÆRING	**WBC066**
F0077NK	KAROLINE	**N0200ME**	ØRNA	**WBC070**
F0077VS	HELLEGUTT	**N0200MS**	HIMMELTIND	**WBC094**
F0078A	RAMSKJÆR	**N0200N**	GENERAL`N	**WBC107**
F0078M	STAUREN	**N0200V**	HESTHOLMEN	**WBC136**
F0078NK	FLIPPER	**N0200VV**	HIMMELTIND	**WBC156**
F0078SV	BUGØYVÆRING	**N0200Ø**	LIVE ELISE	**WBC165**

F0079G	SUNNA	N0201DA	ARNE JOHAN	WBC174	
F0079HV	SANO	N0202ME	ØYGUTT	WBC175	
F0079V	SOLVÆRGUTT	N0202SO	KETHO	WBC177	
F0080A	BRATTHOLMEN	N0202V	GUNN-LOTTE	WBC182	
F0080BD	JILL HEGE	N0202VV	LOFOTVÆRING	WBC184	
F0080LB	STORMSKJÆR	N0203F	RINGSKJÆR NORD	WBC189	
F0080M	VOLDNES	N0205R	HAVBRIS	WBC196	
F0080NK	NYTIND	N0206BR	TORGARNES	WBC197	
F0080TN	MARTIN	N0206DA	REFORM	WBC198	
F0081A	HELLVÆRING	N0206F	MINIBANKEN	WBC211	
F0081LB	JUVEL	N0206MS	OLSTIND	WBC223	
F0081NK	SKIPPY	N0207MS	PEON	WBC224	
F0081TN	SVANANES	N0207V	AUSTNESFJORD	WBC225	
F0082LB	SLETTVOLL SENIOR	N0208VR	VESTRI	WBC236	
F0082M	DYPFJORD	N0208VV	VESTRI	WBC253	
F0082NK	GEIR	N0210A	ELISE	X0517	MYS SLEIPIKOVSKOGO
F0083B	JIM LENNART	N0210SF	MARINA	X0519	MYS KORSAKOVA
F0083BD	NY-VIKING	N0210VV	PEDER	X0522	MYS CHIKHACHEVA
F0083NK	SHARA	N0211BØ	SØRBÅEN	X0524	MYS SHELTINGA
F0083V	TANAFJORD	N0211MS	PEDER	XAA007	
F0084G	TORSTIND	N0213A	SANDRA MARIE	XAA076	
F0084H	SANDNESBUEN	N0214VV	LINDA-MARI	XAA270	
F0085N	DRAVN	N0216VR	TRIO	XAA331	
F0086BD	SENJAFANGST	N0217ME	NATHANIEL	XAA439	
F0086G	ELLI KETILS	N0219VV	NORDHAUG SENIOR	XAA754	
F0086L	EIRIN	N0220F	LOFOTFISK	XAA989	
F0086M	HAVLINER	N0220MS	REINEFJORD	XAB268	
F0086NK	DORADO	N0220VV	HEMMINGODDEN JR	XAB410	
F0087NK	ODD INGE	N0221V	FISKEBØEN	XAC298	
F0087SV	DRUEN II	N0222V	MORILD	XAC324	
F0087V	SKUMNISSEN	N0223BR	ODIN	XAC356	
F0088G	NOREGGA	N0223Ø	NORDGRUNN	XAC705	
F0088LB	TROTTVIK	N0225Ø	VÅJE	XAC936	
F0088M	LILLEBÅEN	N0226BØ	OSKAR	XAD352	
F0088V	ORION	N0226Ø	SKREIEN	XAD784	
F0089LB	BRANDØYBUEN	N0231A	LINNEA	XAE103	
F0089NK	ISICA	N0232B	KARLSØYVÆR	XAE112	
F0089V	MONSNES	N0232MS	KVALVIKVÆRING	XAE209	
F0090A	YLVA MARIE	N0232V	SJÅBØEN	XAE809	
F0090BD	HAVDUR	N0232VV	SENJATUN	XAE961	
F0090H	DANIEL	N0233ME	MARIE	XAF063	
F0090M	FJORDSNURP	N0233Ø	LYNGØYBUEN	XAG592	
F0090VS	MEBAS	N0235A	MAJA	XAH305	

F0091G	STEINFJORD	N0236Ø	SOLBU	XAH437
F0091N	ØRJAN	N0237VA	VESTHAV	XAH524
F0092A	RANDI	N0238Ø	ASTRID CHRISTINA	XAH967
F0092NK	ANETTA	N0240B	HORISONT	XAH996
F0092SV	SOLENG	N0240F	NORDEGG	XAI731
F0092V	SOLENG	N0240Ø	RYVINGEN	XAJ038
F0093V	MILDA	N0242V	SKOGNES	XAJ292
F0094BD	HELLA	N0246Ø	GUNNAR K	XAJ482
F0094G	NYTIND	N0248B	CAKO	XAJ813
F0094LB	VIKING 2	N0250F	GUNN	XAJ859
F0094NK	PLUTOS	N0250V	LAUPSTADVÆRING	XAK084
F0095G	STEF	N0251B	VILMA	XAK282
F0095H	INGVARDSON	N0251V	EA	XAK321
F0095HV	SILBØEN	N0253F	NY-KVIKK	XAL030
F0095NK	MAGNUS	N0253MS	ØRNA	XAL054
F0095VS	NORDAFØRR	N0253V	SVATIND	XAL117
F0096A	VARHOLM	N0253VV	LEIF OLE	XAL127
F0096G	ASTERIX	N0254VV	JOHAN MARTIN	XAL261
F0096M	LEISUND	N0255Ø	ISABELL	XAL271
F0096V	INESA	N0257BØ	SIGURDSON	XAL328
F0098G	ARK	N0258BØ	JENNY	XAL332
F0098LB	ADELEN S	N0258V	TRYGG III	XAL437
F0099BD	JENS EILERT	N0260MS	SØRVÅGVÆRING	XAL556
F0099G	LAMOJENTA	N0260V	SØRVÅGVÆRING	XAL589
F0099H	VARULV	N0260Ø	RYVARDEN	XAL591
F0100A	FRØYA MARIE	N0262ME	HAVSULA	XAL604
F0100B	SOYA	N0263VV	NORØY	XAL613
F0100BD	MIKKELSEN	N0264Ø	LILL RAINER	XAL828
F0100G	THANI	N0265V	ARNE	XAL879
F0100M	KAMILLA KATRINE	N0270B	LAKSHMI	XAM024
F0100NK	RAMBO I	N0270SF	MARINA	XAM121
F0100P	KAMILLA KATRINE	N0270VR	SKOGSØYVÆRING	XAM182
F0101BD	SYLVIA	N0272MS	FRØYBANKEN	XAM344
F0101G	JUNO	N0277V	RAFN	XAM412
F0101HV	STELLA POLARIS	N0282VV	LINE MARI	XAM598
F0101LB	FLATVÆR	N0285Ø	INGRID	XAM611
F0101NK	RICHARD J	N0289B	ARGUS	XAM638
F0101VS	EDEL M.	N0298MS	ANN BRITA	XAM656
F0102NK	PONTOS	N0300B	RÅNES VIKING	XAM663
F0103NK	THOMAS	N0300F	IDA AMALIE	XAM676
F0104G	KUNTZEGUTT	N0300MS	NY-PERLON	XAM684
F0104LB	ÅSVIC	N0300V	SIVERTSEN JR	XAM687
F0105NK	KRISTINA	N0300VV	BALLSTADVÆRING	XAM689
F0106NK	ULF-DANIEL	N0300Ø	ØYVÆR	XAM690

F0107H	ØYVÆRING	N0302Ø	LANGENES	XAM697	
F0107NK	STENSØY	N0304V	VOLLEN	XAM700	
F0108M	ADELEN S	N0307LN	M.YTTERSTAD	XAM702	
F0108TN	ELIAS	N0310SG	TERNA	XAM712	
F0109NK	BEKKVIK JUNIOR	N0311V	EGILSON	XAM715	
F0109V	MARIANN	N0320Ø	LYKKEN	XAM720	
F0110G	POLARJO	N0321A	ALVESTAD	XAM722	
F0110LB	SATURN	N0323ME	EDVIND OLAI	XAM724	
F0110M	NIPEN	N0325MS	BREISUND	XAM725	
F0110NK	TORSTEINSON	N0325VA	TVERRØY	XAM726	
F0111L	AQVARIUS	N0325VV	NYGRUNN	XAM728	
F0111TN	VASSANA	N0326Ø	SKIPNES	XAM738	
F0113NK	STINA	N0328A	FUGLØYBUEN	XAM741	
F0113V	RUBY	N0328ME	LARS-GØRAN	XAM742	
F0114BD	NESBUEN	N0330VV	LOFOTHAV	XAM744	
F0114LB	STIG ROAR	N0335VV	STRAUMVÆRING	XAM747	
F0115NK	SMILER	N0337SG	PER-EGIL	XAM750	
F0116NK	GABRIELLE	N0340V	MÅKEN	XAM760	
F0117H	CARIANE	N0340VV	MEFJORD	XAM765	
F0118NK	JÅNSKY	N0349V	RISVÆR	XAM790	
F0119TN	SELMA	N0350V	MIA	XAM796	
F0120A	FLATVÆR	N0354Ø	ANN KARIN	XAM811	
F0121A	CAROLEVA	N0360VV	AMORIN	XAM846	
F0121L	BJØRNVIKVÆRING	N0361H	ØYULF	XAM912	
F0121NK	EKVATOR	N0364V	VIKING	XAM932	
F0122NK	EDEL MARIA	N0372ME	STRØMTIND	XAM934	
F0123LB	CAROLINE	N0372Ø	SANDER	XAM972	
F0123TN	ALEXANDRA	N0376ME	VAARHEIM	XAM990	
F0124A	JENNY OLINE	N0380B	ANNE HEIDI	XAN011	
F0124NK	LILJEN	N0382VR	SENNHOLMEN	XAN035	
F0125H	HANNA MARIE	N0400V	O. SOLEM	XAN057	
F0125NK	SALARFISK	N0400VV	ANNE-GRETHE	XAN062	
F0126A	KVALØY	N0400Ø	ODANE	XAN072	
F0126L	IDA-MOR	N0404A	TOM ROGER	XAN076	
F0126M	NEPTUN	N0417B	KARIANNE	XAN083	
F0127VS	MÅKEN	N0431Ø	KLOEGGA	XAN094	
F0128LB	INGA HAFDIS	N0438V	FISKHOLMEN	XAN110	
F0128NK	LERO	N0440ME	MELØYVÆRING	XAN112	
F0128V	TOR JOHAN	N0443Ø	SPUTNIK	XAN123	
F0130A	NORDTIND	N0444ME	MAGNY	XAN125	
F0130NK	DØNNING	N0450MS	VIKING	XAN184	
F0133HV	STORMHAV	N0450V	S JOHANSEN	XAN199	
F0133NK	LUSIU	N0450VR	ØYASKJÆR	XAN250	
F0134NK	FLIPPER	N0454R	LIV GERD	XAN261	

F0135NK	VIKAJENTA	**N0465V**	NESODD	**XAN269**
F0135VS	SJØBLOMST	**N0466VV**	ODD	**XAN285**
F0136NK	GRUNNBØEN	**N0470B**	RUBICON	**XAN302**
F0136V	SANDFJORD JENTA	**N0472A**	HAVBRIS	**XAN313**
F0137G	KARL-TORGEIR	**N0474Ø**	ØYABUEN	**XAN324**
F0138M	NESSODD	**N0475VV**	STORFJORDVÆRING	**XAN346**
F0138NK	CASPER	**N0477ME**	NORDLYS	**XAN357**
F0139NK	LANGNES	**N0479ME**	NORDLYS	**XAN365**
F0140M	NORFJELL	**N0487V**	BREMVÆRING	**XAN370**
F0140NK	TIKO	**N0500Ø**	HALLVARDSON	**XAN375**
F0141NK	MARLOV SENIOR	**N0555VV**	TROND-ANTON	**XAN377**
F0142NK	HARDY-GUTTEN	**N0566F**	ALF SIGMUND	**XAN382**
F0143L	HÅBRAND	**N0568HR**	SKJÆRBUEN	**XAN388**
F0143NK	MATHILDE	**N0619V**	MAGNA	**XAN401**
F0146NK	SARNESJENTA	**N2017UK**	UNGDOMSKVOTE	**XAN448**
F0148H	OSVALDSON	**N9000A**		**XAN452**
F0149H	KAJA MARIE	**N9000B**		**XAN454**
F0149NK	THEO MIKAL	**N9000G**		**XAN490**
F0150A	ELLINORA	**N9000LN**		**XAN544**
F0150NK	BRAKAR	**N9000R**		**XAN567**
F0150V	LEAH MARIE	**N9000TF**		**XAN569**
F0151A	VIKAJENTA	**N9000Ø**		**XAN608**
F0151NK	SOLENG	**N9300G**	SALTHAMMER	**XAN651**
F0153NK	VÅGEN	**N9300VV**	SKOLEBÅT	**XAN652**
F0154SV	ESKIL	**NT0001I**	MAY VANJA	**XAN667**
F0155NK	TROND YNGVE	**NT0001L**	GUNBJØRG	**XAN673**
F0155VS	ELSE-K	**NT0001V**	VESLEPER	**XAN705**
F0156NK	KENT ARE	**NT0001VN**	JAN IVAR	**XAN714**
F0157LB	SOLØY	**NT0002L**	NYHOLM	**XAN730**
F0159A	SJØBLINK	**NT0003LA**	MAJA	**XAN734**
F0159NK	SKYTTEN	**NT0003VN**	TERNA	**XAN735**
F0160NK	NY HURTIG	**NT0004LA**	RØINGEN	**XAN743**
F0160V	HAVBLIKK	**NT0005FA**	TRYGVASON	**XAN747**
F0161NK	NORDTUR	**NT0005LA**	LEKNESBUEN	**XAN750**
F0162NK	LYRA	**NT0005NR**	BIRGER JOHAN	**XAN796**
F0163NK	ARSBUEN	**NT0005V**	LIBU	**XAN819**
F0164NK	R. VEGAR	**NT0006NR**	RASKEN	**XAN826**
F0165NK	SJØBUEN	**NT0007F**	VIKAGUTT	**XAN828**
F0165V	VARDØYFISK II	**NT0008V**	BALA	**XAN837**
F0167A	SJØPIA	**NT0009SD**	BRAVOUR	**XAN852**
F0168NK	RODIAN	**NT0010F**	BIG BOSS	**XAN889**
F0169NK	REVEN	**NT0010L**	MEHAV	**XAN915**
F0170L	KAY-ERLEND	**NT0010NR**	GULLFISK	**XAN930**
F0171NK	ISBJØRN	**NT0010S**	PEGASUS	**XAN938**

F0172NK	NYBAKKEN	NT0010V	ELDORADO	XAN942
F0173NK	MARTIN	NT0011N	SILD	XAN958
F0174G	HOPSFJORD	NT0011NR	TRIO	XAN975
F0174NK	KNOTTEN	NT0011S	JONAS	XAN977
F0175A	HØIVIKBAAEN	NT0011V	SULAVÅG I	XAN981
F0175BD	SKARBERG	NT0012NR	SILVER	XAN987
F0175NK	KAMØYFJORD	NT0013V	NATALIE	XAN990
F0176NK	LILJO	NT0015V	HOPEN	XAN992
F0177NK	JAN-TORE	NT0016F	ARINA	XAN995
F0177V	HANNA B	NT0016N	NYDØNNING	XAO000
F0178BD	UNN KRISTIN	NT0016NR	TIKA	XAO019
F0178NK	VESLEMØY	NT0016V	SANDER	XAO020
F0180NK	CAMP	NT0016VL	THORALF	XAO022
F0181HV	GORM III	NT0017NR	NORVEIG	XAO031
F0182BD	SUNDSBØEN	NT0018F	VALCO	XAO038
F0182P	SHAKIRA	NT0018NR	BØLGEN	XAO058
F0182V	NYBROTT	NT0018SD	ROCKMANN	XAO062
F0183NK	KLAKKEN	NT0019NR	SANDER	XAO063
F0184L	MEVÆR	NT0019V	HYDRA	XAO079
F0184M	INGRID MAJALA	NT0020FA	LISBETH	XAO083
F0184NK	EINAR	NT0020V	VIKING	XAO111
F0185NK	VALDIMAR H	NT0020VN	VALENTIN	XAO113
F0186H	EIDVÅGFISK	NT0022V	REMY	XAO127
F0186M	TUBØFISK	NT0024V	KVALØYFJORD	XAO133
F0186NK	OSTAD SENIOR	NT0025NR	ARNØYVÆR	XAO162
F0187NK	ANNE-K	NT0026V	HAVBLOMST	XAO191
F0188G	RAYA	NT0027F	ARINA	XAO208
F0188M	ARNBORG	NT0028F	FOLLABUEN	XAO279
F0188NK	JUNE	NT0028NR	KNØTTE	XAO351
F0189H	STEIN O	NT0029NR	FLAMINGO	XAO355
F0189NK	LILLEBÅEN	NT0029V	LISSBUEN	XAO367
F0190NK	VÅGEN 1	NT0030NR	ARNØYFJORD	XAO397
F0190V	VARDØJENTA	NT0031NR	KIO	XAO406
F0191NK	HELØYGUTT	NT0033V	NOGVAGUTT	YAA033
F0192NK	HELØYGUTT II	NT0034V	INGER	YAD427
F0193A	RANDI HELENE	NT0035V	GRIMSBØ	YAD516
F0193NK	SVANEN	NT0036V	BRUSØYSKJÆR	YAD879
F0194NK	SULAGUTT	NT0037LA	HAVSØLV	YAF306
F0194P	ØYVÆR	NT0040F	SAFIR	YAG085
F0195NK	ØYFJELL	NT0040V	HÅVTIND	YAG322
F0196A	SKARVTIND	NT0041NR	BREIVIK JUNIOR	YAG572
F0199NK	BEKKVIK JUNIOR	NT0041V	ANTON JUNIOR	YAG584
F0200H	EMMA	NT0045V	STRØMVÆRING	YAG610
F0200LB	STORMEN SENIOR	NT0046V	VESLEMØY	YAG621

F0200NK	JAN EGIL
F0200V	LIVE ELISE
F0201LB	STRIPTIND
F0202NK	CRYSTAL
F0202P	KORSNESJENTA
F0204NK	UKINAMEN
F0205H	TOR E
F0206M	SÆTERGUTT
F0207H	ODDGEIR JR
F0210NK	FREIDIG
F0211NK	MATHILDE
F0218NK	KAPPA
F0219NK	STILIAN
F0236V	NORDTIND
F0240A	LISA
F0243BD	SUNDSBØEN
F0243L	KANES
F0247NK	VÅRBUEN
F0250NK	ERIK ANDRE
F0251NK	SKJÆRBUEN
F0257L	KAMILLA
F0258NK	SILJE
F0260H	STORMFUGLEN
F0263L	THEA-EMILIE
F0294A	VÅRLEIK
F0328L	KURT-VIDAR
F0333A	STORM
F0333H	JOSEFINE
F0335LB	FJORDFISK
F0348NK	ROY-TONY
F0356M	LINE
F0365L	SENIORITA
F0380A	SILVER
F0400NK	THOR-ARILD
F0420G	VESTBÅEN
F0444NK	KING NORDKAPP
F0484M	ØRNTIND
F0500BD	INGER VICTORIA
F0500H	SOMMARØYVÆRING
F0500M	GULLHOLMEN
F0500NK	HENRIETTE E
F0600NK	TRIO
F0610V	LIVE ELISE

NT0048N	ARON
NT0049V	TRØNDERFISK
NT0051NR	SILJE
NT0052V	STEFAN
NT0055NR	HEGE
NT0056V	RASKEN
NT0058LA	LEKABUEN
NT0058V	SETTER
NT0064NR	ØRNSKJÆR
NT0064V	LYNN MARY
NT0069F	MERLIN
NT0070V	WILLIKSEN SENIOR
NT0071N	ALTEBUEN
NT0072NR	MARØYSKJÆR
NT0073V	PILEN
NT0076V	HARALD BERGE
NT0077NR	REAL
NT0081NR	OTTESEN-JUNIOR
NT0081V	BAKKEVÆRING
NT0082NR	ALBING
NT0082V	JULIAN
NT0088V	MALO
NT0093V	JULIE
NT0094V	SNEFJELL
NT0096V	ØYVÆR
NT0098V	GRIMSHOLM
NT0100V	STIG HARRY
NT0112V	BAKKETIND
NT0120V	VESTHAV
NT0121LA	LEKAVÆRING
NT0124V	STORVIK
NT0125NR	OLE J
NT0129NR	NORDLYS
NT0129V	SANNAJENTA
NT0130NR	STEINSØY
NT0130V	NYHAV
NT0138V	SATURN
NT0141V	SIGNAL
NT0151V	SØRØYA
NT0157V	NORDLYS
NT0161V	AUNSKJÆR
NT0164V	ANDERØY
NT0169V	SNEFJELL

YAG646	
YAG693	
YAG785	
YAG915	
YAG950	
YAG991	
YAG994	
YAH016	
YAH021	
YAH025	
YAH038	
YAH142	
YAH166	
YAH208	
YAH225	
YAH306	
ZAA614	
ZAE177	
ZAQ478	
ZAQ938	
ZAY468	
ZBB260	
ZBG010	
ZBG412	
ZBG443	
Ø0001M	GLAD
Ø0020S	NELLA
Ø0022S	MISTRAL
Ø0025F	MORILD
Ø0161F	IDA

F0666NK	SJØBRIS	**NT0175NR**	HAVBUEN
F0700H	JSF-SENIOR	**NT0181V**	BAKKETIND
F0700NK	VÅRBUEN	**NT0200V**	TRØNDERKARI
F0777NK	SAGA K	**NT0208V**	HAVLINER
F2017UK	UNGDOMSKVOTE	**NT0226V**	LANGHOLMSUND
F9300NK	SKOLEBÅT	**NT0233V**	ODIN OLIVER
FAD051		**NT0242V**	SULATIND
FAO001		**NT0246V**	VITO
FAS324		**NT0255V**	KRISTIN
GR6500	SISIMIUT	**NT0260V**	JANNE-LISE
GR654	POLAR PRINCESS	**NT0300V**	STIG HARRY
H0001V	ELINA	**NT0338V**	RÅSAGUTT
H0002R	IDEFIKS	**NT0346V**	BRATTSKJÆR
H0002T	AUSTBRIS	**NT0364V**	BALDUSKA
H0003MF	ALFEN	**NT0369V**	VIKNABUEN
H0004BN	TRYM	**NT0400V**	EMMA
H0004K	SJOHAV	**NT0401NR**	LOPPA
H0004T	IRENE	**NT0401V**	SØRSTEIN
H0006B	NERA	**NT0413NR**	KJELL
H0006S	EIRIK	**NT2017UK**	UNGDOMSKVOTE
H0007S	RANDI	**NT9000S**	
H0007T	VÅGAR	**NT9000V**	
H0010KM	VIKING	**NT9000VN**	
H0011K	ØYSOL	**O0004O**	LEIK
H0013B	BRANDASUND	**O0025O**	BUKKØY
H0014F	JONE	**PAC353**	
H0015K	HARTHO	**PAC356**	
H0016BN	KODIAK	**PAC370**	
H0018S	EIRIK	**PAC373**	
H0019B	VIKAFJORD	**R0001SO**	KURTI
H0020BN	HERFINDAL	**R0002F**	SELVÅGBUEN
H0020K	NORDLYS	**R0002FD**	ÅS SJØEN
H0021BN	GULLVIK	**R0002SK**	BUEN
H0021S	BOGASUND	**R0002SO**	CARISA
H0024B	VIKA	**R0003K**	VIKINGBANK
H0029R	BRAGD RADØY	**R0003SO**	HAVDUR
H0029S	TRELLEVIK	**R0004HM**	SLOEKSPRESSEN
H0030K	NORDLYS	**R0004ST**	KRISTINA
H0034AV	GARDAR	**R0005SO**	ROTTFISK
H0036K	LANDAVÅG	**R0007S**	ÅSGUTT
H0036S	NYHAV	**R0007SO**	SOLAGUTT
H0039AV	APOLLO III	**R0012K**	KRISTIN
H0039K	TORESON	**R0014S**	COYGFISK
H0040AV	FLIPPER	**R0017K**	DRISTIG

H0043AV	ZANDER	**R0020V**	STRAUMBAS
H0047BN	SKYE	**R0021ES**	RITA S
H0051K	BENJACO	**R0022ST**	SELVÅGBUEN
H0055FE	SØRØY	**R0025S**	BELLSUND
H0058S	SANGOLT	**R0038SO**	BOIE
H0059B	VESLEFRIKK	**R0048U**	DIMANN
H0060S	STORSTRIL	**R0050K**	QUO VADIS
H0065AV	RABBAGUTT	**R0056K**	MANNESBUEN
H0065B	STARIS	**R0066SK**	SALONICA
H0065FJ	OLAUG	**R0068H**	CONVOY
H0067BN	TINUS	**R0178K**	HELENA
H0068AV	TRIO	**R0180K**	LOBSTER
H0074B	NORMANN	**RAE306**	
H0080AV	SELBJØRNSFJORD	**RAM396**	
H0081AV	MYLING	**RAN633**	
H0081B	KYRHOLM	**RAP208**	
H0084B	KASTEVIK	**RAY932**	
H0086AV	KALSØYJENTO	**RBA219**	
H0087BN	TIME BANDIT	**RBF920**	
H0087K	SVERDFISK	**RBS859**	
H0097AV	KALSØYBAS	**RBX240**	
H0116AV	HEVRØY	**RBY162**	
H0125BN	HAVMANN	**RBY205**	
H0126BN	TARA	**RBZ236**	
H0127B	HAVØRN 2	**RCC684**	
H0131AV	TOR MAGNUS	**RCC954**	
H0146AV	EMMA OLAVA	**RCL785**	
H0149AV	MORILD	**RE70**	KLEIFABERG
H0150AV	ASTRID	**SAC642**	
H0180K	TUNFISK	**SAE192**	
H0214AV	HAVBRIS	**SAH156**	
H0225AV	HAVMANN	**SAI890**	
H0240B	SØRWAAG	**SAK354**	
H0265AV	RABBAGUTT	**SAL479**	
H0288B	HAVLEIK	**SAL523**	
H0402AV	MORTEN EINAR	**SAL974**	
H9300AV	SKOLEFARTØY	**SAM059**	
HAI629		**SAM417**	
HAT091		**SF0001A**	VESTERHAV
IAK060		**SF0001FD**	ROXY
IAR060		**SF0001G**	FRØYBAS
IAV901		**SF0001H**	VÅGHOLM
IAX401		**SF0001SU**	LENDING JUNIOR
IAX638		**SF0003ST**	KEIKO

KBD179
LAE862
LAI131
LAI161
LAI307
LAP398
LBB343
LBE307
LBM885
LBP427
LBP813

SF0006H	ÅFJORD
SF0006S	BRIMØY
SF0010B	FRØYHAV
SF0015SU	LYNGØY
SF0016F	ALDA
SF0017SU	SJARMØR
SF0025SU	LEIK
SF0033G	VIBEKE HELENE
SF0041F	ÆSØYBUEN
SF0044SU	SOLBRIS
SF0045A	BUEFJORD
SF0052B	SMØYSUND
SF0052E	HAVSULA

APPENDIX 8 CLIENT AGREEMENT

On behalf of Norges Fiskarlag, I accept the Publication Certification Report for the Norway North Sea demersal fisheries with the terms and conditions of certification detailed therein. I also confirm that information on fishing activities and scope of certification is up to date and correct.

Name:
Tor Bjørklund Larsen

Signature:
Tor B. Larsen

Place:
Tromsø

Date:
03.06.2018

About DNV GL

Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organizations to advance the safety and sustainability of their business. We provide classification and technical assurance along with software and independent expert advisory services to the maritime, oil and gas, and energy industries. We also provide certification services to customers across a wide range of industries. Operating in more than 100 countries, our 16,000 professionals are dedicated to helping our customers make the world safer, smarter and greener.