PUBLIC CERTIFICATION REPORT FOR THE

Reassessment of the Norway North East Arctic haddock offshore (>12nm) fisheries

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Conformity Assessment Body (CAB)	DNV GL Business Assurance
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Fishery client	Norges Fiskarlag
Assessment Type	2nd reassessment.

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Objective:

The objective of this report is the MSC Fisheries 2nd reassessment of the Norway North East Arctic haddock offshore (>12nm) fishery.

The assessment report timeline is subject to a 6-month extension in accordance with Covid-19 Derogation of 27th March 2020.

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Rev. No.	Date	Reason for Issue	Prepared by	Verified by
0	2019-10-29	Announcement Comment Draft Report	Hans Lassen, Lucia Revenga, Sandhya Chaudhury	Sigrun Bekkevold
1	2020-11-18	Client review & Peer Review Draft Report	Hans Lassen, Lucia Revenga, Sandhya Chaudhury	
2	2021-01-21	Public Comment Draft Report	Hans Lassen, Lucia Revenga, Sandhya Chaudhury	
3	2021-03-17	Final Report	Hans Lassen, Lucia Revenga, Sandhya Chaudhury	Jodi Bostrom
4	2021-04-22	Public Certification Report	Hans Lassen, Lucia Revengal, Sandhya Chaudhury	Jodi Bostrom

1 Contents

2 Glossary

2.1 Abbreviations & acronyms

ACOM	(ICES) Advisory Committee
AFWG	(ICES) Arctic Fisheries Working Group
BSMP	Barents Sea Management Plan
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CPUE	Catch per unit effort
CRISP	Centre for Research-based Innovation in Sustainable fish capture and Pre-processing technology
DoF	Directorate of Fisheries
EEZ	Exclusive Economic Zone
ETP	Endangered, threatened and protected species
EU	European Union
FAM	Fisheries Assessment Methodology
FNI	Fridtjof Nansen Institute
GADGET	Globally applicable Area Disaggregated General Ecosystem Toolbox
GPS	Global Positioning System
HCR	Harvest Control Rule
HelCom	Baltic Marine Environment Protection (Helsinki) Commission
ICES	International Council for the Exploration of the Sea
IMR	Institute for Marine Research (Havforskninsinstituttet), Norway
IPI	Inseparable or practically inseparable catches
IUU	Illegal, unregulated and unreported fishing
IWC	International Whaling Commission
JNRCEP	Joint Norwegian–Russian Commission on Environmental Protection
JNRFC	Joint Norwegian-Russian Fisheries Commission
MAREANO	Marine AREA database for Norwegian waters / Marin AREAldatabase for NOrske kyst- og havområder
MFCA	Ministry of Fisheries and Coastal Affairs
MSC	Marine Stewardship Council
MTIF	Ministry of Trade, Industry and Fisheries
N	Norway
NAFO	Northwest Atlantic Fisheries Organization
NAMMCO	North Atlantic Marine Mammal Commission
NE	North East
NEA	North East Arctic
NEAFC	North East Atlantic Fisheries Commission
NFA	Norwegian Fishermen's Association (Norges Fiskarlag)
NGO	Non – Governmental Organization
NINA	Norsk institutt for naturforskning / The Norwegian nature conservation agency
NORWECOM	NORWegian ECOlogical Model system
NPI	Norwegian Polar Institute
OCEAN-CERTAIN	EU-funded program; OCEAN-CERTAIN – "Ocean Food-web Patrol – Climate Effects: Reducing Targeted Uncertainties with an Interactive Network"
OSPAR	Oslo and Paris Commission for the protection and conservation of the North-East Atlantic and its Resources
PI	Performance Indicator
PISG	Performance Indicator Scoring Guidepost
SAM	State-space assessment model

SG	Scoring Guidepost
SMH	Sensitive marine habitat
TAC	Total Allowable Catch
UK	United Kingdom of Great Britain and Northern Ireland
UNEP	United Nations Environmental Programme
VME	Vulnerable marine ecosystem
VMH	Vulnerable marine habitat
VMS	Vessel monitoring system
VPA	Virtual population analysis
WGBYA	(ICES) Working Group on Bycatch of Protected Species
WGDEC	(ICES) Working Group on Deep-water Ecology
WGDEEP	(ICES) Working Group on the Biology and Assessment of Deep-sea Fisheries Resources
WGECO	Working Group on Ecosystem Effects of Fishing Activities
WGMME	(ICES) Working Group on Marine Mammal Ecology
WGSAM	Working Group on Multispecies Assessment Methods
WGSE	(ICES) Working Group on Seabird Ecology
XSA	Extended survivors' analysis

2.2 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
MSY $B_{trigger}$	Trigger point (SSB) for stock, If SSB is below management action to reduce target fishing mortality is required

3 Executive summary

This report provides information on the 2nd reassessment of the Norway North East Arctic haddock offshore (>12nm) fisheries against Marine Stewardship Council (MSC) Fisheries Standard. The report is prepared by DNV GL for the client Norges Fiskarlag. This fishery is, at present certified - certificate number MSC-F-31209 valid until 26th April 2021.

The assessment was carried out using MSC Fisheries Certification Process v2.1. For the assessment, the default assessment tree in Annex SA from the MSC Fisheries standard v2.01, without any changes, was used.

The assessment covers 5 UoA's targeting haddock >12 nm with trawl, longline, gillnets, Danish seine & hook & line gears. The NEA haddock is indigenous to the North East Arctic and no enhancement takes place.

The second reassessment process was initiated by the announcement on the MSC web-side on the 30th of October 2019.

A comprehensive programme of stakeholder consultations was carried out in December 2nd, 3rd and 9th 2019 as part of this assessment, complemented by a full and thorough review of relevant literature and data sources. On June 16, 2020, six months after the last day of the site visit, ICES released its advice for 2021 including an update of the stock status, ICES (2020a). This update did not suggest any material changes that should trigger an expedited audit.

A rigorous assessment of the MSC Principles and Criteria was undertaken by the assessment team and detailed and fully referenced scoring rationales are provided through the assessment tree scoring tables provided in § 7of this report.

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 Eligibility Date for this assessment is the 26th April 2021 which is also the scheduled date of recertification. The assessment report timeline and the fishery certificate has been subject to a 6-month extension in accordance with Covid-19 Derogation of 27th March 2020.

3.1 Main strengths

Table 1 Main strengths

Principle	Performance Indicator	Comment
Principle 1	PI 1.1.1, PI 1.2.3 and PI 1.2.4 PI 1.2.1 and PI 1.2.2	The assessment of haddock is well founded based on extensive datasets Management is well developed under JNRFC and national regimes
Principle 2	PI 2.1.3, PI 2.4.3, and PI 2.5.3	There are many research institutions working in the area and much information regarding commercial stocks, benthic habitats and ecosystems involved.
Principle 3	PI 3.1.1, PI 3.1.2, PI 3.1.3 PI 3.2.1	The general framework for managing these stocks are well developed and works without major confrontations The Norwegian MCS system is well developed

3.2 Main weaknesses

Table 2 Main weaknesses

Principle	Performance Indicator	Commentgiving stock trends and the stock structure is not clear
Principle 1	PI 1.2.2	The set TACs are not strictly connected to the scientific advice
Principle 2	PI 2.4.1 and 2.4.2	There is uncertainty in the level of overlap of the bottom trawl UoA fishing activity and the designated OSPAR VMEs and Mareano potential VMEs. There are voluntary management measures afforded by other MSC fisheries in the same fishing grounds which have not yet been afforded by the bottom trawl UoA (UoA 1).
Principle 3	PI 3.1.2	Dispute settlement mechanisms are not fully in place, however for this fishery they are not required at this time

3.3 Determination

The principle scores are summarised in Table 7. The Norway North East Arctic haddock offshore (>12nm) fishery achieved a score of 80 or more for each of the three MSC Principles and did not score under 60 for any of the set MSC criteria.

The main findings of the surveillance audit included

- The fisheries are conducted with the same strategy, same gears and covering the same grounds as in previous years
- The fisheries are documented at the same level as in previous years
- The stocks remain healthy
- Management regulations are unchanged
- Control and Enforcement activities and strategies were unchanged and no significant non-compliance has been reported
- Research continues to improve understanding of the biology of the fisheries
- Traceability issues are unchanged
- MCS activities remained as in previous years
- The reassessment for the fishery has 2 conditions and 3 recommendations

Overall, the fishery continues to be fully compliant with the standards set for MSC certification SG 80. Based on the review, analysis and evaluation of available data for the fishery presented in this report the assessment team did not identify any issues that prevent the second reassessment of the Norway North East Arctic haddock offshore (>12nm) fishery and the assessment team recommends the re- certification of the fishery.

4 Report details

4.1 Authorship and peer review details

4.1.1 Assessment team

Table 3 Assessment team

Name	**Sandhya Chaudhury**
Role	Team leader & CoC responsible
Qualifications: SANDHYA CHAUDHURY is a Principal Specialist at DNV GL Business Assurance. She holds a Bachelor degree in Biological sciences 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. She meets the competence criteria in MSC Fisheries Certification process v2.1, and 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 CR v1.3; FCR v2.0, FCP v2.1 and FCP v2.2 She has been Team Leader and 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 has no conflict of interest in relation to the fisheries under assessment.	
Name	**Hans Lassen**
Role	Principle 1 & 3 expert
Qualifications: Hans Lassen is an independent consultant with a M.SC. degree from Copenhagen University and a B.Sc. from Copenhagen Business School. He is the author or co-author of more than 30 scientific papers in prime peer reviewed publications of fisheries related topics. He has more than 40 years' experience with fish stock assessment, formulating and communicating scientific advice for fisheries. He has worked on fish stock assessments, estimating catch composition issues in fisheries, he has worked on cetacean surveys and ecosystem modelling, topics relevant to PI 1 and PI 2, (PI 2), He was involved in all parts of the Greenland fisheries management system representing Greenland Fisheries Research institute, He has been a member of Danish delegations on fisheries negotiations, he has participated in quota allocation workshops, he took part in numerous consultation meetings with the fishing industry partly as scientific advisor and as head of advisory programme at ICES. He conducted regular meetings with RACs now ACs. and worked as consultant for EFCA on management issues, all relevant to PI 3. He chaired a group that contributed to the EC review of the MGP programme: provided input to the 2002 reform of the CFP and been a member of a similar group that reviewed the Danish fisheries management system. He has participated since 2009 as team member in more than 25 MSC assessments and surveillance audits of North Atlantic and Baltic Sea including shrimp, pelagic and demersal fisheries. He carries an MSC certificate as Team leader/Fisheries auditor for CR v1.3, FCR v2.0, FCP v2.1 and FCP v2.2 Furthermore, the certificate includes training as RBF assessor. Also, he carries a certificate as Team leader ISO 19011:2011. Hans has no conflict of interest in relation to the fisheries under assessment.	
Name	**Lucia Revenga**
Role	Principle 2 expert
Qualifications: Lucia studied marine and environmental sciences at Cadiz University (Spain). Her first jobs related to the management of environmental impacts in the shipbuilding industry at the bay of Cadiz, until she started working as a fisheries observer for the Spanish Directorate of Fisheries (MAPAMA). Following this, she worked as a fisheries biologist for the Spanish Oceanographic Institute (IEO) on board both fishing and research vessels, analysing bycatch of bottom trawlers and impacts on benthic habitats. Before becoming an MSC assessor, she worked for 3 years for the Andalusian Institute of research in agriculture and fisheries (IFAPA). She started working as an MSC Principle 2 assessor in 2013 and has since then been involved in twenty MSC assessments, most of them located in Scandinavian countries, for the following fish species: cod, haddock, hake, blue whiting, saithe, tusk, ling, lumpfish, sprat, Norway pout and sand-eels. She has also been involved in MSC assessments for cold water prawn, Norway lobster, krill, blue shell mussels and cockles, and in several pre-assessments for Spanish fisheries.	

Lucia meets the Principle 2, RBF and team leader requirements of FCP v2.2 and ISO 19011.
Lucia has no conflict of interest in relation to the fisheries under assessment.

4.1.2 Peer Reviewers

Peer reviewers for this report have been shortlisted by the MSC Peer Review college and are listed on the MSC website. A summary CV for each is available in the Assessment downloads section of the fishery's entry on the MSC website.

4.2 Version details

Table 4 Fisheries program documents versions

Document	Version number
MSC Fisheries Certification Process	Version 2.1
MSC Fisheries Standard	Version 2.01
MSC General Certification Requirements	Version 2.4.1
Default Assessment Tree – MSC Fisheries Standard – Annex SA	Version 2.01
MSC Reporting Template	Version 1.1

5 Units of Assessment and Certification and results overview

5.1 Units of Assessment and Units of Certification

The fisheries continue to be, to the knowledge of the assessment team, within the scope of the MSC Fisheries standard according to the following determinations:

7.4.2.1: The fisheries do not target, under principle 1, amphibians, reptiles, birds or mammals.
7.4.2.2: The fisheries do not use poisons or explosives.
7.4.2.3: The fisheries are not conducted under a controversial unilateral exemption to an international agreement.
7.4.2.4: The fisheries client has not been prosecuted for forced or child labour violation in the last 2 years.
7.4.2.10: The fisheries client or client group does not include an entity that has been convicted for a shark finning violation in the last 2 years.
7.4.2.11: The fisheries have mechanisms for resolving disputes.
7.4.2.12: The fisheries are not enhanced fisheries.
7.4.2.13: The fisheries are not an Introduced species- based fisheries.
7.12: The fishery is within the scope of the MSC Fisheries Standard.

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, 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 the fisheries in this assessment are specified in Table 5.

Table 5 Units of Assessment (UoA)- Northeast arctic haddock (>12nm) fishery

UoA 1	Description
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North ast Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters
Harvest method / gear	Trawl
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoA 2	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12 nm) & Russian Fishing zones and International waters
Harvest method / gear	Longline

Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoA 3	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters.
Harvest method / gear	Gillnet
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoA 4	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters
Harvest method / gear	Danish seine
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoA 5	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters
Harvest method / gear	Hook & line
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.

5.2 Units of Certification

The Unit of certification is the unit entitled to receive an MSC certificate.
The MSC FCP v2.1 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 types) pursuing that stock and any fleets, groups of vessels, or individual vessels of other fishing operators.”
The proposed Unit of Certification for the fisheries in this assessment is provided in Table 6.

Table 6 Units of Certification (UoC) – Northeast Arctic haddock (>12nm) fishery

UoC 1	Description
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters
Harvest method / gear	Trawl
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoC 2	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters
Harvest method / gear	Longline
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoC 3	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters
Harvest method / gear	Gillnet
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoC 4	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters

Harvest method / gear	Danish seine
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.
UoC 5	**Description**
Species	Atlantic haddock *(Melangrammus aeglefinus)*
Stock	North East Arctic haddock
Geographical area	**Stock region:** North East Arctic **Common name of the body of water:** North East Arctic ocean **FAO area** 27 **Local fisheries management area:** ICES sub areas 1 and 2, Norwegian (>12nm) & Russian Fishing zones and International waters
Harvest method / gear	Hook & line
Management	Joint Norwegian-Russian Fisheries Commission & Norwegian Authorities
Client group	Norges Fiskarlag on behalf of the entire Norwegian Fleet.
Other eligible fishers	The entire Norwegian fleet is included in the Unit of Certification, no other eligible fishers have been identified.

5.3 Assessment results overview

5.3.1 Determination, formal conclusion and agreement

The fishery continues to be fully compliant with the standards set for MSC certification. Based on the review, analysis and evaluation of available data for the fishery presented in this report the assessment team did not identify any issues that prevent the second reassessment of the Norway North East Arctic haddock offshore (>12nm) fishery and the assessment team recommends the re- certification of the fishery.

The Technical Reviewer at DNV adheres to the recommendation of the assessment team and approves the recertification of the Norway NEA haddock offshore (>12nm) fishery for the client Norges Fiskarlag (Norwegian Fishermen's Association).

5.3.2 Principle level scores

Table 7 Principle level scores – North East Arctic haddock offshore (>12nm) fishery

Principle	UoC 1 Trawl	UoC 2 Longline	UoC 3 Gillnet	UoC 4 Danish Seine	UoC 5 Jiggings
Principle 1 – Target species	**97.5**				
Principle 2 – Ecosystem impacts	**84.0**	**87.7**	**87.7**	**85.7**	**87.7**
Principle 3 – Management system	**96.7**				

5.3.3 Summary of conditions

Table 8 Summary of conditions

Condition number	Condition	Performance Indicator (PI)	Related to previous condition?
1 (UoA 1)	The Client shall provide evidence that the UoA 1 fishery (trawl) are highly unlikely to reduce structure and function of the vulnerable biotopes to a point where there would be serious or irreversible harm (i.e. are highly unlikely (<30th %ile) to cause in the potential VME habitats to below 80% of their current status).	2.4.1b	**No**
2 (UoA 1)	The client shall provide evidence that the UoA 1 (trawl) meets the SG80 requirements that there is some quantitative evidence that the UoA complies with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	2.4.2d	**No**

5.3.4 Recommendations

Table 9 Summary of Recommendations

Recommendation number	Recommendation	Performance indicator
1	It is recommended that the recording of non-fatal interactions with out-of-scope species is implemented, in order to better quantify the effects that different UoAs have on the different possible out of scope species.	2.2.2a
2	It is recommended that the client estimates the footprint and impact of all gear types on VMEs.	2.4.1b

Recommendation number	Recommendation	Performance indicator
3	It is recommended that the client works towards the alignment of regulations J-61-2019 and J-10-2021 in relation to reporting of encounters with living corals and sponges.	2.4.2a

6 Traceability and eligibility

6.1 Eligibility date

Products from the certified fishery will continue to be eligible to be sold as MSC certified or bear the MSC ecolabel from 26th April 2021.

The eligibility date is the date of the re-certification of the fishery.

The traceability and segregation systems in the fishery are well implemented.

6.2 Traceability within the fishery

There is a sufficiently effective system of tracking, tracing and segregation in the Norway NEA haddock offshore (>12nm) fishery so as to ensure that all haddock products originating from the certified fishery and sold as certified could be identified prior to or at the point of landing.

6.2.1 Management of fishery activities: monitoring, control and surveillance:

There has been no change in the practice of the fleet since the last reassessment (PCR dt. 6th October 2015). Licenses are issued by the Directorate of Fisheries and specify details of the vessels, permissions, etc. Norwegian vessels are required to report to the Directorate of Fisheries (DOF) with ERS in accordance with Regulations on position reporting and electronic reporting for Norwegian fishing vessels.

Monitoring, control and surveillance is a shared responsibility with close collaboration between the Directorate of Fisheries, the Coast Guard and the regional sales organizations. 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.
Real time VMS monitoring of catch area is mandatory. All vessels are monitored by the Directorate of Fisheries through VMS data and every catch is identified by catch area thereby validating certified status of catch.
DoF has access to real-time catch data through the electronic log books.

The Directorate of Fisheries also 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. In accordance with the regulation implemented in 2015, catches are recorded using an “app” on smartphones, which also provide fishing location in a similar way to VMS on the larger vessels.

All Norwegian vessels in this fishery are therefore obliged to carry VMS on board the vessels and to log in the electronic logbook when the fishing operation begins. The Directorate of Fisheries monitors this data and can distinguish, real time, not only where the vessels are but also if the vessels are fishing or not as well as catch details, including catch locations. Norges Fiskarlag can request anonymized tracking data from the Directorate of Fisheries, if required.
All vessels are also required to complete pre-filled delivery notes and set correct quantity and size distribution in accordance with requirements from Directorate of Fisheries.

6.2.2 Fishery activities

All methods of harvesting, in this fishery, are covered in this assessment and therefore using gears that are not part of the UoC does not occur.
Vessels included in the UoC rarely fish outside the UoC geographic area on the same trip. Even if it does occur the frequency is negligible. They may, in other parts of the year or according to their own priorities, participate in other fisheries outside the UoC geographical area.

Vessels report start of catch with catch estimates via ERS to DoF while at sea. The sales organizations have the authority (specified in the Regulations) to stop/divert fishing operations already at this stage, if not found complaint to Regulations. The risk of mixing between certified and non-certified catch during storage on board the vessels is very low.

6.2.3 Risk of fishing outside the unit of certification

There is no risk of vessels fishing outside the unit of certification for this fishery are rare, in reality negligible. In such instance this would be vessels fishing both inside and outside of 12 nm. A system for separating catches inside or outside 12 nm is already well-established in the Norwegian reporting system. All catches are marked on landing notes and sales notes according to whether they are caught in the “ocean” (outside 12 nm) or “coast” (inside 12 nm). This allows for segregation in subsequent supply chains.

All vessels are monitored by the Directorate of Fisheries through VMS data. The client has access to tracking data on request, and organizational and peer pressure in addition to official control contributes to minimizing the possibility of fishing outside the unit of certification. Catch details including catch locations are logged real time.

6.2.4 At-sea processing

At sea processing on-board the Norwegian vessels, from this fishery, and included in the scope of certification is mainly the production of whole chilled fresh fish, headed and gutted frozen fish, salted and dried fish, frozen blocks, frozen fillets and by-products (bellyflaps, heads, tongues, cheeks, roe, liver and trimmings). All of the on-board processing results in products which are clearly identified with batch numbers, identifying the vessel, area of catch and the species. Thus, the risk of mixing between certified and non-certified product during processing and storage on board is nearly negligibile.

Haddock from this fishery is also landed as unprocessed catch. All catches are subject to controls at landing.

The risk of mixing between certified and non-certified product during storage is nearly negligible as the products are well labelled.

Production of fish-oil and fishmeal, on- board the vessels, is from unspecified fish and require separate CoC certification.

6.2.5 Transport

Most vessels handle other non-certified species during transport, storage, processing, landing and sale. The risk of mixing between certified and non-certified product during transport and handling activities is low as the other species are identifiable and the products are appropriately labelled.

6.2.6 Transhipping

There is no transhipment at sea activities involved in the Norwegian haddock fishery.

6.2.7 Sale

All sales of NEA haddock, for catches by vessels in the Norwegian fleet and covered by this certification, is done through the sales organizations. Direct sales from vessel to buyer is also done through the sales organization, as they get a permit and all the paperwork goes through the sales organizations. Fish is sold either through auctions organized by the sales organizations or directly from the vessel to the buyer. In both cases the same requirements for reporting apply.

The sales organizations are required to record all landings of fish in Norway. All relevant information on catch is provided to the sales organizations on a pre-delivery note. 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 DoF.

Catch certificate is mandatory for export to EU. Norges Sildesalgslag has the responsibility for the catch certificate for all Norwegian fisheries through a separate company (Catch Certificate SA, https://www.catchcertificate.no/). The catch certificate accompanies the delivery note from the vessel. Buyers can access and extract catch certificates electronically. MSC fishery certificate number is provided on invoices which are issued by the sales organizations. The fish changes ownership from vessel or freezer storage to processing plant or traders.

Sales organizations are responsible for invoicing and settlement to fishermen based on electronically signed delivery notes which are made available to the sales organizations after landing. Purchaser name is included in these delivery note.

The sales organizations perform all transactions which are logged and publicly available but the sales organizations do not take ownership of the product or handle the products. They act solely as an intermediary between the vessel owners and the buyers. The client, Norges Fiskarlag (The Norwegian Fishermen's Association) was founded in 1926 and is based on memberships in local and regional fishermen's associations. The association has a total of 110 local chapters and two semi-independent group organizations with approximately 4300 members from across the country. It has 7 regional associations and 2 group- organizations all of which are part of the client group. The sales organizations are owned by fishermen and boat-owners (although details of the mechanisms that form the electoral basis may vary). The sales organizations are, therefore, all a part of the "MSC client group project" and are together with NFA (and the Norwegian Seafood Council) bound by contract to perform the certifications and provide financing for direct and indirect costs.

The sales organizations are :
- Norges Råfisklag
- Surofi
- Vest-Norges Fiskesalslag
- Fiskehav (Rogaland Fiskesalgslag & Skagerakfisk have merged into a single organization).

6.2.8 Points of landing

Landing sites are mainly in Norway, with inspections by DoF and sales organization as described above.
Landing sites are the buyers/processing sites. Freezer storage facilities, that do not take ownership of the products, are common for frozen products. There is no tampering of the product in these facilities.

Landing vessels are identified for being covered by MSC certification at landing. Sampling is done at the landing ports once the fish is landed. All catches are subject to controls at landing. Vessels must complete the pre-filled delivery note and set correct quantity and size distribution in accordance with requirements from DoF.

The labels that identify the products with batch numbers, vessel Identification, catch area and species follow during storage on land before sale. The risk of mixing between certified and non-certified product during handling activities is therefore low.

After landing, the sales notes are issued immediately for fresh landings. For frozen landings a landing note is issued immediately as a temporary document and sales notes are issued later as and when the fish is sold.
For fresh landings, change of ownership takes place when the fish change ownership from vessel to processing plant, regardless of the fish being sold by the sales organizations or directly by the vessel.
For landings of frozen products to freezer storage, change of ownership takes place when a purchase at some point has been confirmed and sales notes have been issued. Up until this point, the fish remains the property of the fisher. Freezer storage facilities, as landing sites for frozen products, do not tamper with the product- they are only box in-box out facilities.

The main buyers/processing sites are producers and traders in Norway – updated list of buyers/landing sites is available on the MSC website – see §9.12.

In rare cases product may also be landed outside of Norway, e.g. in Denmark, Scotland and Shetland. In these cases, landing information is transmitted to Norwegian Authorities who cooperate with national control bodies at points of landing to ensure correct information. Norway is contracting party to the NEAFC Port-State Control regime, which require that port state authorities ascertain with the relevant flag state that catches intended to be landed are within the total quota of the vessel in question. Each Contracting Party shall carry out inspections of at least 15% of landings or transhipments in its ports during each reporting year.

6.2.9 Reporting

Norwegian vessels are required to have electronic logbooks, where real-time catch data are forwarded to the Directorate of Fisheries. 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.

For all landings, catches are delivered to landing sites accompanied by a “sluttseddel” (sales note) and landing note which specify catch area, recorded by the fishers and verified by the landing sites. MSC certified status is documented on the “sluttseddel” based on the species and catch area. This sales note is the basis for sales invoicing.
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. 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.

For the very rare and negligible landings outside Norway the following steps are also documented:

i. Prior notification for Norwegian fishing vessels referred to in Commission Regulation No 1010/2009 Article 2 (2)- refers to catch certificate number.
ii. Pre-landing declaration for Norwegian fishing vessels referred to in Commission Regulation No 1010/2009 Article 3(1)- refers to catch certificate number & catch area (NO-4242)
iii. Landing note: This document provides detailed information about catch taken and reported by a specific Norwegian fishing vessel and refers to a catch certificate number.
iv. Landings of NEA cod & haddock outside Norway are regularly reported to DoF in accordance with the control agreements with the countries in question, landings are also reported directly to the sales organization
v. The sales organisations also assists direct landings outside Norway with NEAFC reporting. Both Norwegian and foreign control authorities are involved at these landings.

Table 10 Identification and traceability links in documents from fishery activities

		Label	Landing document	Sales document
1	Species	Yes	Yes	Yes
2	Catch date	Yes	Yes	Yes
3	Vessel name	Yes	Yes	Yes
4	Catch area	Yes	Yes - detailed	Yes - detailed
5	Production approval number	Yes	Yes	No
6	Gear	Yes	Yes	Yes
7	Product	Yes	Yes	Yes
8	Certified status	No	Yes	Yes

Table 11 Traceability within the fishery

Factor	Description
Will the fishery use gears that are not part of the Unit of Certification (UoC)? If Yes, please describe: - If this may occur on the same trip, on the same vessels, or during the same season; - How any risks are mitigated.	There is no gear mixing for the vessels /trips in the fishery under assessment. All methods of harvesting in the UoC are covered in this assessment. Not assessed is mainly bycatch in other fisheries e.g. purse seine for pelagic fisheries. The certificate covers the entire Norwegian fleet fishing for these species within the UoC
Will vessels in the UoC also fish outside the UoC geographic area? If Yes, please describe: - If this may occur on the same trip;	Vessels fishing outside the UoC is very rare, in reality, negligible. In such instance this would be vessels fishing both inside and outside of 12 nm. A system for separating catches inside or outside 12 nm is already well-established in the Norwegian reporting system. All catches are marked

- How any risks are mitigated.	on landing notes and sales notes according to whether they are caught in the “ocean” (outside 12 nm) or “coast” (inside 12 nm). This allows for segregation in subsequent supply chains. All Norwegian vessels in this fishery 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, real time, not only where the vessels are but also if the vessels are fishing or not.
Do the fishery client members ever handle certified and non-certified products during any of the activities covered by the fishery certificate? This refers to both at-sea activities and on-land activities. - Transport - Storage - Processing - Landing - Auction If Yes, please describe how any risks are mitigated.	Most members handle other non-certified species during all of these activities. 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 but can also be sold in Denmark, Scotland and Shetland. There are good co-operation systems between Norway and these countries and information on compliance and enforcement is shared among the different enforcement administrations. Robustness of these enforcement systems is expected to be high. All products on-board are clearly identified with batch numbers, identifying the vessel, area of catch and the species. These labels follow also during storage on land before sale. The risk of mixing between certified and non-certified catch during storage, transport and handling activities is low.
Does transhipment occur within the fishery? If Yes, please describe: - If transhipment takes place at-sea, in port, or both; - If the transhipment vessel may handle product from outside the UoC; - How any risks are mitigated.	Transhipment does not take place in these fisheries. This is monitored by the Directorate of Fisheries through the VMS.
Are there any other risks of mixing or substitution between certified and non-certified fish? If Yes, please describe how any risks are mitigated.	None identified.

6.3 Eligibility to enter further chains of custody

The scope of the MSC Fishery certification remains unchanged and is up to the point of landing and Chain of Custody commences from the point of landing and sale.

There are no changes to the systems of tracking and tracing in the fishery since the PCR of October 2015, which are considered sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery.
Norway North East Arctic haddock offshore (>12nm) and its products landed by Norwegian vessels, involved in this fishery, 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. The list of vessels is updated at every assessment and is an appendix to this report (PCR).

There is no change to the products, produced on-board the vessels and included in the scope of certification: whole chilled fresh fish, headed and gutted frozen fish, salted and dried fish, frozen blocks, frozen fillets and by-products (bellyflaps, heads, tongues, cheeks, roe, liver and trimmings).

Production of fish-oil and fishmeal, on board the vessels, is from unspecified fish and require separate CoC certification.
The main market remains unchanged and are producers and traders in Norway.

Table 12 Eligibility to enter further chains of custody

Conclusion and determination	Norway NEA haddock offshore (>12nm) products, fished in the certified UoC, will be eligible to enter further certified chains of custody and be sold as MSC certified or carry the MSC ecolabel.
List of parties, or category of parties, eligible to use the fishery certificate and sell product as MSC certified	The entire Norwegian fleet in the defined geographical areas has been included in the unit of Certification and are eligible to use the fishery certificate and sell the product as MSC certified
Point of intended change of ownership of product	Point of change of ownership of product is when fish are landed from vessel to processing plant (landing site).
List of eligible landing points (if relevant)	Landing sites are mainly in Norway, with inspections by DoF and sales organizations. Products may, though very infrequently, also be landed outside of Norway, e.g. in Denmark, Scotland and Shetland. Landing sites are listed in § 9.12
Point from which subsequent Chain of Custody is required	To be eligible to carry the MSC logo, fish must enter into separate MSC Chain of custody certification commencing sale which is point of change of ownership at landing site (processing plants).

6.4 Eligibility of IPI stock(s) to enter further chains of custody

The Norwegian NEA haddock offshore (>12nm) is taken in fisheries where all catches are identified and segregated by species while on board and later on landed in separate containers per species. The fishery takes place in waters outside 12 nm, and therefore Norwegian coastal cod is not present in the catch. There are no IPI stocks to consider for this assessment.

Table 13 Identification of cause for inseparability

Ref.	Clause/ Requirement	IPI- Y/N	Observation
FCP v2.1 7.5.8.1	The CAB shall only recognise stock(s) as being an IPI stock, where the inseparability arises because either:		
a	The non-target catch is practicably indistinguishable during normal fishing operations (i.e., the catch is from a stock of the same species or a closely related species)	All UoA's N	NEA haddock offshore (>12nm) is targeted species. All other species in the catch are distinguishable during normal fishing operations.
b	When distinguishable, it is not commercially feasible to separate due to the practical operation of the fishery that would require significant modification to existing harvesting and processing methods.	All UoA's N	All non-targeted species are separated from the catch of targeted NEA haddock offshore (>12nm)
c	The total combined proportion of catches from the IPI stock(s) do not exceed 15% by weight of the total combined catches of target and IPI stock(s) for the UoA;	All UoA's N/A	All non-targeted species are distinguishable and segregated. There are no IPI stocks to consider in any UoA.
d	The stocks are not ETP species	N	There are no IPI stocks to consider.
e	The stocks are not certified separately	N	There are no IPI stocks to consider. The present assessment covers NEA haddock >12nm as Principle 1 species.

7 Scoring

7.1 Summary of Performance Indicator level score

Table 14 Principle scores NEA haddock offshore (>12nm)

Overall weighted Principle-level scores	UoA1	UoA2	UoA3	UoA4	UoA5
Principle 1 - Target species	97.5				
Principle 2 - Ecosystem	84.0	87.3	87.3	86	87.3
Principle 3 - Management	96				

Table 15 Performance Indicator level scores NEA haddock offshore (>12nm)

Principle	Component	Performance Indicator (PI)		UoC 1	UoC 2	UoC 3	UoC 4	UoC 5
One	Outcome	1.1.1	Stock status	100	100	100	100	100
		1.1.2	Stock rebuilding					
	Management	1.2.1	Harvest strategy	100	100	100	100	100
		1.2.2	Harvest control rules & tools	95	95	95	95	95
		1.2.3	Information & monitoring	90	90	90	90	90
		1.2.4	Assessment of stock status	100	100	100	100	100
Two	Primary species	2.1.1	Outcome	95	95	95	95	95
		2.1.2	Management strategy	90	90	90	90	90
		2.1.3	Information/Monitoring	100	100	100	100	100
	Secondary species	2.2.1	Outcome	80	80	80	80	80
		2.2.2	Management strategy	85	85	85	85	85
		2.2.3	Information/Monitoring	**80**	**80**	**80**	**80**	**80**
	ETP species	2.3.1	Outcome	80	80	80	80	80
		2.3.2	Management strategy	85	85	85	85	85
		2.3.3	Information strategy	80	80	80	80	80
	Habitats	2.4.1	Outcome	70	**95**	**95**	**85**	**95**
		2.4.2	Management strategy	75	100	100	90	100
		2.4.3	Information	80	80	80	80	80
	Ecosystem	2.5.1	Outcome	80	80	80	80	80
		2.5.2	Management	80	80	80	80	80
		2.5.3	Information	100	100	100	100	100
Three	Governance and policy	3.1.1	Legal &/or customary framework	**95**	**95**	**95**	**95**	**95**
		3.1.2	Consultation, roles & responsibilities	100	100	100	100	100
		3.1.3	Long term objectives	100	100	100	100	100
	Fishery specific management system	3.2.1	Fishery specific objectives	100	100	100	100	100
		3.2.2	Decision making processes	100	100	100	100	100
		3.2.3	Compliance & enforcement	95	95	95	95	95
		3.2.4	Monitoring & management performance evaluation	80	80	80	80	80

7.2 Principle 1

7.2.1 Principle 1 background

The haddock targeted is found in the North East Arctic Ocean, within ICES Sub-Areas 1 and 2. The stock is caught by trawl, longline, gill-net, Danish seine and hook and line gears, in general in mixed fisheries for cod and haddock taking saithe as major by-catch species. Two species of redfish, Sebastes norvegicus and S. mentella are also taken as by-catch together with a number of other demersal species, e.g. ling and tusk.

The haddock stock is assessed annually through the ICES system. The stock assessment relies on an age-based analytical assessment (SAM ICES 2019c) that uses catches and survey results in the model and in the forecast. The stock assessment was benchmarked in 2015 at which time the SAM model was introduced as standard assessment tool for the NEA stocks.

The cod and haddock stocks are managed by the Joint Norwegian-Russian Fisheries Commission based on annual quotas (TAC). The overall quotas for cod and haddock are decided based on agreed management plans, see ICES (2019a) and ICES (2019b).

In addition to quotas, the fisheries are regulated by a minimum catch size, a minimum mesh size in trawls and Danish seines, a maximum by-catch of undersized fish, a maximum by-catch of non-target species, closure of areas having high densities of juveniles and by seasonal and area restrictions. Since 1997 sorting grids have been mandatory for all trawl fisheries in most of the Barents Sea and Svalbard area. From 2011 the minimum mesh size, for bottom trawl fisheries for cod and haddock for the whole of the Barents Sea, changed to 130mm. Minimum landing size was also changed, from 1 January 2011, to 44cm in all areas. These changes were part of a harmonisation of the regulations in each EEZ and included changes to the percentage of undersized fish permitted in the catch. The fishery operates under a strictly enforced discard ban.

There are only few changes in the fisheries since the reassessment in 2015. The major change was the adoption of revised management plans for cod and haddock in 2016. The revised plans were evaluated by ICES and found to be precautionary.

7.2.2 Catch profiles

Catch profiles are presented in the following tables: Table 18, Table 19,Table 20, Table 21, Table 22 and Table 23

7.2.3 Total Allowable Catch (TAC) and catch data

Table 16 Total Allowable Catch (TAC) and catch data

			Haddock (MT)
TAC	Year	**2019**	**172,000**
UoA share of TAC	Year	**2019**	**172,000**
UoC share of TAC	Year	**2019**	**86.689**
Total green weight catch by UoC	Year (most recent)	**2018**	**93,839**
Total green weight catch by UoC	Year (second most recent)	**2017**	**113,132**

7.2.4 North East Arctic Haddock

a. Stock status

The spawning-stock biomass (SSB) has been above MSY Btrigger since 1989. Due to the strong recruitment-at-age 3 in 2007–2009 (2004–2006 year classes) the stock reached an all-time high level in 2013. SSB is now decreasing but remains well above MSY Btrigger. Fishing mortality (F) has increased since 2013 and was above FMSY in 2017 and 2018.

Table 17 Northeast Arctic Haddock. Stock status. Source: ICES (2019) NEA Haddock advice Table 1

Haddock in subareas 1 and 2. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2016	2017	2018		2017	2018	2019	
Maximum sustainable yield	F_{MSY}	✓	✗	✗	Above	MSY $B_{trigger}$	✓	✓	✓ Above trigger
Precautionary approach	F_{pa},F_{lim}	✓	✓	✓	Harvested sustainably	B_{pa},B_{lim}	✓	✓	✓ Full reproductive capacity
Management plan	F_{MGT}	✓	✗	✗	Above	B_{MGT}	✓	✓	✓ Above

b. Stock Management

Stock management is based on the Management Plan adopted by JNRFC in October 2016, See ICES (2019) NEA Haddock advice Table 4. The Plan includes provision for reducing the target fishing mortality if the SSB falls below Bpa which is above Blim).

c. Stock assessment

ICES provides annual stock assessment and advice. Stock assessment is based on an Age-based analytical assessment (SAM; ICES, 2019a) that uses catches in the model and in the forecast. The database on which the stock assessment is based includes: Commercial catches (international landings, ages and length frequencies from catch sampling); four survey indices (Joint bottom trawl survey Barents Sea, Feb–Mar (BS-NoRu-Q1 (BTr)); Joint acoustic survey Barents Sea and Lofoten, Feb–Mar (BS-NoRu-Q1 (Aco)); Russian bottom trawl survey, October– December (RU-BTr-Q4)); Joint Ecosystem survey (Eco-NoRu-Q3 (Btr)); annual maturity data from the four surveys; natural mortalities from cod consumption of ages 3–6 haddock are used from 1984.

7.2.5 Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status

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	Stock status relative to recruitment impairment			
	Guide post	It is **likely** that the stock is above the point where recruitment would be impaired (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree of certainty** that the stock is above the PRI.
	Haddock Met?	**Yes**	**Yes**	**Yes**
Rationale				

ICES assesses that fishing pressure on the stock is above F_{MSY} but below F_{pa} and F_{lim}, and the spawning stock size is above MSY $B_{trigger}$, B_{pa}, and B_{lim}. The evaluation is based on the SSB.
The stock assessment is based on Age-based analytical assessment (SAM; ICES, 2019c) that uses catches and survey results in the model and in the forecast. The results include estimates of confidence limits based on lognormal distribution of the SSB and F estimates. The calculations presented below finds that **SG60, SG80 and SG100 are all met.**

The calculations of the relevant limits are

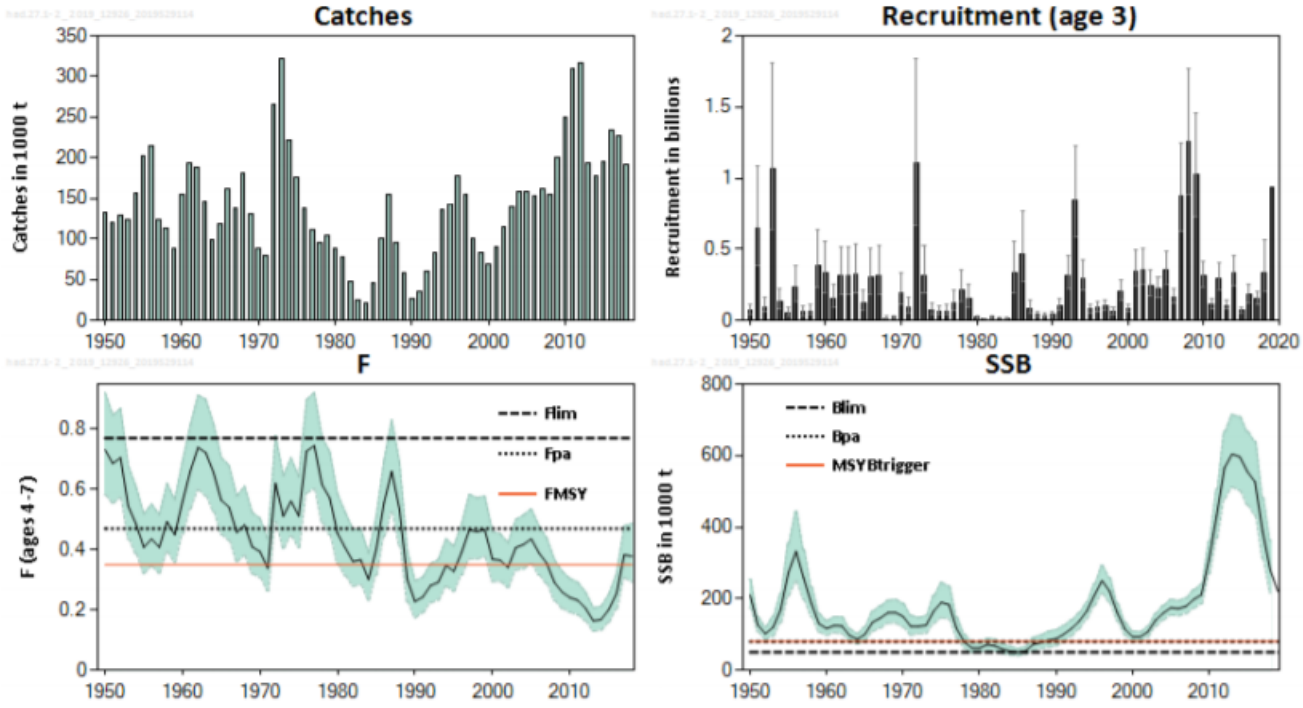
			Limit (kt)	
Blim			50	
Stdev SSB	0.131291			
	Probability	Estimate (kt)		Conclusion
SSB(2018)	0.5	280	280	
SSB(2018)	0.025	216	216	
SSB(2018)	0.975	362	362	
	0.3		261	‘Likely’ is met
	0.2		251	‘Highly likely’ is met
	0.05		226	‘High degree of certainty’ is met

b	**Stock status in relation to achievement of Maximum Sustainable Yield (MSY)**			
	Guide post		**The stock is at or fluctuating around a level consistent with MSY.**	**There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.**
	NEA Haddock Met?		**Yes**	**Yes**
Rationale				

BMSY is not available for the haddock stock. MSY Btrigger is set at 80 kt. The FMSY is set at 0.40.
ICES defines MSY B trigger as the lower bound of SSB fluctuations around B_{MSY} and assuming a lognormal distribution of the variation of SSB under constant fishing pressure and a CV of 20% (S.E. = 0.2) and identifying the MSY Btrigger as the 5% low boundary implies an B_{MSY} around 650 kt based on a MSY Btrigger = 460 kt. This is consistent with the MSC interpretation 30/08/2018.

In discussing the fluctuation around MSY we consider the average over 1-2 generations rather than the point estimates for 2017-2018. The generation time is around 12 years (age at first maturity + 1/M). The average 2004-2018 is well above the approximated B_{MSY} of 650 kt. **SG80 is met.**

The lower 0.025 probability SSB limit (shown at the graph below) is well above the MSY proxy and has been so for the last 10 years. **SG100 is met.**



References

ICES. 2015. Report of the Benchmark Workshop on Arctic Stocks (WKARCT), 26–30 January 2015, ICES Headquarters, Denmark. ICES CM 2015/ACOM:30. 126 pp.

ICES. 2019. Arctic Fisheries Working Group (AFWG). ICES Scientific Reports. 1:30. 934 pp. http://doi.org/10.17895/ices.pub.5292

ICES. 2019. Haddock (Melanogrammus aeglefinus) in subareas 1 and 2 (Northeast Arctic). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, had.27.1-2, https://doi.org/10.17895/ices.advice.4713

DNV GL. 2015. RE-ASSESSMENT REPORT for the Norway North East Arctic cod and haddock fishery Norges Fiskarlag. DNV GL report 2014-013, Rev. 4. Authors: Nichols John, Lockwood Stephen, Sverdrup-Jensen Sten, Pedersen Guro Meldre 2015.

MSC interpretation 2018 Scoring stock status against Bmsy for ICES stocks (FCR v2.0 - Annex SA PI 1.1.1) 30-Aug-2018•Knowledge

Stock status relative to reference points

NEA Haddock	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	*Blim* *Flim*	*50 kt* *0.77*	*SSB (2018) = 280 kt* *CI = [216:362] kt* *F(2018) =0.378* *CI = [0.294:0.487]*
Reference point used in scoring stock relative to MSY (SIb)	*MSY Btrigger* *FMSY*	*80 kt* *0.35*	

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**NEA Cod: ≥80** **NEA Haddock: ≥80** **Coastal Cod: 60-79 (RBF)**
Information gap indicator	**Information sufficient to score PI** **Further information sought for Coastal cod (RBF)**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

Evaluation of haddock as LTL stock.

PI 1.1.1A Stock status PISGs applicable to key LTL stocks – Not Scored – Not relevant as haddock is not an LTL species

Haddock Melanogrammus aeglefinus *(see http://www.fishbase.de downloaded 16-11-2020)*. The Melanogrammus family is not on the list of potential key LTL species, FCR 2.0-1 SA 2.2.9 Box SA1.
Haddock in its adult life cycle phase does not meet at least two of the sub criteria in SA2.2.9a.i–iii,
i. A large proportion of the trophic connections in the ecosystem involve this stock, leading to significant predator dependency; Haddock is a top predator
ii. A large volume of energy passing between lower and higher trophic levels passes through this stock; Haddock is a top predator
iii. There are few other species at this trophic level through which energy can be transmitted from lower to higher trophic levels, such that a high proportion of the total energy passing between lower and higher trophic levels passes through this stock (i.e., the ecosystem is 'wasp-waisted'). There are a number of other species at this level e.g. cod (Gadus morhua)

and additionally does not meet the following criteria:

i. The species feeds predominantly on plankton; This does not apply. Haddock feeds mainly on small bottom-living organisms including crustaceans, mollusks, echinoderms, worms and fishes (sand lance, capelin, herring and argentines)
Ii. has a trophic level of about 3 (but potentially ranging from 2 to 4); The tropic level is 4.0 above the criterion
Iii. is characterised by small body size, early maturity, high fecundity and short life span (default values: <30cm long as adults, mean age at maturity <= 2, >10,000 eggs/spawning, maximum age <10 years respectively); and forms dense schools.
Maturity: L_m 34.9 cm,
Max length: 112 cm TL male/unsexed; common length: 35 cm TL male/unsexed; max. published weight: 16.8 kg; max. reported age: 20 years.
In conclusion haddock does not qualify as a key LTL species.

PI 1.1.2 – Stock rebuilding – Not scored – Not Relevant as PI 1.1.1 scored ≥80

PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	Guide post	The harvest strategy is **expected** to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy **work together** towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is **designed** to achieve stock management objectives reflected in PI 1.1.1 SG80.
	NEA Haddock Met?	**Yes**	**Yes**	**Yes**
Rationale				

The overall JNRFC strategy is set in 2004 and includes as objectives
"…the management strategies for cod and haddock should take into account the following:

- conditions for high long-term yield from the stocks
- achievement of year-to-year stability in TACs
- full utilization of all available information on stock development…"

At the 46th meeting of the Joint Russian–Norwegian Fisheries Commission (JNRFC) in October 2016, the previously used management plan was amended, and the current plan is as follows:

- The TAC for the next year will be set at level corresponding to FMSY.
- The TAC should not be changed by more than ±25% compared with the previous year TAC.
- If the spawning stock falls below Bpa, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from FMSY at Bpa to F= 0 at SSB equal to zero. At SSB-levels below Bpa in any of the operational years (current year and a year ahead) there should be no limitations on the year-to year variations in TAC.
- Norway and Russia can transfer to, or borrow from, the following year up to 10% of the country's quota.

ICES evaluated this HCR in 2016 (ICES, 2016) and concluded that it is precautionary.

The JNRFC management is achieving its objectives as evidenced by the current levels of SSB and F. Based on the ICES evaluation and the general experience with this stock for more than 20 years The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80. **SG60 is met**.

The strategy is responsive to stock status through the TAC setting procedure based on annual stock assessments and the elements of the strategy (TAC, technical measures, and MCS) work together towards achieving the stock management objectives that are laid down in the management plan and correspond to those reflected in MSC PI 1.1.1. **SG80 is met.**

The management plan is designed to be responsive to the status of the stock and to maintain fishing mortality and SSB at levels which support the maximum sustainable yield as evidence through the history of the development of the management plans with numerous amendments since the adoption in 2004, the most recent in 2016. **SG100 is met.**

b	**Harvest strategy evaluation**

	Guide post	The harvest strategy is **likely** to work based on prior experience or plausible argument.	The harvest strategy may not have been fully **tested** but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been **fully evaluated** and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	NEA Haddock Met?	**Yes**	**Yes**	**Yes**

Rationale

The harvest strategy is evaluated by ICES and found to be precautionary**.** Furthermore, experience with the management over the recent 15-20 years indicates that the harvest strategy is likely to work. **SG60 is met.**

There is evidence of the effectiveness of the strategy. TAC control rules and the other conservation measures have maintained the SSB above the JNRFC management plan target since 2002. Fishing mortality has been below the management plan target (F0.4) since 2007. The SSB has not been below the biomass limit point since 1989 and has been below the fishing mortality limit reference point since 2001. The harvest strategy has clear rules which effectively reduce the annual TAC if target and limit reference points for SSB are approached. The strategy is clearly designed to set the annual TAC at a level consistent with maintaining the SSB above, and the fishing mortality below, the management plan and MSY targets. The strategy is strongly supported by a raft of technical measures including minimum mesh size regulations, minimum landing size, area closures when juvenile density is high and other area and seasonal restrictions.
The Harvest strategy has been effective for more than a decade and the stocks have been at record high. **SG80 is met.**

The harvest strategy has been evaluated through ICES (2016) and in various forms at earlier occasions. The strategy has been effective for more than a decade and the experience is record high populations, i.e. the harvest strategy is achieving its objectives.

The haddock harvest strategy for stock situations is to set the TAC corresponding to F_{MSY}. The performance of advice vs TAC is shown in the Table below

NE Arctic Haddock	ICES advice (upper limit) tons	JNRFC TAC tons	Catch tons
2015	165,000	223,000	194,756
2016	244,000	244,000	233,183
2017	233,000	233,000	227,588
2018	202,305	202,305	191,276
2019	152,000	172,000	

For 2015 there were in-year revisions of the advice. The 2019 TAC is set based on an expectation of strong incoming haddock year classes,
The fishing mortality estimated for 2017 and 2018 are both slightly above F_{MSY} after a period when the F is well below F_{MSY}.
The performance of the management strategy is fully evaluated ICES (2016) and the stock is at a high level and have been so for more than a decade. **SG100 is met.**

c	**Harvest strategy monitoring**			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	NEA Haddock Met?	**Yes**		

Rationale

The annual ICES assessment is based on data on commercial landings (international landings, ages and length frequencies from catch sampling); four survey indices (RU-BTr-Q4, BS-NoRU-Q1(Aco), BS-NoRu-Q1 (BTr), and Eco-NoRu-Q3 (Btr)); annual maturity data from surveys. For haddock, natural mortalities from cod consumption of ages 3–6 haddock are used from 1984.
The annual stock assessment provides information on the stock status relative to reference points and indicates whether the harvest strategy is working or not. **SG60 is met.**

	Harvest strategy review			
d	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	NEA Haddock Met?			**Yes**

Rationale

The harvest strategy is reviewed at the Annual JNRFC meetings and at ICES benchmarks of the technical basis for the strategy. There are improvements included at these reviews as deemed appropriate. **SG100 is met.**

	Shark finning			
e	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	NEA Haddock Met?	**NA**	**NA**	**NA**

Rationale

Haddock is not a shark

	Review of alternative measures			
f	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	NEA Haddock Met?	**NA**	**NA**	**NA**

Rationale

The fishery operates on a discard ban and all fish are to be landed. Hence there is no unwanted catch of the target stocks. Therefore, alternative measures to minimise UoA related mortality are not relevant and the scoring issue is not applicable.
All catches are to be landed, however catch of undersized fish is minimised through move-on rules if catching high proportion of small fish and real time closures of areas with high density of young fish.

References

Berg, E., Sarvas, T. H., Harbitz, A., Fevolden, S.E. and Salberg, A.B. 2005. Accuracy and precision in stock separation of north-east Arctic and Norwegian coastal cod by otoliths - comparing readings, image analyses and a genetic method. Marine and Freshwater Research, No. 56 10 pp.
ICES. 2015. Report of the Benchmark Workshop on Arctic Stocks (WKARCT), 26–30 January 2015, ICES Headquarters, Denmark. ICES CM 2015/ACOM:30. 126 pp.
ICES. 2019. Arctic Fisheries Working Group (AFWG). ICES Scientific Reports. 1:30. 934 pp. http://doi.org/10.17895/ices.pub.5292
https://doi.org/10.17895/ices.advice.4710
ICES. 2019. Haddock (Melanogrammus aeglefinus) in subareas 1 and 2 (Northeast Arctic). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, had.27.1-2, https://doi.org/10.17895/ices.advice.4713
DNV GL 2015. RE-ASSESSMENT REPORT for the Norway North East Arctic cod and haddock fishery Norges Fiskarlag. DNV GL report 2014-013, Rev. 4. Authors: Nichols John, Lockwood Stephen, Sverdrup-Jensen Sten, Pedersen Guro Meldre 2015.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**NE Cod: ≥80** **NE Haddock: ≥80** **Coastal cod: 60-79**
Information gap indicator	**Further Information required to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guide post	**Generally understood** HCRs are in place **or available** that are **expected** to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	**Well defined** HCRs are **in place** that **ensure** that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, **most** of the time.
	NEA haddock Met?	**Yes**	**Yes**	**Yes**
Rationale				

The current strategy is to set an annual TAC, based on managing the stock in accordance with the agreed JNRFC management plan. The annual TAC is based on the predicted catch corresponding to the ICES advice and the HCR includes provisions for reducing the target F if the stock drops below Bpa. **SG60 is met**.

There are well defined HCRs adopted, see PI 1.2.1a above, the HCR includes provisions for reducing the target F if the stock drops below Bpa. The target of the HCR is to keep the stock fluctuating around MSY levels **SG80 is met**.

The HCR is designed to keep the stocks fluctuating at or above the MSY levels. The ecological roles of the haddock (and cod) are accounted for through the inclusion of the models for the natural mortalities incorporated in the stock assessment models. **SG100 is met**

b	**HCRs robustness to uncertainty**			
	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a **wide** range of uncertainties including the ecological role of the stock, and there is **evidence** that the HCRs are robust to the main uncertainties.
	NEA Haddock Met?		**Yes**	**Yes**
Rationale				

The main uncertainties affecting the harvest control rule are the reliability of the annual stock assessment in estimating current SSB and fishing mortality. The main uncertainties have been taken into account when selecting the current harvest rules and in particular the “three- year rule” in setting the annual TAC. There are still some issues relating to scientific sampling of the landings and limited survey coverage. Within the assessment modelling procedure, the effect of very strong year classes on the catch at age parameter can also generate uncertainty in the final assessment. These uncertainties are satisfactorily addressed when selecting the current harvest rules and in particular the amended ‘three- year rule ‘in the management plan for setting the annual TAC This clause in the management plan provides both stability and an opportunity to correct for any retrospective problems in the estimation of SSB and F and acts as an appropriate buffer against uncertainty.
The robustness is addressed at the benchmarks of the assessment approach and the studies suggest that the approach is likely to be robust. **SG80 is met**.

The ecological role of the stock is considered through the model for the natural mortalities incorporated in the assessment models, for adult haddock is a top predator and the role is well understood in the system. **SG100 is met.**

c	**HCRs evaluation**			
	Guide post	There is **some evidence** that tools used **or available** to implement HCRs 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 HCRs.	**Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	NEA Haddock Met?	**Yes**	**Yes**	**No**

Rationale

Through strict implementation of the tools (TAC, technical regulations, real time closures, move-on rules, discard ban) and programmes to reduce overcapacity which were all introduced about 25 years ago, the fishing mortality was reduced and the cod and haddock stocks increased. This suggests that the tools appropriate and effective in controlling exploitation.**SG60 is met.**

The stock development indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. The TACs have generally been set consistent with the scientific advice. **SG80 is met**.

The current status of the SSB for both cod and haddock clearly show that the tools are effective in achieving the desired stock status. However, for 2019 the TAC was above the level advice as being sustainable by ICES and the fishing mortality is above FMSY for 2017 and 2018. This casts doubt if the evidence clearly show that the exploitation levels are achieved**. SG100 is not met**

Haddock in subareas 1 and 2. State of the stock and fishery relative to reference points.

	Fishing pressure				Stock size			
		2016	2017	2018		2017	2018	2019
Maximum sustainable yield	F_{MSY}	✓	✗	✗ Above	MSY $B_{trigger}$	✓	✓	✓ Above trigger
Precautionary approach	F_{pa},F_{lim}	✓	✓	✓ Harvested sustainably	B_{pa},B_{lim}	✓	✓	✓ Full reproductive capacity
Management plan	F_{MGT}	✓	✗	✗ Above	B_{MGT}	✓	✓	✓ Above

References

ICES. 2015. Report of the Benchmark Workshop on Arctic Stocks (WKARCT), 26–30 January 2015, ICES Headquarters, Denmark. ICES CM 2015/ACOM:30. 126 pp.

ICES. 2019. Arctic Fisheries Working Group (AFWG). ICES Scientific Reports. 1:30. 934 pp. http://doi.org/10.17895/ices.pub.5292

ICES. 2019. Haddock (Melanogrammus aeglefinus) in subareas 1 and 2 (Northeast Arctic). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, had.27.1-2, https://doi.org/10.17895/ices.advice.4713

DNV GL. 2015. RE-ASSESSMENT REPORT for the Norway North East Arctic cod and haddock fishery Norges Fiskarlag. DNV GL report 2014-013, Rev. 4. Authors: Nichols John, Lockwood Stephen, Sverdrup-Jensen Sten, Pedersen Guro Meldre 2015.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**NA Cod: ≥80**

	NEA Haddock: ≥80 Coastal cod: 60-79
Information gap indicator	NEA Cod and NEA Haddock: Information sufficient to score PI Coastal Cod: Further information sought to score PI

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**95**
Condition number (if relevant)	**NA**

PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	Guide post	**Some** relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	NEA Haddock Met?	**Yes**	**Yes**	**Yes**
Rationale				

The stock assessment is based on Commercial catches (international landings, ages and length frequencies from catch sampling); four survey indices (Joint bottom trawl survey Barents Sea, Feb–Mar (BS-NoRu-Q1 (BTr)); Joint acoustic survey Barents Sea and Lofoten, Feb–Mar (BS-NoRu-Q1 (Aco)); Russian bottom trawl survey, October–December (RU-BTr-Q4)); Joint Ecosystem survey (Eco-NoRu-Q3 (Btr)); annual maturity data from the four surveys; For cod: natural mortalities from annual stomach sampling while for Haddock natural mortalities from cod consumption for age 3-6 haddock are used.
These data are available on an annual basis.
There is thus relevant information available**. SG60 is met.**

The data are sufficient to support the Harvest strategy as demonstrated in the functioning of the JNRFC. **SG80 is met.**

The data are comprehensive with respect to stock structure, stock productivity, fleet composition, stock abundance. There are furthermore data available that allow comprehensive ecosystem modelling of the Barents Sea ecosystem combined with physical models of the system in the Barents Sea. **SG100 is met.**

b	**Monitoring**			
	Guide post	Stock abundance and UoA removals are monitored and **at least one indicator** is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA 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.
	NEA Haddock Met?	**Yes**	**Yes**	**No**
Rationale				

As noted under PI 1.2.3a removals are well documented. For NEA Haddock there are four annual indicators on stock abundance. **SG60 is met**.

The stock status is monitored annually and covers the stock areas for cod and haddock in ICES 1+2. There are stock status indicators available. **SG80 is met**.

The information required by the HCR is available and monitored annually, the annual frequency is as required by the HCR. The data quality is generally good but clearly not all information is obtained with a high degree of certainty, there are issues with the sampling, in some years the survey coverage is less than what could be hoped for, Coverage may be influenced by ice cover (winter surveys). There is good understanding of the inherent uncertainties in the data and the robustness of the assessment and management is investigated through computer simulations. In spite of the comprehensive package of data because of the uncertainties in the data **SG100 is not met.**

c	**Comprehensiveness of information**			
	Guide post		There is good information on all other fishery removals from the stock.	
	All three stocks Met?		**Yes**	
Rationale				

Fisheries fo haddock in ICES 1+2 are well documented and the statistics on removal are considered to be accurate. **SG80 is met**.

References

- ICES (2017) Benchmark
- ICES (2019) Benchmark
- ICES (2019b) Haddock advice
- ICES (2019c) AFWG report

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**All three stocks: ≥80**
Information gap indicator	**Further Information soughtt to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**90**
Condition number (if relevant)	**NA**

PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration			
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Haddock Met?		**Yes**	**Yes**
Rationale				

The stock assessments are based on SAM ICES (2019c) and the benchmarks found that this approach is appropriate for the haddock stock. **SG80 is met**.

The assessments take account of the major features relevant to the biology through the general formulation of the SAM setup and by incorporating accounts of the natural mortalities. **SG100 is met.**

b	**Assessment approach**			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	NEA Haddock Met?	**Yes**	**Yes**	
Rationale				

The stock assessment is based on the SAM approach. This approach is the result of ICES benchmarks which found that the method is applicable and appropriate for assessing the haddock stock. **SG60 is met.**

The stock status is estimated relative to reference points. These reference points are estimated in the stock assessment process and are considered appropriate for the haddock stock. **SG80 is met.**

c	**Uncertainty in the assessment**			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment **takes uncertainty into account**.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a **probabilistic** way.
	NEA Haddock Met?	**Yes**	**Yes**	**Yes**
Rationale				

The stock assessment has considered and identified the major uncertainties in the benchmark process as the basis for development and evaluation of the appropriate assessment method applied. **SG60 is met**.
The SAM approach is built to account for uncertainties in the input data. **SG80 is met**.

The SAM approach provides confidence limits on the estimates and the stock status is evaluated taking these uncertainties into account based on probabilities. **SG100 is met.**

d	**Evaluation of assessment**			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	NEA haddock Met?			**Yes**
Rationale				

The stock assessment has been tested through the ICES benchmark process and through the experience with stock development. It has been found to be robust. Alternative approaches are under constant review and are annually evaluated e.g. the TISVPA. **SG100 is met.**

e	**Peer review of assessment**			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally** peer reviewed.
	NEA Haddock Met?		**Yes**	**Yes**
Rationale				

The stock assessments for haddock are is under internal review through the ICES AFWG working group at its annual meetings. **SG80 is met.**

The stock assessment is subject to regular ICES benchmarks. These benchmarks include both internal as well as external reviews. **SG100 is met.**

References

- ICES (2017) Benchmark
- ICES (2019) Benchmark
- ICES (2019b) Haddock advice
- ICES (2019c) AFWG report

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**All three stocks: ≥80** **Norwegian Coastal waters cod** RBF is used to score PI 1.1.1, FCP v2.1 Table PF1 defines that a default score of 80 shall be awarded to this PI.
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

7.3 Principle 2

7.3.1 Principle 2 background

All commercial species caught in Norwegian and Russian waters must be retained, recorded in the electronic logbook and landed (except for juvenile Atlantic halibut (<80 cm) which shall be released alive in order to assist stock recovery). There is rigorously enforced discard ban on all Norwegian vessels regardless of the area jurisdiction and on all foreign vessels fishing within Norwegian waters.
There are different permanent and temporal area closures in the Barents Sea which have been designed with the intention of protecting juvenile fish of different stocks. Since 1978 there is a permanent closed area closed for all bottom trawling in the 20- nautical mile zone around Bear Island (Figure 1 below). Besides, since 1984 there is a Real- Time Closure system in the Barents Sea, which imposes temporary closures on areas where the number of fish below the minimum legal size or the level of bycatches exceeds permitted limits (Jakobsen and Ozhigin, 2011).

Figure 1 Permanent closed area around Bear Island (in orange).
The figure also includes temporary closed areas for the shrimp fishery (in red) and for the cod fishery (in green) in 2005. (Source: Gullestad et al., 2015)

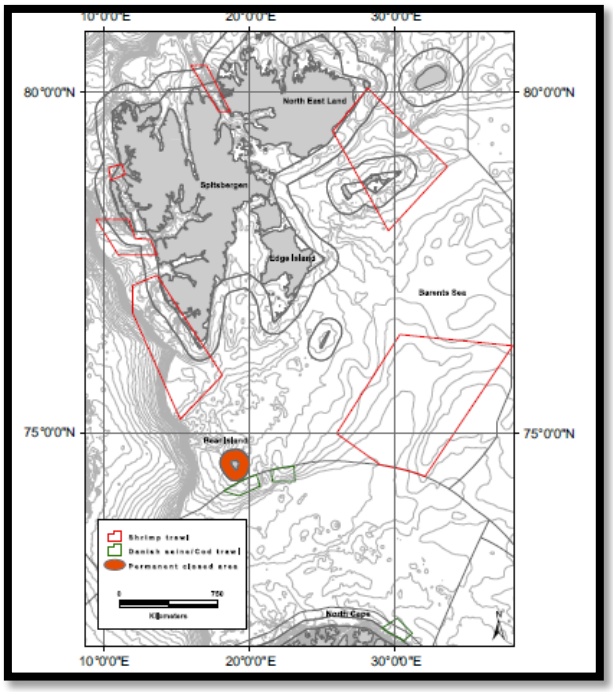
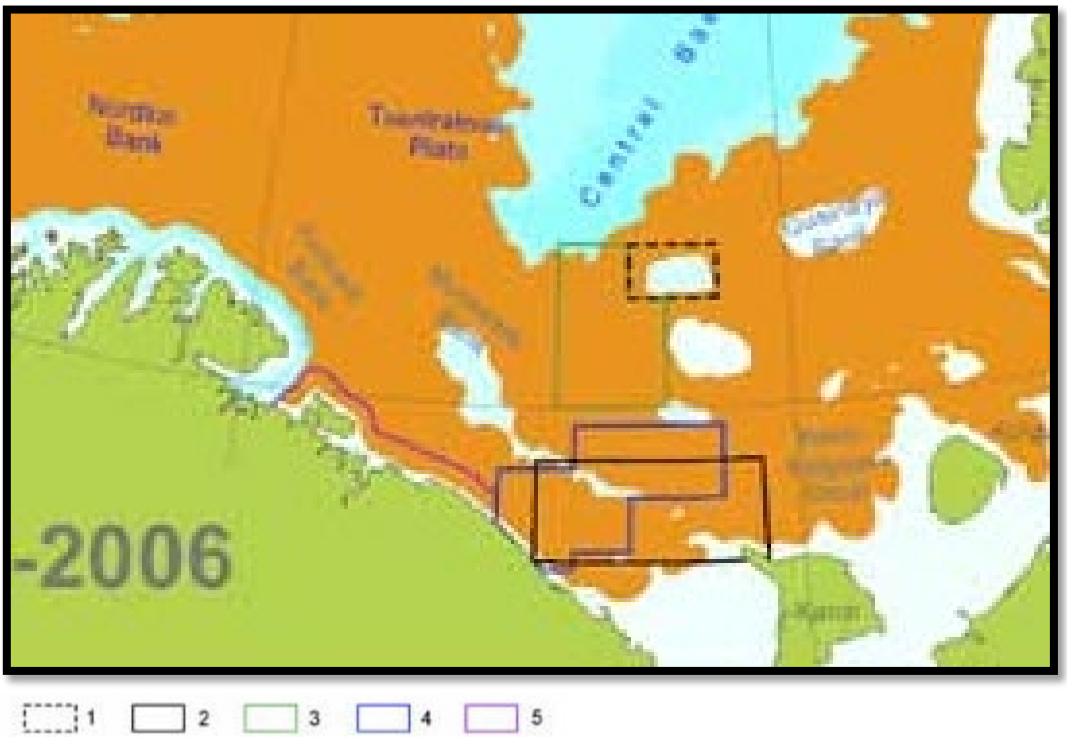


Figure 2: Permanent and temporary area closures directed to the protection of juvenile fish in the Russian EEZ.
Source: Grekov and Pavlenko, 2011



Area No.	x 1,000 km2	Period of closure	Subject of closure
1	5.0	Annually	All types of trawling gear
2	16.4	1st Jan – 30th June	All types of trawling gear
3	24.7	1st Jan – 15th April	All types of trawling gear
4	21.8	Annually	Bottom trawl
5	8.0	Annually	Bottom trawl

The distribution of haddock catches by gear types has remained stable for the 2016-2018 period. Table 18 below shows this distribution.

Table 18: Distribution by gear in the Norwegian haddock fishery 2016-2018.

		Danish seine	Gillnets	Hooks and lines	Demersal trawl	Other gears
2016-2018	Haddock	16%	3%	35%	46%	<0.2%

For the offshore fleet, there is no clear separation on the cod and haddock fisheries as they are both considered as demersal fisheries. The assessment team has used data provided by the Norwegian Directorate of Fisheries who has segregated all landing data according to main catches in each individual landing (landings with 50% or more of cod have been considered to target cod and landings with 50% or more of haddock have been considered to target haddock). This is how the demersal fishery has been split into 2 different fisheries, one targeting cod and one targeting haddock. Following this segregation, P2 species are apportioned according to landing data provided.

Tables below show catch composition for all UoAs for the past 3 years, together with catch proportion and 2017-2019 average to determine main and minor species.

Table 19 Catch composition for UoA 1 (bottom trawl targeting haddock).
Source: Directorate of Fisheries. Main primary species is NEA cod. There are no main secondary fish species.

Trawl	2017	2017%	2018	2018%	2019	2019%	TOTAL	% TOTAL
Haddock	54088,2	83,1	39042,5	85,0	37119,7	82,2	130250,4	83,4
Cod	8200,4	**12,6**	4519,2	**9,8**	5607,7	**12,4**	18327,3	**11,7**
Saithe	1473,2	2,3	1478,3	3,2	828,6	1,8	3780,1	2,4
Redfish (S. mentella)	539,1	0,8	484,6	1,1	888,1	2,0	1911,9	1,2
Spotted Wolffish	56,1	0,1	15,2	0,0	38,2	0,1	109,4	0,1
Redfish (S. norvegicus)	488,8	0,8	269,1	0,6	546,5	1,2	1304,3	0,8
Atlantic wolffish	65,0	0,1	14,4	0,0	10,3	0,0	89,8	0,1
Tusk	10,5	0,0	7,0	0,0	13,0	0,0	30,5	0,0
Greenland halibut	134,1	0,2	79,0	0,2	71,8	0,2	284,9	0,2
Northern wolffish	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Ling	25,3	0,0	23,0	0,1	6,1	0,0	54,5	0,0
Snow crab	0,0	0,0	0,0	0,0	12,6	0,0	12,6	0,0
Atlantic halibut	5,5	0,0	4,6	0,0	1,9	0,0	12,0	0,0
Hake	8,3	0,0	2,6	0,0	0,0	0,0	10,9	0,0
Pollock	0,0	0,0	6,8	0,0	3,4	0,0	10,2	0,0
Whiting	0,0	0,0	0,8	0,0	0,0	0,0	0,8	0,0
TOTAL	65094,5	100,0	45947,1	100,0	45148,1	100,0	156189,7	100,0

Table 20: Catch composition for UoA 2 longlines targeting haddock.
Source: Directorate of Fisheries. At the time of writing the PRCRDR these data are not disaggregated on catch by longlines and catch by the jigging activity. Therefore, the same catch data will be used to evaluate UoA 2 and UoA 5. Main primary species to consider for both UoAs is NEA cod. There are no main secondary fish species to consider.

Hook and line	2017	2017%	2018	2018%	2019	2019%	TOTAL	% TOTAL
Haddock	25626,3	81,6	24375,2	80,4	20710,8	82,6	70712,3	81,5
Cod	4551,7	**14,5**	4960,0	**16,4**	3524,4	**14,1**	13036,1	**15,0**
Saithe	23,1	0,1	5,6	0,0	25,4	0,1	54,1	0,1
Redfish (S. mentella)	3,5	0,0	0,0	0,0	2,0	0,0	5,5	0,0
Spotted Wolffish	539,0	1,7	252,9	0,8	223,5	0,9	1015,4	1,2
Redfish (S. norvegicus)	84,5	0,3	75,0	0,2	49,7	0,2	209,2	0,2
Greenland halibut	135,8	0,4	189,8	0,6	79,1	0,3	404,6	0,5
Tusk	306,5	1,0	253,3	0,8	212,3	0,8	772,1	0,9
Atlantic wolffish	31,5	0,1	13,5	0,0	3,0	0,0	48,0	0,1
Northern wolffish	25,1	0,1	114,8	0,4	106,6	0,4	246,5	0,3
Ling	45,1	0,1	34,5	0,1	51,3	0,2	131,0	0,2
Other skates and rays	6,1	0,0	2,2	0,0	49,5	0,2	57,8	0,1
Atlantic halibut	16,4	0,1	7,8	0,0	8,4	0,0	32,6	0,0
Roughhead grenadier	2,8	0,0	11,8	0,0	1,3	0,0	15,9	0,0
Greater forkbeard	0,0	0,0	0,8	0,0	8,5	0,0	9,3	0,0
Pollock	0,8	0,0	0,7	0,0	0,0	0,0	1,5	0,0
Starry ray / Thorny skate (Amblyraja radiata)	0,0	0,0	2,6	0,0	6,8	0,0	9,4	0,0
Monkfish	0,7	0,0	0,0	0,0	6,6	0,0	7,3	0,0
Rabbitfish	0,5	0,0	0,0	0,0	0,0	0,0	0,5	0,0
American plaice	0,0	0,0	0,0	0,0	0,9	0,0	0,9	0,0
Plaice	0,0	0,0	0,0	0,0	0,6	0,0	0,6	0,0
TOTAL	**31399,3**	**100,0**	**30300,4**	**100,0**	**25070,7**	**100,0**	**86770,5**	**100,0**

Total bait used both the cod and haddock offshore longline fisheries was 6253 tons in 2020 and 6317 tons in 2019. In 2019, total catches by the cod longline fleet accounted for 41366 tons, while total catches by the haddock longline fleet

accounted for 25070 tons. Globally, the cod and haddock longline fleets caught 66436 tons of different species, of which 62% were taken by the cod offshore longline fishery and 38% were taken by the haddock longline offshore fishery. It has been considered that the bait has been used in an equivalent way to these catches, so that 62% of the total bait has been used by the cod offshore longline fishery and 38% by the haddock offshore longline fishery. This is, in 2019, 3916,5 tons of bait have been used by the cod offshore longline fleet and 2400,5 tons of bait have been used by the haddock offshore longline fleet.

Specifically, the following species, quantities, and total catch bait percentages have been used for the cod and haddock offshore longline fisheries.

The cod offshore longline fishery used the following bait: 1288 tons of Norwegian mackerel, (accounting for a 2,84% of the total catch), 691 tons of Atlanto-Scandic herring (accounting for a 1,53% of the total catch), 45 tons of Norwegian saithe (accounting for a 0.10% of the total catch), 24 tons of prawn (accounting for a 0,05% of the total catch), 805 tons of Argentinian squid (accounting for a 1,78% of the total catch) and 1063 tons of Pacific saury (accounting for a 2,35% of the total catch). Catch percentages show that all bait species are considered as minor primary species for the MSC assessment process (see https://www.fishsource.org/stock_page/1626 and https://www.ofdc.org.tw:8181/web/components/Editor/webs/files/CMM%202019-08%20Pacific%20Saury.pdf for management measures applying to the squid and saury stocks).

The haddock offshore longline fishery used the following bait: 789 tons of Norwegian mackerel, (accounting for a 2,87% of the total catch), 424 tons of Atlanto-Scandic herring (accounting for a 1,54% of the total catch), 27 tons of Norwegian saithe (accounting for a 0.10% of the total catch), 15 tons of prawn (accounting for a 0,05% of the total catch), 494 tons of Argentinian squid (accounting for a 1,80% of the total catch) and 652 tons of Pacific saury (accounting for a 2,37% of the total catch). Catch percentages show that all bait species are considered as minor primary species for the MSC assessment process (see https://www.fishsource.org/stock_page/1626 and https://www.ofdc.org.tw:8181/web/components/Editor/webs/files/CMM%202019-08%20Pacific%20Saury.pdf for management measures applying to the squid and saury stocks).

Note that jigging vessels do not use bait but artificial lures which use motion to attract fish.

Table 21: Catch composition for UoA 3 (gillnets targeting haddock).
Source: Directorate of Fisheries. There are no main primary nor secondary fish species to consider.

Gillnet	2017	2017%	2018	2018%	2019	2019%	TOTAL	% TOTAL
Haddock	233,3	96,1	252,0	95,4	130,6	100,0	615,9	96,6
cod	3,6	1,5	2,9	1,1	0,0	0,0	6,4	1,0
Saithe	2,7	1,1	7,2	2,7	0,0	0,0	9,9	1,6
Tusk	0,4	0,2	0,0	0,0	0,0	0,0	0,4	0,1
Ling	1,8	0,7	0,9	0,3	0,0	0,0	2,7	0,4
Atlantic halibut	0,2	0,1	0,1	0,0	0,0	0,0	0,3	0,0
Pollock	0,7	0,3	1,0	0,4	0,0	0,0	1,8	0,3
TOTAL	242,7	100,0	264,1	100,0	130,6	100,0	637,3	100,0

Table 22: Catch composition for UoA 4 (Danish seine targeting haddock).
Source: Directorate of Fisheries. Main primary species to consider is NEA cod. There are no main secondary fish species.

Danish seine	2017	2017%	2018	2018%	2019	2019%	TOTAL	%TOTAL
Haddock	6325,9	79,9	5344,6	76,6	4831,8	78,5	16502,3	78,4
Cod	1511,6	**19,1**	1577,0	**22,6**	1248,1	**20,3**	4336,8	**20,6**
Saithe	36,7	0,5	30,5	0,4	57,8	0,9	125,0	0,6
Spotted Wolffish	7,0	0,1	2,0	0,0	0,6	0,0	9,6	0,0
Greenland halibut	1,5	0,0	0,2	0,0	0,0	0,0	1,7	0,0
Atlantic wolffish	14,7	0,2	8,9	0,1	6,0	0,1	29,5	0,1
Northern wolffish	2,1	0,0	0,0	0,0	0,0	0,0	2,1	0,0
Ling	6,4	0,1	4,2	0,1	4,9	0,1	15,5	0,1

Atlantic halibut	0,8	0,0	0,7	0,0	0,8	0,0	2,3	0,0
Plaice	10,4	0,1	10,1	0,1	5,9	0,1	26,4	0,1
Monkfish	0,7	0,0	0,0	0,0	0,0	0,0	0,7	0,0
Lemon sole	0,7	0,0	0,0	0,0	0,0	0,0	0,7	0,0
TOTAL	7918,6	100,0	6978,1	100,0	6155,9	100,0	21052,6	100,0

Primary and secondary fish species.

Main primary species for most UoAs is NEA cod. There are no main primary species in the gillnet UoA.
There are no main secondary fish species in any UoA. As regards minor species, there are more than 20 minor primary and secondary fish species.

NEA Cod

According to ICES 2019 advice on NEA cod, the spawning-stock biomass (SSB) has been above MSY Btrigger since 2002. The SSB reached a peak in 2013 and now shows a downward trend. Fishing mortality (F) was reduced from well above Flim in 1997 to below FMSY in 2008. It remained below FMSY until 2018 when it increased to slightly above FMSY. There has been no strong recruitment since the 2004 and 2005 year-classes. ICES asses that fishing pressure on the stock is above FMSY and between Fpa and Flim, while the spawning stock size is above MSY Btrigger, Bpa, and Blim. ICES advises that when the Joint Russian–Norwegian Fisheries Commission management plan is applied, catches in 2020 should be no more than 689 672 tonnes.

Figure 3: Cod in subareas 1 and 2 (Northeast Arctic). F and SSB, with 95% confidence intervals.
For this stock, FMGT ranges from 0.40 to 0.60 (not shown) and there are two SSBMGT values (460 000 tonnes and 920 000 tonnes). Source: ICES 2019 advice for NEA cod.

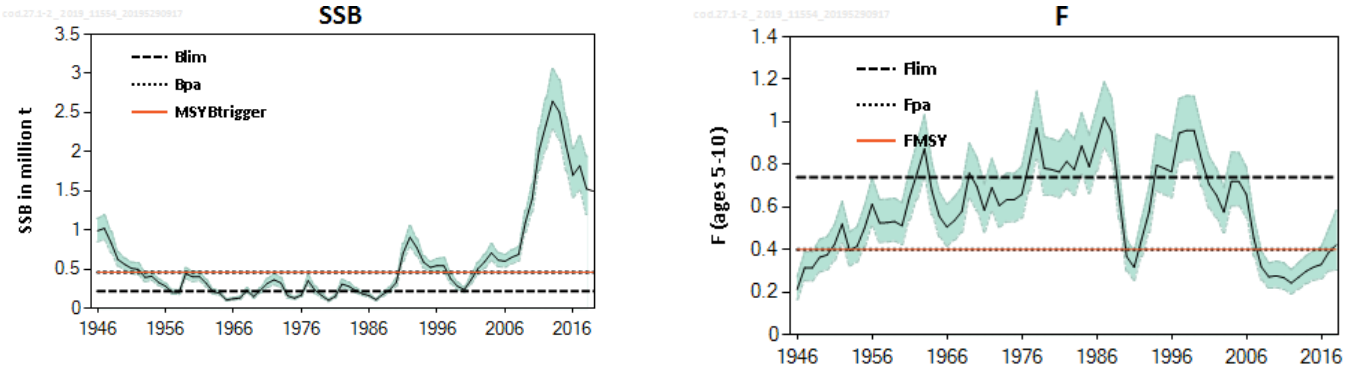


Figure 4: Cod in subareas 1 and 2 (Northeast Arctic). State of the stock and fishery relative to reference points.
Source: ICES 2019 advice for NEA cod.

	Fishing pressure				Stock size			
		2016	2017	2018		2017	2018	2019
Maximum sustainable yield	F_{MSY}	✓	✓	✗ Above	MSY $B_{trigger}$	✓	✓	✓ Above trigger
Precautionary approach	F_{pa},F_{lim}	✓	✓	○ Increased risk	B_{pa},B_{lim}	✓	✓	✓ Full reproductive capacity
Management plan	F_{MGT}	✓	✓	✓ Below	B_{MGT}	✓	✓	✓ Above

Table 23: Cod in subareas 1 and 2 (Northeast Arctic). Catch distribution by fleet in 2018 as estimated by ICES.
Source: ICES 2019 advice for NEA cod.

Catch (2018)	Landings		Discards
778 627 tonnes	71% demersal trawls	29% other gear types	Discarding is considered to be negligible
	778 627 tonnes		

Main secondary species

Main secondary species are those species in the catch which comprise more than 5% of the catch (or more than 2% for less resilient species) and with no associated management measures as well as out of scope species which are not categorised as ETP species. According to catch composition tables facilitated by the Directorate of Fisheries for years 2017-2019, there are no main secondary species in any UoA.

ETP species

According to MSC FS v2.01, SA 3.1.5, the team shall assign ETP (endangered, threatened or protected) species as follows:

- Species that are recognised by national ETP legislation (*such as Norwegian Regulation J-250-2013 protecting basking sharks, spurdogs, porbeagle and silky sharks. It shall be highlighted here that Norway has a Norwegian red list of endangered species which demands the protection of certain species in the Norwegian territory, but which has no specific regulation nor enforcement measures related. Therefore, species enlisted are not necessarily considered as ETP species for the MSC assessment).*
- Species listed in the binding international agreements given below:
    - 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 UoA under assessment is not endangered.
    - Binding agreements concluded under the Convention on Migratory Species (CMS), including: ii. Annex 1 of the Agreement on Conservation of Albatross and Petrels (ACAP);
    - Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement (AEWA);
    - Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS);
    - Annex 1, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS);
    - Wadden Sea Seals Agreement;
    - Any other binding agreements that list relevant ETP species concluded under this Convention
- Species classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).

Norway has signed several international agreements and conventions on species protection and management of relevance to the NEA cod and haddock fisheries:

- The Convention on Biological Diversity (CBD);
- The Convention on International Trade in Endangered Species of Wild Animals (CITES)
- The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention / CMS).
- The Agreement on North Atlantic Marine Mammal Commission (NAMMCO).
- The OSPAR Agreement, Annex V ("on the protection and conservation of the ecosystems and Biological Diversity in the maritime area"), listing threatened and declining species in the Barents Sea.
- Report No. 8 (2005-2006) for species management in the Barents Sea – Lofoten area.

Given these guidelines, ETP species to consider are listed in Table 24 below, which lists ETP species in relation to the NEA haddock fishery offshore (>12nm) in the Barents Sea (both in Norwegian and Russian waters), outside 12 nm. Information on the status of those species in the Norwegian red list of species and in the Russian red book of the Murmansk region is given as an indication of the species status and consideration by the affected jurisdictions but does not define the MSC consideration of ETP species.

Table 24: ETP species in the Barents Sea and Norwegian coastal waters
(LC: Least Concern; NT: Near Threatened). Species in bold are specifically protected by Norwegian Regulation J-250-2013. Source: DNV-GL.

SCIENTIFIC NAME	COMMON NAME	2015 Norwegian red list	Russian red book of the Murmansk region			
				OSPAR	IUCN red list	CITES Appendix I
INVERTEBRATES						
Arctica islandica	Ocean quahog	N/A	N/A	**Yes**	N/A	No
Nucella lapillus	Dog whelk	LC	N/A	**Yes**	N/A	No
SEABIRDS						
Fratercula arctica	Atlantic puffin	Vulnerable	N/A	N/A	**Vulnerable**	No
Pagophila eburnea	Ivory gull	Vulnerable	N/A	**Yes**	NT	No
Polysticta stelleri	Steller's eider	Vulnerable	Yes	**Yes**	**Vulnerable**	No
Rissa tridactyla	Black-legged kittiwake	Endangered	N/A	**Yes**	LC	No
Somateria mollissima	Common eider	N/A	Yes	No	**Vulnerable**	No
Uria lomvia	Thick-billed murre (or Brünnich's guillemot)	Critically Endangered	N/A	**Yes**	LC	No
FISH						
Acipenser sturio	Sturgeon	N/A	N/A	**Yes**	**Critically Endangered**	**Yes**
Alosa alosa	Allis shad	N/A	N/A	**Yes**	LC	No
Anguilla anguilla	European eel	Vulnerable	N/A	**Yes**	**Critically Endangered**	No
Carcharhinus falciformis	**Silky shark**	N/A	N/A	No	NT	No
Cetorhinus maximus	**Basking shark**	Endangered	N/A	**Yes**	**Vulnerable**	No
Coregonus lavaretus	Lavaret	LC	N/A	**Yes**	**Vulnerable**	No
Dipturus batis	Common skate	Critically Endangered	N/A	**Yes**	**Critically Endangered**	No
Lamna nasus	**Porbeagle**	Vulnerable	N/A	**Yes**	**Vulnerable**	No
Petromyzon marinus	Sea lamprey	NT	N/A	**Yes**	LC	No
Raja clavata	Thornback ray	LC	N/A	**Yes**	NT	No
Salmo salar	Salmon	LC	N/A	**Yes**	LC	No
Squalus acanthias	**Spurdog**	Endangered	N/A	**Yes**	**Vulnerable**	No
MARINE MAMMALS						
Balaena mysticetus	Bowhead whale	Critically Endangered	N/A	**Yes**	LC	**Yes**
Balaenoptera acutorostrata	Minke whale	LC	N/A	N/A	LC	**Yes**
Balaenoptera borealis	Sei whale	N/A	N/A	N/A	**Endangered**	**Yes**
Balaenoptera musculus	Blue whale	Vulnerable	N/A	**Yes**	**Endangered**	**Yes**
Balaenoptera physalus	Fin whale	LC	N/A	N/A	**Endangered**	**Yes**
Cystophora cristata	Hooded seal	Endangered	N/A	N/A	**Vulnerable**	No
Eubalaena glacialis	Northern right whale	Regionally extinct	N/A	**Yes**	**Endangered**	**Yes**
Eschrichtius robustus	Gray whale	LC	N/A	N/A	LC	**Yes**
Hyperoodon ampullatus	Northern bottlenose whale	LC	N/A	N/A	DD	**Yes**
Megaptera novaeangliae	Humpback whale	LC	N/A	N/A	LC	**Yes**
Odobenus rosmarus	Walrus	Vulnerable	N/A	N/A	**Vulnerable**	No
Phocoena phocoena	Harbour porpoise	LC	N/A	**Yes (OSPAR regions 2 and 3)**	LC	No
Physeter macrocephalus	Sperm whale	N/A	N/A	N/A	**Vulnerable**	**Yes**

Among the fishes, all large elasmobranchs (sharks and rays) are listed at one level of concern or another by the IUCN. Despite the legal requirement not to discard commercial species, most fishing vessels will return large sharks to the sea if they are still alive but some, e.g. basking shark *Cetorhinus maximus* and porbeagle *Lamna nasus*, can become enmeshed in gillnets and would be landed.

Spurdogs/dogfish are present in very low proportions (over 60 kg per year) in the catch records for hooks and lines and gillnets. Other gear types in the fishery don't show interactions with the species. Spurdog *Squalus acanthias* is listed

as on the IUCN and Norwegian red list (IUCN, Gjosater, 2010). There are specific measures prohibiting targeted fishing for the dogfish, basking shark and porbeagle but if caught they should be landed (in practice, if still alive they are more likely to be released). The catch of these species should be recorded individually as they are easily identified by crew members.

ICES provides scientific advice on the status of spurdog stock in NEA waters. According to latest advice available (2018), the total biomass and recruitment have declined substantially since the 1960s to the lowest level observed but appear to have stabilized over the last decade. The harvest rate has declined substantially and is estimated to be well below the MSY level (HRMSY), while total biomass continues to be below MSY Btrigger. No other reference points for fishing pressure and stock size have been defined for this stock. ICES advises that when the precautionary approach is applied, there should be no targeted fisheries on this stock in 2019 and 2020. Landing of bycatch should be part of a management plan, including close monitoring of the stock and fisheries. 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; therefore, ICES considers that bycatch should not exceed that level.

Figure 5: Spurdog in the Northeast Atlantic. Summary of the stock assessment.
Long-term trends in mean harvest rate (average ages 5–30), and total biomass. Shaded areas in the bottom panels reflect estimates of precision (±2 standard deviation) and horizontal lines indicate the associated MSY reference points.

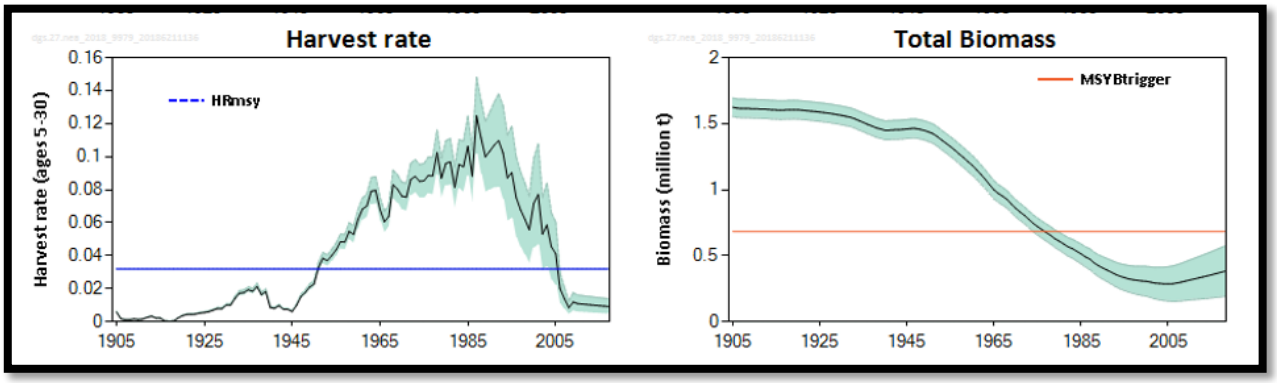


Table 25: Spurdog in the Northeast Atlantic. State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size			
		2015	2016	2017		2016	2017	2018	
Maximum sustainable yield	HR_{MSY}	✓	✓	✓	Below	MSY $B_{trigger}$	✗	✗	✗ Below trigger
Precautionary approach	HR_{pa},HR_{lim}	✓	✓	✓	Below possible reference points	B_{pa},B_{lim}	?	?	? Undefined
Management plan	HR_{MGT}	–	–	–	Not applicable	B_{MGT}	–	–	– Not applicable

Other sharks, skates and rays are taken in too small numbers to justify identifying them by species in the landing statistics and the total quantities involved are very small, as shown in landing records.

As regards seabirds and marine mammals, fatal interactions with these species are also recorded by the fleet in the electronic logbook. Records show 0 fatalities.

The abundance and distribution of seabirds and marine mammals are monitored as part of the annual IMR–PINRO ecosystem survey (Mauritzen & Klepikovsky, 2013). Both institutions collect information on the presence of ETP species in the Barents Sea through the combined research projects on board research vessels. Besides, PINRO has 5 scientific observers covering Russian vessels in the Barents Sea (with approximately 5% coverage) collecting information on ETP and benthic species in the catch, and IMR collects information through the reference fleet.

The Barents Sea has one of the largest concentrations of seabirds in the world (Norderhaug et al., 1977; Anker-Nilssen et al., 2000); its 20 million seabirds harvest annually approximately 1.2 million tonnes of biomass from the area (Barrett et al., 2002). Nearly 40 species are thought to breed regularly in northern regions of the Norwegian Sea and the Barents Sea but just two species (both considered as ETP species) – puffin (*Fratercula arctica*) and kittiwake (*Rissa tridactyla*) – account for more than 90% of all breeding seabirds in the region (Christiansen, 2010). The high density of seabirds is a consequence of high primary production and large stocks of pelagic fish species such as capelin, herring and polar cod. In the north and east, the marginal ice-zone is an important feeding habitat where seabirds forage on migrating capelin, polar cod and zooplankton (Mehlum & Gabrielsen, 993, Mehlum et al., 1996). The seabird communities in south and west depend on juvenile gadoids, juvenile herring, sandeels (Ammodytes sp.) and capelin (e.g. Anker-Nilssen, 1992, Barrett & Krasnov, 1996, Barrett et al., 1997, Fauchald & Erikstad, 2002).

There is always concern with respect to interactions of static-gear fisheries and seabirds (Fangel et al., 2011). The 2009 joint IMR–NINA survey estimated that less than 3000 seabirds (all species combined) were taken in the cod gillnet fishery with comparable numbers in the cod longline fishery (Fangel et al., 2014). While undesirable, these numbers are small relative to the size of the seabird populations in the NEA Arctic. These findings are consistent with the ICES working group on seabird ecology (WGSE, 2014) which has not identified NE Arctic fisheries as specific cause for concern. Furthermore, surveys with a remote electronic monitoring system of gillnet and longline fishing (in the Baltic) found that in >1000 hours of recording during hauling operations, only 136 seabirds were captured (both gears combined) and no marine mammals (WGBYA, 2014). By observation and inference, therefore, these reports would tend to confirm the industry's contention that the capture of seabirds, by any method of fishing, is extremely rare, even more when targeting demersal fish species such as NEA haddock (offshore >12nm).

ICES JWGBIRD 2018 report summarizes the vulnerability of marine bird species and families to bycatch of different gear types, including all gears under assessment. Information on this report is broad and does refer to North East Atlantic however serves as an indicator to Norwegian waters too. According to this report, gillnets and/or hook gears (hand- and longlines) are reported to be the deadliest fishing gears for seabirds. Besides, Bærum et al. (2018) showed that coastal fisheries might represent a more general threat to a wider range of seabird species, as opposed to longline fisheries (e.g. Fangel et al. 2017). It is acknowledged that important gaps remain in the understanding of seabird bycatch (ICES JWGBIRD 2018).

The ICES Working Group on Bycatch of Protected Species (WGBYC) identified a number of data sources related to bycatch numbers and fishing effort, but these are often incomplete with regards to seabird bycatch. Specifically related to Norway, "*the Norwegian Reference Fleet (NRF), a group of Norwegian fishing vessels contracted by the Institute of Marine Research (IMR), provides detailed information on their fishing activity, to improve stock assessments and fisheries management (https://www.hi.no/hi/tokt/referanseflaten-1). The self-reported data collected by the NRF include bycatch of marine mammals and seabirds. This has resulted in a 10-year long time series of seabird bycatch data related to the fishery data from a large fleet of small-scale vessels fishing with gillnets along the Norwegian coast, and enabled estimation of the total bycatch of seabirds in the Norwegian small-vessel gillnet fishery (Bærum et al. 2018).* ***The NRF has proven an effective way of collecting seabird bycatch data****, yet caution is required when interpreting self-reported fisheries information*".

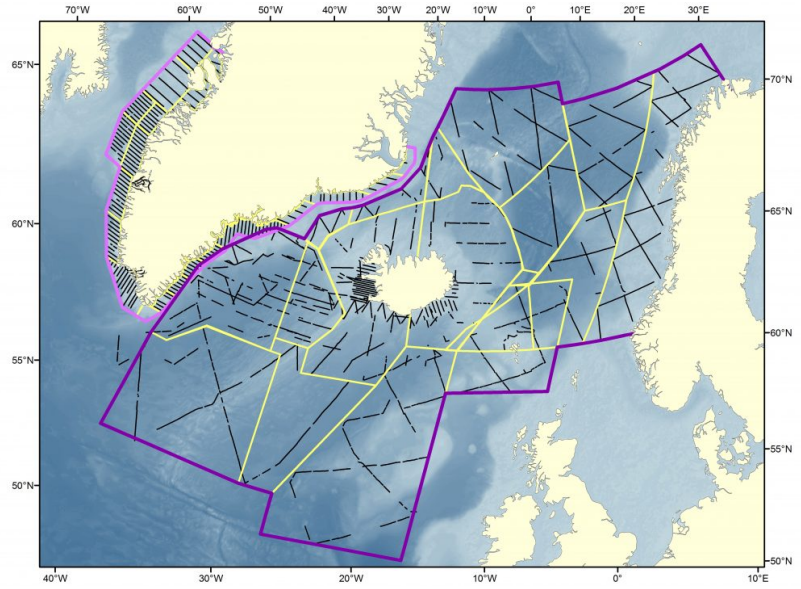
Detailed information on research and results by the Norwegian reference fleet, including information on species interacted, areas of research, and vessels in the reference fleet can be found at https://www.hi.no/hi/nettrapporter/rapport-fra-havforskningen-en-2020-8 . Researchers from the reference fleet were consulted at the site visit and they reported no significant incidents to take into consideration for the offshore cod and haddock fisheries.
Information on the distribution and abundance of marine mammals in the Barents Sea is gathered under the auspices of the North Atlantic Marine Mammal Commission (NAMMCO). Twelve species of large cetaceans, five species of dolphins and seven pinniped species have been recorded in the Barents Sea region, plus polar bears (*Ursus maritimus*). Most of the whales are long-distance migrants but only three species are permanent high Arctic residents – white (beluga) whale (*Delphinapterus leucas*), narwhal (*Monodon monceros*) and bowhead whale (*Balaena mysticetus*). Historically, all of the large whales were hunted but even after 80 years of protection, only scattered individuals of bowhead whale survive near the ice edge. Today, the minke whale (*Balaenoptera acutorostrata*) is the only whale species being hunted in the region, and only in limited numbers (Stiansen et al., 2009). 93 demersal fish species, particularly cod (Stiansen et al., 2009) contribute a significant percentage of the minke whale annual diet but, clearly, it is not an obligate predator of gadoids (Table 26).

Table 26: Estimated annual fish consumption (thousand tonnes) by minke whale (1992–1995) and harp seal (1990–1996). 1. The prey species is included in the "other-fish" group. 2. Only Themisto spp. Source: Stiansen et al., 2009

Prey	Minke whale consumption	Harp seal consumption	
		Low capelin stock	High capelin stock
Capelin	142	23	812
Herring	633	394	213
Cod	256	298	101
Haddock	128	47	[1]
Krill	602	550	605
Hyperiid amphipods	0	304	313[2]
Shrimp	0	[1]	[1]
Polar cod	[1]	880	608
Other fish	55	622	406
Other crustaceans	0	356	312
Total	1817	3491	3371

Marine mammal abundance is estimated through counting surveys by NAMMCO. The NAMMCO NASS 2015 surveys (Figure 6 below) covered the Northern part of the North Atlantic. These surveys include areal sightings and vessel observations.

Figure 6 : Transects that were surveyed during NASS2015. Source: NAMMCO website.



The frequency of direct, physical interaction between demersal fishing vessels and large whales is likely to be trivial [dolphins and certainly porpoises (*Phocoena phocoena*), tend to be more abundant inshore] but there can be direct trophic competition. Trophic competition for pelagic prey species (e.g. herring, capelin) probably occurs on a greater scale between target gadoid species and whales. The demersal fisheries, however, tend to reduce gadoid stock size and hence predation pressure on the pelagic species thereby favouring the cetacean predators rather than increasing trophic pressure. These species interactions are all part of the mosaic of multi-species ecosystem research and modelling undertaken by numerous institutions in the NE Atlantic (e.g. Marine Research Institute, Iceland: Stefansson et al., 1997; CEFAS, UK: Blanchard et al., 2002) and as part of the Barents Sea Management Plan (BSMP, 2006; Stiansen et al., 2009; Arneberg, 2013). Harp seal (*Pagophilus groenlandicus*) is the marine mammal that exists in the

highest numbers in the region, with an estimated population in 2012 of c. 160 000 (NAMMCO, 2014). It feeds in the open ocean and in spring huge numbers gather on the sea ice at the entrance to the White Sea to give birth.

As regards ETP species such as harbour porpoises (*Phocoena phocoena)*, the 2014 NAMMCO report expresses concern about the number of individuls affected by the inshore cod (and monkfish) gillnet fishery in Norwegian coastal waters. No concerns have been raised in relation to possible interactions by the NEA haddock offshore (>12nm) fishery. Vessels equipped with electronic logbooks are also required to keep records (including 'zero' observation) of interactions with marine mammals and seabirds although it is unclear if that data is already being analysed.

The Norwegian Coast Guard and the Directorate of Fisheries are responsible for the enforcement of management measures. The Directorate of Fisheries reviews catches taken by the different fleets each year, in order to identify areas of concern related to the risks caused by the fishery to target species or other affected species, such as primary, secondary and ETP species, and in order to implement management measures if these are considered necessary.

Table 27 below gives a summary of main primary, secondary and ETP species interacting each UoA as reported in catch statistics and reference fleet data.

Table 27: Main primary, secondary and ETP species for the different UoAs.

Unit of Assessment	Main primary species	Main secondary species	ETP species
UoA 1	NEA Cod	None reported	None reported
UoA 2	NEA Cod	None reported	Spurdog
UoA 3	None reported	None reported	Spurdog
UoA 4	NEA Cod	None reported	None reported
UoA 5	NEA Cod	None reported	Spurdog

Habitats

The fishery takes place in Norwegian (but also Russian to a much lower degree) waters of the Barents Sea, the Norwegian Sea, and the North East Atlantic Ocean (on EU waters, mostly with passive gears), in waters outside 12 nm from the coast, with gears that impact the seafloor in different manners. Figure 7 below shows effort distribution in 2017 for the bottom trawl UoA (in blue and yellow), showing that most of the bottom trawl fishing activity for the haddock fishery takes place in the Barents Sea (see yellow mark), while Figure 8 below shows that passive gears are more widely distributed (specially lines).

Figure 7: Effort distribution of bottom trawlers in 2017 for Norwegian vessel by target species.
Source: Directorate of Fisheries.

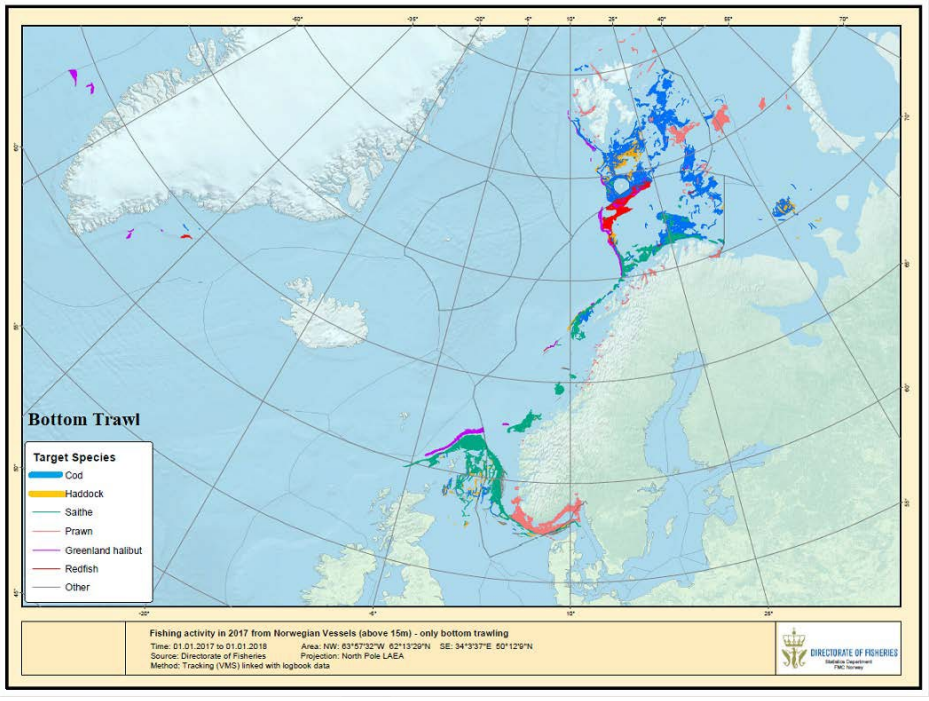
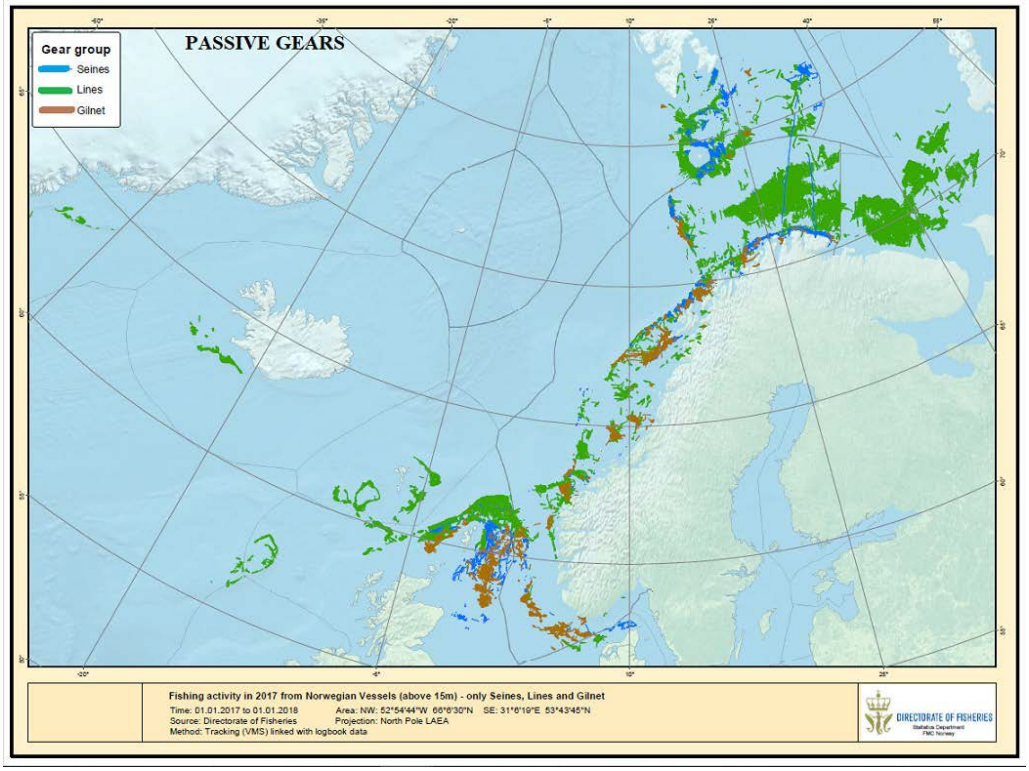


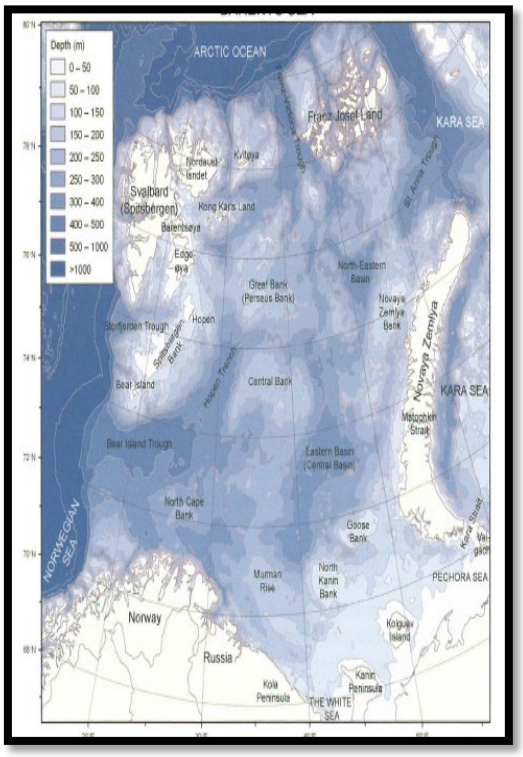
Figure 8: Effort distribution of passive gears in 2017 for Norwegian vessel. Source: Directorate of Fisheries.



The Barents Sea area is about 1 600 000 km2 (Carmack et al. 2006). This estimation includes the surface of the different islands in the area (i.e. Svalbard, Franz Joseph Land and the Novaya Zemlya archipelagos and other small islands), which account for more than 81 200 km2 (Terziev 1990).

First investigations on Barents Sea benthic species were made more than 200 years ago (Jakobsen T., Ozhigin V., 2011). Since then, both PINRO and IMR have undertaken research in the area through different means. Both institutions have a history of collaboration programs over the years. Since 2003, both institutions participate in an annual Joint Russian-Norwegian ecosystem survey using five research vessels and bottom trawlers. These surveys serve to gather information regarding the abundance of different fish species but also information on hydrographic conditions, endangered species or planktonic or benthic species. Information on the area can be found in the figures and maps below.

Figure 9: Barents Sea bottom topography and regional names. Source: Jakobsen T., Ozhigin V., 2011



Rybalko Aleksandr & Lepland Aave 2014: Seabed Sediments of the Barents Sea. Scale 1:3 000 000. Geological Survey of Norway (Trondheim) and SEVMORGEO (St. Petersburg)

Figure 10: Seabed sediments of the Barents Sea.
The area is dominated by soft sediments such as sandy mud or also by muddy sands, with occasional patches of gravels. There are no hard sediments in the area. Source: Lepland Aivo,

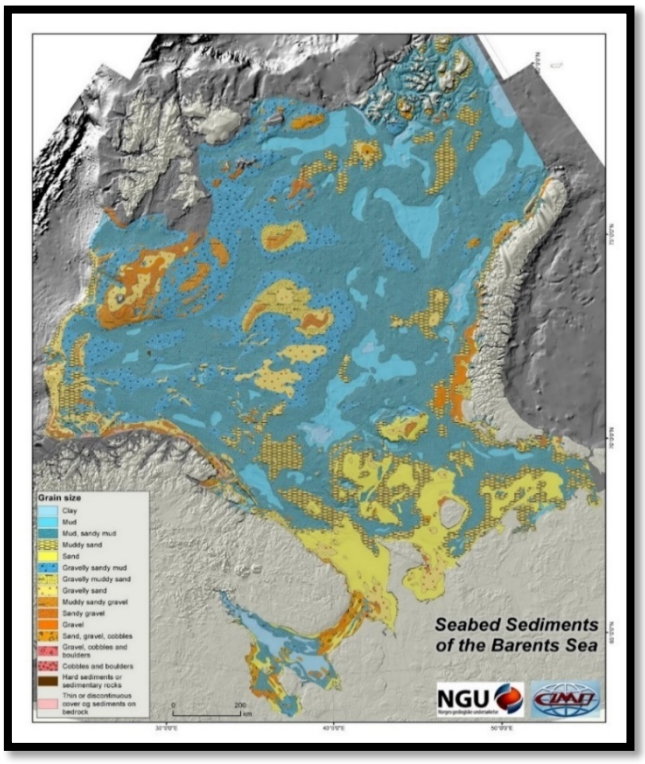


Figure 11: Biotopes of the Barents Sea.
Blue areas represent cold water from the polar front while pink areas represent warmer waters from the Atlantic influx. (Source: www.ngu.no. Dolan, M.F.J., Jørgensen, L.L., Lien, V.S., Ljubin, P., Lepland, A. 2015: Biotopes of the Barents Sea. Scale 1:3 000 000. Geological Survey of Norway (Trondheim), Institute of the Marine Research (Bergen) and Polar Research Institute of Marine Fisheries and Oceanography (Murmansk)).

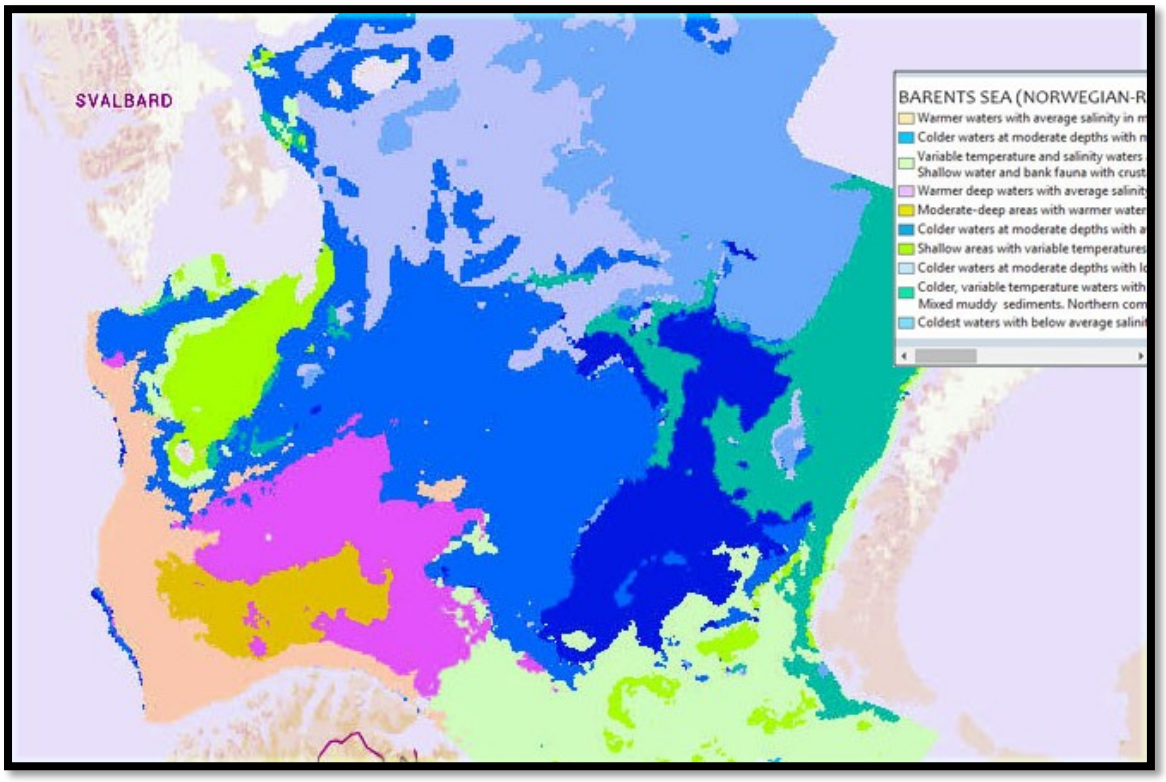
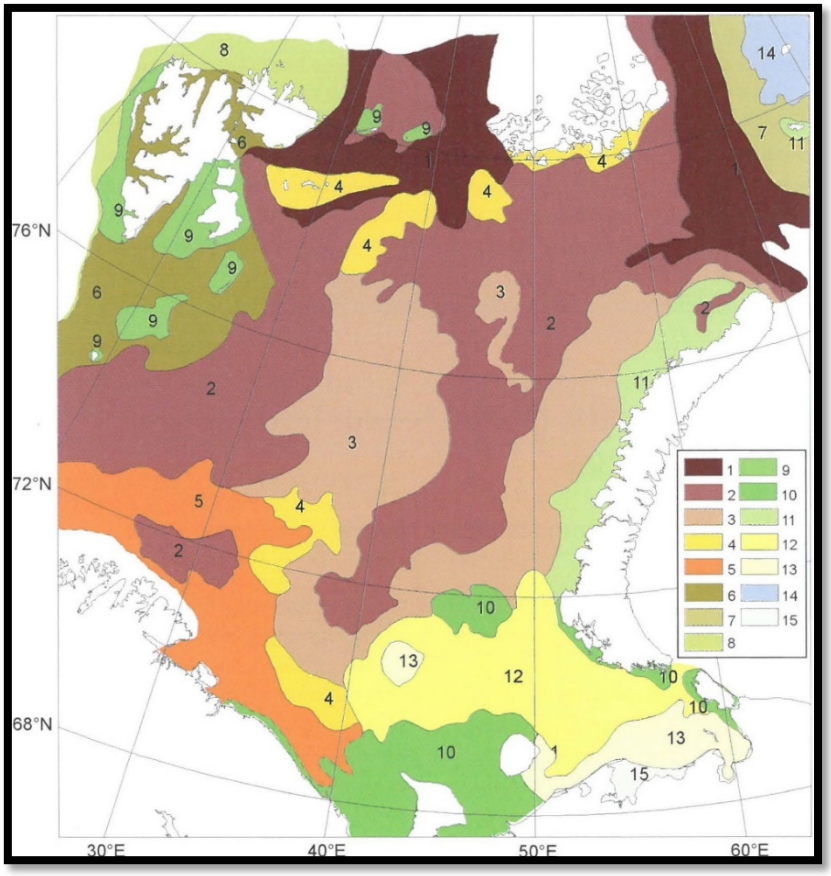
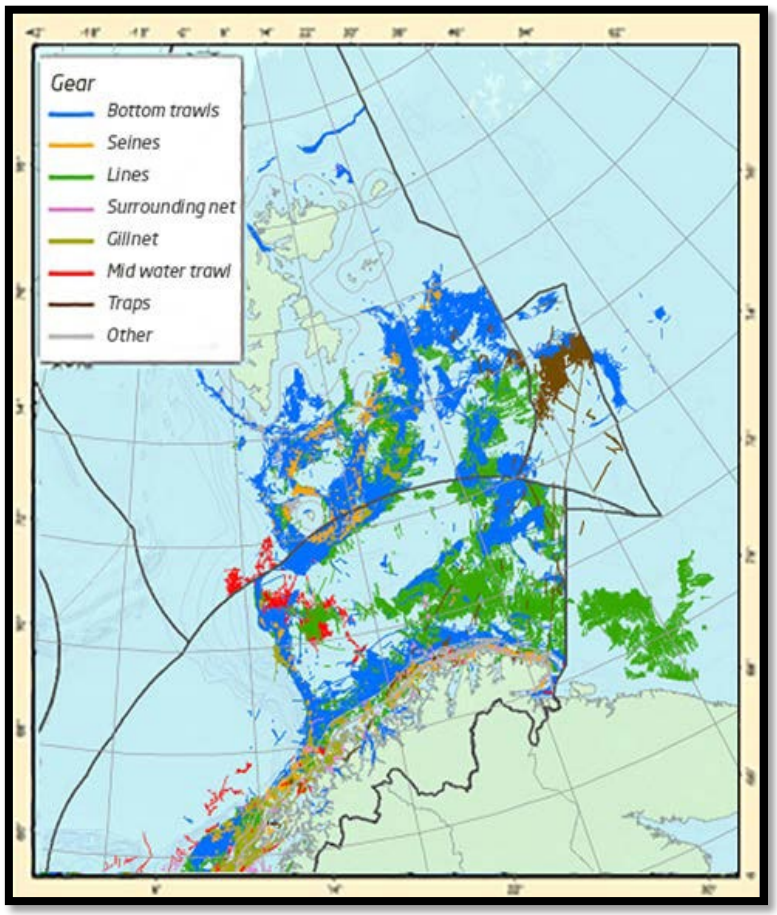


Figure 12: Distribution of benthic communities in the Barents Sea.
Numbers from 1 to 15 represent communities dominated by different species. (Source: Jakobsen T., Ozhigin V., 2011)
1 - Ophiopleura borealis + Hormosina globulifera;
2 - Polychaeta + Sipunculoidea (Gofjingia spp.);
3 - Trochostoma spp.;
4 – Elliptica elliptica + Astarte crenata;
5 - Brisaster fragilis;
6 - soft-bottom community adjacent to Svalbard (Spitsbergen);
7 - community of St. Anna Trough slopes;
8 - Strongylocentrotus spp. + Ophiopholis aculeata;
9 - shallow-water coastal community of sessile filter-feeders adjacent to Svalbard;
10 - shallow-water coastal community of sessile filter-feeders on Lithothamnion spp.;
11 - shallow-water coastal community adjacent to western coast of Novaya Zemlya and Vise Island;
12 -Astarte borealis;
13 - Clinocardium ciliatum + Macoma calcarea + Serripes groenlandicus;
14- community of bivalves adjacent to Ushakov Island;
15 - Macoma balthica.



In 2013, over approximately 35 000 km2 of the Barents Sea were affected by bottom trawling by Norwegian vessels in the area, corresponding to circa 1.6% of the ecoregion's spatial extent. The proportion of swept seafloor increased by ca. 1% from 2009 until 2013. As seen below, bottom trawl activity concentrates close to the coastline and in the central Barents Sea. In the International waters of the Loophole there is overlap between snow crab pots and bottom trawlers which may bring conflict between fleets.

Figure 13: Location of Norwegian fishing activity in all waters and non-Norwegian fishing activity within the Norwegian EEZ
Reported (VMS) to Norwegian authorities. (Source: Jakobsen T., Ozhigin V., 2011)



According to ICES advice, there are certain habitats in the Barents Sea (and in the Northeast Atlantic) at a threatened or declining situation. For MSC certification purposes, these will be considered as Vulnerable marine ecosystems. These habitats include:

- Coral gardens
- Cymodocea meadows
- Deep-sea sponge aggregations
- Intertidal mudflats
- Lophelia pertusa reefs
- Modiolus modiolus beds
- Ostrea edulis beds
- Seamounts
- Zostera beds.

NEAFC Recommendation 09/2015 lists which species should be considered as VME indicators when encountered in large fields. These species are listed based on traits related to functional significance, fragility, and the life-history traits of components that show slow recovery to disturbance.
NEAFC VME habitat types include the following taxa:

1 - Cold water coral reef:

- *Lophelia pertusa* reef
- Solenosmilia variabilis reef

2 - Coral garden:

- Hard-bottom coral garden

- Hard-bottom gorgonian and black coral gardens: *Anthothelidae, Chrysogorgiidae, Isididae, Keratoisidinae, Plexauridae, Acanthogorgiidae, Coralliidae, Paragorgiidae, Primnoidae, Schizopathidae.*
- Colonial scleractinians on rocky outcrops: *Lophelia pertusa, Solenosmilia variabilis*.
- Non-reefal scleractinian aggregations: *Enallopsammia rostrate, Madrepora oculata*

- Soft bottom coral gardens
  - Soft-bottom gorgonian and black *Chrysogorgiidae* coral gardens
  - Cup-coral fields *Caryophylliidae, Flabellidae*
  - Cauliflower coral fields *Nephtheidae*

3 - Deep sea sponge aggregations
- Other sponge aggregations: *Geodiidae, Ancorinidae, Pachastrellidae*.
- Hard-bottom sponge gardens: *Axinellidae. Mycalida*e
- Glass sponge communities *Rossellidae, Pheronematidae*

4 - Seapen fields: *Anthoptilidae, Pennatulidae, Funiculinidae, Halipteridae, Kophobelemnidae, Protoptilidae, Umbellulidae, and Vigulariidae*
5 - Tube dwelling anemone patches: *Cerianthidae*
6 - Mud and sand emergent fauna: Bourgetcrinidae, Antedontidae, Hyocrinidae, Xenophyophora, Syringamminidae.
7 - Bryozoan patches

The MAREANO program is a comprehensive research program which aims to map Norwegian EEZ seafloor. The program was first launched in 2005 and since then has increased the area covered year by year. Much information about vulnerable habitat types can be found on its website, however, so far, the program has focused on mapping the seabed along the coast of Norwegian mainland (see Figure 14). Mapping of the seafloor in the Barents Sea began some years ago, but the area covered is still small and does not fully overlap with the UoA fishing grounds, especially in the central Barents Sea region. The identification of certain vulnerable habitats such as coral reefs in the mainland coastline has led to the designation of new marine protected areas in the zone.

Figure 14: Area covered by the MAREANO program. Red dots show MAREANO stations.
(Source: www.mareano.no)

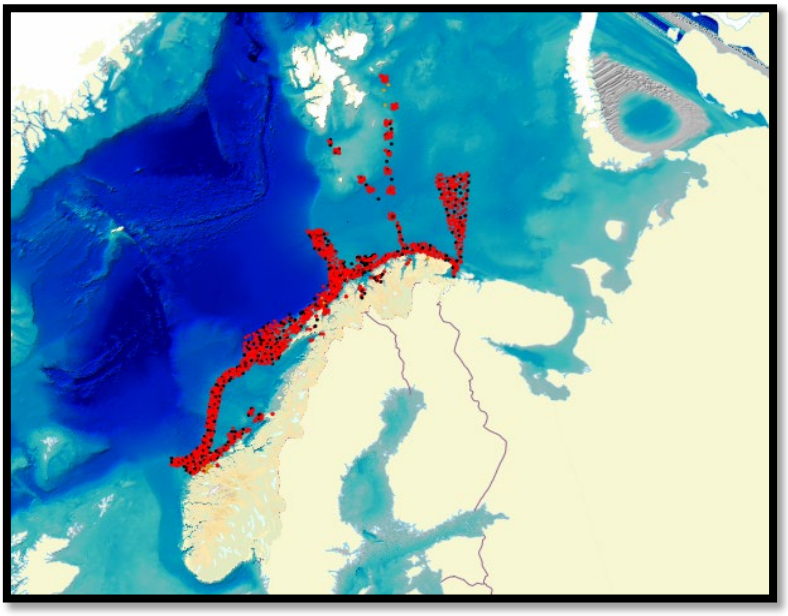
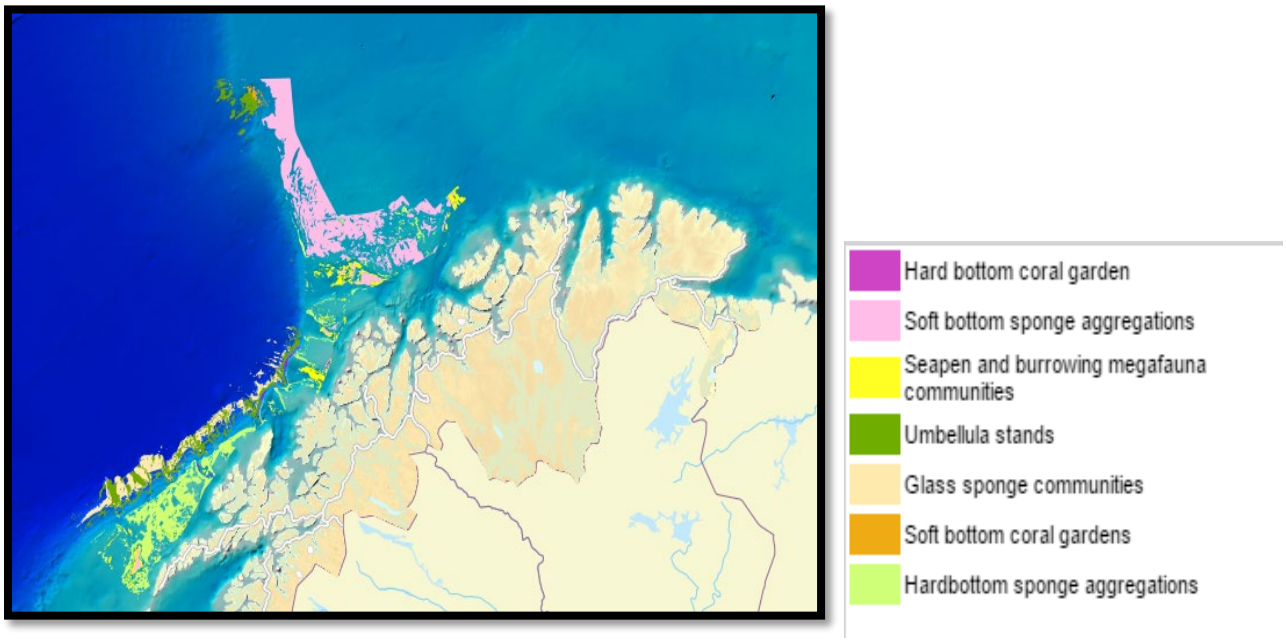


Figure 15. Vulnerable biotopes as identified by the MAREANO program. Source www.mareano.no



Benthic species in the Barents Sea have however been studied by other research institutions such as IMR. Jørgensen et al. (2015) studied data collected in 2011 by bottom trawlers to assess the vulnerability of benthic species to trawling, based on the risk of being caught or damaged by a bottom trawl. This work identified 347 different benthic species in the Barents Sea. Of those, 23 were classified by the research group as “high-risk” species, due to their “large weight and upraised” taxa and the ease of being caught by a bottom trawl. Jørgensen et al. (2015) research focuses on the distribution of these “high-risk” species, some of which are also considered as species indicators of VME by OSPAR and/or NEAFC.

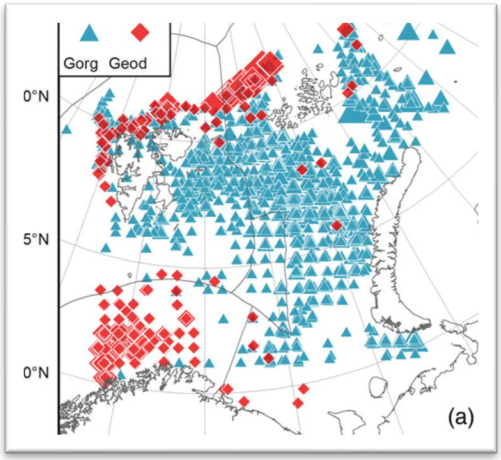
Table 28: Benthic species present in the Barents Sea with a high risk of catchability.
As identified by Jørgensen et al. (2015).

Arthropods	Red king crab		Paralithodes camtschaticus
	Snow crab		Chionoecetes opilio
	Sea spider		Colossendeis spp.
Cnidarian	Sea pen		Umbellula encrinus
	Nephtheidae	soft	Gersemia spp.
	corals		Drifa glomerata
Echinoderms	Basket stars		Gorgonocephalus arcticus
			Gorgonocephalus eucnemis
			Gorgonocephalus lamarcki
	Sea cucumbers		Cucumaria frondosa
			Parastichopus tremulus
	Sea lilies		Heliometra glacialis
			Poliometra prolix
Molluscs	Cephalopods		Bathypolypus arcticus
			Benthoctopus spp.
			Rossia moelleri
			Rossia palpebrosa
	Sea whelk		Neptunea ventricosa
Porifera	Surface-dwelling		Geodia barrette
	sponges		Geodia macandrewii
	Other sponges		Phakellia spp.
			Haliclona spp.
			Suberites spp.

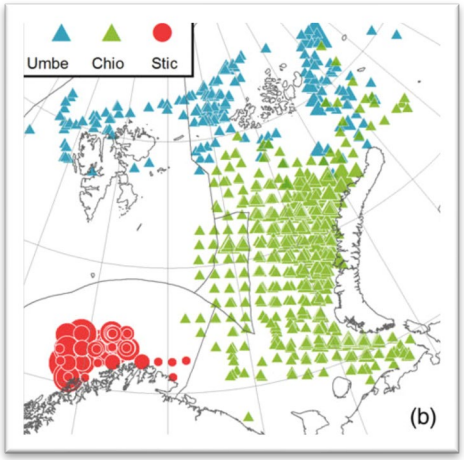
This study showed that *Geodia* sponges were dominant in the southwestern Barents Sea, basket stars (*Gorgonocephalus*) in the northern Barents Sea, sea pen (*Umbellula encrinus*) on the shelf facing the Arctic Ocean, and sea cucumber (*Cucumaria frondosa*) in shallow southern areas. Sea pens are associated with the shelf margin in the Arctic and lower slope in Norways EEZ. Of the species mentioned in Table 28 above, Porifera are considered by OSPAR as threatened and declining in the Barents Sea. NEAFC, in Recommendation 09:2015, considers both cnidarian and porifera species as representative of VME.

The following figures show the distribution of cnidarians and porifera as recorded by Jørgensen et al. (2015).

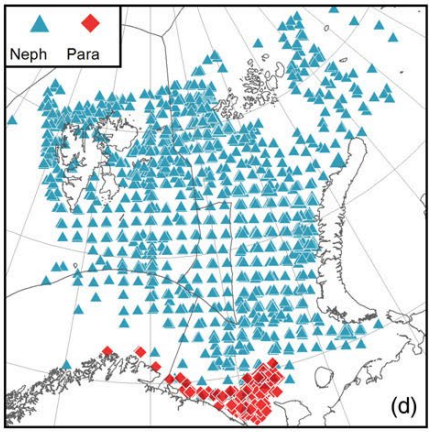
Figure 16: Distribution (wet weight biomass after 15 min trawling) of benthic species in the Barents Sea.
Of those, sponges, seapens and corals are considered as indicator species for vulnerable habitats by NEAFC.
Source: Jørgensen et al. (2015)
(a) Basket star: *Gorgonocephalus spp.* (Gorg) and sponges: *Geodia spp*. (Geod); VME Species are marked in red.
(b) Seapens: *Umbellula encrinus* (Umbe), Snow crab: *Chionocetes opilio* (Chio), and sea cucumber: *Parasticopus spp*. (Stic); VME species are marked in blue.
(d) Soft coral: *Nephtheidae (Neph)* and red king crab: *Paralithodes camtschaticus* (Para); VME species are marked in blue.
(e) Sea spider: *Colossendeis spp*. (Colo), stalked *Porifera* (Pori: including *C. gigantean, S. borealis, Cladohriza spp*., Asbestopluma spp.), and Sea whelk: *Neptunea spp. (*Nept: including *N. communis, N. despecta, N. ventricosa, and N. denselirata*); VME species are marked in green.



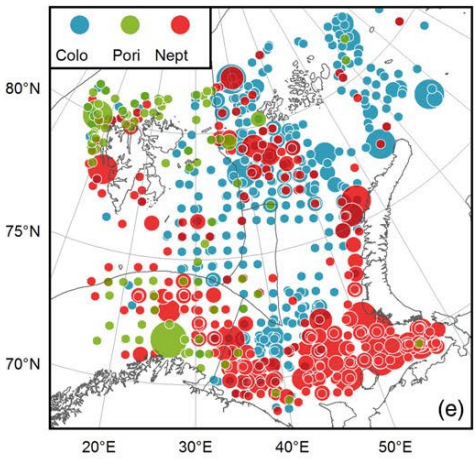
A: Geodia species are marked in red



B: Seapen species are marked in blue



D: Soft coral species are marked in blue



E: Porifera are marked in green.

Jakobsen and Ozhigin (2011) agree that large aggregations of sponges (e.g. *Geodia spp*.) can be found along the continental slope from Tromsøflaket and north along the west coast of West Spitsbergen, north of Svalbard (Spitsbergen) and east to Franz Josef Land. Porifera also appears to dominate the communities in terms of biomass

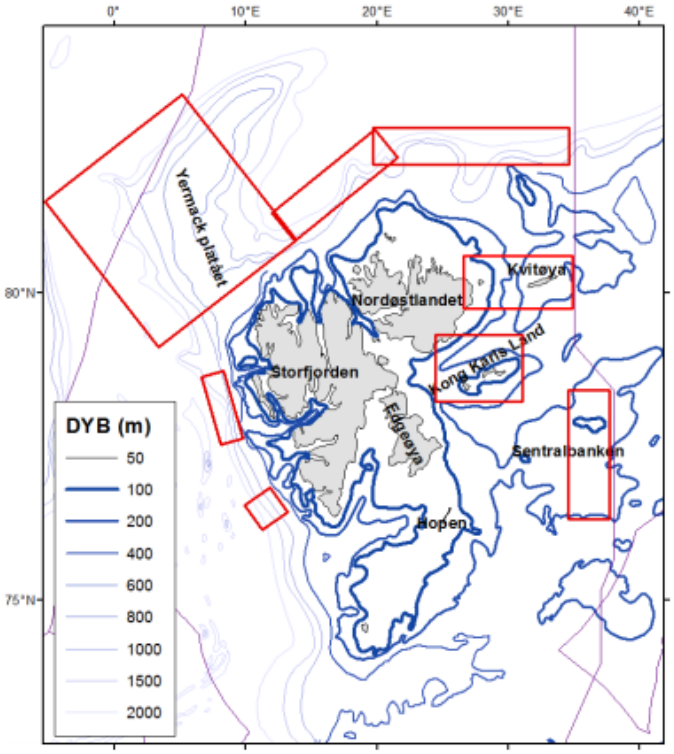
north of the Finnmark coast, including the Bear Island Channel, while cnidarians (mainly sea anemones and soft corals) and molluscs are more common the Eastern part of the Barents Sea.
Vulnerable bottom habitats in the Barents Sea north of 76°N and around Svalbard have been studied by IMR (Jørgensen, 2017) and described based on an evaluation of:

- the complexity of the benthos community (number of species, biomass, number of individuals),
- the sensitivity of the benthos community for climate warming (mean temperature preference and temperature tolerance),
- how exposed the benthos community are toward being hit/caught by a bottom trawl (height, body weight and mobility of species), and the geographical distribution of possible vulnerable species/species group.

The areas which are considered as vulnerable are:

- The deep regions on the continental slope around Svalbard
- The Yermack Plateau with the slopes
- The areas east of Svalbard including
    - The area between Nordøstlandet and Kvitøya
    - The area around Kong Karls Land
    - The area along the delimitation line between Norway and Russian on the Central Bank.

Figure 17: Vulnerable areas (in red) north of 76°N.
The vulnerability is based on the complexity of the benthos-community, sensitivity toward increasing temperature and bottom trawling and the geographical distribution of vulnerable species/species-groups. Source: Jørgensen, L.L. (2017).



Denisenko et al (2013) concluded that the *Lophelia pertusa* coral reefs are mostly located in the south western part of the Barents Sea (Norway EEZ). The distribution of the species is affected by water temperature and hydrological conditions (which do not occur in the Russian EEZ). They agree that largest sponge aggregations are located in the southwest part of the shelf around Banks of Tromso, and that the biomass of sponges is insignificant in the central and Eastern part of the Barents Sea (Denisenko et al, 2013). Fossa et al. (2002) estimated that *L. pertusa* covered 1500–2000 km2 of seabed in the Norwegian EEZ and that 30–50% of the total reef area had been damaged by demersal fishing. Whether this damage is recent and ongoing or is primarily historical is a moot point at present as such damage will remain virtually undisturbed in these deep stable environments, as indicated by the presence of settled 'marine

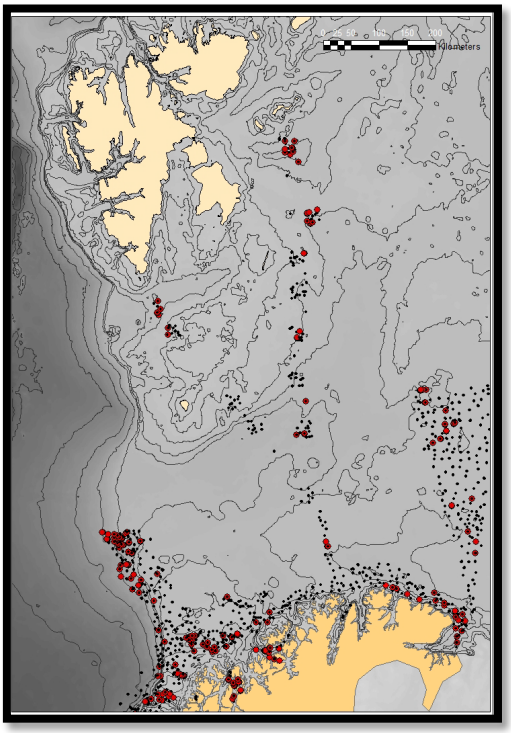
snow' in some tracks (Hankinson & Ulvestad, 2013). Inevitably, fishing remains a threat to *L. pertusa* reefs throughout the OSPAR area (Hall-Spencer & Stehfest,2008).

Soft corals are widely distributed in the Barents Sea. While most of these species (*Gersemia fruticosa, G. rubiformis, Drifa glomerata* and *Duva florida*) need a hard substratum to grow on, *Gersemia fruticosa* can also lodge on soft sediment. While soft corals are common in all waters in the Barents Sea and are generally taken as bycatch of bottom trawlers, they do not form mass settlements in the open waters of the Barents Sea.

Deepwater sponge communities (known to fishermen as ostur) are also widespread, but not always densely populated throughout the Barents Sea (Fig 1.4a; Christiansen, 2010;61 WGDEC, 2014). The ostur communities act as keystone habitat for a wide range of associated species. Klitgaard (1995) found 242 species of epi and in-fauna, of which 115 species were obligate sponge associates. Spicule mats associated with the sponge communities also support increased biomass of macrofauna (Bett and Rice, 1992). The western Barents Sea is well known for mass occurrences of sponges from numerous scientific and fishermen's sources (Klitgaard & Tendal, 2004); between 150 and 350 m depth, sponges of up to 1 m diameter and contributing up to 95–98 % of the local benthic total biomass samples and up to 5–6 kg m–2 were found to occur on sandy and sandy–silty seabed with good water movement. The distribution (presence, or absence), of sponges in the Russian sector has yet to be established in detail comparable with that in the MAREANO area. Such data as have been presented to date suggest that the occurrence sponge communities in the Russian zone of the Barents Sea are few and sparsely distributed (OSPAR, 2008, 2009; Lubin et al., 2013). The greatest abundance of sponge species in the Barents Sea are to be found along the western and northern margins, adjacent to the icefield (Lubin et al., 2013).
During MAREANO mapping (and comparable ROV-camera surveys; Hankinson & Ulvestad, 2013) closely spaced trawl-door ruts and traces of trawling have been seen in about 90% of video recordings. In some places with a large number of trawl tracks, large quantities of sediments were observed on the surface of sponges, and unattached sponges had collected in the trawl ruts. Self-evidently, direct trawl-gear impact will damage and break sponge colonies but aquarium experiments show that damage can be healed relatively fast (Hoffmann et al. 2003)65 and sponges have been found to regrow quite rapidly within the Barents Sea (Hankinson & Ulvestad, 2013). Nevertheless, the size structure within sponge populations indicates slow reproduction and recruitment, and high age of the large specimens. No exact aging has so far been done but comparable size structure investigations in Antarctica point to decades if not centuries (Dayton 1979;66 Gatti 2002).67 Consequently, it is assumed that it will take a long time for a sponge dominated area to recover even after partial destruction.

The distribution of seapens has been studied by the MAREANO program. Figure 18 below shows the relative abundance as observed during field surveys (2006-2017). *Umbelulla incrinus* forms dense aggregations on soft sediments in the northeastern part of the Barents Sea near Saint Anne's trench. Again, according to Denisenko et al (2013), benthic biomass in this southern region is considerably lower than in the northern region, however this does not affect food supply for fish species.

Figure 18 Relative abundance of sea pens (red dots) observed by MAREANO during field surveys from 2006 until 2017. Black dots indicate locations where the seabed has been surveyed and no seapen has been observed. (Source: www.MAREANO.no)



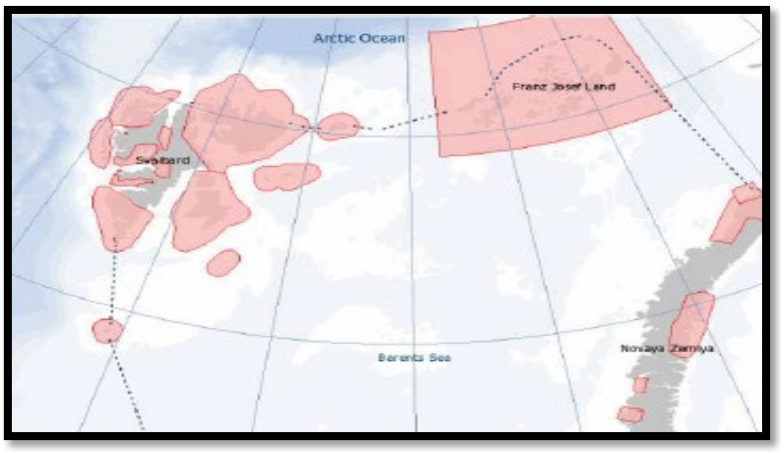
Sessile animals such as sea pens which project above the sediment surface are clearly likely to be damaged or uprooted by the passage of a trawl. As suspension-feeders, sea pens may require a certain degree of water movement, and more favourable conditions for growth may exist where local hydrography is modified by irregularities in the sea floor. In Loch Fyne, *Virgularia* was scarce on the deeper muds irrespective of whether or not these were trawled (Howson & Davies, 1991). At shallower depths where the species was more abundant, densities were similar at untrawled (3 - 4 individuals m-2) and trawled (2 - 7 m-2) sites. Howson & Davies concluded that there was no clear evidence that trawling had affected Virgularia densities in Loch Fyne. The resilience of *Virgularia* to trawling is supported by the findings of Tuck et al. (1998), who found no changes in density in a sea loch following experimental trawling carried out repeatedly over an 18-month period http://www.ukmarinesac.org.uk/communities/seapens/sp5_1_1.htm#a3).

There are a number of management measures which are already implemented in the Barents Sea in order to protect habitats:

- Avoidance of coral reefs and sponges by the fishing industry, as towed-gear vessels avoid coral because of the damage it can do to the gear and sponges crush the fish and makes the catch commercially worthless. There is also the risk of trawls bursting with concomitant loss of fishing time for repairs or (high cost) replacement. Vessels engaged in the current fishery have the technology (high precision GPS navigation and ground-discrimination echo sounders which can distinguish between mud and sand or hard rock, coral and sponges) that enables them to skirt around and avoid known VME areas.
- Mandatory use of satellite monitoring (VMS – vessel monitoring system) which serves to verify that large vessels do not enter Marine Protected Areas (MPAs), as confirmed by the Norwegian Directorate of Fisheries.
- Trawling is forbidden within the majority of the 12- nautical mile limit from Norwegian baselines (in some instances, this limit is set at 6 nautical miles).
- Fishing below 1000 m within the Norwegian EEZ is banned in order to protect deep-water sensitive habitats and species.
- Norwegian regulation J-61-2019 regulating bottom gears to protect vulnerable marine ecosystems. (https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Kommende-J-meldinger/J-61-2019) and defining “New fishing areas” where restrictions apply.

- Norwegian Regulation J-40-2016 – applies to all the Norwegian EEZ including waters in the Barents Sea; article 2 establishes that when a trawl vessel catches more than 30 kgs of coral or 400 kg of sponges in a single haul, the vessel shall stop fishing and move position at least 2 nautical miles in order to avoid such catches. The incident must be reported to the Directorate of Fisheries. According to this regulation, when fishing in a "new fishing area" in the Norwegian EEZ or the Svalbard FPZ, vessels must have a special permit from the Directorate of Fisheries. These are only approved by the Directorate if the vessel has submitted for approval:
    - A detailed protocol for trial fishing which includes a fishing plan for fishing gear, fish stocks, by-catches, time and areas.
    - A plan to avoid damage to sensitive marine ecosystems.
    - A plan for journal entry and reporting.
    - And a plan for collecting data on vulnerable habitats.
- Similar measures on the protection of corals and sponges is recommended in NEAFC waters, where Recommendation 19/2014 establishes threshold limits for bycatch of corals and sponges.
- NEAFC commission meets annually and decides, when necessary, on the establishment of area closures, as done in other NEAFC waters. To date, NEAFC has not identified any need for area closure in the Loophole area (http://www.fao.org/fishery/topic/16204/en).
- Norwegian Regulation J-187-2008, prohibits trawling near coral reefs, and establishes MPAs to protect coral species. It is noted that these are all located in Norwegian coastal waters. Information on the distribution in offshore areas remains limited.
- Norwegian Regulation J-151-2014 establishing closed areas to protect benthic habitats (mostly coral) in Norwegian and Svalbard EEZs.
- While not specifically designed for the protection of benthic habitats, Russian Regulation 414 (2014), articles 16 and 17, describes the position of 5 area closures in the Russian EEZ in order to protect juvenile fish.

Figure 19: Marine Protected Areas in the Barents Sea. Source: www.barentsportal.com



The Norwegian Biodiversity Information Centre has designed a Red list of vulnerable ecosystems and habitats in Norway. This list includes 16 marine areas which are categorised from Data Deficient to Critically Endangered. Table 29 lists the vulnerable habitats as described by the Norwegian Biodiversity Information Centre.

Table 29: List of vulnerable and endangered marine habitats and ecosystems.
As categorised by the Norwegian Red List of vulnerable ecosystems and habitats. Source: https://www.artsdatabanken.no/rodlistefornaturtyper

Area	Type of area	Classification
Pigtail coral forest bottom	Marine deep water	Endangered
Bamboo coral forest bottom	Marine deep water	Endangered
Cold water basins	Marine shallow waters, Svalbard	Endangered
Arctic lagoon	Marine shallow waters, Svalbard	Data Deficient
Polar sea Ice	Marine shallow waters, Svalbard	Critically Endangered
Isskurt sublitoral bottom	Marine shallow waters, Svalbard	Vulnerable
Isskurt litoral bottom	Marine shallow waters, Svalbard	Vulnerable
Brakk hard bottom springs	Marine shallow waters, Svalbard	Data Deficient
Rulg bottom	Marine shallow waters, Svalbard	Data Deficient

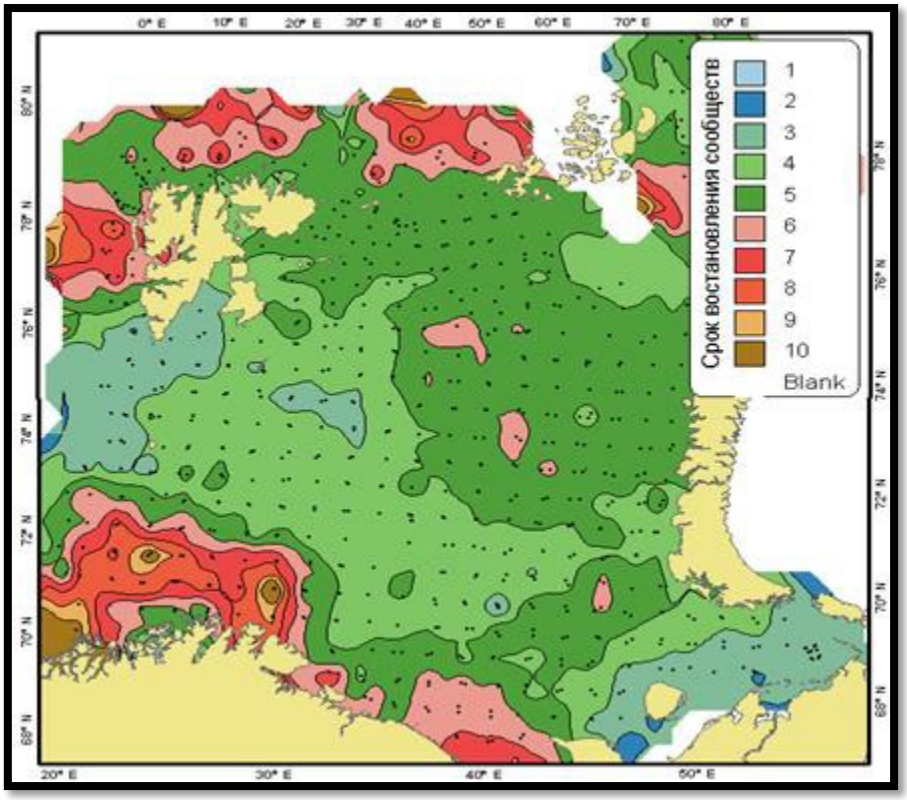
Area	Type of area	Classification
Brakk sand and gravel floor	Marine shallow waters, Svalbard	Vulnerable
Shallow sandy bottom	Marine shallow waters, Svalbard	Data Deficient
Northern sugarcane forest	Marine deep water	Endangered
Southern sugarcane forest	Marine deep water	Endangered
Northern fingertip bottom	Marine deep water	Vulnerable
Exposed mussel bottom	Marine deep water	Vulnerable
Rugl bottom	Marine deep water	Data Deficient

According to Kaiser et al. (2006), bottom trawling does not irreversibly affect soft bottoms such as sandy and muddy grounds. However, there is still a clear and negative relation between fisheries-intensity and density of mega benthos (Jakobsen T., Ozhigin V., 2011).

Large epifauna species such as echinoderms, sponges, gorgonian corals, soft corals, large snails and bivalves are examples of groups of animals found in trawl bycatches. Sponges, seapens, ophiurids and sessile polychaetes remaining in the seafloor show a clear negative relationship between their biomass and trawling intensity in the area. Specifically, sea pens have the ability to bend under pressure and some can retract into their burrow in response to hydrodynamic pressure clues. Those that cannot bend may be cut down by bottom-contact ground gear, including Danish seine footropes as the net closes but probably not by a rock-hopper foot rope that is 25–30 cm clear of the seabed (i.e. the axis of 21–24 inch wheels). Even if they are not cut down, they can still be damaged by passage of the gear. Other species such as Asteroidea spp. show a positive response to trawling.

WWF Russia, developed, in 2013, a map of the minimum recovery time for habitats in the Barents Sea. The map was made based on the assumption that the duration of community recovery is determined by the average life expectancy of the most long-lived species in the community. On this basis, a community cannot be considered fully recovered prior to the time that the longest-living member completes its entire life cycle. According to the map, recovery after bottom trawling would take place within 5 years in most parts of the Barents Sea, but recovery would be up to 10 years or more in the areas where VMEs tend to occur.

Figure 20: Map of the minimum recovery time (years) in the Barents Sea.
Different colours show the community recovery time in years. (Source: Lubin 2013 (from Denisenko S.G. and Zgurovsky, K.A. 2013. Impact of trawl fishery on benthic ecosystems of the Barents Sea and opportunities to reduce negative consequences. Murmansk. WWF. 2013. 55pp.)



Other authors have also tried to estimate the recovery time for different species after trawling (Buhl-Mortensen et al., 2015). Benthic infauna communities might take at least 18 months to recover (Tuck et al. 1998). Macrobenthic invertebrates (molluscs, crustaceans, annelids and echinoderms) may take 1-3 years to recover (Desprez, 2000). Large sessile fauna takes from years to decades to recover. Indirect evidence (Pitcher 2000, and Sainsbury et al. 1997) suggests that large sponges probably take more than 15 years to recover.
However, some regions have already been trawled for more than a century, which has led to a loss of biodiversity in the modified areas where vulnerable species are less abundant.
Trawling impacts have also been accompanied by natural spatial and temporal variations in water temperature and ocean currents. Full recovery of vulnerable species in those habitats is not expected to take place in a short time frame but avoiding future damage in unexplored areas should be easier to control. In any case, trawl-modified habitats continue to offer nutrients for ecosystem needs, regardless showing lower biodiversity.

The interaction of fishing gears with seabed habitats and species varies considerably with specific details of the gear and location (e.g. not all trawls will have the same effect on a given habitat, not least because the rig of the ground gear – doors, sweeps and footrope – may not be suitable for a particular substratum; Lokkeborg, 2005). In recent years there have been a plethora of specific studies and examples have been reviewed by Hall (1999) and Kaiser & de Groot (2000). There are, however, some broad generalities to the different fishing gears that can be noted and kept in mind; these are summarised here.

Demersal (bottom) trawls: The range of ground gear used by trawl vessels has been summarise by Lokkeborg (2005) and Buhl-Mortensen et al. (2013). In essence, smaller, less powerful (inshore) vessels use lighter ground gear than is adopted by the large, powerful offshore fleet. When the Barents Sea trawl grounds were first being opened up in the 1920s and '30s, position fixing was rudimentary, sun and star sights, line of sight to land – all weather permitting – and, on some vessels, basic radio direction finders. Little was known about seabed topography or habitats; i.e. vessels were fishing blind. For these reasons if no other, the ground gear was heavily armoured to protect the net and catch. Heavy (3–5 t) rectangular, steel-shod wooden (aptly named,) 'Dreadnought' doors were built to withstand anything with which they made contact. The footrope comprised a continuous row of 21–24 inch (50–60 cm) spherical steel bobbins. These were intended to either climb over or smash through any seabed obstruction, both animate and inanimate. The net itself was made of natural fibre that became waterlogged and dragged along the seabed; its underside was protected from chaffing and tearing by a mat of raw cowhides. This gear was in almost universal use through to the late 1960s–mid 1970s. Thus, it was during the middle decades of the 20th century that fishing had the greatest and most lasting adverse effects on SMHs and SMS, such as corals and sponges. With their slow growth and decadal recovery rates, many areas of the NE Arctic are still showing the scars of this historic fishing activity, but there are also signs of colonisation, growth and recovery (BMT COrdah, 2011; Buhl-Mortensern, 2013; Hankinson & Ulvestad, 2013).
Following the first of the great fuel-oil crises in the early 1970s there was an urgent need to develop a lighter, more fuel-efficient design for trawl gear (research and development that continued to this day through the government–industry funded CRISP partnership, including work to develop an even more environmentally friendly gadoid trawl; www.imr.no/crisp); this resulted in development of the rock-hopper rig. While the lighter rock-hopper gear has made very little difference in choice of offshore trawl grounds fished, it has enabled more of the smaller, less powerful inshore vessels to fish on rougher grounds than was previously possible. While rockhopper gear still has the capacity to damage some SMHs, its lighter environmental footprint (rubber discs rather than steel bobbins) is complemented by the more efficient oval slotted polyvalent doors and buoyant net fibres that enable the net to float clear of the seabed without the need for protective cowhides dragging across the seabed.

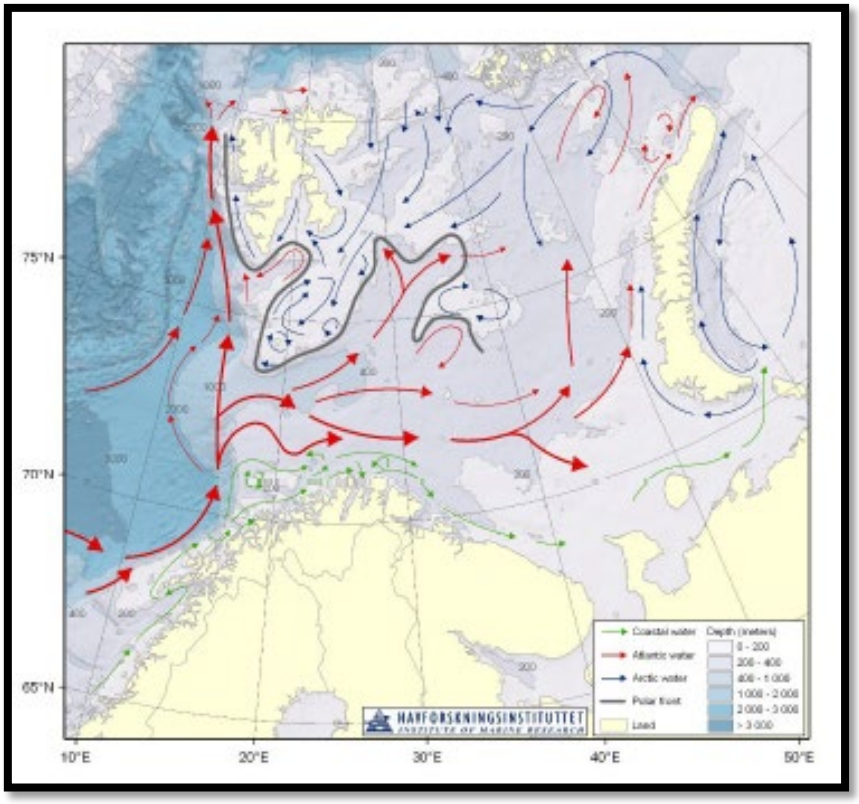
Static gear (lines and nets): Generally speaking, static gear has a very light environmental footprint and is more likely to have an effect on the fish community through ghost fishing (i.e. continuing to fish after the gear has been lost or abandoned) than on benthic communities. Nevertheless, there is the potential to scrape turf communities or to break coral heads during hauling (Buhl-Mortensen et al., 2013). In response to the ghost fishing problem, if vessels fail to retrieve all or lose their gear, for whatever reason, they are expected to report its last known position to the Norwegian Coastguard, which undertakes an annual lost-gear retrieval programme (Misund et al., 2005; Buhl-Mortensen et al., 2013).
Danish seine: A Danish seine consists of a conical net with wings, rather like a trawl; it is laid out in a triangle on the seabed using very long ropes that are hauled in by an anchored vessel or vessel holding station by its own engine power (Scottish fly-seining). Since this kind of fishing is dependent on the ropes not getting caught on obstacles during the herding phase, there are clear limitations on the sediment types where it can be used; i.e. the vessel must avoid all areas with known seabed obstructions (Buhl-Mortensen et al., 2013), including benthic megafauna such as corals and sponges. As no significant problem has been identified there have been no studies to document the physical impact of Danish and Scottish seining on seabed habitats. The potential effects are probably much smaller than for bottom trawling, since there are no trawl doors, the ground gear is lighter and the seine is not dragged long distances (Buhl-

Mortensen et al., 2013). However, the ropes may have a physical impact on upright soft megafauna such as seapens (Pennatulacea), cutting or possibly uprooting them.

Ecosystem

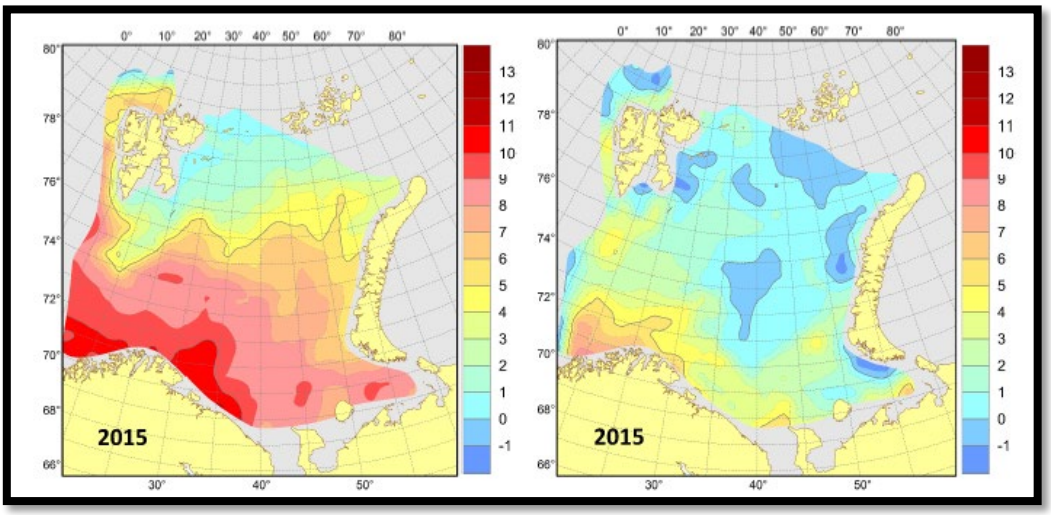
The Barents Sea is one of the shelf seas surrounding the Polar basin. It covers an area of approximately 1 600 000 km2 (Carmack et al. 2006), has an average depth of ca. 230 m, and a maximum depth of about 500 m at the western end of Bear Island Trough (ICES 2016 AFWG Report). It connects with the deeper Norwegian Sea to the west, the Arctic Ocean to the north, and the Kara Sea to the east (Figure 21 below). It is delimited by mainland Russia and Norway in the South, Svalbard Islands in the East, Novaya Zemlya Islands to the West, and the Franz Josef Land Islands to the North. Atlantic waters enter the central Barents Sea through the western troughs between the Svalbard archipelago and the Norwegian coastline.

Figure 21: Water circulation in the Barents Sea. (Source: ICES AFWG REPORT 2016)



Ocean circulation in the Barents Sea is influenced by the region's topography and is characterized by inflow of relatively warm Atlantic water, and coastal freshwater from the west. Atlantic waters later divide into two branches, one going East and one going North. In the northern region, colder Arctic waters flow from northeast to southwest. Atlantic and Arctic water masses are separated by the Polar Front, which is characterized by strong gradients in both temperature and salinity. In the western Barents Sea the front position is stable, while in the eastern Barents Sea the front position varies seasonally and inter-annually. Variations in large-scale atmospheric circulation leads to changes in upper ocean circulation, ice extent and hydrographic properties of the water column. Ice cover also has a strong seasonal and inter-annual variation, ranging from almost ice-free conditions to covering more than half the sea. In the last 40 years, there has been a general decreasing trend in ice coverage in the Barents Sea. Distribution of phytoplankton, zooplankton and fish species have moved North as these waters get warmer. Other responses of the Barents Sea to climate change and ocean acidification are still to be observed.
The last decade was the warmest on record, with the highest temperatures in 2007 and 2012. In 2015 the surface temperature was on average 1.2°C higher than the long-term mean for the period 1931–2010 almost all over the Barents Sea Figure 24 below). Water masses get stratified during the springtime, and after that primary production increases leading to a spring bloom (ICES 2016 AFWG Report).

Figure 22: Surface (left) and bottom (right) water temperature (ºC) in the Barents Sea in August-October 2015.
(Source: ICES AFWG REPORT 2016)



The Barents Sea region is influenced by different human activities such as fishing, transportation of goods, oil and gas, tourism and aquaculture. Hunting of marine mammals was a common activity which remains at lower rates.
As regards fishing activities, vessels from different nationalities target different species using different gears. The largest commercially exploited fish stocks (cod, capelin and haddock) are now harvested at fishing mortalities close to those in the management plan and have full reproductive capacity. Some of the smaller stocks (golden redfish Sebastes marinus and coastal cod in Norway) are overfished. Other species subject to targeted fisheries include Greenland halibut, Atlantic halibut, beaked redfish, deep-water shrimps, red king crabs, and snow crabs (both crab species are well established in the region, despite being invasive species).
Marine research institutions such as IMR and PINRO undertake different scientific surveys to monitor both physical and chemical parameters as well as sample the status of the stock of different species. Table 30 below summarizes the different scientific surveys regularly taken by these institutions.

Table 30: Overview of conducted monitoring surveys by IMR and PINRO in the Barents Sea.
With observed parameters and species. Climate and phytoplankton parameters are: T-temperature, S-Salinity, N-nutrients, Chla-chlorophyll.

Survey	Institution	Period	Climate	Phyto-plankton	Zoo-plankton	Juvenile fish	Target fish stocks	Mammals	Benthos
Winter survey	Joint	Feb- Mar	T, S	N, chla	Intermittent	All commercial species and some additional	Cod, Haddock	-	-
Lofoten survey	IMR	Mar- Apr	T, S	-	-	-	Cod, haddock, saithe	-	-
Ecosystem survey	Joint IMR - PINRO	Aug- Oct	T, S	N,chla	Yes	All commercial species and some additional	All commercial species and some additional	Yes	Yes
Norwegian coastal surveys	IMR	Oct- Nov	T, S	N,chla	Yes	Herring, sprat, demersal species	Saithe, coastal cod	-	-

Survey	Institution	Period	Climate	Phyto-plankton	Zoo-plankton	Juvenile fish	Target fish stocks	Mammals	Benthos
Russian Autumn-winter trawl-acoustic survey	PINRO	Oct- Dec	T, S	-	Yes	Demersal species	Demersial species	-	-
Norwegian Greenland halibut survey	IMR	Aug, biennial	-	-	-	-	Greenland halibut, redfish	-	-
Russian young herring survey	PINRO	May	T, S	-	Yes		Herring	-	-

Interspecies trophic relations are also studied through different multispecies and ecosystem models, which identify the most important inter-species/ functional group links and sensitivity of the ecosystem to changes and serves to give scientific based management advice to the different fleets. Table 31 below gives a summary of different multispecies and ecosystem models for the Barents Sea.

According to Plagányi (2007), there are different approaches to modelling the ecosystem:

- Whole ecosystem models: models that attempt to take into account all trophic levels in the ecosystem.
- Minimum Realistic Models (MRM): takes into account a limited number of species which are most likely to have important interactions with a target species of interest.
- Dynamic System Models (Biophysical): represent both bottom-up (physical) and top-down (biological) forces interacting in an ecosystem.
- Extensions of single-species assessment models (ESAM): They expand current single-species assessment models taking only a few additional inter-specific interactions into account.

Table 31: Classification of the multispecies/ecosystem models for the Barents Sea.
(Source: ICES AFWG REPORT 2016)

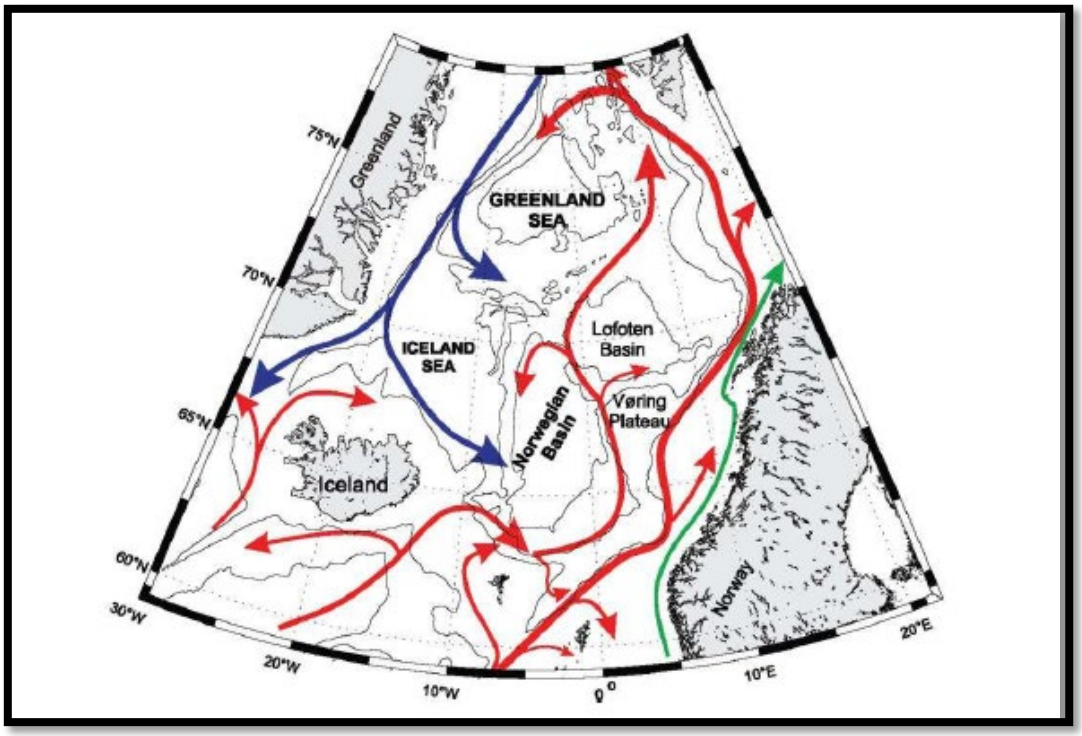
MODEL	NAME	STATUS (for the Barents Sea)
Whole ecosystem models (End to End models)		
EwE and ECOSPACE	Ecopath with Ecosim	Potentially useful
ATLANTIS	ATLANTIS	Operational
Minimum realistic models (Multispecies models)		
Bifrost	Boreal integrated fish resource optimization and simulation tool.	Operational
STOCOBAR	Stock of cod in the Barents Sea	Operational
GADGET	Globally applicable Area Disaggregated General Ecosystem Toolbox	Operational
DSF	Dynamic Stochastic Food web	In development
BORMICON	Boreal Migration and consumption model	Precursor to GADGET
MULTISPEC	Multi-species model for the Barents Sea: Simplified version is AGGMULT which is also connected to a ECONMULT - a model describing the economies of the fishing fleet.	Retired
MSVPA and MSFOR (and derivates)	Multi-species Virtual Population Analysis; Multi-species Forecasting Model.	Potentially useful
IBM	Individual-Based Models	Operational
Dynamic system models		
NORWECOM.E2E	Formulation is moving towards whole ecosystem model	In development

MODEL	NAME	STATUS (for the Barents Sea)
SYMBIOSES	SYMBIOSES	First version functional, under further development.
Extension of single species assessment models		
ESAM	Extended Single-Species Models e.g. Livingston and Methot 1998; Hollowed et al., 2000; Tjelmeland and Lindstrøm 2005.	Limited application
SEASTAR	Stock Estimation with Adjustable Survey observation model and TAg-Return data	Limited application
EcoCod	Ecosystem and Cod	In development

These models and assessments provide enough information to indicate that the Barents Sea ecosystem is relatively healthy (affected however by global warming and other human pressures), and that the current cod and haddock fisheries are not disrupting ecosystem main functions. Declines in the populations of other species such as marine mammals or birds are attributed to other factors such as rising sea temperature or redistribution of prey species.
Monitoring of the marine environment and all aspects of its living resources are ongoing research programmes by IMR in support of Norwegian seas management plans115, and further afield under the auspices of JNRFC (Prokhorova, 2013; Wienerroither et al., 2013). These programmes include monitoring the effects of trawling on sensitive marine habitats and developing further protection measures where appropriate.

The fishery also takes place in the Norwegian Sea. The Norwegian Sea is bounded by a line drawn from the Norwegian Coast at about 62° N to Shetland–Faroes–east Iceland–Jan Mayen–southern Spitsbergen–Vesteralen (on the Norwegian coast). The Norwegian Sea has an area of c.1 million km2 and an average depth of c. 2000 m divided into two separate basins (the Lofoten Basin to the south and the Norwegian Basin in the north) of 3000 m to 4000 m depth. Along the Norwegian coast there is a relatively narrow continental shelf, between 40 and 200 km wide with a relatively level seabed. The circulation in the Norwegian Sea is strongly affected by the topography. A low salinity Norwegian Coastal Current enters the area from the North Sea and flows north to the Barents Sea. North Atlantic inflow takes place mainly through the Faroe–Shetland Channel with some flow over the Iceland–Faroe Ridge. The major part of the warm, high salinity Atlantic Water continues northward as the offshore Norwegian Atlantic Current, parts of which branch into the North Sea and also to the more central parts of the Norwegian Sea. At the western boundary of the Barents Sea, the Norwegian Atlantic Current further bifurcates into the North Cape Current, which carries herring eggs and larvae from the Norwegian Sea spawning areas into the Barents Sea nursery areas, flowing eastwards into the Barents Sea and the West Spitsbergen Current flowing northwards into the Fram Strait between Spitzbergen and Greenland.

Figure 23: The main circulation pattern in the Norwegian Sea.
Red lines indicate warm currents, blue lines indicate cold currents and green lines show low salinity coastal water.



The ecosystem in the Norwegian Sea has a relatively low biodiversity, but the food chain is productive and some species occur in very high numbers (http://www.imr.no/filarkiv/havets_ressurser_og_miljo_2009/2.1_introduksjon-okosystem_Norskehavet.pdf/nb-no). The great basins are dominated by deep-sea fauna while there are deep-sea coral reefs which act as keystone habitats for a diverse associated community of invertebrate and fish species. There is intense primary production during the spring bloom, which supports a high zooplankton biomass but recent biomass is the lowest since the measurements started in 1997 (http://www.imr.no/filarkiv/havets_ressurser_og_miljo_2009/2.3_primaer_sekundaerproduksjon.pdf/nb-no).
Plankton organisms uncommon to the Norwegian Sea are entering the area at an increasing rate. The warm–temperate copepod *Calanus helgolandicus* appears to be displacing the normal Norwegian Sea copepod *C. finmarchicus*, and at times is the dominant species along the south-western coast of Norway. This change might have a detrimental effect on spring-spawning fish stocks if the fish larvae experience a reduction in their favoured food supply, i.e. larvae of *C. finmarchicus.*

The spring phytoplankton bloom starts in the Norwegian Sea, where it is dominated by the diatom *Chaetoceros socialis* followed by flagellates, particularly *Phaeocyctis pouchetii,* and then spreads north and east into the Barents Sea with the retreating ice. In early spring, the water is mixed from top to bottom, but the main bloom does not occur until the water becomes stratified by density (temperature–salinity) differences. Diatoms are the dominant phytoplankton group in the Barents Sea, particularly early in the spring bloom when the concentration of diatoms can reach several million cells per litre.

The zooplankton communities of the Norwegian–Barents Seas are dominated by copepods and euphausids. The calanoid copepod Calanus finmarchicus is the main copepod in the Atlantic water while *C. hyperboreus* and C. glacialis are the dominant species in Arctic water masses. Krill (euphausids) also play a significant role, particularly *Meganychthiphanes norvegica*, *Thysanoessa inermis* and *Thysanoessa longicaudata*. Other important zooplankton include the hyperids Themisto libellula and Themisto abyssorum. Krill species are believed to be omnivorous, filterfeeding on phytoplankton during the spring bloom but feeding on small zooplankton (possibly including cod and haddock eggs and larvae) at other times of the year. *Ctenophore* and *scyphozoan* jellyfishes are also abundant, widespread predators of planktonic-stage and post-larval fish. The plankton community shows interannual variability in productivity, with concomitant implications for fish productivity.

Table 32: Scoring elements

Component	Scoring elements	Designation	

e.g. P1, Primary, Secondary, ETP, Habitats, Ecosystems	e.g. species or stock (SA 3.1.1.1)	Scientific name	Main or minor	Data deficient?
P1	Haddock	*Melanogrammus aeglefinus*	N/A	No
Primary	NEA Cod	*Gadus morhua*	Main	No
Primary	Saithe	*Pollachius virens*	Minor	No
Primary	Beaked redfish	*Sebastes mentella*	Minor	N/A
Primary	European hake	*Merluccius merluccius*	Minor	N/A
Primary	Golden redfish	*Sebastes marinus*	Minor	N/A
Primary	Greenland halibut	*Reinhardtius hippoglossoides*	Minor	N/A
Primary	Herring (bait)	*Cuplea harengus*	Minor	N/A
Primary	King crab	*Paralithodes camtschaticus*	Minor	N/A
Primary	Ling	*Molva molva*	Minor	N/A
Primary	Lumpfish	*Cyclopterus lumpus*	Minor	N/A
Primary	Mackerel (bait)	*Trachurus trachurus*	Minor	N/A
Primary	NEA Shrimp	*Pandalus borealis*	Minor	N/A
Primary	Pacific saury	*Cololabis saira*	Minor	N/A
Primary	Squid (bait)	*Illex argentinus*	Minor	N/A
Primary	Tusk	*Brosme brosme*	Minor	N/A
Secondary	American plaice	*Hippoglossoides platessoides*	Minor	N/A
Secondary	Atlantic wolfish	*Anarhichas lupus*	MInor	N/A
Secondary	Blue ling	*Molva dypterygia*	MInor	N/A
Secondary	Common dab	*Limanda limanda*	MInor	N/A
Secondary	European flounder	*Platichthys flesus*	MInor	N/A
Secondary	European plaice	*Pleuronectes platessa*	Minor	N/A
Secondary	Greater forkbeard	*Phycis blennoides*	Minor	N/A
Secondary	Greater argentine	*Argentina silus*	Minor	N/A
Secondary	Halibut	*Hippoglossus Hippoglossus*	Minor	N/A
Secondary	Lemon sole	*Microstomus kitt*	MInor	N/A
Secondary	Lesser argentine	*Argentina sphyraena*	Minor	N/A
Secondary	Monkfish	*Lophius piscatorius*	Minor	N/A
Secondary	Pollack	*Pollachius pollachius*	Minor	N/A
Secondary	Rabbitfish	*Chimaera monstruosa*	Minor	N/A
Secondary	Rays, stingrays, mantas nei	*Rajiformes spp.*	Minor	N/A
Secondary	Righteye flounders	*Pleuronectidae spp.*	Minor	N/A
Secondary	Roughead grenadier	*Macrourus berglax*	Minor	N/A
Secondary	Roundnose grenadier	*Coryphaenoides rupestris*	Minor	N/A
Secondary	Spotted wolffish	*Anarhichas minor*	Minor	N/A
Secondary	Thorny skate/Starry ray	*Amblyraja radiata*	Minor	N/A
Secondary	Turbot	*Psetta maxima*	Minor	N/A
Secondary	Whiting	*Merlangius merlangus*	Minor	N/A
Secondary	Witch flounder	*Glyptocephalus cynoglossus*	Minor	N/A
ETP	Spurdog	*Squalus acanthias*	N/A	No

Habitat	Fine substratum (with flat associated geomorphology and large erect biota).	Commonly encountered habitats	No
Habitat	Cold water coral reefs	VME	No
Habitat	Coral gardens	VME	No
Habitat	Deep sea sponge aggregations	VME	No
Habitat	Seapens fields	VME	No
Habitat	Coarse sediments	Minor	N/A
Habitat	Rocky areas	Minor	N/A

Table 33 Individual outcome scoring of the different scoring elements

Designation	Component	Scoring elements	Scoring				
			UoA 1	UoA 2	UoA 3	UoA 4	UoA 5
N/A	P1. PI 1.1.1	Haddock	100				
Main	Primary	NEA Cod	100	100	100	100	100
Minor	Primary	Saithe	100	100	100	100	100
Minor	Primary	Beaked redfish	100	100	100	100	100
Minor	Primary	European hake	80	80	80	80	80
Minor	Primary	Golden redfish	80	80	80	80	80
Minor	Primary	Greenland halibut	100	100	100	100	100
Minor	Primary	Herring (bait UoA2)	N/A	100	N/A	N/A	N/A
Minor	Primary	King crab	80	80	80	80	80
Minor	Primary	Ling	100	100	100	100	100
Minor	Primary	Lumpfish	80	80	80	80	80
Minor	Primary	Mackerel (bait UoA 2)	N/A	100	N/A	N/A	N/A
Minor	Primary	NEA Shrimp	100	100	100	100	100
Minor	Primary	Pacific saury (bait UoA 2)	N/A	80	N/A	N/A	N/A
Minor	Primary	Squid (bait UoA 2)	N/A	80	N/A	N/A	N/A
Minor	Primary	Tusk	100	100	100	100	100
Minor	Secondary	American plaice	80	80	80	80	80
MInor	Secondary	Atlantic wolfish	80	80	80	80	80
MInor	Secondary	Blue ling	80	80	80	80	80
MInor	Secondary	Common dab	80	80	80	80	80
MInor	Secondary	European flounder	80	80	80	80	80
Minor	Secondary	European plaice	80	80	80	80	80
Minor	Secondary	Greater forkbeard	80	80	80	80	80
Minor	Secondary	Greater argentine	80	80	80	80	80
Minor	Secondary	Halibut	80	80	80	80	80
MInor	Secondary	Lemon sole	80	80	80	80	80
Minor	Secondary	Lesser argentine	80	80	80	80	80
Minor	Secondary	Monkfish	80	80	80	80	80
Minor	Secondary	Pollack	80	80	80	80	80
Minor	Secondary	Rabbitfish	80	80	80	80	80
Minor	Secondary	Rays, stingrays, mantas nei	80	80	80	80	80
Minor	Secondary	Righteye flounders	80	80	80	80	80
Minor	Secondary	Roughead grenadier	80	80	80	80	80
Minor	Secondary	Roundnose grenadier	80	80	80	80	80
Minor	Secondary	Spotted wolffish	80	80	80	80	80
Minor	Secondary	Thorny skate/Starry ray	80	80	80	80	80
Minor	Secondary	Turbot	80	80	80	80	80

Designation	Component	Scoring elements	Scoring				
			UoA 1	UoA 2	UoA 3	UoA 4	UoA 5
Minor	Secondary	Whiting	80	80	80	80	80
Minor	Secondary	Witch flounder	80	80	80	80	80
N/A	ETP	Spurdog	80	80	80	80	80
Commonly encountered habitats	Habitat	Fine substratum (with flat associated geomorphology and large erect biota).	80	100	100	100	100
VME	Habitat	Cold water coral reefs	60	100	100	80	100
VME	Habitat	Coral gardens	60	100	100	80	100
VME	Habitat	Deep sea sponge aggregations	60	100	100	80	100
VME	Habitat	Seapens fields	60	100	100	80	100
Minor	Habitat	Coarse sediments	80	100	100	80	100
Minor	Habitat	Rocky areas	80	100	100	80	100

7.3.2 Principle 2 Performance Indicator scores and rationales

PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI		
Scoring Issue		SG 60	SG 80	SG 100
a	Main primary species stock status			
	Guide post	Main primary species are **likely** to be above the PRI. OR If the species is below the PRI, the UoA has measures in place that are **expected** to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are **highly likely** to be above the PRI. OR If the species is below the PRI, there is either **evidence of recovery** or a demonstrably effective strategy in place **between all MSC UoAs which categorise this species as main**, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main primary species are above the PRI **and are** fluctuating around a level consistent with MSY.
	UoAs 1,2,4 and 5	Yes	Yes	Yes
	UoA 3	N/A	N/A	N/A
Rationale				

Based on catch composition tables for years 2017-2019 provided by the Directorate of Fisheries, main primary species to consider for the different UoAs are as follows:

For UoA 1 main primary species is NEA cod.
For UoA 2 main primary species is NEA cod.
For UoA 3 there are no main primary species to consider.
For UoA 4 main primary species is NEA cod.
For UoA 5 main primary species is NEA cod.

NEA Cod in subareas I and II: According to ICES 2019 advice on NEA cod, the spawning-stock biomass (SSB) has been above MSY Btrigger since 2002. The SSB reached a peak in 2013 and now shows a downward trend. Fishing mortality (F) was reduced from well above Flim in 1997 to below FMSY in 2008. It remained below FMSY until 2018 when it increased to slightly above FMSY. There has been no strong recruitment since the 2004 and 2005 year- classes. ICES assesses that fishing pressure on the stock is above FMSY and between Fpa and Flim, while the spawning stock size is above MSY Btrigger, Bpa, and Blim. ICES advises that when the Joint Russian–Norwegian Fisheries Commission management plan is applied, catches in 2020 should be no more than 689 672 tonnes. **NEA Cod meets the requirements at SG60, SG80 and SG100.**

As NEA cod is the only main species to consider. **UoAs 1, 2, 4 and 5 meet the requirements at SG60, 80 and 100.**

Scoring element	SG60	SG80	SG100
NEA Cod	Yes	Yes	Yes

b Minor primary species stock status

	Guide post			Minor primary species are highly likely to be above the PRI. OR If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species.
	Met? All UoAs			**N/A (See table below)**

Rationale

Minor primary species present in the catch are saithe, beaked redfish, European hake, golden redfish, Greenland halibut, king crab, ling, lumpfish, NEA prawn and tusk. Other minor species to consider are bait species used by the longline fleet, and which include (apart from saithe and prawn) herring, mackerel, Pacific saury and Argentinian squid.

Saithe: According to ICES 2019 advice on saithe stock in subareas 1 and 2, the spawning-stock biomass (SSB) has been above Bpa since 1996 and is presently estimated to be well above Bpa. The fishing mortality (F) has been below Fpa since 2013. Recruitment (R) has been close to the long-term geometric mean level in the last decade. fishing pressure on the stock is below Fpa, Flim, and FMP, and that the spawning stock size is above Bpa, Blim, and SSBMGT. **SG100 is met for saithe**.

Beaked redfish: According to ICES 2019 advice on beaked redfish in subareas 1 and 2, Spawning–stock biomass (SSB) increased steadily from 1992 to 2007, followed by stabilization slightly below that peak. Whilst the year classes 1996–2003 were weak, there is evidence for strong year classes 2005 – 2010. Recent recruitments are slightly above the long-term average. Fishing mortality has been low but has increased since 2014. ICES assesses that fishing pressure on the stock is below possible precautionary levels; and spawning stock size is above MSY Btrigger and above Bpa and Blim. **SG100 is met for beaked redfish**.

European hake: There is no advice on the status of the hake stock in subareas 1 and 2, therefore the team is not in a position to determine if the hake stock is above the PRI. The different UoAs take an average of 3 tons per year per UoA. It is likely that this level of catch does not hinder the recovery and rebuilding of the stock, but there is no evidence on this. **SG100 is not met for hake.**

Golden redfish: According to ICES 2018 advice on golden redfish in subareas I and II (latest advice available), the spawning-stock biomass (SSB) shows a declining trend since the late 1990s and is currently at the lowest in the time-series. Recruitment in 2006 (the 2003 yearclass) is now entering the SSB and fishery but the SSB has not yet ceased declining. The large recruitment estimates for 2011 and 2012 have high uncertainty. Fishing mortality (F) decreased until around 2005 but is now rising again. The stock is subject to specific management measures (such as area closures) to assist stock rebuilding and is landed as retained bycatch in small quantities by the different fleets. Targeted fishing is controlled by a ban on all directed trawl fisheries and specific licensing for seasonal gillnet and longline fisheries for beaked redfish. While these measures are having a positive effect on beaked redfish stock status with signs of stock rebuilding (ACOMsmen, 2014), the golden redfish stock continues to be at an all-time low with no signs of recovery (ICES 2018 advice). ICES advises that when the precautionary approach is applied, there should be zero catch in each of the years 2019 and 2020. ICES is not aware of any agreed precautionary management plan for golden redfish in this area. ICES assess that the spawning stock size is below Bpa and Blim. The current exploitation rate is above the FMSY proxy.
There is no significant direct fishery, and measures have been taken to attempt reduce the bycatch mortality by area closures. However, fishing mortality has been rising in recent years, and a further bycatch reduction is needed to minimize all sources of fishing mortality. It is imperative to minimize catches on the remaining mature fish and to protect incoming recruits.

According to ICES 2018 advice for golden redfish in NEA estimations of catches for 2017 are 5340 tons, of which 3354 would be taken by the whole Norwegian fleet, and 1307 tons would be taken by the Russian federation. Other countries contribute to catches in negligible numbers.

Golden redfish stock is not likely to be above the PRI. However, there are measures in place implemented by the whole Norwegian fleet which seek the rebuilding of the stock. These measures, who have been in place for several years now, are expected to ensure that the different UoAs do not hinder recovery and rebuilding of the stock. While these measures can be considered as a strategy, so far the strategy is not considered to be demonstrably effective as the measures have been implemented for several years now but there is no evidence of recovery yet. **SG100 is not met by golden redfish.**

Greenland halibut: According to ICES 2019 advice on Greenland halibut in subareas 1 and 2, the fishable biomass (length ≥ 45 cm) increased from 2007 to 2014 and has started to decline since then but remains above Bpa. The harvest rate has been increasing since 2008 and is at the highest in the time-series. Recruitment (age 1) is sporadic and the last strong year class was in 2013. No reference points for fishing pressure have been defined for this stock. Stock size is above Bpa. **SG100 is met for Greenland halibut.**

King crab: There is no ICES advice for the stock. The team is not in a position to determine if the catch by the different UoAs is hindering the recovery and rebuilding of the stock**. SG100 is not met for king crab.**

Ling: According to ICES 2019 advice on ling in subareas 1 and 2, a standardized catch per unit effort (cpue) based on data from the Norwegian longline fleet shows an increasing trend from 2004 to present. Landings have been relatively stable, but with a sharp increase in 2018. No reference points for stock size have been defined for this stock. ICES assesses that fishing pressure on the stock is below FMSY proxy. **SG100 is met by ling.**

Lumpfish: There is no ICES advice for the stock. The team is not in a position to determine if the catch by the different UoAs is hindering the recovery and rebuilding of the stock. **SG100 is not met for lumpfish.**

NEA shrimp: According to ICES 2019 advice on the stock, throughout the history of the fishery, estimates of stock biomass have remained above MSY Btrigger and fishing mortality has been very low, well below FMSY. ICES assesses that fishing pressure on the stock is below FMSY and Flim. Spawning-stock size is above MSY Btrigger and Blim. **SG100 is met for NEA shrimp.**

Tusk: According to ICES 2019 advice on the stock, a standardized CPUE based on data from the Norwegian longline fleet shows a positive trend from 2003. ICES assesses that fishing pressure on the stock is below FMSY proxy, while the relative spawning stock size is above MSY Btrigger proxy**. SG100 is met for tusk.**

Herring (bait): According to ICES 2019 advice, fishing mortality has increased since 2015, but is estimated to be below FMSY in 2018. The spawning-stock biomass (SSB) has been declining since 2008, but is estimated to be above MSY Btrigger in 2019. **SG100 is met for herring**.

Mackerel (bait): The spawning-stock biomass (SSB) is estimated to have increased since 2007, reaching a maximum in 2014, and has been declining since then. It has, however, remained above MSY Btrigger since 2008. The fishing mortality (F) has declined since 2003, but is estimated to have remained above FMSY. **SG100 is met for mackerel.**

Pacific saury (bait): The team is not in a position to determine if the requirements at SG100 are met**. SG100 is not met for Pacific saury.**

Squid (bait): The team is not in a position to determine if the requirements at SG100 are met. **SG100 is not met for squid.**

Scoring element	SG100
Saithe	Yes
Beaked redfish	Yes
European hake	No
Golden redfish	No
Greenland halibut	Yes
Herring	Yes
King crab	No
Ling	Yes

Lumpfish	No
Mackerel	Yes
NEA Shrimp	Yes
Pacific saury	No
Squid	No
Tusk	Yes

References

ICES 2019 advice on NEA cod
ICES 2019 advice on NEA saithe, beaked redfish, Greenland halibut, ling, NEA shrimp, herring, mackerel and tuck.
ICES 2018 advice on golden redfish.
CMM 2019-08 Pacific Saury.pdf (ofdc.org.tw)
FishSource - Argentine shortfin squid - SW Atlantic

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range: UoAs 1-5	**60-79**
Information gap indicator	**Information sufficient to score PI.**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score: All UoAs

Scoring element	SG60	SG80	SG100
NEA cod	**Yes**	**Yes**	**Yes**
Saithe	N/A	N/A	Yes
Beaked redfish	N/A	N/A	Yes
European hake	N/A	N/A	No
Golden redfish	N/A	N/A	No
Greenland halibut	N/A	N/A	Yes
Herring (bait)	N/A	N/A	Yes
King crab	N/A	N/A	No
Ling	N/A	N/A	Yes
Lumpfish	N/A	N/A	No
Mackerel (bait)	N/A	N/A	Yes
NEA Shrimp	N/A	N/A	Yes
Pacific saury (bait)	N/A	N/A	No
Squid (bait)	N/A	N/A	No
Tusk	N/A	N/A	Yes

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Condition number (if relevant):	**N/A**

PI 2.1.2 – Primary species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a **partial strategy** in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a **strategy** in place for the UoA for managing main and minor primary species.
	All UoAs.	**Yes**	**Yes**	**Yes**
Rationale				

Main primary species for the different UoAs is NEA cod (with the exception of the gillnet UoA for which there are no main primary species to consider). Minor primary species include saithe, golden redfish, beaked redfish, European hake, Greenland halibut, king crab, ling, lumpfish, NEA prawn and tusk. Minor species used as bait as Pacific saury and Argentinian squid are subject to management measures in their respective jurisdictions.

The Norwegian Marine Resources Act is an established strategy which should address all main impacts of the fishery on the ecosystem. Besides, the Joint Russian–Norwegian Fisheries Convention and the Norwegian management plans for the Barents Sea and Norwegian Sea set the guidelines to manage the different commercial stocks present in these areas.

The generic strategy for the conservation and sustainable exploitation of fish stocks is supported by ongoing research into the distribution and abundance of all fishes in the NE Arctic. IMR CRISP programme contributes with research into potential improvements in target identification and gear selectivity.

Generic management regulations that apply to the haddock fishery are:

- Discard ban
- minimum catch size
- minimum mesh size
- maximum bycatch of undersized fish
- closure of areas having high densities of undersized fish and in addition some seasonal and other area restrictions.
- The use of sorting grid is mandatory for all trawl fisheries.
- ban on targeted fishing for vulnerable species such as golden redfish.
- Regulation on the releasement of Atlantic halibut <80 cm which must be returned to sea alive to contribute to the rebuilding of the stock.
- Cod, haddock and saithe are subject to quota
- There are specific management measures directed to the rebuilding of golden redfish and coastal cod which are described below.

The TAC for Norwegian cod is a combined TAC for both the stock of NEA cod and the stock of coastal cod. There are no separated quotas for the coastal cod, and the catches of coastal cod are therefore not effectively restricted by quotas. Most regulatory measures for NEA cod also apply for coastal cod; such as minimum catch size, minimum mesh size, maximum bycatch of undersized fish, closure of areas having high densities of undersized fish and in addition some seasonal and other area restrictions. The use of sorting grid is mandatory for all trawl fisheries. Since the NEA haddock offshore (>12nm) fishery takes place in waters outside 12 nm, coastal cod is not present in the catch of any UoA.

There are other measures directed to certain minor species, such as golden redfish. Specifically, ICES 2018 advice states that catches should be zero for 2019 and 2020. The species is redlisted in the Norwegian red list of protected species (with no associated specific management measures or regulations) and catches should be kept to minimum. For the 5340 tonnes landed in 2017 in ICES subareas I and II, 64% were landed by the trawl fleet, 18 % were landed by the gillnet fleet, 15 % by the longline fleet and 3% by other gear types. There are specific management measures which were implemented with the intention of reverting the poor situation of this stock. Such measures are area closures and bycatch limitations, and a move-on rule for the prawn trawl fishery in the Barents Sea:

- In 2004 the redfish fishery became banned from 1st to 31st of May. Maximum bycatch allowed was reduced to 20% and a minimum landing size was established at 32 cm.
- In 2005 the prohibition to target redfish was extended from 20th April till 19th June.
- In 2006 fishing season was again modified, and prohibitions remained during the months of April and September. A minimum mesh size of 120 mm was introduced.
- In 2007 fishing was banned from 1st March till 30th June, and also during September. However, the hand-line fleet smaller than 11 m was excluded from these regulations.
- In 2012 fishing closures run from 20th December till 30th June, and also during September. However, all hand-line vessels were excepted from the regulatory measures for future years.
- In 2015 the fishing closures remained the same but additional restrictions were added such that redfish catch should be less than 50% of the catch per week.
- In 2016 fishing closures were modified from previous years and was now banned from 1st January to 31st July. Catch of redfish was restricted as it shouldn't be more than 30% of the total catch per week.

According to previous data from IMR, total catch by the Norwegian fleet was reduced from 6233 tonnes in 2004 down to 1969 in 2016 (68 %), where the landings from trawlers was reduced by 82%, while the landings from coastal fleet was reduced by 55 %. In spite of the reduction, as mentioned above, the stock has so far shown no signs of recovery.

The different measures implemented under the auspices of the Norwegian Marine Resources Act, act as a strategy for managing main and minor primary species.

Scoring element	SG60	SG80	SG100
Cod	Yes	Yes	Yes
Minor primary species	N/A	N/A	Yes

As NEA cod is the only main primary species to consider for all UoAs, **the requirements at SG60, SG80 and SG100 are met by all UoAs.**

	Management strategy evaluation			
b	Guide post	The measures are considered **likely** to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
	All UoAs	**Yes**	**Yes**	**No**

Rationale

Enforcement by the Coast Guard, together with records on landings, research on the status of the different stocks and the scientific advice given for the different stocks serve to give some objective basis for confidence that the measures will work for most species.
ICES stock assessments allow to estimate the size and status of all the impacted primary species. NEA cod stock is well above the PRI. Its good status serves as testing that the strategy is working effectively for this stock.
SG60 and SG80 are met by NEA cod and therefore by UoAs 1,2,4 and 5.
UoA 3 also meets the requirements at SG60 and SG80 since there are no main primary species to consider.

SG 100 is not met by any UoA, as testing does not support with high confidence that the partial strategy is working in the recovery of certain stocks such as golden redfish.

Scoring element	SG60	SG80	SG100

Cod	Yes	Yes	No
Minor primary species (golden redfish)	N/A	N/A	No

	Management strategy implementation			
c	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its overall objective as set out in scoring issue (a).**
	All UoAs		**Yes**	**No**
Rationale				

There is clear evidence that the strategy is successfully implemented, as confirmed by previous 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 main scoring elements (NEA cod) meet the requirements at SG80. A**ll UoAs meet the requirements at SG80.**

While the good stock status of NEA cod could serve as clear evidence that the objective of not hindering affected stocks is been met for this species, certain stocks, such as golden redfish show no sign of recovery despite the management efforts applied to the stock. Since golden redfish is present in the catch of all UoAs, **SG100 is not met by any UoA.**

	Shark finning			
d	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale				

There are no shark primary species in the catch. In any case, shark finning is not an issue in Norwegian waters. This SI is not applicable.

	Review of alternative measures			
e	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	All UoAs	**Yes**	**Yes**	**Yes**
Rationale				

The Norwegian Directorate of Fisheries performs an annual risk review in which different aspects are taken into consideration, including the examination of the number and type of infringements by Norwegian vessels, the species (and quantities) affected and the alternative measures to minimize such damages in the future. The risk review includes a review of catch data and its relation to allocated TACs.

The risk review is taken as part of the Directorate of Fisheries annual activity, with annual meetings in June and November, and review of results would result in new management measures to minimize unwanted catch and infringements by the fleet (if any). **SG60, SG80 and SG100 are met by all UoA's**.

References

Directorate of Fisheries, personal comment.
ICES 2019 advice for NEA cod
ICES 2019 advice for golden redfish.
CMM 2019-08 Pacific Saury.pdf (ofdc.org.tw)
FishSource - Argentine shortfin squid - SW Atlantic

Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range UoAs 1-5	**60-79**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**90**
Condition number (if relevant):	**N/A**

PI 2.1.3 – Primary species information

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impact on main primary species			
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main primary species with respect to status. **OR** **If RBF is used to score PI 2.1.1 for the UoA:** Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is **adequate to assess** the impact of the UoA on the main primary species with respect to status. **OR** **If RBF is used to score PI 2.1.1 for the UoA:** Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is **adequate to assess with a high degree of certainty** the impact of the UoA on main primary species with respect to status.
	All UoAs	**Yes**	**Yes**	**Yes**
Rationale				

On a general approach, the landing obligation, which was implemented for all species in 2009, serves to provide quantitative information on the impacts of the fishery in all affected species. Removals by other countries in the area are also known by the relevant management institutions.
Specifically, ICES provides scientific advice for NEA cod. This information, together with removals by the UoA and by all fishing fleets in the area serve to assess with a high degree of certainty the impact of the different UoAs on NEA cod with respect to status. **The requirements at SG60, SG80 and SG100 are met by NEA cod and by all UoAs**.

b	**Information adequacy for assessment of impact on minor primary species**			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	All UoAs			**Yes**
Rationale				

As mentioned above, the landing obligation, which was implemented for all species in 2009, serves to provide quantitative information on the impacts of the fishery in all affected species. Removals by other countries in the area are also known by the relevant management institutions. Enforcement to the different management measures is carried out by the Norwegian Coast Guard. There is research undertaken by IMR which includes annual coastal surveys and ecosystem surveys, both in the Norwegian Sea and in the Barents Sea.
The impact of the different UoAs with respect to stock status of the different minor primary species can be easily evaluated by consulting ICES catch advice. **SG100 is met by all UoA's** and scoring elements.

c	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage **main** primary species.	Information is adequate to support a **partial strategy** to manage **main** primary species.	Information is adequate to support a **strategy** to manage **all** primary species and evaluate with a **high degree**

				of certainty whether the strategy is achieving its objective.
	All UoAs	**Yes**	**Yes**	**Yes**

Rationale

Landing statistics since the implementation of the Norwegian landing obligation can provide trends of the landings of the different primary species in the catch composition and the areas where these species are more abundant. On general terms, the evaluation of the effectiveness of the different management measures can be done by comparing landing statistics before and after the implementation of the different management measures and by consultation of ICES advice on the different species.

The status of the different stocks present in the catch composition is studied by research institutions such as ICES, IMR and also by PINRO (for those stocks in the Barents Sea waters). Special attention is paid to golden redfish due to its poor stock status. **SG60, SG80 and SG100 are met by all UoAs and scoring elements.**

References

Landing records.
ICES advice for cod, haddock, saithe, golden redfish.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**100**
Condition number (if relevant)	**N/A**

PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
Scoring Issue		SG 60	SG 80	SG 100
	Main secondary species stock status			
a	Guide post	Main secondary species are **likely** to be above biologically based limits. OR If below biologically based limits, there are **measures** in place expected to ensure that the UoA does not hinder recovery and rebuilding.	Main secondary species are **highly likely** to be above biologically based limits. OR If below biologically based limits, there is either **evidence of recovery** or a **demonstrably effective partial strategy** in place such that the UoA does not hinder recovery and rebuilding. AND Where catches of a main secondary species outside of biological limits are **considerable**, there is either **evidence of recovery** or a, **demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species**, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main secondary species are above biologically based limits.
	All UoAs	**N/A**	**N/A**	**N/A**
Rationale				

According to information recorded on electronic logbooks (which also record interaction on fatal interactions with out of scope species) for the different UoAs for years 2017-2019 as facilitated by the Directorate of Fisheries, there are no main secondary species to take into consideration for the different UoA's.

	Minor secondary species stock status			
b	Guide post			Minor secondary species are highly likely to be above biologically based limits. OR If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	All UoAs.			**No**
Rationale				

Minor secondary fish species in the catch of the different UoAs are American plaice, Atlantic wolfish, blue ling, common dab, European flounder, European plaice, greater forkbeard, greater argentine, halibut, lemon sole, lesser argentine, monkfish, pollack, rabbitfish, rays, stingrays and mantas nei, righteye flounders, roundnose grenadier, spotted wolfish, starry ray, turbot, whiting and witch flounder.
There are no reference points available for these stocks, neither derived from analytical stock assessment nor using empirical approaches. Thus, all Minor Secondary scoring elements are Data Deficient species according to MSC FCP v2.1 7.7.3.2 and a RBF shall be triggered for assessing this SI. However, FCP v2.1 PF4.1.4 allows the team to avoid conducting RBF on Minor species when evaluating PI2.1.1 or 2.2.1. Due to the high number of different taxa to be assessed as Minor Secondary species the assessment team decided not to trigger the RBF for assessing them. Therefore, they were not assessed.
Therefore, in accordance with PF4.1.4 the final PI score shall be adjusted downward according to clause PF5.3.2 (which states that "*final PI score shall be no greater than 80*"). **SG100 is not met** by any minor secondary species.

References

Landing records.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**80**
Condition number (if relevant)	**N/A**

PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **partial strategy** in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **strategy** in place for the UoA for managing main and minor secondary species.
	All UoAs	**Yes**	**Yes**	**No**
Rationale				

There are no main secondary fish species to consider.

The strategy is set out in the Norwegian Marine Resources Act, in the protocol for the JRNFC and in the Barents Sea and Norwegian Sea management plans, which explicitly require an ecosystem approach to marine environmental management. The act also requires that all commercial fish species are retained, recorded and landed and that vessels equipped with e-logbooks must record interactions with seabirds and marine mammals. (Paper logbooks are still required in the Russian zone.) Electronic logbooks should serve to record fatal interactions with seabirds and marine mammals should these happen.
There is no requirement to record non-fatal interactions with out-of-scope species, which would serve to better quantify the effects that different UoAs have on the different possible out of scope main secondary species. A recommendation on implementing this recording is set.
Marine mammal and seabird stock monitoring and abundance estimates are made by IMR and NINA and records of all biota are made during annual IMR– PINRO trawl surveys undertaken under the auspices of JRNFC. As for seabirds, there are permanent and seasonal closures of inshore waters in the vicinity of key seabird nesting sites. As regards sharks and rays, the study on their status is part of both IMR and ICES research activities, who provides advice on the stock status of some of these species.
Fishermen always avoid interactions of non-targeted species in order to save time and money. Besides, certain management measures are implemented in order to prevent interactions with out of scope species:

- Longlines and Hooks and lines have implemented streamers (tori lines) which should serve to prevent interactions with seabirds. The implementation of swivel hooks could also serve to minimise such interactions (Fanger, 2015).
- The possible implementation of mandatory use of pingers in the Vestfjord is at present at hearing. This implementation should serve to reduce interactions of marine mammals with this fishing gear in this area. In any case, there are no specific concerns raised in relation to the possible interaction of gillnets and mammals such as harbour porpoises (concerns related to the gillnet fishery are associated to the inshore cod and lumpfish fisheries, which operate in waters closer to the shoreline).
- Entanglements with Danish seine and demersal trawlers could result either in casualty or in releasement, depending on the level of entanglement. All demersal trawlers are equipped with sorting grids for exclusion of bycatch and minimise the mortality of non-targeted species. Specifically, a review of the impact of Norwegian offshore demersal trawl fisheries on marine mammals was undertaken by ICES Study Group for Bycatch of Protected Species (SGBYC 2009) and concluded that larger offshore demersal trawl vessels “are regarded as having a relatively low risk for bycatches of marine mammals”.

The different measures implemented are considered as a partial strategy by the UoA for managing interactions with possible main secondary species. **SG60 and SG80 are met by all UoAs**.

Despite the fact that interactions with out-of-scope species are not expected, and that there are no main secondary fish species to consider in this assessment, the team is not aware of any "strategy" designed to manage interactions with main and minor secondary species. **SG100 is not met by any UoA**.

	Management strategy evaluation			
b	Guide post	The measures are considered **likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is **some objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	All UoAs	**Yes**	**Yes**	**No**

Rationale

As described in SIa, the strategy is set out in the Norwegian Marine Resources Act, in the protocol for the JRNFC and in the Barents Sea and Norwegian Sea management plans, which explicitly require an ecosystem approach to marine environmental management. Actual level of implementation of the different management measures in place is discussed under SIc.
Coastal states' agencies (IMR, NINA, PINRO) monitor the status of fish, seabird and marine mammal populations and pay close regard to the potential for adverse interactions of these populations with fisheries. Where specific problems are identified, they are modelled and subject to quantitative analysis although more generally emphasis is given to broader ecosystem modelling. IMR conducts on-site research which serves to provide estimations on the effectiveness of mitigation measures.
The general low level of interactions with secondary species (resulting in no main secondary species to consider) gives some objective basis for confidence that the partial strategy implemented will work. **The requirements at SG60 and SG80 are met by all UoAs.**
The high number of minor secondary species together with uncertainties related to the stock status of some of them prevent the UoAs from meeting the requirements at SG100. **The requirements at SG100 are not met by any UoA.**

	Management strategy implementation			
c	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its objective as set out in scoring issue (a).**
	All UoAs		**Yes**	**No**

Rationale

ICES, IMR and NINA conduct research and monitoring of the populations of marine mammal and seabirds. Their results are afterwards reviewed by OSPAR and NAMMCO.
Norwegian specific management measures such as landing obligation of all species, area closures, bycatch limitations, move on rules, return to sea of alive elasmobranchs, use of sorting grids to avoid catch of unwanted species, use of specific scaring devices such as streamers (by longlines) and pingers (by gillnets), comprehensive research by IMR and a robust enforcement system serve as a clear evidence that the strategy is being implemented successfully. There is a strong enforcement system covering fleet effort, gear types and mesh sizes, landings and permanent and temporary area closures. **All UoAs meet requirements at SG80.**

While the monitoring of interactions by the fishery 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 NEA haddock offshore (>12nm) fishery, the lack of information on the biologically based limits for all secondary species such as fish and elasmobranchs prevent the UoA from meeting the requirements at SG100, since it is not

possible to asseverate that the partial strategy is achieving its overall objective in relation to minor secondary species, **SG100 is not met by any UoA.**

d	**Shark finning**			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	All UoAs	**Yes**	**Yes**	**Yes**
Rationale				

While some sharks are identified in the catch as minor secondary species, shark finning is forbidden in Norway and is not reported to occur. **All UoAs meet the requirements at SG60, 80 and 100.**

e	**Review of alternative measures to minimise mortality of unwanted catch**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of **unwanted** catch of main secondary species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of **unwanted** catch of main secondary species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of **unwanted** catch of all secondary species, and they are implemented, as appropriate.
	All UoAs	**Yes**	**Yes**	**Yes**
Rationale				

The Norwegian Directorate of Fisheries performs an annual risk review in which different aspects are taken into consideration, including the examination of the number and type of infringements by Norwegian vessels, the species (and quantities) affected and the alternative measures to minimize such damages in the future. The risk review includes a review of fatal interactions with out-of-scope species, but non-fatal interactions can't be taken into consideration due to the lack of records.

The risk review is taken as part of the Directorate of Fisheries annual activity, with meetings in June and November, and review of results would result in new measures to minimize unwanted catch (including out of scope main secondary species if any) and infringements by the fleet (if any). **SG60, SG80 and SG100 are met by all UoA's.**

References

Landing records

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range All UoAs	**≥80**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**85**
Condition number (if relevant)	**N/A**

PI 2.2.3 – Secondary species information

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts on main secondary species			
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main secondary species with respect to status. OR **If RBF is used to score PI 2.2.1 for the UoA:** Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and **adequate to assess** the impact of the UoA on main secondary species with respect to status. OR **If RBF is used to score PI 2.2.1 for the UoA:** Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	Quantitative information is available and **adequate to assess with a high degree of certainty** the impact of the UoA on main secondary species with respect to status.
	All UoAs	**Yes**	**Yes**	**No**
Rationale				

Quantitative information from catches and landings is available, including VMS and standardised logbooks, combined with regular at sea inspections. This provides an accurate time-series of catches. Catch composition data as facilitated by the Directorate of Fisheries shows that there are no main secondary species to consider. There is information available on the status of stocks and populations of certain secondary species (such as tusk and other fish species, sharks and rays) gathered by research institutions and programs (such as IMR, ICES, NAMMCO, NINA, JRNFC) which provide some qualitative information on the possible out of scope secondary species present in the area and their population status. This qualitative and quantitative information is generally available and is adequate to assess the impact of the different UoAs on main secondary species (if any) with respect to status. **The requirements at SG60 and SG80 are met by all UoAs.**

However, available quantitative information on the occurrence of non-fatal interactions with out-of-scope species is not considered adequate to assess with a high degree of certainty the full impact that the different UoAs may have on possible out-of scope main secondary species. **The requirements at SG100 are not met for any UoA.**

b	**Information adequacy for assessment of impacts on minor secondary species**			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	All UoAs			**No**
Rationale				

As all out of scope species which are not considered ETP species are by default considered as main secondary species, minor secondary species can only refer to fish species which are not specifically managed and which comprise less that a 5% of the total catch by the different UoAs. These species are American plaice, Atlantic wolfish, blue ling, common dab, European flounder, European plaice, greater forkbeard, greater argentine, halibut, lemon sole, lesser argentine, monkfish, pollack, rabbitfish, sharks, rays, stingrays and mantas nei, righteye flounders, roundnose grenadier, spotted wolfish, starry ray, turbot, whiting and witch flounder.

While quantitative information is available on the amounts of these species taken by the different UoAs, stock status of is not always known for all of them (as for lesser argentine and skates and rays, for example). **Therefore, the requirements at SG100 are not met by the different UoAs.**

	Information adequacy for management strategy			
c	Guide post	Information is adequate to support **measures** to manage **main** secondary species.	Information is adequate to support a **partial strategy** to manage **main** secondary species.	Information is adequate to support a **strategy** to manage **all** secondary species and **evaluate** with a **high degree of certainty** whether the strategy is **achieving its objective**.
	All UoAs	**Yes**	**Yes**	**No**

Rationale

Information on catches and interactions with main secondary species is gathered by the Directorate of Fisheries and also by research institutions such as IMR. This information, collected on a continued basis, is considered adequate both to support measures or a partial strategy to manage main secondary species. **SG60 and SG80 are met by all UoA's.** Information gathered by research institutions should also serve to assess the impact that the different UoA's may have with respect to the status of the different main secondary species. Given the high number of minor secondary species in the catch the team considers that available information is not adequate to support a strategy to manage all secondary species and to evaluate with a high degree of certainty whether the strategy is achieving its objective, as stock status and reference limits are not known for some of them. **SG100 is not met by any UoA.**

References

Landing records

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range All UoAs	**≥80**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**80**
Condition number (if relevant)	**N/A**

PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guide post	Where national and/or international requirements set limits for ETP species, the **effects of the UoA** on the population/ stock are known and **likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, the **combined effects of the MSC UoAs** on the population /stock are known and **highly likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a **high degree of certainty** that the **combined effects of the MSC UoAs** are within these limits.
	All UoAs	**Yes**	**Yes**	**No**
Rationale				

According to landing records the only ETP species interacting the offshore haddock fishery is spurdog, with catches of 50-200 kg been reported per year by the gillnet and hook and line fleets (UoAs 3, 2 and 4). Some other unidenfied skates and rays (of which some would be considered as secondary species, but others would be considered as ETP species) are reported in the same quantities.
In 2007, Norway introduced a general ban on target fisheries for spurdog in the Norwegian economic zone and in international waters of ICES subareas 1–14, with the exception of a limited fishery for small coastal vessels. This was followed in 2011 by a ban of all directed fisheries, although there is still a bycatch allowance (with strict percentage limits, regularly reviewed). Live specimens can be released, whereas dead specimens must be landed. This also applies to recreational fisheries (ICES WGEF 2018). Norwegian Regulation J-250-2013, protecting basking sharks, spurdogs, porbeagles and silky sharks) prohibits direct fishing for these species and enforces releasement when species are still alive. Apart from the 0 TAC, this regulation does not set specific limits for these encounters.

ICES advises that when the precautionary approach is applied, there should be no targeted fisheries on this stock in 2019 and 2020. Landing of bycatch should be part of a management plan, including close monitoring of the stock and fisheries. 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; therefore, ICES considers that bycatch should not exceed that level (ICES Advice Spurdog NE Atlantic Oct 2018).

Low mortality has been reported for spurdog caught by trawl when tow duration was <1 h, with overall mortality of about 6% (ICES WGEF 2018). Survival studies on elasmobranchs indicate that the rate of survival is high, provided on-board handling is speedy, and the cod-end weight did not damage the specimens (STECF 2014). It is standard practice on board the vessels of the fishery under assessment to release any living by-caught elasmobranchs as speedily as possible. All fisheries in the Norwegian EEZ and Russian EEZ have to comply with the zero TAC rule, and this is enforced through the usual means of inspections.

Considering the detailed reporting, and the low number of spurdog recorded as well as quick release handling on board when encountered, it can be said that the effect of the fishery on the species is known and highly likely to be within limits set by ICES. **SG60 and SG80 are met.**

The team is not in a position to asseverate this with a high degree of certainty. The requirements at **SG100 are not met**.

b	**Direct effects**			
	Guide post	Known direct effects of the UoA are likely to not **hinder recovery** of ETP species.	Direct effects of the UoA are **highly likely** to not **hinder recovery** of ETP species.	There is a **high degree of confidence** that there are no **significant detrimental direct effects** of the UoA on ETP species.
	UoA 1 (Bottom tralws)	**Yes**	**Yes**	**No**

	UoA 2 (longlines)	**Yes**	**Yes**	**No**
	UoA 3 (gillnets)	**Yes**	**Yes**	**No**
	UoA 4 (Danish seine)	**Yes**	**Yes**	**No**
	UoA 5 (Hooks and lines)	**Yes**	**Yes**	**No**

Rationale

Landing obligation, implemented in 1987, would require vessels to land any dead animal, regardless it being ETP species or not. The electronic logbook system requires that not only commercial fishes are recorded but also ETP species, principally seabirds and marine mammals. A particular logbook 'page' cannot be closed until the ETP boxes are completed, even if it is with a zero. Skippers are also required to avoid all known coral reefs and report all catches of coral >30 kg and sponges >400 kg and move on ≥2 miles.
The abundance and distribution of seabirds and marine mammals are monitored as part of the annual IMR–PINRO ecosystem survey (Mauritzen & Klepikovsky, 2013). Both institutions collect information on the presence of ETP species in the Barents Sea through the combined research projects on board research vessels. Besides, PINRO has 5 scientific observers covering Russian vessels in the Barents Sea (with approximately 5% coverage) collecting information on ETP and benthic species in the catch, and IMR collects information through the reference fleet. Generally speaking, interactions of the different UoAs with seabirds and marine mammals are not expected due to the different mitigation measures implemented by the different UoAs (as with out-of-scope species). No marine mammals nor seabirds have been reported in the landing records for the NEA haddock fishery (which takes place outside 12 nm from the shoreline) nor by the reference fleet.

The Barents Sea has one of the largest concentrations of seabirds in the world (Norderhaug et al., 1977; Anker-Nilssen et al., 2000); its 20 million seabirds harvest annually approximately 1.2 million tonnes of biomass from the area (Barrett et al., 2002). Nearly 40 species are thought to breed regularly in northern regions of the Norwegian Sea and the Barents Sea but just two species (both considered as ETP species) – puffin (*Fratercula arctica*) and kittiwake (*Rissa tridactyla*) – account for more than 90% of all breeding seabirds in the region (Christiansen, 2010). The high density of seabirds is a consequence of high primary production and large stocks of pelagic fish species such as capelin, herring and polar cod. In the north and east, the marginal ice-zone is an important feeding habitat where seabirds forage on migrating capelin, polar cod and zooplankton (Mehlum & Gabrielsen, 993, Mehlum et al., 1996). The seabird communities in south and west depend on juvenile gadoids, juvenile herring, sandeels (Ammodytes sp.) and capelin (e.g. Anker-Nilssen, 1992, Barrett & Krasnov, 1996, Barrett et al., 1997, Fauchald & Erikstad, 2002).

There is always concern with respect to interactions of static-gear fisheries and seabirds (Fangel et al.2011). The 2009 joint IMR–NINA survey estimated that less than 3000 seabirds (all species combined) were taken in the cod gillnet fishery with comparable numbers in the cod longline fishery (Fangel et al., 2014). While undesirable, these numbers are small relative to the size of the seabird populations in the NEA Arctic. These findings are consistent with the ICES working group on seabird ecology (WGSE, 2014) which has not identified NE Arctic fisheries as specific cause for concern. Furthermore, surveys with a remote electronic monitoring system of gillnet and longline fishing (in the Baltic) found that in >1000 hours of recording during hauling operations, only 136 seabirds were captured (both gears combined) and no marine mammals (WGBYA, 2014). By observation and inference, therefore, these reports would tend to confirm the industry's contention that the capture of seabirds, by any method of fishing, is extremely rare.

ICES JWGBIRD 2018 report summarizes the vulnerability of marine bird species and families to bycatch of different gear types, including all gears under assessment. Information on this report is broad and does refer to North East Atlantic however serves as an indicator to Norwegian waters too. According to this report, gillnets and/or hook gears (hand- and longlines) are reported to be the deadliest fishing gears for seabirds. Besides, Bærum et al. (2018) showed that coastal fisheries might represent a more general threat to a wider range of seabird species, as opposed to longline fisheries (e.g. Fangel et al. 2017). It is acknowledged that important gaps remain in the understanding of seabird bycatch (ICES JWGBIRD 2018).

The ICES Working Group on Bycatch of Protected Species (WGBYC) identified a number of data sources related to bycatch numbers and fishing effort, but these are often incomplete with regards to seabird bycatch. Specifically related to Norway, "*the Norwegian Reference Fleet (NRF), a group of Norwegian fishing vessels contracted by the Institute of Marine Research (IMR), provides detailed information on their fishing activity, to improve stock assessments and fisheries management (https://www.hi.no/hi/tokt/referanseflaten-1). The self-reported data collected by the NRF include bycatch of marine mammals and seabirds. This has resulted in a 10-year long time series of seabird bycatch data related to the fishery data from a large fleet of small-scale vessels fishing with gillnets along the Norwegian coast, and enabled estimation of the total bycatch of seabirds in the Norwegian small-vessel gillnet fishery (Bærum et al. 2018).* ***The NRF has proven an effective way of collecting seabird bycatch data****, yet caution is required when interpreting self-reported fisheries information*".

Detailed information on research and results by the Norwegian reference fleet, including information on species interacted, areas of research, and vessels in the reference fleet can be found at https://www.hi.no/hi/nettrapporter/rapport-fra-havforskningen-en-2020-8 . Researchers from the reference fleet were consulted at the site visit and they reported no significant incidents to take into consideration for the offshore cod and haddock fisheries.
Information on the distribution and abundance of marine mammals in the Barents Sea is gathered under the auspices of the North Atlantic Marine Mammal Commission (NAMMCO). Twelve species of large cetaceans, five species of dolphins and seven pinniped species have been recorded in the Barents Sea region, plus polar bears (*Ursus maritimus*). Most of the whales are long-distance migrants but only three species are permanent high Arctic residents – white (beluga) whale (*Delphinapterus leucas*), narwhal (*Monodon monceros*) and bowhead whale (*Balaena mysticetus*). Historically, all of the large whales were hunted but even after 80 years of protection, only scattered individuals of bowhead whale survive near the ice edge. Today, the minke whale (*Balaenoptera acutorostrata*) is the only whale species being hunted in the region, and only in limited numbers (Stiansen et al., 2009). Demersal fish species, particularly cod (Stiansen et al., 2009) contribute a significant percentage of the minke whale annual diet but, clearly, it is not an obligate predator of gadoids.

Marine mammal abundance is estimated through counting surveys by NAMMCO. The NAMMCO NASS 2015 surveys (see Figure 12) covered the Northern part of the North Atlantic. These surveys include areal sightings and vessel observations.

The frequency of direct, physical interaction between demersal fishing vessels and large whales is likely to be trivial [dolphins and certainly porpoises (*Phocoena phocoena*), tend to be more abundant inshore] but there can be direct trophic competition. Trophic competition for pelagic prey species (e.g. herring, capelin) probably occurs on a greater scale between target gadoid species and whales. The demersal fisheries, however, tend to reduce gadoid stock size and hence predation pressure on the pelagic species thereby favouring the cetacean predators rather than increasing trophic pressure. These species interactions are all part of the mosaic of multi-species ecosystem research and modelling undertaken by numerous institutions in the NE Atlantic (e.g. Marine Research Institute, Iceland: Stefansson et al., 1997; CEFAS, UK: Blanchard et al., 2002) and as part of the Barents Sea Management Plan (BSMP, 2006; Stiansen et al., 2009; Arneberg, 2013).

The 2014 NAMMCO report expresses concern about the number of harbour porpoise (*Phocoena phocoena*, ETP species in OSPAR regions II and III, see https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats) taken in the inshore cod (and monkfish) gillnet fishery in Norwegian coastal waters. The numbers of casualties resulting from interactions by those fisheries were at the time estimated to be around 6000–7000 individuals per year (C.V. 30%). In 2017 IMR reported that previous numbers were overestimated and that the current level of by-catch of harbour porpoise in the total Norwegian gill-net cod and monk fishery are around 3,000 individuals annually (Bjørge et al., 2016). The 2016 SCANS-III survey found that the harbour porpoise population was about 467,000 individuals, and in the Northern Norwegian areas (North of 62 N), the estimate was around 25,000 (Hammond et al., 2017). Catch statistics for the different UoAs for years 2017-2019 show no interactions with marine mammals.

IMR has calculated that an estimated 2,900 porpoises are taken annually as by-catches in nets along the coast. PBR for harbour porpoises in Norway is estimated at 2,542 animals annually (https://www.fiskeridir.no/Yrkesfiske/Dokumenter/Hoeringer/Forslag-til-tiltak-for-aa-redusere-bifangst-av-sjoepattedyr). 40% of these animals are taken in the cod fisheries, and the other 60% by the monkfish gillnet fishery (Moan pers. comm).
Under the auspices of IMR, the coastal reference fleet has since the autumn of 2018 carried out experiments with so-called acoustic alarms / scare devices (pingers) in net fishing for cod and monkfish. The department's experiments show

a 70% - 100% reduction in by - catches of harbour porpoises in nets. This is in accordance with several international surveys. NFA, IMR and the Fisheries Directorate are pressing to implement the use of pingers on a voluntary basis. Besides, a hearing for J-regulations for mandatory use of pingers in Vestfjorden was published in June 2020 (https://www.fiskeridir.no/Yrkesfiske/Dokumenter/Hoeringer/Forslag-til-tiltak-for-aa-redusere-bifangst-av-sjoepattedyr). Close date for comments was 8th September 2020 (https://www.fiskeridir.no/Yrkesfiske/Nyheter/2020/0620/Hoering-om-tiltak-for-aa-redusere-bifangst-av-sjoepattedyr).
The species is IUCN classified as Least Concern (https://www.iucnredlist.org/species/17027/50369903).

The Research Council of Norway acts as an observer of the CRISP consortium. The purpose of CRISP (Centre for Research-based Innovation in Sustainable fish capture and Processing technology) is to establish a platform for cooperation where scientists, fishermen, fishing gear manufacturers, and electronic instrument producers will work together to solve these challenges. CRISP is formed by institutions such as the Institute of Marine Research, the University of Bergen, the University of Tromsø, Norges Sildesalgslag and Norges Råfisklag, among others. One of the pillars of this consortium is to work on the development of low-impact and selective fishing gears (http://crisp.imr.no/en/projects/crisp/about-crisp/project-overview). To reduce the impact of gillnets on marine mammals there is research undergoing on the use of deterrent pingers to reduce the undesirable catch of harbour porpoises and other marine mammals. To date, deterrent pingers have been tested in the Vestfjord fishery as a mean to minimise adverse fishery interactions but their utility is still discussed, as harbour porpoise bycatch seems to be reduced with the use of pingers but there seems to be an increase in the bycatch or harbour seals, which may be attracted to the pingers. Further investigation is needed (Bjørge and Moan, 2019). It has to be remineded however that harbour porpoise is considered as an ETP species in OSPAR regions II and III (but not in OSPAR region I which is where the cod offshore fishery is taking place). At present the use of deterrent devices by the UoA is a voluntary measure but its mandatory implementation in the Vestfjord is at present at a hearing process. No interactions with the vessels in the different UoAs nor with IMR high seas reference fleet North of 62º North have been reported.

Given the revised levels of general harbour porpoise bycatch, the associated management measures, the nil recordings by the UoAs and IMR reference fleet vessels in waters North of 62º North and the fact that OSPAR does not consider the species to be threatened in OSPAR region I, the team considers that harbour porpoise is not a scoring element to consider in the NEA cod offshore fishery under assessment.

According to landing records the only ETP species interacting with the haddock offshore fishery is spurdog, with catches of 50-500 kg been reported some years by the different UoAs (anecdotal catches of 50 kgs by UoAs 1,2,4 and 5 and higher catchs of 500 kg some years for UoA 3). Some other unidenfied skates and rays (of which some would be considered as secondary species, but others would be considered as ETP species) are reported in the same quantities.

The stock of spurdog is subject to ICES Advice. According to ICES 2018 advice (latest available) the stock is below HRMSY, and total biomass is below MSY Btrigger. ICES advises that when the precautionary approach is applied, there should be no targeted fisheries on this stock in 2019 and 2020. Landing of bycatch should be part of a management plan, including close monitoring of the stock and fisheries. 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; therefore, ICES considers that bycatch should not exceed that level.

There are specific measures prohibiting targeted fishing for spurdog, basking shark and porbeagle but if caught they should be landed (in practice, if still alive they are more likely to be released). The catch of these species should be recorded individually as they are easily identified by crew members. Fatal interactions can be obtained from landing records and show that total quantities involved are very small.

As regards unidentified skates and rays, catch by the different UoAs also show these interactions are sporadic. Given this low level of interactions and the high post releasement rate of these species (as described by Mandelman and Farrington (2007), direct effects are likely not to hinder the recovery of ETP species. Besides, interactions with seabirds and marine mammals are not expected due to the different mitigation measure simplemented by the different UoAs (as with out of scope species). **The requirements at SG60 are met by all UoAs.**

Given the implemented recording of interactions with spurdogs and other ETP species, and the low interactions by the UoAs which show interactions (catches about 50 kg per year for UoAs 1,2,4 and 5, and 500 kg for UoA 3, and similar numbers for other unidentified skates and rays, the team considers that direct effects of the different UoAs are highly likely not to hinder the recovery of elasmobranchians ETP species. **The requirements at SG80 are met by all UoAs.**

However, uncertainties related to the identification of interacted skates and rays prevent all UoAs from meeting the requirements at SG100, as with this uncertainty it is not possible to asseverate that direct impacts by the different UoAs are highly likely not to hinder the recovery of the different ETP species. **SG100 are not met by any UoA**.

	Indirect effects			
C	Guide post		Indirect effects have been considered for the UoA and are thought to be **highly likely** to not create unacceptable impacts.	There is a **high degree of confidence** that there are no **significant detrimental indirect effects** of the UoA on ETP species.
	All UoAs		**Yes**	**No**

Rationale

Indirect effects on ETP populations would be those caused as results of interactions with the fishing gear or vessel (such as injuries, acoustic disturbances, ghost fishing in case of gear loss or environmental degradation such as pollution) or those related to the reduction of prey availability for prey species, competition for forage, destruction of egg cases or geolocation difficulties.
As regards lost fishing gears, fleets make every effort to avoid gear loss and to retrieve it.
Indirect effects such as prey removal are normally considered 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. In any case, the haddock stock in subareas 1 and 2 is on a healthy situation.
Given this, indirect effects have been considered for all UoAs under assessment and are thought to be highly likely to not create unacceptable impacts to ETP species. **SG80 is met by all UoAs**.

Given the uncertainties related to certain indirect effects (such as acoustic disturbances) and the difficulty to provide a high degree of confidence that there aren't significant detrimental effects of the fishery on ETP species **prevent all UoAs from obtaining SG100.**

References

ICES 2018 advice for spurdog stock in NEA waters
https://www.iucnredlist.org/species/17027/50369903
https://image3.slideserve.com/5506882/ospar-regions-ospar-rsc-regions-n.jpg
https://www.researchgate.net/profile/Jean-Pascal_Berge2/publication/258437864/figure/fig4/AS:339607855091715@1457980230189/Geographic-location-of-the-ICES-areas.png
(http://crisp.imr.no/en/projects/crisp/about-crisp/project-overview
https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats)
https://www.fiskeridir.no/Yrkesfiske/Dokumenter/Hoeringer/Forslag-til-tiltak-for-aa-redusere-bifangst-av-sjoepattedyr
https://www.fiskeridir.no/Yrkesfiske/Nyheter/2020/0620/Hoering-om-tiltak-for-aa-redusere-bifangst-av-sjoepattedyr

Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range: UoA 1	>80
Draft scoring range: UoA 2	>80
Draft scoring range: UoA 3	60-79
Draft scoring range: UoA 4	>80
Draft scoring range: UoA 5	>80
Information gap indicator	More information sought

Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score: UoAs 1-5	**80**
Condition number (if relevant) All UoAs	**N/A**

PI 2.3.2 – ETP species management strategy

PI 2.3.2		The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place (national and international requirements)			
	Guide post	There are **measures** in place that minimise the UoA-related 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 UoA'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 UoA'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.
	All UoAs	**NA**	**NA**	**NA**
Rationale				

While there is a strategy in place to manage the UoA's impact on ETP species, there are no specific requirements for their protection set out in applicable national ETP legislation nor in international agreements. See SIb.

b	**Management strategy in place (alternative)**			
	Guide post	There are **measures** in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a **strategy** in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a **comprehensive strategy** in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.
	All UoAs	**Yes**	**Yes**	**No**
Rationale				

The strategy is set out in the Norwegian Marine Resources Act, in the protocol for the JRNFC and in the Barents Sea and Norwegian Sea management plans, which explicitly require an ecosystem approach to marine environmental management. The act also requires that all commercial fish species are retained, recorded and landed and that vessels equipped with e-logbooks must record interactions with seabirds and marine mammals. (Paper logbooks are still required in the Russian zone.) Electronic logbooks should serve to record fatal interactions with any ETP species should these happen. Records from catch statistics for years 2017-2019 show that these interactions are very limited. There have been some interactions with elasmobranchs such as spurdogs and unidentified skates, but not with seabirds nor marine mammals. There is no requirement to record non-fatal interactions, which would serve to better quantify the effects that different UoAs have on the different ETP populations.

Marine mammal and seabird stock monitoring and abundance estimates are made by IMR and NINA and records of all biota are made during annual IMR– PINRO trawl surveys undertaken under the auspices of JRNFC. The status of the different sharks and ray species is part of both IMR and ICES research activities, who provides advice on the stock status of some of these species. As for seabirds, there are permanent and seasonal closures of inshore waters in the vicinity of key seabird nesting sites.

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:

- The use of sorting grids is mandatory for bottom trawlers.

- Longlines and Hooks and lines have implemented streamers (tori lines) which should serve to prevent interactions with seabirds. The implementation of swivel hooks could also serve to minimise such interactions (Fanger, 2015).
- Gillnets in UoA3 set their nets in waters outside 12 nm and target haddock, which is found at deeper waters than cod and lumpfish- The depth and distance from the coast should serve to reduce interactions with marine mammals. No concerns have been raised by NAMMCO in relation to the offshore haddock gillnet fishery. A hearing is in place now in order to decide on the implementation of mandatory use of pingers in the Vestfjord. As regards seabirds, according to Fanger (2015), interactions of seabirds with gillnets decreases significantly at depths equal or higher than 50 m.
- Entanglements with Danish seine and demersal trawlers could result either in casualty or in releasement, depending on the level of entanglement. All demersal trawlers are equipped with sorting grids for exclusion of bycatch and minimise the mortality of non-targeted species. Specifically, a review of the impact of Norwegian offshore demersal trawl fisheries on marine mammals was undertaken by ICES Study Group for Bycatch of Protected Species (SGBYC 2009) and concluded that larger offshore demersal trawl vessels “are regarded as having a relatively low risk for bycatches of marine mammals”.

The team considers that the different regulations and measures in place are considered as a strategy which is expected to ensure that the different UoAs do not hinder the recovery of ETP species. **SG60 and SG80 are met by all UoAs.**

However, the team considers that this strategy is not comprehensive it still lacks from mandatory use of tori lines and pingers (which are now voluntary implemented by some vessels) and from the mandatory record for all interactions and measures to avoid non-fatal interactions. **SG100 is not met by any UoA.**

	Management strategy evaluation			
c	Guide post	The measures are **considered likely** to work, based on **plausible argument** (e.g., general experience, theory or comparison with similar fisheries/species).	There is an **objective basis for confidence** that the measures/strategy will work, based on **information** directly about the fishery and/or the species involved.	The strategy/comprehensive 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.
	All UoAs	**Yes**	**Yes**	**No**

Rationale

Norwegian Regulation J-250-2013 applies to all gear types and obliges to the releasement of spurdogs, porbeagles, silky sharks and basking sharks if entangled. Research undertaken by Madelman and Farrington (2007) shows that shark species have a high survival rate if released soon.
Coastal states’ agencies (IMR, NINA, PINRO) monitor the status of fish, seabird and marine mammal populations and pay close regard to the potential for adverse interactions of these populations with fisheries. The rationale at PI 2.3.1.SIb describes that specific interactions with seabirds and marine mammals are not considered to be a cause of concern for research agencies.
Where (and if) specific problems are identified, they are modelled and subject to quantitative analysis although more generally emphasis is given to broader ecosystem modelling. IMR conducts on-site research which serves to provide estimations on the effectiveness of mitigation measures. Information from catch statistics show that interactions with ETP species are low. This is supported by research agencies such as NAMMCO and NINA (see PI 2.3.1.b).
The minimal interactions of the different gear types with ETP species serve as an objective basis for confidence that the different measures implemented work effectively in preventing any hindering to ETP species. **The requirements at SG60 and SG80 are met for all UoAs.**

The lack of a comprehensive strategy directed to minimise these impacts and of a quantitative analysis of interactions **prevent the different UoAs from meeting the requirements at SG100.**

d Management strategy implementation

	Guide post		There is some **evidence** that the measures/strategy is being implemented successfully.	There is **clear evidence** that the strategy/comprehensive strategy is being implemented successfully and **is achieving its objective as set out in scoring issue (a) or (b).**
	All UoAs		**Yes**	**No**

Rationale

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.
Norwegian specific management measures such as landing obligation of all species, area closures, bycatch limitations, move on rules, return to sea of alive elasmobranchs, use of sorting grids to avoid catch of juvenile fish, use of specific scaring devices such as streamers (by longlines) and pingers (by gillnets), research by IMR and a robust enforcement system serve as a clear evidence that the strategy is being implemented successfully. **All UoAs reach SG80**.

While the monitoring of interactions with the fishery and the monitoring of elasmobranchs, 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 NEA haddock offshore (>12nm) fishery, the uncertaintites in relation to the identification of possible ETP species (such as unidentified skates and rays) prevent all UoAs from meeting the requirements at SG100, since it is difficult to quantitatively determine the level of impact by the different UoAs on these species (although it is expected to be very low). **SG100 is not met by any UoA.**

	Review of alternative measures to minimize mortality of ETP species			
e	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	All UoAs	**Yes**	**Yes**	**Yes**

Rationale

The Norwegian Directorate of Fisheries performs an annual risk review in which different aspects are taken into consideration, including the examination of the number and type of infringements by Norwegian vessels, the species (and quantities) affected and the alternative measures to minimize such damages in the future. The risk review includes a review of fatal interactions with ETP species, but non-fatal interactions can't be taken into consideration due to the lack of records.

The risk review is taken as part of the Directorate of Fisheries annual activity, with meetings held in June and November, and review of results would result in new measures to minimize unwanted catch (including ETP species) and infringements by the fleet (if any). **SG60, SG80 and SG100 are met by all UoAs.**

References

- Barents Sea Management Plan for Norway. https://www.regjeringen.no/en/topics/climate-and-environment/biodiversity/innsiktsartikler-naturmangfold/forvaltningsplaner-for-havomrada/id2076485/
- Bjørge A., Moan A. 2017. Revised estimates of harbour porpoise (*Phocoena phocoena*) bycatches in two Norwegian coastal gillnet fisheries. SC/24/BYCWG/08 By-catch WG.
- Bjørge Arne & Moan André, 2019. Workshop on marine mammal bycatch monitoring and mitigation. Ålesund, Norway, 19th -20th June 2019 Institute of Marine Research.
- Clegg, T. and Williams, T. Monitoring bycatches in Norwegian fisheries. Species registered by the Norwegian Reference Fleet 2015-2018. IMR. 2020.
- Directorate of fisheries landing records

- Fangel, K., Aas, Ø., Bærum, K. M., Anker-Nilssen, T. & Christensen- Dalsgaard, S. 2015. Utilsiktet bifangst av sjøfugl i norske kystfiskerier med garn og line. - NINA Temahefte 64. 20 s.
- Hammond PS, C Lacey , A Gilles , S Viquerat , P Börjesson , H Herr , K Macleod , V Ridoux , MB Santos , M Scheidat, J Teilmann , J Vingada , N Øien. 2017. Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys. https://synergy.st-andrews.ac.uk/scans3/files/2017/04/SCANS-III-design-based-estimates-2017-04-28-final.pdf
- http://crisp.imr.no/en/projects/crisp/about-crisp/project-overview.
- https://nammco.no/topics/harbour-porpoise/#1475844513273-d6d59198-d3a0
- https://www.fiskeridir.no/Yrkesfiske/Nyheter/2020/0620/Hoering-om-tiltak-for-aa-redusere-bifangst-av-sjoepattedyr
- https://www.fiskeridir.no/Yrkesfiske/Dokumenter/Hoeringer/Forslag-til-tiltak-for-aa-redusere-bifangst-av-sjoepattedyr
- https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats
- ICES Study Group for Bycatch of Protected Species (SGBYC 2009) http://ices.dk/sites/pub/CM%20Doccuments/CM-2009/ACOM/ACOM2209.pdf
- JRNFC: Joint Russian Norwegian Fisheries Commission Protocol https://www.jointfish.com/OM-FISKERIKOMMISJONEN/PROTOKOLLER.html
- Mandelman, J.W., and M.A. Farrington. 2007a. The estimated short-term discard mortality of a trawled elasmobranch, the spiny dogfish (*Squalus acanthias*).
- NAMMCO 2014 report https://nammco.no/wp-content/uploads/2016/10/scientific-committee-21-2014-report.pdf
- Norwegian Marine Resources Act https://www.fiskeridir.no/English/Fisheries/Regulations/The-marine-resources-act
- Norwegian Regulation J-250-2013 protecting basking sharks, spurdogs, porbeagle and silky sharks. https://www.fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger/J-250-2013
- Norwegian Sea Management Plan for Norway. https://www.regjeringen.no/en/topics/climate-and-environment/biodiversity/innsiktsartikler-naturmangfold/forvaltningsplaner-for-havomrada/id2076485/
- OSPAR Recommendation 2013/11 (https://www.ospar.org/site/assets/files/1891/harbour_porpoise_reporting.pdf)

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range UoAs 1	**>80**
Draft scoring range UoAs 2	**>80**
Draft scoring range UoAs 3	**60-79**
Draft scoring range UoAs 4	**>80**
Draft scoring range UoAs 5	**>80**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**85**
Condition number (if relevant):	**N/A**

PI 2.3.3 – ETP species information

PI 2.3.3		Relevant information is collected to support the management of UoA 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	Information adequacy for assessment of impacts			
	Guide post	Qualitative information is **adequate to estimate** the UoA related mortality on ETP species. **OR** **If RBF is used to score PI 2.3.1 for the UoA:** Qualitative information is **adequate to estimate productivity and susceptibility** attributes for ETP species.	Some quantitative information is **adequate to assess** the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. **OR** **If RBF is used to score PI 2.3.1 for the UoA:** Some quantitative information is **adequate to assess productivity and susceptibility attributes** for ETP species.	Quantitative information is available to assess with a high degree of certainty the **magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status** of ETP species.
	All UoAs	**Yes**	**Yes**	**No**
Rationale				

A good overview of the ETP species' spatial and temporal distribution is obtained from the joint IMR–PINRO and IMR surveys of the Barents Sea and Norwegian Sea ecosystems, Polar Institute research, NINA bird surveys and ICES working groups, who gather information on sharks, marine mammals and seabird distributions, populations and life-history characteristics.

Research on ETP species in the area is undertaken by different groups, such as ICES Working Group on Elasmobrachian Fishes (WGEF), ICES Working Group on Protected Species (SGBYC), and ICES Working Group on marine mammal ecology (WGMME) which identify issues relating to marine mammal ETP species or. Other groups, such as NAMMCO (the North Atlantic Marine Mammal Commission) and IWC also monitor marine mammal ETP species in the Barents Sea.

There have been marine mammal surveys going on in the NE Arctic for a long time which inform us of abundance estimates. Mark–recapture experiments, breeding surveys and more recently transect surveys either by ship for large cetaceans, or spotter planes for small one, have been used to get this information. The ICES states that any quotas for harvesting marine mammal species commercially must be based on estimates that are less than 5-years old, and therefore has advised that these surveys are necessary. Obviously, the species that are most threatened or most valuable commercially receive more monitoring than the rest of species. Annual vessel monitoring surveys undertaken by IMR target minke whales and other large baleen whales and provide abundance estimates every 6 years. According to NINA, the principal threat to seabird populations is the inshore static gear fishery, with other methods of fishing having little significant interaction. According to IMR, estimates of seabird static gear interaction show that bird mortality is low in relation to total fishing effort and the population sizes.

Landing obligation, implemented in 1987, should serve to detect any increase in landings of ETP species. IMR also collects information on interactions of the fishing fleets with ETP species. This qualitative and quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. **The requirements at SG60 and SG80 are met by all UoAs.**

So far injuries or other non-fatal impacts are not being measured so information falls short to cover the possible non-fatal injuries made to ETP populations. **SG100 is not met by any UoA**. It is recommended that all vessels record all ETP interactions in an electronic database.

b	**Information adequacy for management strategy**

	Guide post	Information is adequate to support **measures** to manage the impacts on ETP species.	Information is adequate to measure trends and support a **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.
	All UoAs	**Yes**	**Yes**	**No**

Rationale

The broad range of surveys undertaken by IMR, PINRO, NINA and the Norwegian Polar Institute provide adequate information to monitor the trends that support the strategies represented by the protocols of the JNRFC, NAMMCO and OSPAR and the Norwegian and Barents Seas management plans. According to the team, the amount of data provided by landing records, fishery's log books, research done by ICES working groups and the current monitoring programs are enough to measure trends and support a full strategy to manage the possible fatal impacts that the fishery may have on ETP species. **SG60 and SG80 are met by all UoAs.**

However, such strategy can't be considered as comprehensive as it falls short to evaluate impacts and injuries that the fishery may have on ETP species. **SG100 is not met by any UoA.**

References

- http://www.seapop.no/en/about/
- Anker-Nilssen, T., Barrett, R.T., Bustnes, J.O., Bårdsen, B.-J., Christensen-Dalsgaard, S., Dehnhard, N., Descamps, S., Erikstad, K.K., Fauchald, P., Hanssen, S.A., Langset, M., Lorentsen, S.-H., Moe, B., Reiertsen, T.K., Strøm, H., Systad, G.H.2019.Sjøfugl i Norge 2018. Resultater fra SEAPOP-programmet. *SEAPOP*: 28 pp. (Seabirds in Norway, 2018. Results from the SEAPOP programme). http://www.seapop.no/opencms/export/sites/SEAPOP/no/filer/pdf/arsbrosjyrer/seapop-arsbrosjyre-2018-web.pdf
- http://www.jointfish.com/eng/THE-FISHERIES-COMMISSION/WORKING-GROUPS.html
- https://www.npolar.no/en/research/
- NAMMCO Scientific Working Group on abundance estimates. 2018. https://nammco.no/wp-content/uploads/2018/09/report_aewg_2018_final.pdf
- NAMMCO-North Atlantic Marine Mammal Commission (2018) Report of the NAMMCO Scientific Working Group on By-catch. Available at https://nammco.no/topics/sc-working-group-reports/
- https://nammco.no/wp-content/uploads/2018/05/report-nammco-sc-bycwg-04042018.pdf
- Prozorkevich, D., Johansen G.O. and, van der Meeren, G.I. 2018 (Eds.) Survey report from the joint Norwegian / Russian ecosystem survey in the Barents Sea and adjacent waters, August-October 2017. IMR/PINRO Joint Report Series, No. 1/2018, 98 pp. ISSN 1502-8828. https://www.imr.no/tokt/okosystemtokt_i_barentshavet/survey_reports/survey_report_2017/nb-no
- ICES 2018 Working Group on Bycatch of Protected Species. http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2018/WGBYC/wgbyc_2018.pdf
- ICES 2019 Working Group on Marine Mammals Ecology. http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/EPDSG/2019/WGMME/wgmme_2019.pdf
- NSMP. 2010. Integrated Management of the Marine Environment of the Norwegian Sea. Report No. 37 (2008–2009) to the Storting. Ministry of the Environment, Oslo. https://www.regjeringen.no/en/dokumenter/meld.-st.-10-20102011/id635591/
- BSMP. 2010. Integrated Management of the Marine Environment of the Barents Sea. Report No. 10 (2010–2011) to the Storting. Ministry of the Environment, Oslo. https://www.regjeringen.no/en/dokumenter/meld.-st.-10-20102011/id635591/

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range: All UoAs	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**80**
Condition number (if relevant)	**N/A**

PI 2.4.1 – Habitats outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
Scoring Issue		SG 60	SG 80	SG 100
	Commonly encountered habitat status			
a	Guide post	The UoA is **unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	UoA 1 (Bottom trawls)	**Yes**	**Yes**	**No**
	UoA 2 (longlines)	**Yes**	**Yes**	**Yes**
	UoA 3 (gillnets)	**Yes**	**Yes**	**Yes**
	UoA 4 (Danish seine)	**Yes**	**Yes**	**Yes**
	UoA 5 (Hooks and lines)	**Yes**	**Yes**	**Yes**
Rationale				

Most commonly encountered habitats by the UoA in the Barents Sea (where most of the bottom trawl activity takes place) are clay, muddy and sandy bottoms. All of them are considered to fall under the "Fine" substratum category, which has a "flat" associated geomorphology and "large erect" biota. There are no hard sediments in the area.

The degree to which the effect of a fishing gear on habitats can be regarded as 'serious or irreversible' is dependent on the nature and function of the habitats and a determination of an acceptable rate of recovery in event of fishing operations ceasing. Irreversibility may imply regime change, loss or extinction of key habitat species (*i.e.* recovery would never occur), whereas serious may imply major change in the structure and diversity of species assemblages. MSC guidance suggests that serious (or irreversible) harm refers to change that fundamentally alters the capacity of the component to maintain its function (e.g. reducing ecosystem services; loss of resilience; regime shift; gross changes in composition of dependent species) or to recover from the impact (within timescales of natural ecological processes – normally one or two decades).

Longlines, gillnets and hooks and lines are not dragged across the seabed in the way that mobile gears such as bottom trawlers and Danish seines are. Contact with the seafloor is not expected and if any, the soft condition of the seabed would facilitate its recovery. **SG60, SG80 and SG100 are met for these UoA's (UoA's 2, 3 and 5).** The evidence that these UoA are highly unlikely to reduce structure and function of commonly encountered habitats to a point where there would be serious or irreversible harm is found in the fishing methodology of these fishing gears and on the soft nature of commonly encountered habitats, which have quick recovery rates.

As regards **Danish seines**, this gear has a very light construction and can only be used on relatively flat grounds that are known not to have any significant irregularities or obstructions. As with longlines, gillnets and hooks and lines, the evidence that these UoA are highly unlikely to reduce structure and function of commonly encountered habitats to a point where there would be serious or irreversible harm is found in the fishing methodology (with limited contact with the seafloor) and on the soft nature of commonly encountered habitats, which have quick recovery rates. **SG60, SG80 and SG100 are met for Danish seines, this is, UoA 4.**

As regards the **bottom trawl UoA 1,** fishing activity mostly takes place in the Fisheries protection zone around Svalbard but also in Norwegian waters and to a lesser extent in Russian waters, in well-established trawl corridors meaning that they concentrate fishing activity to historic grounds which represent less than 20% of the total Barents Sea area and in habitats which are already degraded. Many of the trawls used are rockhopper trawls that are designed to ride over seabed irregularities but still have the capacity to affect habitat structure and function through surface abrasion and boulder turning. Compared with earlier trawls, however, they have a lighter environmental footprint in that polyvalent slotted doors sit less heavily on the seabed than earlier dreadnought-type doors and the belly of the net tends to float clear of the seabed as the net is of buoyant man-made material rather than water-logged natural fibres. Modern navigation systems and ground discrimination echo sounders enable vessels to be navigated with a high degree of precision.

Trawling affects benthic habitats through relocation of shallow burrowing infaunal species to the surface of the seafloor, and by resuspension of surface sediment. Kaiser et al. (2006) concluded that trawling produces a significant, negative, short-term effect on soft habitats, but no detrimental effects were seen in the long term once the fishing stops. The recovery time as described in Figure 20, which shows that commonly encountered areas by the fishery should recover in 5 to 10 years' time once the fishery stops. Besides, trawl modified habitats continue to cover ecosystem needs, regardless of showing a lower biodiversity rate.

The team concludes that bottom trawls are highly unlikely to (further) reduce structure and function of the commonly encountered habitats (soft bottoms of fine substratum with flat associated geomorphology and large erect biota) to a point where there would be serious or irreversible harm. **SG60 and SG80 are met for UoA 1**.

As regards SG100, the assessment team could not find any evidence to support SG100 for the bottom trawl UoAs. **SG100 is not met for UoA1.**

Scoring element	SG60	SG80	SG100
Fine substratum (with flat associated geomorphology and large erect biota).	Trawl- Yes Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl- Yes Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl- No Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes

	VME habitat status			
b	Guide post	The UoA is **unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	UoA 1 (Bottom trawls)	**Yes**	**No**	**No**
	UoA 2 (longlines)	**Yes**	**Yes**	**No**
	UoA 3 (gillnets)	**Yes**	**Yes**	**No**
	UoA 4 (Danish seine)	**Yes**	**Yes**	**No**
	UoA 5 (Hooks and lines)	**Yes**	**Yes**	**No**
Rationale				

Throughout the NE Arctic, benthic species that are potentially vulnerable to trawling remain well represented in both IMR–PINRO and MAREANO survey data and there is no indication of benthic species being threatened with local

extinction. There is considerable natural variation in the distribution of benthic habitat forming species, due to factors such as productivity, substratum type and sedimentary environment.

Different species described by NEAFC and OSPAR as indicator species of VME ecosystems have been identified in the fishing grounds. Both Jørgensen *et al* (2015) and Jakobsen and Ozhigin (2011) have located the spatial distribution of corals, sponges, seapens, and soft corals. These species have been designated by NEAFC as indicators of VMEs in the Barents Sea (although OSPAR does not consider seapens to be a declining habitat in OSPAR Region 1, see https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats).

The assessment team has considered the following scoring elements (VME habitats), following ICES and NEAFC advice and Jorgesen et al (2015) identification of benthic species present in the area:

- Cold water hard coral reefs: *Lophelia pertusa* reef and *Solenosmilia variabilis* reef.
- Coral garden: Hard bottom coral garden and soft bottom coral garden.
- Deep sea sponge aggregations: Hard bottom sponge gardens and glass sponge communities
- Seapen fields.

In considering the potential impact of the fishery, the assessment team took into account the distribution of fishing activity in relation to known distribution of the VME habitats, the bio-regional distribution of habitat types, the irregular reproduction and slow growth rates of the vulnerable species with the consequent slow recovery rates, the nature of the fishing gear used, and the behaviour of fishermen in avoiding habitats which might damage the fishing gear.

There are certain management measures and regulations protecting VME in the fishing grounds. These include:

- Comprehensive research on the distribution of VME gained through the Mareano program.
- Avoidance of coral reefs and sponges by the fishing industry, as towed-gear vessels avoid coral because of the damage it can do to the gear and sponges crush the fish and makes the catch commercially worthless. There is also the risk of trawls bursting with concomitant loss of fishing time for repairs or (high cost) replacement. Vessels engaged in the current fishery have the technology (high precision GPS navigation and ground-discrimination echo sounders which can distinguish between mud and sand or hard rock, coral and sponges) that enables them to skirt around and avoid known VME areas.
- Mandatory use of satellite monitoring (VMS – vessel monitoring system) which serves to verify that large vessels do not enter Marine Protected Areas (MPAs), as confirmed by the Norwegian Directorate of Fisheries.
- Trawling is forbidden within the majority of the 12 nautical mile limit from Norwegian baselines (in some instances, this limit is set at 6 nautical miles). Much of the cold-water coral reefs are located within this limit. This management measures protects cold-water coral reefs regardless of those inside this limit not been affected by the NEA haddock offshore (>12nm) fishery.
- Fishing below 1000 m within the Norwegian EEZ is banned in order to protect deep-water sensitive habitats and species.
- Norwegian regulation J-61-2019 regulating bottom gears to protect vulnerable marine ecosystems (https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Kommende-J-meldinger/J-61-2019).which applies to all the Norwegian EEZ including waters in the Barents Sea; and establishes that when a trawl vessel catches more than 30 kgs of coral or 400 kg of sponges in a single haul, the vessel shall stop fishing and move position at least 2 nautical miles in order to avoid such catches. The incident must be reported to the Directorate of Fisheries.
  This regulation also requires that when fishing in a “new fishing area” in the Norwegian EEZ or the Svalbard FPZ, vessels must have a special permit from the Directorate of Fisheries. These are only approved by the Directorate if the vessel has submitted for approval:
  - A detailed protocol for trial fishing which includes a fishing plan for fishing gear, fish stocks, by-catches, time and areas.
  - A plan to avoid damage to sensitive marine ecosystems.
  - A plan for journal entry and reporting.
  - And a plan for collecting data on vulnerable habitats.
- Regulation J-215-2015 has been replaced by regulation J-10-2021 (Regulations on position reporting and electronic reporting for Norwegian fishing and catching vessels. ERS regulations. See Section 12) and regulation J-58-2015 has been replaced by regulation J-31-2021 (The Exercise Regulations). Regulation J-10-2021 on position reporting, Section 12, states that Catch notification (DCA) shall contain information specified in blocks A and B of this section, including by-catches of marine mammals, seabirds, live corals and live sponges which shall be entered in kilograms round weight. This regulation is not aligned with regulation J-61-2019 described above, specifically directed to the protection of VMEs (Regulations of fisheries to protect vulnerable

marine ecosystems) (see https://www.fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger/J-61-2019), . A recommendation to align reporting requirements of both regulations has been set.

- Norwegian Regulation J-58-2015 states that it is illegal for any bottom trawl fishing vessel to fish on known coral reefs" (included those mapped by the Mareano program and which are not managed as MPAs)
- Similar measures on the protection of corals and sponges is recommended in NEAFC waters, where Recommendation 19/2014 establishes threshold limits for bycatch of corals and sponges.
- NEAFC commission meets annually and decides, when necessary, on the establishment of area closures, as done in other NEAFC waters. To date, NEAFC has not identified any need for area closure in the Loophole area (http://www.fao.org/fishery/topic/16204/en).
- Norwegian Regulation J-187-2008, prohibits trawling near coral reefs, and establishes MPAs to protect coral species. It is noted that these are all located in Norwegian coastal waters.
- Norwegian Regulation J-151-2014 establishing closed areas to protect benthic habitats (mostly coral) in Norwegian and Svalbard EEZs.
- Other VME habitats, present in the area, such as seapen fields have just very recently (May 2017) been protected in the Barents Sea by the creation of a closed area directed to protect these VME.

The Directorate of Fisheries is generally satisfied as regards the UoAs compliance of these measures.

As with the commonly encountered habitats, l**onglines, gillnets and hooks and lines** are not dragged across the seabed in the way that mobile gears such as bottom trawlers and Danish seines are. Contact with the seafloor is not expected with the exception of anchoring systems. **SG60 and SG80 are met for UoAs 2, 3 and 5.** The lack of specific information on potential impacts by the fishery prevents all UoAs from meeting the requirements at SG100. **SG100 is not met for UoAs 2,3 and 5.**

As regards **Danish seines**, this gear has a very light construction and can only be used on relatively flat grounds that are known not to have any significant irregularities or obstructions, as these would damage the nets. As for **bottom trawlers**, many of the trawls used are rockhopper trawls that are designed to ride over seabed irregularities but still have the capacity to affect habitat structure and function through surface abrasion and boulder turning. Therefore, while fishermen again would avoid hard substrate in order to prevent damage to the nets, the best way to prevent impacts on vulnerable benthic habitats is to avoid them.
As mentioned above, VME scoring elements to consider are cold water coral reefs, coral gardens, deep sea sponge aggregations and seapen fields.

Coral water coral reefs, coral gardens and sponges: The distribution of these VME habitats has been investigated by different research institutions (IMR, PINRO, and individual researchers) and mapped by the Mareano program. Results of the Mareano program are updated in the vessel's bridge technology. Given the different management measures that apply to the protection of corals (through the identification of these areas and the use of VMS to position the vessels, the prohibition of bottom trawling in waters closer than the 12 nm limit from the coast, the establishment of MPA and the mandatory move on rule) and sponges (again through the identification of these areas and the use of VMS to position the vessels, and through the mandatory move on rule) the team considers that it is unlikely that any UoA under this assessment would reduce the structure and function of these VME habitats to a point where there would be serious or irreversible harm, as interactions are generally avoided.

It should be considered that some areas of the Barents Sea are regularly fished, while other areas will never be targeted and fished. This limits the impact of the different gears to particular lanes, while creating benthic unfished patches or islands of greater diversity amongst even the more heavily fished areas. Such islands support recovery of benthic community in fished areas through neighbouring emigration and by acting as source locations for new recruits to other areas. This is important because such benthic ecology/habitats are key to the life history processes (breeding, nursery and feeding areas) for a wide range of species, including commercially important fish and shellfish. Also varying levels of recoverability is expected post-fishing. Large sessile fauna may require years or decades to recover. Indirect evidence (Pitcher 2000, and Sainsbury et al. 1997) suggests that large sponges probably take more than 15 years to recover. Kaiser et.al. (2006), suggest 5-10years recovery time.

Hard bottom areas associated with VMEs and other habitat forming species are likely to take much longer from trawling impact. Coral aggregations or structures are thousands of years old, and some sponges live for hundreds of years. According to Lubin (2013) and Denisenko and Zgurovsky (2013) full recovery of VMEs - age structures and species composition - is likely to take decades. However, there are examples of relatively rapid recovery of certain sponge communities. These may not be identical to the original habitat in terms of age, size structure and species composition,

however their functionality, diversity and healthy habitats deliver a wide and comparable range of ecosystem services. Also, though there is evidence of reduced physical heterogeneity and of changes in the abundance of some taxa, there is no evidence of loss or change in the number of taxa. For the ecoregion, It suggested that recovery in most parts of the Barents Sea would take place within 5 years, but recovery would be up to 10 years or more in the areas where VMEs tend to occur (such as epibenthos, and sponge aggregations on the edge of the continental slope). In other benthic environments similar to the Barents Sea, recovery is observed in similar time periods (3 to 9 years) from monitoring, pre and post mobile bottom fishing gear and closed areas (Collie et al., 2001).

As regards seapens (which are not considered to be a declining habitat by OSPAR in OSPAR region 1, where most of the bottom trawl fishing activity takes place), following the highlight of this topic in previous MSC assessments in Norwegian waters, a MPA has been designated in the fisheries protection zone around Svalbard. In any case, and according to Denisenko et al (2015), most seapens in the Barents Sea are distributed further north that where the fishery takes place.
SG60 and SG80 are met for the coral reefs, soft coral gardens, sponges and seapens scoring elements for UoAs 2,3,4 and 5 (longlines, gillnets, Danish seine and hooks and lines). **SG60 and SG80 requirements are met for UoAs 2,3,4 and 5.**

Since all gear types may interact the seafloor with their anchoring systems and there is no specific study on the potential impact this limited interaction may cause onVMEs, the requirements at **SG100 are considered not met for all UoAs.**

As regards bottom trawlers (UoA 1) and the different scoring elements, the established management measures together with the historical footprint of the fishery (which follow the same paths over the time) make it unlikely for the UoA to reduce structure and function of the VME habitats to a point where there would be irreversible harm. **SG60 is met for UoA 1.**

As regards interactions of bottom trawlers with VME indicator species, these have an impact on VMEs when encountered. MSC FS v2.01 SA 3.13.3.2 describes how VMEs shall be defined and includes potential VMEs to cover situations when a gobernance body uses a precautionary approach. MSC FS v2.01 SA3.13.4.1 describes that in the case of VMEs the team shall interpret “serious or irreversible harm” as reductions in habitat structure and function below 80% of the unimpacted level. MSC FS v2.01 GSA3.13.4, states that the pre-existing historical extent of the habitat should be considered in the calculation of the current state of the VME in relation to unimpacted levels if the historical extent is known and if recovery in those areas of historical extent would be possible. If the habitat has been altered completely so that the pre-existing state does not exist, recovery of that state is not expected; however if recovery of the pre-existing state is possible, this should be considered.
The Barents Sea fishery has been operating for longtimes and it can not be considered that it would recover in 20 years to its original non-fished status even if all Barents Sea fisheries were to cease completely.

Following a Notice of Objection, the Murmanseld 2 Barents Sea cod and haddock fishery has included potential VMEs in the consideration of VMEs. The inclusion of the identified vulnerable biotopes looks for further evidence that the UoA is highly unlikely to reduce structure and function of any of these habitats to a point where there would be serious or irreversible harm, i.e. are highly unlikely (<30th %ile) to cause reductions in vulnerable biotopes (proxies for potential VME habitats) to below 80% of their current status (status at the time of identification as potential VMEs). As a result of uncertainties in the VMEs areas affected by the UoA on a precautionary approach the assessment team has determined that **SG80 is not met for UoA 1** and a condition is raised on this PI.

Scoring element	SG60	SG80	SG100
Cold water coral reefs	Trawl- Yes Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl-No Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl- No Longline- No Gillnet-No Danish seine-No Hooks and lines-No
Coral gardens	Trawl- Yes Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl-No Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl-No Longline- No Gillnet-No Danish seine-No Hooks and lines-No

Deep sea sponge aggregations	Trawl- Yes Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl-No Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl-No Longline- No Gillnet-No Danish seine-No Hooks and lines-No
Seapens fields	Trawl- Yes Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl-No Longline- Yes Gillnet-Yes Danish seine-Yes Hooks and lines-Yes	Trawl-No Longline- No Gillnet-No Danish seine-No Hooks and lines-No

(Changes to 2.4.1b, from the PCDR of January 2021, are due to harmonisation with the Norway NEA cod offshore (>12nm) fishery as a result of rescoring due to stakeholder comment).

	Minor habitat status			
c	Guide post			There is **evidence** that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	UoA 1 (Bottom tralws)			**No**
	UoA 2 (longlines)			**Yes**
	UoA 3 (gillnets)			**Yes**
	UoA 4 (Danish seine)			**No**
	UoA 5 (Hooks and lines)			**Yes**
Rationale				

As with in the commonly encountered habitats**, longlines, gillnets and hooks and lines** are not dragged across the seabed in the way that mobile gears such as bottom trawlers and Danish seines are. Expected contact with the seafloor is restricted to the anchoring system and is this contact is not expected to cause irreversible harm as described by MSC FS. GSA 3.13. The low chance of contact serves as evidence that these UoA are highly unlikely to reduce structure and function of minor habitats to a point where there would be serious or irreversible harm. **SG100 is met for UoAS 2,3 and 5.**

As regards **Danish seines**, this gear has a very light construction and can only be used on relatively flat grounds that are known not to have any significant irregularities or obstruction. And while it is expected that this gear is not deployed in hard substrate, the team could not find evidence of this. **SG100 is not met for UoA 4 (Danish seine).**

As for **bottom trawlers**, these are designed to ride over seabed irregularities but still have the capacity to affect habitat structure and function through surface abrasion and boulder turning. The team could not find evidence to support SG100 for the bottom trawlers UoAs. **SG100 is not met for UoA 1 (bottom trawlers).**

Scoring element	SG60	SG80	SG100
Coarse sediments	N/A	N/A	UoA 1(Trawl)- No UoA 2 (Longline)- Yes UoA 3 (Gillnet)-Yes

			UoA 4 (Danish seine)-No UoA 5 (Hooks and lines)-Yes
Rocky areas	N/A	N/A	UoA 1 (Trawl)- No UoA 2 (Longline)- Yes UoA 3 (Gillnet)-Yes UoA 4 (Danish seine)-No UoA 5 (Hooks and lines)-Yes

References

- Kaiser et al, 2006.
- Collie, J.S., Hall, S.J., Kaiser, M.J., and Poiner, I.R. (2001). A quantitative analysis of shing impacts on shelf-sea benthos. Journal of Animal Ecology, 69, 785-798.
- https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats
- Jørgensen *et al* (2015)
- Jakobsen and Ozhigin (2011)
- Denisenko et al (2015)
- Norwegian regulation J-10-2021
- Norwegian Regulation J-215-2015
- Norwegian Regulation J-58-2015
- Norwegian Regulation J-40-2016
- https://www.fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger/J-61-2019
- NEAFC Recommendation 19/2014
- Norwegian Regulation J-187-2008
- Norwegian Regulation J-151-2014
- Industry Group Agreement to Cod fishery in the northern part of North-East Atlantic
- Murmanseld 2 Barents Sea cod and haddock fishery. MSC Public certification report. March 2020. https://fisheries.msc.org/en/fisheries/murmanseld-2-barents-sea-cod-and-haddock/@@assessments

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range UoA 1	≥80
Draft scoring range UoA 2	≥80
Draft scoring range UoA 3	≥80
Draft scoring range UoA 4	≥80
Draft scoring range UoA 5	≥80
Information gap indicator	More information sought

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score UoA 1	**70**
Overall Performance Indicator score UoA 2	**95**
Overall Performance Indicator score UoA 3	**95**
Overall Performance Indicator score UoA 4	**85**
Overall Performance Indicator score UoA 5	**95**
Condition number (if relevant): UoA 1	**1 (UoA 1)**

PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a **partial strategy** in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a **strategy** in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	UoA 1 (Bottom tralws)	**N/A**	**Yes**	**Yes**
	UoA 2 (longlines)	**N/A**	**Yes**	**Yes**
	UoA 3 (gillnets)	**N/A**	**Yes**	**Yes**
	UoA 4 (Danish seine)	**N/A**	**Yes**	**Yes**
	UoA 5 (Hooks and lines)	**N/A**	**Yes**	**Yes**
Rationale				

As described in PI 2.4.1.SI b, there is a broad range of management measures which apply to Norwegian vessels when fishing in the Barents or in the Norwegian Seas, including Barents and Norwegian Seas management plans. Management measures include:

- Comprehensive research on the distribution of VME gained through the Mareano program, which maps depth, topography, sediment composition, contaminants, biotopes and habitats in Norwegian and Svalbard waters, serves as a valuable tool to manage habitat types in Norwegian and Svalbard waters, and has helped to establish no fishing zones in Norwegian waters, which have 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.
- Mandatory use of satellite monitoring (VMS – vessel monitoring system) which serves to verify that large vessels do not enter Marine Protected Areas (MPAs), as confirmed by the Norwegian Directorate of Fisheries.
- Fishing below 1000 m within the Norwegian EEZ is banned in order to protect deep-water sensitive habitats and species.
- Norwegian Regulation J-58-2017 creating a protected area in the Trænadjupet Slide, offshore Norway.
- Norwegian Regulation J-151-2014 establishing closed areas to protect benthic habitats (mostly coral) in Norwegian and Svalbard EEZs.
- Other VME habitats, present in the area, such as seapen fields, have been recently (2017) protected in the Barents Sea by the creation of a closed area directed to protect these VME.
- Avoidance of coral reefs and sponges by the fishing industry, as towed-gear vessels avoid coral because of the damage it can do to the gear and sponges crush the fish and makes the catch commercially worthless. There is also the risk of trawls bursting with concomitant loss of fishing time for repairs or (high cost) replacement. Vessels engaged in the current fishery have the technology (high precision GPS navigation and ground-discrimination echo sounders which can distinguish between mud and sand or hard rock, coral and sponges) that enables them to skirt around and avoid known VME areas. Besides, trawling vessels generally fish only in predetermined trawling corridors thus concentrating fishing activity in historical fishing grounds already degraded.
- Trawling is forbidden within the majority of the 12 nautical mile limit from Norwegian baselines (in some instances, this limit is set at 6 nautical miles). Much of the cold-water coral reefs are located within this limit.
- Norwegian regulation J-61-2019 regulating bottom gears to protect vulnerable marine ecosystems (https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Kommende-J-meldinger/J-61-2019)

- Norwegian Regulation J-40-2016 – which applies to all the Norwegian EEZ including waters in the Barents Sea; article 2 establishes that when a trawl vessel catches more than 30 kgs of coral or 400 kg of sponges in a single haul, the vessel shall stop fishing and move position at least 2 nautical miles in order to avoid such catches. The incident must be reported to the Directorate of Fisheries.

  Regulation J-40-2016 requires that when fishing in a "new fishing area" in the Norwegian EEZ or the Svalbard FPZ, vessels must have a special permit from the Directorate of Fisheries. These are only approved by the Directorate if the vessel has submitted for approval:

  - A detailed protocol for trial fishing which includes a fishing plan for fishing gear, fish stocks, by-catches, time and areas.
  - A plan to avoid damage to sensitive marine ecosystems.
  - A plan for journal entry and reporting.
  - And a plan for collecting data on vulnerable habitats.

It must be highlighted however that regulations J-10-2021 (on electronic reporting) and regulation J-61-2019 (on protection of VMEs) are not aligned in the requirements for reporting encounters with VME indicator species. A recommendation to align these requirements has been set.

- Similar measures on the protection of corals and sponges is recommended in NEAFC waters, where Recommendation 19/2014 establishes threshold limits for bycatch of corals and sponges.
- NEAFC commission meets annually and decides, when necessary, on the establishment of area closures, as done in other NEAFC waters. To date, NEAFC has not identified any need for area closure in the Loophole area (http://www.fao.org/fishery/topic/16204/en).
- Norwegian Regulation J-187-2008, prohibits trawling near coral reefs, and establishes MPAs to protect coral species. It is noted that these are all located in Norwegian coastal waters.
- Trawling UoAs participation in the Industry Group Agreement to Cod fishery in the northern part of North-East Atlantic, who agreed that from the 2016 season the catching sector will not expand their Cod fishing activities with trawl gear into those areas where regular fishing has not taken place before. This is a precautionary measure until through initiatives such as those mentioned below the fishing activity in future years will be determined by improved knowledge replacing the need for this precautionary approach. There is also a commitment to avoid fishing in known VME on a precautionary basis, whilst the appropriate measures are under development.

Enforcement of these measures is carried out by the Norwegian Coast Guard. The Directorate of Fisheries is generally content with the accomplishment of these measures.
The comprehensive set of measures to manage habitat impacts by the different fishing gears (mostly focused on the performance of trawling vessels, which have the higher impact on bottom types) serve to justify that there are measures in place to manage habitat impacts and that these measures conform a partial strategy (**SG80 is met by all UoAs)**.

As SG80 for scoring issue a is met, SG60 is not scored following Derogation for PI 2.4.2 for scoring issue a (see https://mscportal.force.com/interpret/s/article/Move-On-Rules-derogation-November-2020) This applies to all UoAs under assessment. These measures are considered as a comprehensive strategy to manage habitat impacts by Norwegian vessels in Norwegian and Svalvard waters. The offshore fishing activity (UoAs 1 and 2) mostly takes place in Norwegian waters although these vessels are allowed to enter Russian waters. As Norwegian regulations apply to all Norwegian vessels regardless the jurisdiction of the fishing grounds, it is considered that this strategy also covers fishing activity of the UoA when in foreign waters. **All UoAs meet the requirements at SG100**.

	Management strategy evaluation			
b	Guide post	The measures are **considered likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on **information directly about the UoA and/or habitats** involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on **information directly about the UoA and/or habitats** involved.

	UoA 1 (Bottom tralws)	**Yes**	**Yes**	**No**
	UoA 2 (longlines)	**Yes**	**Yes**	**Yes**
	UoA 3 (gillnets)	**Yes**	**Yes**	**Yes**
	UoA 4 (Danish seine)	**Yes**	**Yes**	**No**
	UoA 5 (Hooks and lines)	**Yes**	**Yes**	**Yes**

Rationale

The environmental status of the Barents and Norwegian Seas (including common and VME habitats) is monitored by different research programs, including the MAREANO monitoring program, the joint IMR-PINRO ecosystem surveys in the Barents Sea and research by IMR on the status of benthic habitats in Norwegian waters.
Information gathered on these research programs together with information gathered by VMS, serve to support scientific advice for conservation measures when deemed necessary, e.g. the coral-reef MPAs and general prohibition on ground-contact fishing is similar areas. The science supporting management measures serve to provide an objective basis for confidence that this strategy to manage benthic habitats will work. **SG60 and SG80 are met for all UoAs.**

It is not expected that static gears as l**onglines, gillnets and hooks and lines**, will cause any irreversible harm in the seafloor. The limited effects of these gears on bottom habitats serve as a test to support with a high degree of confidence that the strategy will work. **SG100 is met for UoAs 2, 3 & 5.**

As regards fishing gears such as Danish seine and demersal trawlers, the team considers that the strategy won't be fully tested until all fishing grounds in the UoA are fully mapped and research is undertaken to see the response of vulnerable habitats to management measures. **SG100 is not met for UoAs 1 & 4.**

	Management strategy implementation			
c	Guide post		There is **some quantitative evidence** that the measures/partial strategy is being implemented successfully.	There is **clear quantitative evidence** that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	UoA 1 (Bottom tralws)		**Yes**	**No**
	UoA 2 (longlines)		**Yes**	**Yes**
	UoA 3 (gillnets)		**Yes**	**Yes**
	UoA 4 (Danish seine)		**Yes**	**No**
	UoA 5 (Hooks and lines)		**Yes**	**Yes**

Rationale

The MAREANO program began mapping the Norwegian Sea seafloor in 2005 and continues to increase its coverage of the Norwegian and Svalbard EEZs seafloor annually. The Marine Resources Act was established in 2008. Regulation J- 187-2008, which prohibits trawling near coral reefs, was implemented in 2008, while Regulation J-40-2016 (now J-61-2019), which protects corals and sponges through the implementation of a move on rule, was first implemented in 2016. Since 2016 different areas have been closed to the fishing activity in order to protect vulnerable habitats (mostly corals but also seapens).
All vessels above 15 m carry VMS which serve to monitor their position and accomplishment of regulation measures as regards Marine Protected Areas. The Norwegian Coast Guard enforces these regulations, and, the Directorate of Fisheries who monitors VMS data and catch logbooks for compliance is generally content as regards the fishery compliance with management measures. Fishing vessels avoid any activity at MPAs.

Given the different management measures implemented, the enforcement in place, and the low ratio of infringements, the team considers that there is clear quantitative evidence that the management strategy to ensure that the fishery does not cause serious or irreversible harm to habitat types is successfully implemented. **All UoAs achieve SG60 and SG80**.

As regards the requirements for **SG100, these are met for UoAs 2, 3 and 5 (longlines, gillnets and hooks and lines)**, since the fishing methodology is working effectively in avoiding impact on any habitats and therefore meeting the requirements set at SIa, SG100.
SG100 is not met for UoAs 1 and 4 (bottom trawlers and Danish seines) since fishing methodology impacts the seafloor and there is no evidence of the recovery of vulnerable habitats following area closures nor on the identification of all potential VMEs in the fishing grounds. **SG100 is not met by UoAs 1 and 4 (bottom trawls and Danish seines)**.

d	**Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs**			
	Guide post	There is **qualitative evidence** that the UoA complies with its management requirements to protect VMEs.	There is **some quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is **clear quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	UoA 1	**Yes**	**No**	**No**
	UoA 2	**Yes**	**Yes**	**Yes**
	UoA 3	**Yes**	**Yes**	**Yes**
	UoA 4	**Yes**	**Yes**	**Yes**
	UoA 5	**Yes**	**Yes**	**Yes**
Rationale				

Quantitative evidence (based on the number of inspections and the number of infractions) from the Norwegian fisheries authority and Coast guard confirms all permitted fishing vessels (MSC and non-MSC) are complying with fisheries management regulations (Norwegian and Russian regulations as well as NEAFC Recommendations) with regards to sharing VMS data, catch data and avoiding closed areas, and MPA, where any non-compliance would result in infringements as well as loss of fishing permit. Given this, the team considers that there is clear quantitative evidence that all UoAs comply with the different mandatory management requirements affecting the fishery, including those designed to protect VMEs. **SG60 is met by all UoA's.**

While there is clear quantitative evidence that all UoAs comply with mandatory management requirements, there is room for uncertainty in relation to the compliance with protection measures afforded to VMEs by other MSC UoAs/ non MSC fisheries.

The entire Norwegian ocean going fleet was a signatory member of the Cod Industry Group Agreement (also known as the Greenpeace agreement), which stipulated that from the 2016 season the catching sector will not expand their Cod fishing activities with trawl gear into those areas where regular fishing has not taken place before. This was a precautionary measure until similar measures were imposed by management authorities. As the affected fishing grounds are now managed through regulation J-61-2019 by the designation of "New fishing areas" were more restrictive rules apply, the Cod Industry group Agreement is no longer in place.

There are however other voluntary protection measures afforded by other MSC UoAs in the area.

- Development and implementation of lighter gear (several Russian fisheries e.g. Arkhangelsk, FIUN etc.)
- Several Russian fisheries are developing and hoping to implement lighter bottom trawl gears.
- Implementation of NEAFC Recommendation as regards the establishment of a move on rule of 5 nm when encountering 7 kg of seapens.

- Recording by the crew of interactions with living corals and living sponges (AGARBA, FIUN)
- The MSC AGARBA cod fishery has an internal Code of Conduct and internal move on rule so that vessels shall move 2 nm when encountering 200 kg sponges or 20 kg corals.
- Agreement by Russian Barents Sea MSC fisheries to voluntarily protect a number of areas in the Barents Sea from demersal fishing (came into force on 1st August 2020). Two of these areas fall within Russian EEZ and one within Norwegian EEZ.

The Norwegian bottom trawl haddock fishery (UoA 1) has not provided evidence of complying with these voluntary measures. **The requirements at SG80 are not met for UoA 1.**

As these voluntary measures afforded by other MSC UoAs / non-MSC fisheries in the area do not affect to the longline, gillnet, Danish seine and hooks and lines fleets these UoAs meet the requirements at SG100, since there is clear evidence that these UoAs comply with mandatory management measures**. SG80 and SG100 are met for UoAs 2, 3, 4 and 5.**

References

- Norwegian Regulation J-215-2015
- Norwegian Regulation J-58-2015
- Norwegian Regulation J-40-2016
- NEAFC Recommendation 19/2014
- Norwegian Regulation J-187-2008
- Norwegian Regulation J-151-2014
- Norwegian regulation J-61-2019
- Industry Group Agreement to Cod fishery in the northern part of North-East Atlantic
- https://wwf.ru/en/resources/news/barents/morskie-lesa-barentseva-morya-zashchityat-rossiyskie-rybaki-/

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range UoA 1	≥80
Draft scoring range UoA 2	≥80
Draft scoring range UoA 3	≥80
Draft scoring range UoA 4	≥80
Draft scoring range UoA 5	≥80
Information gap indicator	More information sought

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score UoA 1	**75**
Overall Performance Indicator score UoA 2	**100**
Overall Performance Indicator score UoA 3	**100**
Overall Performance Indicator score UoA 4	**90**
Overall Performance Indicator score UoA 5	**100**
Condition number (if relevant)	**2 (UoA 1)**

PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	The types and distribution of the main habitats are **broadly understood**. **OR** **If CSA is used to score PI 2.4.1 for the UoA:** Qualitative information is adequate to estimate the types and distribution of the main habitats.	The nature, distribution and **vulnerability** of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA. **OR** **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	All UoAs	**Yes**	**Yes**	**No**
Rationale				

As described in the background section, there is sufficient information on the nature, distribution and vulnerability of the main habitats in the different UoAs. Moreover, the general distribution of vulnerable habitats such as cold-water coral reefs, coral gardens, deep sea sponge aggregations and seapen fieldsare also identified. Information on depths, sediments, distribution of biotopes, and presence of certain indicator species of VME has been gathered over the years by different institutions, such as IMR and PINRO through their Joint annual ecosystem survey, or by the Mareano program (which maps depth, topography, sediment composition, contaminants, VME biotopes, biotopes in general with species diversity and richness, and habitats in Norwegian and Svalbard EEZ). The MAREANO-programme was launched in 2005 by multibeam echo-sounder mapping of a 984 km2 area at Tromsoflaket. This is a progressive programme, in 2013, the sum depth measurements, for all years: were about 131 000 km2, and by 2014, an area of 157 585 km2 has been sampled. While Norwegian coastal waters have been widely mapped, the Mareano program still falls short in providing specific information on the central Barents Sea, but which is slowly increasing its coverage year by year.

Besides, there are different publications on the distribution on benthic species, as those by Jakobsen and Ozhigin (2011), Jørgensen *et al*. (2015), Lubin (2013) or by ICES working groups (WGIBAR 2018) which serve to increase the knowledge of habitats in the area.

Research undertaken serves to provide sufficient knowledge on the nature, vulnerability and distribution of main habitats (this is, commonly encountered habitats and VME) in the different areas under assessment are known at a level of detail relevant to the scale and intensity of the UoA. **SG60 and SG80 are met by all UoAs.**

While the occurrence of vulnerable habitats has been identified, it is difficult to state that ALL habitats are known over their range, especially in the central Barents Sea where further mapping would be welcomed. **SG100 is not met by any UoA.**

b	**Information adequacy for assessment of impacts**			
	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction	The physical impacts of the gear on all habitats have been quantified fully.

		overlap of habitat with fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	and on the timing and location of use of the fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	
	UoA 1 (Bottom tralws)	**Yes**	**Yes**	**No**
	UoA 2 (longlines)	**Yes**	**Yes**	**No**
	UoA 3 (gillnets)	**Yes**	**Yes**	**No**
	UoA 4 (Danish seine)	**Yes**	**Yes**	**No**
	UoA 5 (Hooks and lines)	**Yes**	**Yes**	**No**

Rationale

VMS tracks provide reliable information on the spatial and temporal location and extent of fishing gear types. These tracks, together with available information on the distributions of main habitat types and the knowledge of the impacts that the different gears may have on habitat types serve to identify the main impacts that the different UoAs have on main habitats and that there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.

As regards specific impacts that each gear type has, Grekov and Pavlenko (2011) estimated that the area annually affected by the Russian longline fleet in the Barents Sea was about 100 km2 (using an estimation of 88 million fished hooks per year), and concluded that both the relative size of the area and the impacts of both the hooks and anchors on the seabed do not cause special concern. While not specific for the longline UoAs, the team considers that estimations made for the Russian longline fleet could also serve to estimate the impact of the Norwegian longline fleet, although this impact has not been quantified fully.

As for other gear types, the effect of static gears such as gillnets and hooks and lines 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. The quantification of physical impacts of bottom fixed gears could be calculated by the study of the number, size and distribution of these gears, and the proportion of affected area versus the Norwegian and Barents Seas areas. While lost gears (either static or moving) could influence the distribution and abundance of benthic communities through encouraging aggregation of scavengers, these risks are minimized by the Coastguard's annual lost-gear recovery program. As regards hooks, the impact that these could have on benthic habitats is negligible. In any case, and as with the longline fleet, these impacts have not been quantified fully.

As regards trawling activity, it is known that this 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. Lubin (2013) estimated this time to range from 4 to 7 years in the affected habitats. It is acknowledged that the composition of the benthic communities may shift favouring more resilient species, but the overall structure and function of the habitats remains. Effects or hard substrate have also been studied and are considered more harmful. While not as noticeable, Danish seines also have an impact on benthic habitats.

While there is reasonable data on recovery rates of major habitats, understanding of recovery rates of associated species, and especially vulnerable species is still poorly understood, and although effects of the different fishing gears has been studied in different research papers, its effects in the affected fishing grounds have not been quantified fully.

SG60 and SG80 is met by all UoAs. **SG100 is not met by any UoA**.

	Monitoring			
c	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
	All UoAs		**Yes**	**No**

Rationale

Information on habitats continues to be collected through the ongoing MAREANO Program, joint IMR-PINRO ecosystem surveys and the OSPAR Commission (www.ospar.org). 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 by all UoAs.**

However, further mapping is needed in order to gather information on yet un-mapped areas (such as the central Barents Sea) in order to be able to measure change in all habitat distributions over time. Besides, habitat maps on the same area that date back time enough would be necessary in order to measure any change or trend. **SG100 is not met for any UoA.**

References

Jakobsen and Ozhigin (2011)

Jørgensen et al. (2015)

ICES working group (WGIBAR 2018)

VMS maps.
MAREANO Program
IMR-PINRO Joint fisheries commission.
OSPAR Commission (www.ospar.org)
Grekov and Pavlenko (2011)
Kaiser et al (2006),
Gordon et al (2002)
Meenakumari et al (2008)
Lubin (2013)

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range All UoAs	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**80**
Condition number (if relevant)	**N/A**

PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA 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	Ecosystem status			
	Guide post	The UoA 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 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.	There is **evidence** 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.
	All UoAs	**Yes**	**Yes**	**No**
Rationale				

The background section summarises the ecosystem models, specific to the Barents Sea, described in the 2018 ICES AFWG Report. The AFWG has reported on the trophic relationships among the different species in the ecosystem, such as Ecopath type studies by Blanchard *et al* 2002; EcoCod (which seeks to estimate cod MSY taking into account a range of ecosystem factors), Gadget (multispecies interactions between cod, herring, capelin, minke whale, krill) in the Barents Sea; Biofrost (multispecies model for Barents Sea – addressing primarily cod / capelin dynamics); STOCOBAR (Stock of cod in the Barents Sea) and various ecosystem modelling studies by e.g. Planque and Lindstom at IMR. Similar ecosystem models exist for the Norwegian Sea (Hjollo et al, 2012; Utne et al, 2012). Broader ecosystem models include NORWECOM.E2E, which includes plankton and fish. PINRO and IMR have developed together hydrodynamic models that complement these mainly biologically based models.

Three ICES working groups (AFWG, WGDEC and WGIBAR) provide a comprehensive annual review of ecosystem status in the NE Arctic. This information is supplemented by on-going data collected by IMR and PINRO under the Joint Norwegian-Russian Commission and its environmental status reports for the Barents Sea (which issues annual Barents Sea ecosystem status report, trends, highlights expected future situation) and work undertaken as part of implementing the Norwegian Integrated Management Plan for the Barents Sea- Lofoten area. The different models and assessments provide enough information to support that both the Norwegian and the Barents Sea ecosystems are relatively healthy (affected however by global warming and other human pressures).

Key ecosystem elements considered to be most crucial to giving the Barents Seas ecosystem its characteristic nature, structure, dynamics and functions are well documented (WGIBAR 2018).There is evidence that many of the key elements of the ecosystem are in good shape, and there is a good understanding of the factors affecting the negative change in other ecosystem elements, such as some seabirds species with declining population trends (northern fulmar, black-legged kittiwake, razorbill, Atlantic puffin and common guillemot) as elsewhere in the northeast Atlantic. This is probably caused by food shortage, predation from an increasing population of white-tailed eagles and lagged effects from previous bycatch in different fisheries (particularly long line and gill net fisheries).
As for marine mammals, some of which prey on cod, haddock, saithe, etc but which are not obligate predators of any one of them, the clearest evidence that the fishery for cod and haddock is highly unlikely to disrupt the key elements underlying ecosystem structure and function is provided by the long-term historic overview. Despite the extreme variation in abundance of several of the major fish stocks over the past 50 – 70 years (which includes current stock and haddock stocks being c. twice all previous recorded levels) there has never been any substantiated indication of any significant adverse effect on ecosystem structure or function (as might be indicated by a universal collapse of bird or mammal populations or plague blooms of jellyfish).

The Marine Resources Act makes it an explicit requirement that an ecosystem approach is taken to all aspects of marine resource management. Norway maintains extensive ecosystem monitoring and management programmes that review the role of fisheries and target species' trophic role. A key element of this is the annual assessment, management advice and landing for the NEA cod and haddock fisheries. The fishery's share of TAC is based on ICES advice, which takes into account the potential needs of other species in the ecosystem, such as other fish species or marine mammals. However, the feed needs of other predators such as seabirds are not yet taken into account.

Of relevance to the haddock fisheries, the stock is at an all-time high and is harvested at sustainable levels. Capelin, a key species in the ecosystem in terms of food web dynamics, is also at high stock levels. The current haddock fishery is not being considered as disrupting ecosystem main functions. Declines in the populations of other species such as marine mammals or birds in the Barents Sea are attributed to other factors such as rising sea temperature or redistribution of prey species.
The team considers that the haddock fishery in the NEA 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. **SG60 and SG80 are met by all UoAs.**

Uncertainties in relation to the impact that global warming has on the different elements of the ecosystem including distribution and abundance of fish and out-of-scope species prevent all UoAs from meeting the requirements at SG100, Since this impact is still not well understood in relation to fisheries. **SG100 is not met by any UoA.**

References

ICES 2018 AFWG Report
Blanchard *et al* 2002;
Planque and Lindstom at IMR
Hjollo et al, 2012
Utne et al, 2012
NORWECOM.E2E
ICES 2018 WGIBAR
ICES advice for cod, haddock.
Marine Resources Act.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range: All UoAs	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**80**
Condition number (if relevant)	**N/A**

PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place, if necessary which take into account the **potential impacts** of the UoA on key elements of the ecosystem.	There is a **partial strategy** in place, if necessary, which takes into account **available information and is expected to restrain impacts** of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a **strategy** that consists of a **plan**, in place which contains measures to **address all main impacts of the UoA** on the ecosystem, and at least some of these measures are in place.
	All UoAs	**Yes**	**Yes**	**No**

Rationale

The Norwegian EEZ and the Barents Sea are subject to management measures which seek profit from the fishery as well as the protection of the fishing resources. This is done by the establishment of fishing regulations, mesh limitations and technical measures, closed areas, bycatch limitations, enforcement effort, landing obligation, and continue monitoring of many species present in the ecosystem.
The Norwegian Marine Resources Act has an explicit requirement to take an ecosystem approach to resource management and exploitation. The act provides the statutory basis for the suite of regional seas management plans (for the North Sea and Skagerrak, the Norwegian Sea, and the Barents Sea), each of them aimed at monitoring and safeguarding the status of the marine environment and the resources it supports. Major revisions of these management plans are planned every 4 years.
An integral part of the fishing strategy in the Barents Sea is the JNRFC commitment to safeguarding the exploited stocks, as demonstrated through the agreed management plans for, inter alia, cod, haddock and saithe. Fundamental to the strategy is the annual planning and execution of a series of research cruises both by individual states and under the auspices of the JNRFC, to monitor and assess the status of resources, ecosystems and environment. The strategy bases its measures on data gathered through different research institutions (including IMR and PINRO), ICES advice on fish stocks (which is based on SMS modelling, which includes prey-predator relationships), ICES Advisory Committee on Ecosystems (ACE), habitat mapping programs (MAREANO Programme) and OSPAR Commission research (www.ospar.org).
Specifically, for the Barents Sea there are different management measures used in the cod and haddock fisheries which ensure that these fisheries do not pose a risk of serious or irreversible harm to ecosystem structure and function. These measures include: TACs for the target species but also for several of the P2 primary species (e.g. saithe); minimum landing size for cod set at 44 cm, sorting grids in the bottom trawl fishery to minimize the catch of juvenile fish; minimum mesh size (130mm); maximum bycatch of undersized fish, move-on rules to protect juvenile fish (cod, saithe, Greenland halibut and redfish); area closures to protect spawning grounds; MPAs to protect vulnerable benthic habitats and species and move on-rule to protect corals and sponges.
The different measures in place take into account the potential impact of the fishery. **SG60 is met by all UoAs**.

Given the coordination with Russian management authorities gained through the JNRFC and the Norwegian management plans for the Barents and Norwegian Sea these measures can be considered as a partial strategy already implemented. **SG80 is met by all UoAs**.

Norway has defined management plans for the Barents Sea and the Norwegian sea ecoregions. These management plans contain management measures design to ensure that the fishing activity does not pose a risk of serious or irreversible harm to the ecosystem structure and function, however this plan fails short to manage all possible impacts (since not all measures are binding) in all possible fishing grounds (which include Russian EEZ) and is therefore only considered as partial. **SG100 is not met by any UoA.**

Management strategy evaluation

b	Guide post	The **measures** are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar UoAs/ ecosystems).	There is **some objective basis for confidence** that the measures/ partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved.	**Testing** supports **high confidence** that the partial strategy/ strategy will work, based on information directly about the UoA and/or ecosystem involved.
	All UoAs	**Yes**	**Yes**	**No**

Rationale

The haddock stock is at biomass levels above MSY Btrigger. The integrated ecosystem approach-based management plan and strategies for the Barents Sea and Lofoten areas, as well as for the Norwegian Sea, which take into account direct information about the ecosystems involved through ICES advice, scientific advice from IMR, PINRO and the scientific community and which uses historical and current information collected under the framework of the Joint-Norwegian-Russian Fisheries Commission, are reviewed every 4 years which allows for modifications to the management plans where further effectiveness is required.
Given the broad knowledge on the Barents Sea and Norwegian Sea ecosystems, the continued monitoring by different research institutions, the generally healthy status of both ecosystems and of the heathy situation of haddock and NEA cod stocks, there is some objective basis for confidence that the measures and partial strategy implemented will work (and are working already). **SG60 and SG80 are met for all UoAs.**

Although the main pressures of the Barents Sea and the Norwegian Sea are evaluated and reported by ICES (EOBSE 2016 and EONSE 2018) there is no testing as regards the management plan effectiveness. Besides, the plan falls short to manage fishing grounds in Russian jurisdiction. **SG100 is not met by any UoA.**

c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its objective as set out in scoring issue (a).**
	All UoAs		**Yes**	**No**

Rationale

There is evidence of area closures (and VMS tracking to confirm compliance), compliance with management measures (evidence gathered through inspection by the Coast Guard informing of no systematic non-compliance), evidence of scientific research cruises and resulting status reports, and there is evidence of ecosystem elements being given key consideration at fisheries management level – both in the form of ICES advice and in the deliberations of the JNRFC. This conform an evidence that the partial strategy is implemented successfully. **SG80 is met by all UoAs**.

This evidence is not available for all the fishing grounds, as some fishing areas remain unmapped by the Mareano program. **SG100 is not met by any UoA.**

References

ICES Ecosystem Overview for the Barents Sea Ecoregion, 2016.
https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/Barents_Sea_Ecoregion-Ecosystem_overview.pdf
ICES Ecosystem Overview for the Norwegian Sea Ecoregion, 2018.
https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/NorwegianSea_EcosystemOverview.pdf
Integrated Management Plan for the Marine Environment of the Barents Sea–Lofoten Area, Meld. St. 10 (2010–2011).
https://www.regjeringen.no/en/dokumenter/meld.-st.-10-20102011/id635591/
Integrated Management of the Marine Environment of the Norwegian Sea — Report No. 37 (2008 – 2009).
https://www.regjeringen.no/en/dokumenter/report-no.-37-to-the-storting-2008-2009/id560159/
ICES 2019 advice for cod in regions I and II.

ICES 2019 advice for haddock in regions I and II.
Mareano program. www.mareano.no

Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range: All UoAs	≥80
Information gap indicator	Information sufficient to score PI

Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score All UoAs	**80**
Condition number (if relevant)	**N/A**

PI 2.5.3 – Ecosystem information

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	Information is adequate to **identify** the key elements of the ecosystem.	Information is adequate to **broadly understand** the key elements of the ecosystem.	
	All UoAs	**Yes**	**Yes**	
Rationale				

As described in PI 2.5.1, key elements of the ecosystem, such as primary and secondary productivity, and predator-prey relationships, have been studied through different ecosystem models both in the Norwegian and the Barents Seas. The trophic relationships of cod and haddock with prey species on the North East Atlantic have been studied through ecosystem models for the Norwegian Sea (Hjollo et al, 2012; Utne et al, 2012) and the Barents Sea.
The Norwegian Institute for Nature Research (NINA) monitors birds populations while the IMR Institute studies the Norwegian Sea ecosystem through the Norwecom.E2E project. Barents Sea ecosystem is studied under the auspices of the JNRFC. Information from these studies is adequate to broadly understand the key elements of these ecosystems.
SG60 and SG80 are met by all UoAs.

B	**Investigation of UoA impacts**			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information but **have not been investigated** in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and **some have been investigated in detail**.	Main interactions between the UoA and these ecosystem elements can be inferred from existing information and **have been investigated in detail**.
	All UoAs	**Yes**	**Yes**	**Yes**
Rationale				

International research effort over the past 25 years has led to an increased knowledge and understanding of interactions between fisheries and ecosystems. This understanding is backed-up by different ecosystem models designed for the fishing grounds.
There is a good level of information on the ecosystem, and also a broad knowledge of the impacts that the fishery has on the different ecosystem elements, including information on the level of interactions with bycatch, ETP species, and main habitat types. Such information is collected via VMS, landing and inspection records. Furthermore, different institutions such as IMR, PINRO and WWF follow up the status of the different elements of the Norwegian and Barents Seas ecosystems.
The main impacts and interactions of the fishery on key ecosystem elements can be inferred from existing information, and several have been investigated in detail**. SG60, 80 and 100 are met by all UoAs**.

C	**Understanding of component functions**			
	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are **known**.	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are **understood**.
	All UoAs		**Yes**	**Yes**
Rationale				

Information obtained by different means ((relevant scientific research by IMR/PINRO together with ecosystem modelling over the years, and fishery specific data such as VMS data, catch composition data, and non-commercial species sightings data, as well as coast guard inspection data) is sufficient to gather a good understanding of the main functions of key ecosystem components, such as target species – haddock – primary, secondary, ETP species, habitats (productive nursery areas) and ecosystem. **SG80 is met by all UoAs.**

The distribution of fishing effort and landings are recorded accurately and shared with national authorities for real-time quota/fishing removal management. There is a well-established landing obligation. Impact on seabed habitat is managed by scientific surveys of closed areas, and before –after surveys of open areas. The impacts of the different UoAs on the different species and habitats are identified and the main functions of these components in the ecosystem have been investigated and are understood. **SG100 is met by all UoAs**.

	Information relevance			
d	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components **and elements** to allow the main consequences for the ecosystem to be inferred.
	All UoAs		**Yes**	**Yes**
Rationale				

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 under PI 2.5.1) provide a broad knowledge of the impacts that the fishery has on the targeted species and dependent predators. These simulation models have been developed using data collected over many years, including stomach content analysis and other investigations enable the main consequences for the ecosystem to be inferred and tested.
As ecosystem management strategies and our understanding of the data requirements for ecosystem-based management improve, there is the opportunity for regular refinement of data collection methodologies and priorities – meaning that data remains tailored to the management strategies designed to mitigate ecosystem impacts. **SG80 and SG100 are met by all UoAs.**

	Monitoring			
e	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	All UoAs		**Yes**	**Yes**
Rationale				

There is a comprehensive monitoring of the area by IMR (in the Norwegian and Barents Seas) and also by PINRO (in the Barents Sea), conducted through different annual research trips intended to evaluate the status of different fishing stocks, ETP species and habitats. Other institutions monitor other populations such as seabirds and mammals. There also are different ecosystem models in the area which serve to foresee expected future changes in the status of the ecosystem. Risks associated with changing populations or relations between fisheries and various elements of the ecosystem should be detected. **SG80 is met by all UoAs.**

Although there are some gaps in understanding, there is more than enough information available to support precautionary strategies to manage marine ecosystem impacts. The long-established and long-term research programmes and their associated databases (and not only those of coastal states but other nations with an historic scientific interest in the NE Arctic) are undoubtedly sufficient to support the development of strategies to manage ecosystem interactions. The regional seas management plans for the Norwegian and the Barents Sea are de facto examples of such management strategies. **SG100 is met by all UoAs.**

References

ICES 2018 AFWG Report
NORWECOM.E2E
ICES 2018 WGIBAR
ICES advice for cod, haddock.
Marine Resources Act.
ICES Ecosystem Overview for the Barents Sea Ecoregion, 2016.
https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/Barents_Sea_Ecoregion-Ecosystem_overview.pdf
ICES Ecosystem Overview for the Norwegian Sea Ecoregion, 2018.
https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/NorwegianSea_EcosystemOverview.pdf
Integrated Management Plan for the Marine Environment of the Barents Sea–Lofoten Area, Meld. St. 10 (2010–2011).
https://www.regjeringen.no/en/dokumenter/meld.-st.-10-20102011/id635591/
Integrated Management of the Marine Environment of the Norwegian Sea — Report No. 37 (2008 – 2009).
https://www.regjeringen.no/en/dokumenter/report-no.-37-to-the-storting-2008-2009/id560159/
ICES 2018 advice for cod in regions I and II.
ICES 2018 advice for haddock in regions I and II.
Mareano program. www.mareano.no
http://www.jointfish.com/index.php/eng.html

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range (All UoAs)	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score All UoAs	**100**
Condition number (if relevant)	**N/A**

7.4 Principle 3

7.4.1 Principle 3 background

The North East Arctic haddock fisheries are conducted both with an international trawler fleet and with coastal vessels using traditional fishing gears. The cod and haddock stocks are shared between Norway and Russia and management is coordinated through the Joint Norwegian-Russian Fisheries Commission (JNRFC) based on agreed management plans. There are minute catches in international waters regulated under NEAFC by-catch regulations. Norway has a well-established system for fisheries management which is systematized in the 2008 Marine Resources Act and secondary legislation. The purpose of the Act is to ensure sustainable and economically profitable management of wild living marine resources and genetic material derived from them, and to promote employment and settlement in coastal communities. The act applies to all harvesting and other utilisation of wild living marine resources and genetic material derived from them as well as other activities in connection, such as catch levels and quotas, catch and use of marine resources, arrangements on the fishing fields, transhipment, delivery, landing, receipt, storage, production, placing on the market, liability for damage, local regulations and monitoring, enforcement, sanctions and criminal liability.

The Marine Resources Act is a framework law, which mainly 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, seasonal restrictions, bycatch, minimal fish size, discard ban, restrictions on the use of trawl in specific areas, protection of coral reefs, documentation on hold volumes, marking of vessels and gear, loss of gear and fish welfare. 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 haddock.

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.

The 2008 Marine Resources Act requires that Norwegian fisheries management be guided by the precautionary approach, in line with international treaties and guidelines, and by an ecosystem approach that takes into account habitats and biodiversity. The same objectives are found in the most relevant policy documents, such as the integrated management plans for the Barents and Norwegian Seas, and for the North Sea and Skagerrak.
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. Regulatory Meetings are organized twice a year and are open to all with user-group organizations and NGOs attending 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 Fishermen's Association, 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 indigenous Sami population. In addition to formal and informal consultation on the execution of the fisheries regulations, 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. 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.

Quotas for the haddock also covers small fisheries in the international waters. These catches are regulated through NEAFC by-catch regulations. The catches are minimal. In addition to quotas, the fishery is regulated by a minimum catch size, a minimum mesh size in trawls and Danish seines, a maximum by-catch of undersized fish, a maximum by-catch of non-target species, closure of areas having high densities of juveniles and by seasonal and area restrictions (ICES, 2014b). Since 1997 sorting grids have been mandatory for all trawl fisheries in most of the Barents Sea and Svalbard area. From 2011 the minimum mesh size, for bottom trawl fisheries for cod and haddock for the whole of the Barents Sea, changed to 130mm. Minimum landing size was also changed, from 1 January 2011, to 44cm in all areas. These changes were part of a harmonisation of the regulations in each EEZ and included changes to the percentage of undersized fish permitted in the catch. In the past, there has been a major issue of unreported and unregulated catches in this fishery. More rigorous enforcement measures, including inspections at sea and designated catch control and landing points and VMS tracking of some vessels have seen the problem virtually eliminated since 2009 (ICES, 2019c).

MCS is conducted by the Norwegian authorities in the Norwegian zone and the Russian authorities in the Russian zone. International waters are the responsibility of NEAFC. The organisations involved with MCS have an elaborated cooperation both nationally and internationally.

The Marine Resources Act places the overall responsibility for monitoring, control and surveillance in Norwegian fisheries with the Directorate of Fisheries. 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. 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). 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 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 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. 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. 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.

Though the Coast Guard performs tasks on behalf of several ministries, it's most important 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. Hence, there are a number of possibilities for enforcement authorities to physically check whether the data provided by fishers through self-reporting are indeed correct. In addition, VMS data enables control of whether area restrictions are observed, among other things.
Intentional or negligent violations are punished with fines or prison up to one year, 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. Alternatively, catch, gear, vessels or other properties can be confiscated. 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.
Enforcement authorities report the level of compliance in the fishery to be high.

There are mechanisms in place to evaluate key parts of the management system. 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 discussed on the basis of risk-based monitoring of past experience. The international part of 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 within the fisheries sector. The Office of the Auditor General conducts annual reviews of the financial performance of the fishery management system.
The Scoring Justifications presented below include updated version of the regulations.

7.4.2 Principle 3 Performance Indicator scores and rationales

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - 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	Compatibility of laws or standards with effective management			
	Guide post	There is an effective national legal system **and a framework for cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and **organised and effective cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and **binding procedures governing cooperation with other parties** which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

The fishery is managed through the Joint Norwegian-Russian Fisheries Commission (JNRFC) There are minute catches in international waters regulated under NEAFC by-catch regulations. These by-catches amount to less than 1,000 t annually compared to annual catches in the range of 200-250,000 t annually.
The coastal zone is defined as the area up to the 12 nm off the baseline in conformity with UNCLOS. This section is only accessible for fishing vessels with a Norwegian Flag for the Norwegian sector of the Norwegian EEZ and similar for the Russian sector. The exclusion of non-Norwegian vessels follows from the agreements between Norway and countries with access to the NEA cod and haddock, i.e. Greenland, Iceland, Faroe Islands and EU countries including UK. The Norwegian coastal cod is only present within this coastal zone.

The haddock fishery is conducted in the Norwegian coastal zone, in the Norwegian and Russian EEZ outside the coastal zone and in international waters. The flag state of the fleet is Norway and these fish under the Norwegian national system.
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. The Act provides for a formal system of cooperation between regulatory bodies of governance, such as the Ministry of Trade, Industry and Fisheries, the Directorate of Fisheries and the Coast Guard, and further for cooperation between management authorities and scientific research institutes, primarily the Institute of Marine Research. The 2008 Integrated Management Plan for the Norwegian Sea provides for cooperation between different sector authorities, such as the Ministry of Trade, Industry and Fisheries and the Ministry of Climate and Environment. The national legal documents refer to and are in compliance with relevant international agreements, such as the 1982 Law of the Sea Convention (UNCLOS) and the 1995 Fish Stocks Agreement. The fisheries are managed according to the principles set out in the FAO Code of Conduct for Responsible Fisheries, which includes the application of a precautionary approach. Norway has implemented actions against IUU fishing in accordance with the FAO Global Plan of Action against IUU fishing and is a signatory to the 2009 FAO Port State Agreement. The system is considered to be effective, at the national level, insofar as it constitutes a coherent set of rule-making practices.

This fishery is subject to international cooperation for management of the stock. The JNRFC provides efficient joint management in the Barents Sea and the Norwegian Sea of inter alia the haddock stock. In line with the international trend for a more comprehensive, eco-based strategy, and since the turn of the century, the Fisheries Commission has been working towards a more long-term, precautionary approach to harvesting strategies for the live marine resources in the Barents Sea and the Norwegian Sea.In that context the fishery does meet the requirements of scoring issue SG

100 in that a framework for international cooperation does exist through the JNRFC which have proven to be effective in the management of the NEA cod and haddock fishery since 1975. **SG60 and SG80 are met.**

As noted above there is an effective national Norwegian system. This is coupled with binding procedures through JNRFC. There is clear evidence of continued international cooperation under the JNRFC on science and research and together these have delivered the outcomes, in terms of stock and marine ecosystem status consistent with MSC principles 1 and 2. **SG100 is met**

	Resolution of disputes			
b	Guide post	The management system incorporates or is subject by law to a **mechanism** for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes which is **considered to be effective** in dealing with most issues and that is appropriate to the context of the UoA.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes that is appropriate to the context of the fishery and has been **tested and proven to be effective**.
	Met?	**Yes**	**Yes**	**No**

Rationale

At the national level in Norway, there is an effective, transparent dispute resolution system in place. This system includes an elaborate consultation system including two annual meetings between the industry and the Directorate together with easy access to the ministry. For potential infringement violations of regulations, 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 that management authorities have lost cases against fishermen and accepted the verdict, which is a clear demonstration that the system works. **SG60 is met**

The NE Arctic haddock is shared and as a high-seas stock subject to international cooperation for its management. The bilateral JNRFC agreement is the fundamental mechanism to achieve that management based on the agreed harvest strategy endorsed as precautionary by ICES. The main core of that agreement is to set the annual TAC on the basis of ICES advice. The 50/50 TAC allocation to each party (with 3rd country allocations reached through bilateral agreements) is based on a legally binding long- term agreement.
Disputes between Norway and Russia are solved within the frameworks of the 1975 JNRFC agreement on the regulation of the NEA cod and haddock fisheries and the annual fisheries consultations. At the international level, a state can institute proceedings against another state through mechanisms such as the International Court of Justice and the International Tribunal for the Law of the Sea. The system is considered to be effective insofar as no major disputes have emerged. **SG80 is met**

However, the system has not been tested and proven its effectiveness and the recent dispute over the Northeast Atlantic pelagic complex suggest that the dispute settlement at the international level is not effective. **SG100 is not met.**

	Respect for rights			
c	Guide post	The management system has a mechanism to **generally respect** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **observe** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **formally commit** to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.

	Met?	**Yes**	**Yes**	**Yes**

Rationale

The Norwegian system for fisheries management includes various mechanisms that generally respect and observe the rights of the coastal population along the country's coast. For the most important species, significantly and proportionately larger quota shares are allotted to coastal fisheries than to the ocean going fleet, although this established custom is not enshrined in law. (see, for instance, the Regulation on Participation in Fisheries for an overview (Deltagerloven). **SG60 is met.**

The management system includes a set of mechanisms (hearings, biannual meeting between the industry and management (Fiskeridirektoratet)), that all are aimed to observe the legal rights of the fishing industry which also represent the coastal fishing communities. Although this represents a subsidy to the fishing communities involved, it has no bearing on the total quantity of fish landed as this is set by national quotas. These national arrangements are not in conflict with MSC P1 and P2.
At the international level the historical fishing rights of countries particularly depending on fishing for food and livelihood are respected and observed through the appropriate regional fisheries management bodies, e.g. JNRFC and NEAFC. **SG80 is met.**

The allotment of quota shares to coastal fisheries is done with particular attention to the traditional fisheries of 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.**

References

- Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).
- Forskrift om landings- og sluttseddel (landingsforskriften), 2016 (Regulation on Landing and Sales Notes).
- Konsesjonsforskriften, (Regulation on Licencing).
- Forskrift om utøvelse av fisket i sjøen, (Regulation on the Execution of Marine Fisheries).
- Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N).
- 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 99utenfor 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).
- Meld. St. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).
- Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
- St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**95**
Condition number (if relevant)	**NA**

PI 3.1.2 – Consultation, roles and responsibilities

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	Roles and responsibilities			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **generally understood**.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for key areas** of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for all areas** of responsibility and interaction.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

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. **SG60 and SG80 are met.**

As noted, Organisations and individuals in the management process have been identified in the management system and the legal system defines the roles explicitly. The roles are well understood in the system. **SG 100 is met.**

b	**Consultation processes**			
	Guide post	The management system includes consultation processes that **obtain relevant information** from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that **regularly seek and accept** relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that **regularly seek and accept** relevant information, including local knowledge. The management system demonstrates consideration of the information and **explains how it is used or not used**.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

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. **SG60 is met.** 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. **SG80 is met.**

So-called Regulatory Meetings are organized twice a year are open to all; user group organizations and NGOs attend on a regular basis. At these meetings, the allocation of quotas inter alia is thoroughly discussed based on proposal by the directorate.
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. 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**.

	Participation			
c	Guide post		The consultation process **provides opportunity** for all interested and affected parties to be involved.	The consultation process provides **opportunity and encouragement** for all interested and affected parties to be involved, and **facilitates** their effective engagement.
	Met?		**Yes**	**Yes**
Rationale				

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. **SG80 is met**.

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. **SG 100 is met.**

References

- Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).
- Forskrift om landings- og sluttseddel (landingsforskriften), 2016 (Regulation on Landing and Sales Notes).
- Konsesjonsforskriften, (Regulation on Licencing).
- Forskrift om utøvelse av fisket i sjøen, (Regulation on the Execution of Marine Fisheries).
- Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N).
- 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).
- Meld. St. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).
- Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
- St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring Issue		SG 60	SG 80	SG 100
a	Objectives			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach, are **implicit** within management policy.	**Clear** long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach are **explicit** within management policy.	**Clear** long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are **explicit** within **and required by** management policy.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

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 requirements are thus defined explicitly. **SG60 and SG80 is met.**

The same objectives are found in the most relevant policy documents, such as the integrated management plans for the Barents and Norwegian Seas, and for the North Sea and Skagerrak. **SG 100 is met**.

References

- General Norwegian legal basis https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger (
- Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N).
- 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).
- Meld. St. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).
- Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
- St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report	
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1		The fishery-specific management system 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	Objectives			
	Guide post	**Objectives**, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **implicit** within the fishery-specific 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-specific 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-specific management system.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

Well defined and measurable short and long-term objectives consistent with achieving the outcomes of MSC Principles 1 and 2 are explicit in the integrated management plans for the Barents and Norwegian Seas, the Marine Resources Act and supporting legislation on the Norwegian cod and haddock fishery. This includes objectives to maintain fish stocks at sustainable levels (here: both target stocks and other retained species) and protect other parts of the ecosystem, such as habitats. These objectives are well defined and measurable, in the sense that performance against them can be measured through the enforcement bodies' recording and inspection routines (see PI 3.2.3). SG60, SG80 and **SG 100 is met**.

References

- Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).
- Forskrift om landings- og sluttseddel (landingsforskriften), 2016 (Regulation on Landing and Sales Notes).
- Konsesjonsforskriften, (Regulation on Licencing).
- Deltakerforskriften, (Regulation on Participation in Fisheries).
- Forskrift om utøvelse av fisket i sjøen, (Regulation on the Execution of Marine Fisheries).
- Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N).
- 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).
- Meld. St. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).
- Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
- St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 3.2.2 – Decision-making processes

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		
Scoring Issue		SG 60	SG 80	SG 100
a	Decision-making processes			
	Guide post	There are **some** decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are **established** decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	**Yes**	**Yes**	
Rationale				

There are established procedures at the international level codified at regulations under the JNRFC. The procedures are in use when establishing management plans, technical measures, and annual total TACs. Established decision-making procedures at national level in Norway –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 haddock 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. SG60 and **SG80 are both met**.

b	**Responsiveness of decision-making processes**			
	Guide post	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				

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). **SG60 and SG80 are met**.

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. 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, the assessment team did not find issues that are not responded to (in the sense that the issue is seriously considered) in this fishery. Hence, **SG 100 is met**.

c	**Use of precautionary approach**			
	Guide post		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		**Yes**	

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	**Accountability and transparency of management system and decision-making process**			
	Guide post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	**Information on the fishery's 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 the fishery's 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?	**Yes**	**Yes**	**Yes**

Rationale

The Fishery directorate maintains a website http://www.Fiskeridir.no with substantial information on the Norwegian fishery (fleet statistics, catch statistics, access to Summaries of the regular 'Reguleringsmøte' etc. **SG60 is met.** Summaries of the half-yearly 'Reguleringsmøte' available at the Fishery directorate web site provides good summaries of the fishery's performance and management action. **SG80 is met.** (See further in scoring SG100 below)

The Ministry of Trade, Industry and Fisheries submits annual reports to the Parliament on behalf of the entire system for fisheries management. 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 and are available at the respective institutions' websites. 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. Furthermore, the reports and background material for the bienniel Regulations meetings provides a detailed overview of the problems and issues with the fisheries. 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. 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	**Approach to disputes**			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or	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.

		regulation necessary for the sustainability for the fishery.		
	Met?	**Yes**	**Yes**	**Yes**

Rationale

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. **SG60 and SG80 are met.**

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

- Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).
- Forskrift om landings- og sluttseddel (landingsforskriften), 2016 (Regulation on Landing and Sales Notes).
- Konsesjonsforskriften, (Regulation on Licencing).
- Deltakerforskriften, (Regulation on Participation in Fisheries).
- Forskrift om utøvelse av fisket i sjøen, (Regulation on the Execution of Marine Fisheries).
- Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N).
- 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).
- Meld. St. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).
- Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
- St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**100**
Condition number (if relevant)	**NA**

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
a	MCS implementation			
	Guide post	Monitoring, control and surveillance **mechanisms** exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance **system** has been implemented in the fishery 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 and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The Norwegian MCS system is comprehensive and has demonstrated consistent ability to enforce relevant management measures and other regulations pertaining to fisheries.
MCS in Norwegian fisheries is the shared responsibility 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. The Coast Guard 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.
The Russian system is based on mandatory observers when fishing in the Russian zone. Reporting requirements are similar as in the Norwegian zone as the regulations are harmonised between Norway and Russia through JNRFC. Similar rules apply in the international waters (NEAFC).
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. 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.
SG60 and SG80 is met.

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.
The ERS regulation J-208-2017 (“ERS regulation” - Valid version is now [5 March 2021]: J-10-2021) includes the requirements to report all FAO datacodes for catch and bycatch under the “Block B data elements” in §13 of the regulation. This includes corals and sponges. Reporting of non-commercial bycatch has up until now has been low. A review of the reports from logbook only found 3 reports in 2019. Therefore, non-commercial bycatch rather has been monitored through the Reference fleet together with other scientific projects such as the MAREANO project that have contributed. However, the Reference fleet program only included monitoring of bottom fauna from 2019. In late fall of 2020, DoF has been in contact with NFA and other organizations about a joint campaign in 2021 that will inform the fleet of the ERS requirements for bycatch reports, and make it clear that this from now on will be both encouraged and enforced. While there is an extensive monitoring, control and surveillance system implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules, because of the problems with reporting of corals and sponges, the system is not deemed ‘comprehensive’. **SG 100 is not met**.
A recommendation to work towards the alignment of the two regulations is included in this report.

(Changes to 3.2.3a, from the PCDR of January 2021, are due to harmonisation with the Norway NEA cod offshore (>12nm) fishery as a result of rescoring due to stakeholder comment).

b	**Sanctions**			
	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, **are consistently applied** and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and **demonstrably** provide effective deterrence.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

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). Hence, sanctions deal with non-compliance exist and the annual reports of the Coast guard indicate that the sanctions are applied. **SG60 is met.**

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. The structure with a possibility for appeal through the court system ensures that the sanctions are consistently applied. **SG80 is met.**

The comprehensive enforcement system (see SI 3.2.3 a) above) combined with the high level of compliance (see SI 3.2.3 c) below) makes it reasonable to assume that the system demonstrably provides effective deterrence. Fishers interviewed during the site visit confirm that it is indeed the case, a finding which is corroborated by social science investigations about compliance in Norwegian fisheries. **SG 100 is met**.

c	**Compliance**			
	Guide post	Fishers are **generally thought** to comply with the management system for the fishery under assessment, including, when required, providing information of	**Some evidence exists** to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to	There is a **high degree of confidence** that fishers comply with the management system under assessment, including, providing information of importance to

		importance to the effective management of the fishery.	the effective management of the fishery.	the effective management of the fishery.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

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 1048 controls in the cod, haddock and saithe fishery in 2016. Infringements leading up to prosecution were found in 30 inspections (3 %). **SG60 is met.**

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.
Compliance statistics 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 not least the consistent reports from the fishery that compliance is high and the general impression by the inspectors that this is indeed the case, 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	**Systematic non-compliance**			
	Guide post		There is no evidence of systematic non-compliance.	
	Met?		**Yes**	

Rationale

As demonstrated under PI 3.2.3 c) above, there is no evidence of systematic non-compliance in the fishery. DoF, in 2020, reviewed logbooks back to 2014 and found that corals and sponges have been reported in the Norwegian zone in the years 2016, 2017 and 2019. There are reported 1 case in each of the years 2016 and 2017, while in 2019 there are three cases. In total, 46 kg of sponges and corals. Reporting of non-commercial catch, as is identified under 3.2.3a, is rather than systematic non-compliance (as claimed) on the part of the fisheries, a result of the interpretation of the ERS regulation by the Directorate of Fisheries combined with practical problems in identifying the species on deck. The regulation for protection of VMEs (limiting the reporting obligation to 30 kg of corals and 400 kg of sponges (J-31-2021) and ERS regulation (J-10-2021) requirement for reporting combined with problems in identification of the species has made a very strict implementation impractical. As noted above there is planned a campaign in 2021 that

is aimed to introduce a stricter interpretation of the regulation that has hitherto been the practice. A recommendation to align the two regulations has been raised in this assessment. **SG 80 is met.**

References

- Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).
- Forskrift om landings- og sluttseddel (landingsforskriften), 2016 (Regulation on Landing and Sales Notes).
- Konsesjonsforskriften, (Regulation on Licencing).
- Deltakerforskriften, (Regulation on Participation in Fisheries).
- Forskrift om utøvelse av fisket i sjøen, (Regulation on the Execution of Marine Fisheries).
- Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N).
- 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).
- Meld. St. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).
- Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
- St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**95**
Condition number (if relevant)	**NA**

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		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	Evaluation coverage			
	Guide post	There are mechanisms in place to evaluate **some** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **key** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **all** parts of the fishery-specific management system.
	Met?	**Yes**	**Yes**	**No**
Rationale				

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 biennual Regulatory Meetings (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, **SG60 and 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 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. 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'. The parallel revision in 2006–2007 came about at the initiative of the Russian Auditor General, and a decade has passed since then (with a lesser update in 2011). The last 'management review' proper, performed by the Office of the Auditor General at its own initiative, took place 12-13 years ago. (A review of the North Sea fisheries was carried out in 2017, but that does not apply to the fishery-specific management system of the present assessment.) So, while holistic evaluations of the Norwegian system for fisheries management have been carried out, in the opinion of the assessment team they fall short of reflecting a 'mechanism'. Hence, **SG 100 is not met**.

b	**Internal and/or external review**			
	Guide post	The fishery-specific management system is subject to **occasional internal** review.	The fishery-specific management system is subject to **regular internal** and **occasional external** review.	The fishery-specific management system is subject to **regular internal and external** review.
	Met?	**Yes**	**Yes**	**No**
Rationale				

The fishery-specific management system is subject to various forms of internal self-evaluation within the Norwegian bodies of governance (see SI 3.2.4 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 – is annually reviewed by Parliament following the submission of status reports by the Ministry of Trade Industry and Fisheries. The NEA haddock stocks are subject to joint management with Russia and the JNRFC represent an annual review. The financial audits performed by the Office of the Auditor General cover only a minor and rather peripheral aspect of the fisheries management system, seen in the context of an MSC assessment. As mentioned under SI 3.2.4 a) above, the Office of the Auditor General conducted comprehensive evaluations of the Norwegian system for fisheries management in 2003–2004 and 2006–2007, so the system is indisputably subject to external reviews, The NEAFC regulations are reviewed at annual meetings. **SG80 is met**.

And although it can be debated how often (and at what intervals) reviews must be carried out to meet the SG 100 requirement of 'regular' external reviews, the assessment team concluded that it is not met here. While only three years passed between the two mentioned evaluations, none has been carried out for nearly a decade now. There is no regular program for a general overhaul of the Norwegian fisheries management. **SG 100 is not met.**

References

- Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).
- Forskrift om landings- og sluttseddel (landingsforskriften), 2016 (Regulation on Landing and Sales Notes).
- Konsesjonsforskriften, (Regulation on Licencing).
- Deltakerforskriften, (Regulation on Participation in Fisheries).
- Forskrift om utøvelse av fisket i sjøen, (Regulation on the Execution of Marine Fisheries).
- Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N).
- 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).
- Meld. St. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).
- Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).
- St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**≥80**
Information gap indicator	**More information sought**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	80
Condition number (if relevant)	NA

8 References

a. Principle 1

Fiskeridirektoratet J-31-2020: Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62 grader N i 2019, §30 (regulation of fishing for cod, haddock and saithe in the coastal zone)

ICES. 2015. Report of the Benchmark Workshop on Arctic Stocks (WKARCT), 26–30 January 2015, ICES Headquarters, Denmark. ICES CM 2015/ACOM:30. 126 pp.

ICES. 2016. Norway/Russia request for evaluation of harvest control rules for Northeast Arctic cod and haddock and for Barents Sea capelin. In Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 3, Section 3.4.1. 12 pp. http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/Special_Requests/NorwayRussia_HCR_Northeast_Artic_cod_haddock_capelin.pdf.

ICES. 2019b. Haddock (Melanogrammus aeglefinus) in subareas 1 and 2 (Northeast Arctic). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, had.27.1-2, https://doi.org/10.17895/ices.advice.4713

ICES. 2019d. Arctic Fisheries Working Group (AFWG). ICES Scientific Reports. 1:30. 930 pp. http://doi.org/10.17895/ices.pub.5292

ICES. 2020a. Haddock (Melanogrammus aeglefinus) in subareas 1 and 2 (Northeast Arctic). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, had.27.1-2. https://doi.org/10.17895/ices.advice.5948

ICES. 2020b. Arctic Fisheries Working Group (AFWG). ICES Scientific Reports. 2:52. http://doi.org/10.17895/ices.pub.6050

DNV GL. 2015. RE-ASSESSMENT REPORT Public Certification Report for the Norway North East Arctic cod and haddock fishery Norges Fiskarlag Authors: Report No.: 2014-013, Rev. 4 Certificate No.: F-DNV-186569. Authors; Nichols John, Lockwood Stephen, Sverdrup-Jensen Sten, and Pedersen Guro Meldre

b. Principle 2

Arctic Agreement: Industry Group Agreement to Cod fishery in the northern part of North-East Atlantic.

ASCOBANS Agreement (Agreement on the Conservation of Small Cetaceans in the Baltic, North East Atlantic, Irish and North Seas).

ACOM, 2014. Ecoregion Barents Sea and Norwegian Sea: beaked redfish (Sebastes mentella) in subareas I and II. ICES Advice Book 3.3.6.

Addison J., Revenga L., Keus B., Bekkevold, S. MSC PCR Norway NEA cold water prawn. Reassessment report. 2017. DNV-GL.

Anker-Nilssen, T. 1992. Food supply as a determinant of reproduction and population development in

Norwegian Puffins Fratercula arctica. Dr. scient. thesis, University of Trondheim, Norway.

Anker-Nilssen T., Bakken V., Strøm H., Golovkin, A.N., Bianki V.V, & Tatarinkova I.P (Scientific eds.). The status of marine birds breeding in the Barents Sea region. 2000. Norsk Polar Institute. Repportserie, n 113. Tromso. ISBN-82-7666-176-9

Anker-Nilssen, T., Barrett, R.T., Bustnes, J.O., Bårdsen, B.-J., Christensen-Dalsgaard, S., Dehnhard, N., Descamps, S., Erikstad, K.K., Fauchald, P., Hanssen, S.A., Langset, M., Lorentsen, S.-H., Moe, B., Reiertsen, T.K., Strøm, H., Systad, G.H.2019.Sjøfugl i Norge 2018. Resultater fra SEAPOP-programmet. SEAPOP: 28 pp. (Seabirds in Norway, 2018. Results from the SEAPOP programme). http://www.seapop.no/opencms/export/sites/SEAPOP/no/filer/pdf/arsbrosjyrer/seapop-arsbrosjyre-2018-web.pdf

Arneberg, P., Titov, O., Filin, A., and Stiansen, J. E. (Eds.) 2013. Joint Norwegian-Russian environmental status report on the Barents Sea Ecosystem – update for current situation for climate, phytoplankton, zooplankton, fish and fisheries in 2011. IMR/PINRO Joint Report Series, 2013(3).

Bærum, K.M., Anker-Nilssen, T., Christensen-Dalsgaard, S., Fangel, K., Williams, T. & Vølstad, J.H., 2018. Spatial and temporal variations in seabird bycatch: incidental bycatch in the Norwegian coastal gillnet-fishery, Accepted for publication in PLoS One.

Barrett R.T., and Krasnov Y.V. 1996.Recent responses to changes in stocks of prey species by seabirds breeding in the southern Barents Sea. ICES Journal of Marine Science: Journal du Conseil, 53(4):713–722.

Barrett, R.T., Bakken, V. and Krasnov, J. 1997. The diets of common and Brunnich's guille-mots Uria aalge and U. lomvia in the Barents Sea region. Polar Research 16(2): 73–84.

Barrett R.T, 2002. Atlantic puffin Fratercula arctica and common guillemot Uria aalge chick diet and growth as indicators of fish stocks in the Barents Sea. Mar. Ecol. Prog. Ser. 230: 275- 287

Bern Convention: https://www.coe.int/en/web/bern-convention

Bett, B.J. & Rice, A.L. 1992. The influence of hexactinellid sponge (Pheronema carpenteri) spicules on the patchy distribution of macrobenthos in the Porcupine Seabight (Bathyal NE Atlantic). Ophelia 36: 217–226.c

Bjørge A., Moan A. 2017. Revised estimates of harbour porpoise (Phocoena phocoena) bycatches in two Norwegian coastal gillnet fisheries. SC/24/BYCWG/08 By-catch WG.

Bjørge, A. & Moan, A., 2016. Revised estimates of harbour porpoise (Phocoena phocoena) bycatches in two Norwegian coastal gillnet fisheries. Report to the Scientific Committee of the International Whaling Commission, Bled, Slovenia, June 2016. SC/66b/SM/03. 16 sider.

Bjørge, A., 2017a. Prosjekt 901201: Tiltak for å unngå uønsket bifangst i norske garnfiskerier. Endelig evaluering av erfaringer ved bruk av pingere og anbefaling til norske myndigheter

Bjørge, A., 2017b. Status for bifangst av sjøpattedyr i Norge. Bestandsvurdering og rådgivning 2017. Notat til Nærings- og fiskeridepartementet. November 2017. 5 sider.

Blanchard, J.L., Pinnegar, J.K., and Mackinson, S. (2002). Exploring marine mammal-fishery interactions using 'Ecopath with Ecosim': modelling the Barents Sea ecosystem. Cefas Science Series Technical Report No. 117.52p.

BMT COrdah, 2011. The management of marine growth during decommissioning. Report for Gas & Oil Uk: Aberdeen, UK. http://www.oilandgasuk.co.uk/cmsfiles/modules/publications/pdfs/OP086.pdf

BSMP, 2006. Report No. 8 to the Storting (2005-2006) Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands. http://www.regjeringen.no/Upload/MD/Vedlegg/Svalbard%20og%20polaromraadene/

Buhl-Mortensen, L., Ellingsen, K. E., Buhl-Mortensen, P., Skaar, K. L., and Gonzalez-Mirelis, G. Trawling disturbance on megabenthos and sediment in the Barents Sea: chronic effects on density, diversity, and composition. ICES Journal of Marine Science, doi:10.1093/icesjms/fsv200.

Carmack, E., Barber, D., Christensen, J., Macdonald, R., Rudels, B. and Sakshaug, E. 2006. Climate variability and physical forcing of the food webs and the carbon budget on panarctic shelves. Progress in Oceanography, 71 (2-4): 145-181.

CITES (Convention on International Trade in Endangered Species). Appendix I.

Christiansen, S. 2010. Background Document for Deep-sea sponge aggregations. OSPAR Biodiversity Series: London.

Collie, J.S., Hall, S.J., Kaiser, M.J., and Poiner, I.R. (2001). A quantitative analysis of fishing impacts on shelf-sea benthos. Journal of Animal Ecology, 69, 785-798.

Convention on Biological Diversity (CBD)

Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention/ CMS).

Convention on International Trade in Endangered Species (CITES). Appendix I.

Dayton PK (1979) Observations on growth, dispersal, and population dynamics of some sponges in McMurdo Sound, Antarctica. In Biologie des Spongiaires (c. Levi and N. Boury- Esnault, eds.), pp 272–282. Centre Nationale de Recherche Scientifique; Paris.

Denisenko S.G & Zgurovsky K.A (Eds). 2013. Impact of trawl fishery on benthic ecosystems of the Barents Sea and opportunities to reduce negative consequences - Murmansk. WWF. 2013. 55 pp.

Desprez, M. 2000. Physical and biological impact of marine aggregate extraction along the French coast of the Eastern English Channel: short and long-term post-dredging restoration. ICES Journal of Marine Science, 57: 1428–1438.

Dolan, M.F.J., Jørgensen, L.L., Lien, V.S., Ljubin, P., Lepland, A. 2015. Biotopes of the Barents Sea. Scale 1:3 000 000. Geological Survey of Norway (Trondheim), Institute of the Marine Research (Bergen) and Polar Research Institute of Marine Fisheries and Oceanography (Murmansk).

Fangel, K., Aas, Ø., Bærum, K. M., Anker-Nilssen, T. & Christensen- Dalsgaard, S. 2015. Utilsiktet bifangst av sjøfugl i norske kystfiskerier med garn og line. - NINA Temahefte 64. 20 s.

Fangel, K., Wold, L.C, Aas, O., Christensen-Dalsgaard, S., Qvenild, M. & Anker-Nilssen, T. 2011. Bifangst av sjofugl i norske kystfiskerier. Et kartleggings- og metodeutprovingsprosjekt med focus pa fiske med garn og line. NINA Rapport 719.

http://www.nina.no/archive/nina/PppBasePdf/rapport/2011/719.pdf

Fangel, K., Nedreaas, K., Aas, O., Volstad, J., Wold, L., Christensen-Dalsgaard, S., Anker-Nilssen, Y. & Overvik, M. 2014. Unintended bycatch of seabirds in Norwegian coastal fisheries: comparison of estimation methods. Presentation at the Second Symposium on Fishery-Dependent Information (FDI), 3-6 March 2014 in Rome, Italy.

Fangel, K., Aas, Ø., Vølstad, J.H., Bærum, K.M., Christensen-Dalsgaard, S., Nedreaas, K., Overvik, M., Wold, L.C. and Anker-Nilssen, T., 2017. Assessing incidental bycatch of seabirds in Norwegian coastal commercial fisheries: Empirical and methodological lessons. Global Ecology and Conservation, 4, pp.127-136. (PDF) Assessing incidental bycatch of seabirds in Norwegian coastal commercial fisheries: Empirical and methodological lessons (researchgate.net)

http://www.imr.no/prosjektsiter/fdi/presentations/pdfs/bycatch_of_seabirds_in_norwegian_coastal_fisheries_final.pdf/en

Fauchald, P., and Erikstad, K.E. 2002.Scale dependent predator-prey interaction in the marine ecosystem: the aggregative response of guillemots to capelin under variable capelin abundance and patchiness. Marine Ecology Progress Series 231:279–291.

Fossa, J.H., Mortensen, P.B. & Furevik, D.M., 2002. The deep-water coral Lophelia pertusa in Norwegian waters: distribution and fishery impacts. Hydrobiologia 471, 1–12.

Gatti S (2002) The role of sponges in the High-Antarctic carbon and silicon cycling – a modelling approach. Berichte zur Polar- und Meeresforschung 434.

Gullestad, P., 2013. The “Discard Ban Package” – Norwegian experiences in efforts to improve fisheries exploitation patterns. http://www.fisheries.no/PageFiles/21748/HSM/pdf_vedlegg/Norwegian%20discard%20policy.pdf

Grekov, A.A. Pavlenko A.A 2011 A comparison of longline and trawl fishing practices and suggestions for encouraging the sustainable management of fisheries in the Barents Sea, — Moscow-Murmansk, World Wide Fund For Nature (WWF), 50p.

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

Hall, S. J. (1999). The Effects of Fishing on Marine Ecosystems and Communities. Oxford: Blackwell Science – Fish Biology & Aquatic Resources Series 1.

Jason M. Hall-Spencer, J.M. & Stehfest, K.M. 2008. Assessment of Lophelia pertusa reefs in the OSPAR area. Joint Nature Conservation Committee: Peterborough, UK.

Hammond PS, C Lacey, A Gilles, S Viquerat, P Börjesson, H Herr, K Macleod, V Ridoux, MB Santos, M Scheidat, J Teilmann, J Vingada, N Øien. 2017. Estimates of cetacean abundance in European Atlantic waters in summer 2016 from the SCANS-III aerial and shipboard surveys

Hankinson, L. & Ulvestad, L. 2013. Environmental Monitoring in Region 9 and Baseline Surveys in the Norwegian Sea and the Barents Sea: Visual Mapping in the Barents Sea 2013. Report No.: 16AKYSL-15 / 2013-1476. Hovik: DNV.

Hjøllo,S.S., Husea, G., Skogena, M.D., and Mellea, W. 2012. Modelling secondary production in the Norwegian Sea with a fully coupled physical/primary production/individualbased Calanus finmarchicus model system. Marine Biology Research April 2012; Volume 8 (5-6): Pages 508-526 http://dx.doi.org/10.1080/17451000.2011.642805.

Hoffmann, F., Rapp, H.T., Zoller, T. & Reitner, J. (2003). Growth and regeneration in cultivated fragments of the boreal deep-water sponge Geodia barrette Bowerbank, 1858 (Geodiidae, Tetractinellida, Demospongiae). Journal of Biotechnology 100: 109–118.

Howson, C.M. & Davies, L.M., 1991. Marine Nature Conservation Review, Surveys of Scottish sealochs. A towed video survey of Loch Fyne. Volume 1 - Report. Report to the Nature Conservancy Council from the University Marine Biological Station, Millport

https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats

Monitoring bycatches in Norwegian fisheries | Havforskningsinstituttet (hi.no)

http://www.imr.no/tokt/okosystemtokt_i_barentshavet/en

http://www.imr.no/temasider/modeller/norwecom.e2e/en

https://www.iucnredlist.org/species/41671/45231087#population

http://www.seapop.no/en/about/

http://www.jointfish.com/eng/THE-FISHERIES-COMMISSION/WORKING-GROUPS.html

https://www.npolar.no/en/research/

http://www.ukmarinesac.org.uk/communities/seapens/sp5_1_1.htm#a3)

https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Kommende-J-meldinger/J-61-2019)

http://www.fao.org/fishery/topic/16204/en).

https://www.artsdatabanken.no/rodlistefornaturtyper

http://www.imr.no/filarkiv/havets_ressurser_og_miljo_2009/2.1_introduksjon-okosystem_Norskehavet.pdf/nb-no)

http://www.imr.no/filarkiv/havets_ressurser_og_miljo_2009/2.3_primaer_sekundaerproduksjon.pdf/nb-no).

ICES 2019 Working Group on the Integrated Assessments of the Barents Sea. http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/IEASG/2019/WGIBAR%20report%202019.pdf

ICES 2018 Working Group on Bycatch of Protected Species. http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/acom/2018/WGBYC/wgbyc_2018.pdf

ICES 2019 Working Group on Marine Mammals Ecology. http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/EPDSG/2019/WGMME/wgmme_2019.pdf

ICES. 2018a.working group on Arctic Fisheries. Report of the Arctic Fisheries Working Group (AFWG), 16–24 April 2018, JRC, Ispra, Italy. ICES CM 2018/ACOM:06.

ICES working group on seabird ecology (WGSE), 2013. Report of the Working Group on Seabird Ecology. ICES CM 20131/SSGEF:19.

ICES Working Group on Deep-water Ecology WGDEC, 2014. Report of the ICES/NAFO Joint Working Group on Deep-water Ecology ICES CM2014/ACOM:29.

ICES Working Group on Marine Mammal Ecology, 2014

ICES. 2011. Report of the Arctic Fisheries Working Group (AFWG), 28 April–4 May 2011, Hamburg, Germany. ICES CM 2011/ACOM:05. 659 pp.

ICES 2016 Report of the Arctic Fisheries Working Group (AFWG). Section 1: General description of the Barents Sea Ecosystem.

ICES. 2018c. Golden redfish (Sebastes norvegicus) in subareas 1 and 2 (Northeast Arctic). Advice on fishing opportunities, catch, and effort Barents Sea and Norwegian Sea Ecoregions Published 13 June 2018 reg.27.1-2 https://doi.org/10.17895/ices.pub.4408 ICES Advice 2018

ICES. 2018d. Report of the Benchmark Workshop on Redfish Stocks (WKREDFISH), 29 January-2 February 2018, Copenhagen, Denmark. ICES CM 2018/ACOM:34. 174 pp.

ICES. 2018. Report of the Joint OSPAR/HELCOM/ICES Working Group on Marine Birds (JWGBIRD), 1–5 October 2018, Ostende, Belgium. ICES CM 2017/ACOM:24. 79pp.

ICES 2018 advices for cod, haddock, tusk, saithe and golden redfish.

ICES Ecosystem Overview for the Barents Sea Ecoregion, 2016. https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2016/2016/Barents_Sea_Ecoregion-Ecosystem_overview.pdf

ICES Ecosystem Overview for the Norwegian Sea Ecoregion, 2018. https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/NorwegianSea_EcosystemOverview.pdf

IMR: The Norwegian Sea ecosystem programme http://www.imr.no/forskning/programmer/okosystem_norskehavet/en

IMR: The Barents Sea ecosystem programme http://www.imr.no/forskning/programmer/okosystem_barentshavet/en

Integrated Management Plan for the Marine Environment of the Barents Sea–Lofoten Area, Meld. St. 10 (2010–2011). https://www.regjeringen.no/en/dokumenter/meld.-st.-10-20102011/id635591/

Integrated Management of the Marine Environment of the Norwegian Sea — Report No. 37 (2008 – 2009). https://www.regjeringen.no/en/dokumenter/report-no.-37-to-the-storting-2008-2009/id560159/

IUCN 2019 red list of endangered species

Jørgensen, L. L. 2017. Evaluation of vulnerable benthos communities in the Northern Barents Sea: trawl caught benthos from the “Ecosystem survey”. Report from Havforskningen. N 19/2017. ISSN 1893-4536.https://brage.bibsys.no/xmlui/bitstream/handle/11250/2480431/19- 2017.pdf?sequence=1&isAllowed=y

Jakobsen T. and Ozhigin V.K. (2011) The Barents Sea: Ecosystem, resources, management: Half a century of Russian-Norwegian cooperation. Tapir academic Press

Jørgensen, L. L., Planque, B., Thangstad, T. H., and Certain, G. 2015. Vulnerability of megabenthic species to trawling in the Barents Sea. – ICES Journal of Marine Science, doi: 10.1093/icesjms/fsv107.

Joint Russian Norwegian Fisheries Commission: http://www.jointfish.com/index.php/eng.html

Kaiser, M. J. & de Groot, S. J. (Eds) (2000). Effects of Fishing on Non-target Species and Habitats. Oxford: Blackwell Science

Klitgaard, A.B. 1995. The fauna associated with outer shelf and upper slope sponges (Porifera, Demospongiae) at the Faroe Islands, northeastern Atlantic. Sarsia 80: 1–22.

Klitgaard, A.B., Tendal, O.S. (2001) “Ostur” – “Cheese bottoms” – sponge dominated areas in Faroese shelf and slope areas. In Marine biological investigations and assemblages of benthic invertebrates from the Faroe Islands (Bruntse, G. & Tendal, O. S. eds). Kaldbak Marine Biological Laboratory; The Faroe Islands.

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

Lepland Aivo, Rybalko Aleksandr & Lepland Aave, 2014. Seabed Sediments of the Barents Sea. Geological Survey of Norway (Trondheim) and SEVMORGEO (St. Petersburg).

Lubin 2013 (from Denisenko S.G. and Zgurovsky, K.A. 2013. Impact of trawl fishery on benthic ecosystems of the Barents Sea and opportunities to reduce negative consequences. Murmansk. WWF. 2013. 55pp.)

Lokkeborg, S. 2005. Impacts of trawling and scallop dredging on benthic habitats and communities. FAO Fisheries Technical Paper. No. 472. Rome, FAO.

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.

MAREANO programme: www.mareano.no

Mauritzen, M. & Klepikovsky., R. 2013. Marine mammals and seabird monitoring. In: Survey report from the joint Norwegian/Russian ecosystem survey in the Barents Sea and adjacent waters, August-October (Prokhorova, T. ed.) IMR/PINRO Joint Report Series, No.4/2013. Bergen: IMR

Mehlum, F. & Gabrielsen, G.W. 1993. The diet of high-arctic seabirds in coastal and ice-covered, pelagic areas near the Svalbard archipelago. Polar Research 12:1–20.

Mehlum, F., Hunt, G.L., Klusek, Z., Decker, M.B., and Nordlund N. 1996. The importance of prey aggregations to the distribution of Brunnich's guillemots in Storfjorden, Svalbard. Polar Biology, 16:537–547.

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.

Misund, R., Kolle, J., Haugen, S. & Hareide, N.-R. 2005. The Norwegian Retrieval Survey For Lost Gillnets. Bergen: Report from the

Norwegian Directorate for Fisheries

NAMMCO NASS 2015 surveys

NAMMCO website (North Atlantic Marine Mammal Commission).

NAMMCO, 2014. Report of the Twentieth Meeting of the Scientific Committee of NAMMCO. Tromso. http://www.nammco.no/webcronize/images/Nammco/1001.pdfpdf

NAMMCO Scientific Working Group on abundance estimates. 2018. https://nammco.no/wp-content/uploads/2018/09/report_aewg_2018_final.pdf

NAMMCO-North Atlantic Marine Mammal Commission (2018) Report of the NAMMCO Scientific Working Group on By-catch. Available at https://nammco.no/topics/sc-working-group-reports/https://nammco.no/wp-content/uploads/2018/05/report-nammco-sc-bycwg-04042018.pdf

NEAFC 2014. Recommendation 19: Protection of VMEs in NEAFC Regulatory Areas as Amended by Recommendation 09:2015; http://neafc.org/system/files/Annual-Meeting-2014-report-final.pdf

DNV GL. 2015. MSC PCR Norway NEA cod and haddock fishery. Reassessment report. DNV-GL. Authors; Nichols J., Lockwood S., Sverdrup-Jensen S., Pedersen G.M. 2015.

DNV-GL. 2020. MSC PCR Murmanseld 2 barents Sea cod and haddock fishery. Authors: Nichols, J., Hough, A., Hønneland, G., Midteide, S., Bekkevold, S.

Norderhaug M, Brun E, Møllen GU (1977) Barentshavets sjøfuglressurser. Medd Norsk Polarinst 104:1–119.

Norwecom.E2E project.

Norwegian Marine Resources Act

Norwegian red list for Species (2015)

Norwegian Fisheries Regulation J-151-2013: Regulations amending the Regulations on reporting (position, catch and activity) and control etc. by fishing and catching in the fishing protection zone at Svalbard.

Norwegian Fisheries Regulation J-61-2019: Regulation on fisheries regulation to protect vulnerable marine ecosystems.

Norwegian Regulation J-58-2017 creating a protected area in the Trænadjupet Slide, offshore Norway.

Norwegian Fisheries Regulation J-40-2019: Delegation of competence to the Directorate of Fisheries to establish annual regulations for fishing.

Norwegian Fisheries Regulation J- 187-2008: Redirects to J-126-2008 - Regulations of 28 April 1978 on the regulation of fishing in Svalbard's territorial waters and inland waters

Norwegian Fisheries Regulation J-250-2013: Regulation on the protection of basking sharks, spurdogs, porbeagles and silky sharks

Norwegian Fisheries Regulation J-48-2016: Regulation on the protection of coral reefs.

Norwegian Fisheries Regulation J-267-2016: Utøvelsesforskriften (most recent per 24.01.2017 – contains main technical regulations for all fisheries). http://www.fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger/J-267-2016

OSPAR Agreement, Annex V (“on the protection and conservation of the ecosystems and Biological Diversity in the maritime area).

OSPAR Commission (www.ospar.org)

OSPAR, 2008. Case Reports for the OSPAR List of threatened and/or declining species and habitats. Biodiversity Series. London: OSPAR. http://qsr2010.ospar.org/media/assessments/p00358_case_reports_species_and_habitats_2008.pdf

OSPAR, 2009. Assessment of the environmental impact of fishing. Monitoring & Assessment Series. London: OSPAR. http://qsr2010.ospar.org/media/assessments/p00465_JAMP_QSR_fisheries_assessment.pdf

Pitcher, C. R., Poiner, I. R., Hill, B. J., and Burridge, C. Y. 2000. Implications of the effects of trawling on sessile megazoobenthos on a tropical shelf in northeastern Australia. ICES Journal of Marine Research, 57: 1359–1368.

Plagányi, É.E. 2007. Models for an Ecosystem Approach to Fisheries. FAO Fisheries Technical Paper No. 477. Rome, FAO. 2007. 108p. ISBN 978-92-5-105734-6.

Prozorkevich, D., Johansen G.O. and, van der Meeren, G.I. 2018 (Eds.) Survey report from the joint Norwegian / Russian ecosystem survey in the Barents Sea and adjacent waters, August-October 2017. IMR/PINRO Joint Report Series, No. 1/2018, 98 pp. ISSN 1502-8828. https://www.imr.no/tokt/okosystemtokt_i_barentshavet/survey_reports/survey_report_2017/nb-no

Russian Regulation 414 (2014), articles 16 and 17

Russian red book of species in the Murmask region http://portal.kgilc.ru/redbook/?q=docs_en, http://portal.kgilc.ru/redbook/?q=post325p1.

Sainsbury, K. J., Campbell, R., Lindholm, R., and Whitelaw, A. W. 1997.Experimental management of an Australian multispecies fishery: Examining the possibility of trawl-induced habitat modification. In Global Trends: Fisheries Management, pp. 107–112. Ed. By E. K. Pikitch, D. D. Huppert, and M. P. Sissenwine. American Fisheries Society, Bethesda, MD.

Stefansson, G., Sigurjonsson, J., & Vikingsson, G. A. (1997). On dynamic interactions between some fish resources and cetaceans off Iceland based on a simulation model. Journal Northwest Atlantic Fisheries Science 22, 357–370

Stiansen, J.E., Korneev, O., Titov, O., Arneberg, P. (Eds.), Filin, A., Hansen, J.R., Hoines, A., Marasaev, S. (Eds) 2009. Joint Norwegian-Russian environmental status 2008. Report on the Barents Sea Ecosystem. Part II – Complete report. IMR/PINRO Joint Report Series, 2009(3).

Terziev, F.S. (Ed.). 1990. The Barents Sea. Hydrometeorology and Hydrochemistry of the Seas of the USSR. Vol. 1. No. 1. Meteorological and Hydrographic Conditions. Gydrometeoizdat Press, Leningrad. 280 pp. (In Russian).

Tuck I, Hall S, Roberston M, Armstrong E, Basford D (1998) Effects of physical trawling disturbance in a previously unfished sheltered Scottish sea loch. Mar Ecol Prog Ser 162:227–242.

Tysganova, M., Berenboim, B., Salvesen, I., Gjosater, J., Jelmert, A. & Kalas, J. 2009. Introduced species - Red king crab (Paralithodes camtschaticus). http://barentsportal.com/barentsportal_v2.5/index.php/en/barents-sea-status-report/background/bioticcomponents

Utne, K. R., S. S. Hjøllo, G. Huse, and M. Skogen (2012). Estimating the comsumption of Calanus finmarchicus by planktivorous fish in the Norwegian Sea using a fully coupled 3D model system. Marine Biology Research 8 (5-6), 527–547.

Wienerroither R., Johannesen E., Dolgov A., Byrkjedal I., Aglen A., Bjelland O., Drevetnyak, K., Eriksen KB., Hoines A., Langhelle G., Langoy H., Murashko P., Prokhorova T., Prozorkevich D., Smirnov O., Wenneck T. 2013. Atlas of the Barents Sea Fishes based on the winter survey. IMR-PINRO Joint Report Series 2-2013.

www.ngu.no

www.mareano.no

www.barentsportal.com

www.imr.no/crisp

c. Principle 3

Deltakerloven, LOV-1999-03-26-15, 1999 (Act on the Right to Participate in Fisheries).

Forskrift om landings- og sluttseddel (landingsforskriften), 2019 (Regulation on Landing and Sales Notes). Under continuous updating, see https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger

Konsesjonsforskriften, (Regulation on Licencing). Under continuous updating, see https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger

Deltakerforskriften, (Regulation on Participation in Fisheries). Under continuous updating, see https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger

Forskrift om utøvelse av fisket i sjøen, (Regulation on the Execution of Marine Fisheries). Under continuous updating, see https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger

Forskrift om regulering av fisket etter torsk, hyse og sei nord for 62°N i 2019 (Regulation on the Fishery for Cod, Haddock and Saithe North of 62°N in 2019). Under continuous updating, see https://fiskeridir.no/Yrkesfiske/Regelverk-og-reguleringer/J-meldinger/Gjeldende-J-meldinger

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. 35 (2016–2017) Oppdatering av forvaltningsplanen for Norskehavet, 2017 (Update of the [Integrated] Management Plan for the Norwegian Sea).

Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament). • NEAFC Dispute Resolution Mechanism, Annex K – Amendment of the Convention on Dispute Settlement, 2004. • Prosedyrer for konsultasjoner med Sametinget, Kgl. res. 04/186, 2005 (Royal Decree on Procedures for Consultations with the Sami Parliament).

St. meld. nr. 37 (2008-2009) Helhetlig forvaltning av det marine miljø i Norskehavet (forvaltningsplan), 2009 (White Paper on the Integrated Management Plan for the Norwegian Sea).

9 Appendices

9.1 Assessment information

9.1.1 Previous assessments

a. Initial assessment:

The intention to certify the Norway North East Arctic haddock fishery was first announced in September 2008. The assessment of this fishery was integrated with the assessment of the Norway North East Arctic cod fishery. The fishery was announced as combined inshore and offshore fisheries with single Unit of Certifications for each gear type (trawl, long-line, Danish seine, gill-net and jigger). Following an initial review, at which the significant issue of coastal cod by-catch was identified, each Unit of Certification was split into an offshore (outside of 12 nm limit) and inshore (inside of 12 nm limit) fisheries (ref. Advisory to Stakeholders; Clarification on Unit of Certification 17 November 2009).

The offshore haddock fishery, which does not interact with the coastal cod stocks, was certified in April 2010. The inshore haddock fishery, which does interact with the coastal cod stocks, had been assessed on a separate timeline, taking account of the developing coastal cod management plan (see Advisory to Stakeholders; Resumption of Assessment of Inshore Cod and Haddock Fisheries, 14 January 2011) and was certified on 21st October 2011. Following an initial review, at which the significant issue of coastal cod by-catch was identified, each Unit of Certification was split into an offshore (outside of 12 nm limit) and inshore (inside of 12 nm limit) fisheries (ref. Advisory to Stakeholders; Clarification on Unit of Certification 17 November 2009).
The offshore fishery, which does not interact with the coastal cod stocks, was certified in April 2010.
The inshorefishery, which does interact with the coastal cod stocks, has been assessed on a separate timeline, taking account of the developing coastal cod management plan (see Advisory to Stakeholders; Resumption of Assessment of Inshore Cod and Haddock Fisheries, 14 January 2011) and was certified on 21st October 2011.

With the inshore fisheries certified in October 2011, the inshore and offshore fisheries were recombined for each gear type, as unified Units of Certification, under single certificates. The assessment process was performed according to the requirements set out in the MSC Fisheries Certification Methodology. The default assessment tree, according to the Fisheries Assessment Methodology (FAM) version 2, was used for this certification. Scope of certification was up to the point of landing and chain of custody commenced from point of sale/landing.
There were some minor differences in the wording of conditions for the inshore vs. offshore fisheries. It was agreed to:

- Carry out recertification of both inshore and offshore fisheries according to the shorter of the two timelines i.e. the offshore certificate timescale.
- On recertification, the fishery assessments would be consolidated into a single timescale.
- Where inshore fisheries have slightly different conditions, these would be evaluated according to the timescale established in the inshore fishery Public Certification Report. If necessary, these timescales would be continued into the recertification period, assuming progress is on-target for completion.
- The surveillance audits will follow the shorter timeline i.e the existing offshore certification timeline.

Following the successful assessment of the inshore haddock fishery in 2011, a variation was granted by MSC on 28th November 2011 to combine the inshore and already certified (2010) offshore fisheries.

Three conditions were set at the initial certification of offshore and inshore fisheries. Conditions raised were identical for inshore and offshore fisheries and were combined. No recommendations were made at the initial certification. Conditions 1 and 2 from the initial assessment were therefore carried over into the reassessment and did not hinder receommendation of recertification. The client was considered to be fully compliant with Condition 3 from the initial assessment at the 4th surveillance audit in 2014.

b. First reassessment:

The first reassessment of the Norway North East Arctic haddock fishery was announced in May 2014 and the fishery was recertified on 6th October 2015. The default assessment tree from Marine Stewardship Council Certification Requirements v 1.3 was used to score the fisheries. Site visits to the fishery were performed by DNV GL's 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.

The Norway NEA haddock fishery achieved a score of 80 or more for each of the three MSC Principles and did not score under 60 for any of the set MSC criteria. The fishery achieved a score of less than 80 for three individual performance indicators (PIs), including a below 80 score for two individual scoring elements for one of the PIs, and therefore four appropriate conditions were raised.
Based on the evaluation of the Norway NEA haddock fishery the assessment team recommended the certification of the fishery, with four conditions and two recommendations for the client Norges Fiskarlag (Norwegian Fishermen's Association). Two conditions from the initial assessment are carried over into the new certification period, based on a process allowed by MSC in their response to the variation request to combine the inshore and offshore fisheries of these fisheries (28.11.2011): Where the inshore fisheries were slightly different conditions, they were evaluated according to the timescale established in the inshore fishery Public Certification Report. (If necessary, these timescales were continued into the recertification period, as progress was on-target for completion.)

The Technical Reviewer at DNV GL adhered to the recommendation of the assessment team and approved the certification of the Norway North East Arctic haddock fishery for the client Norges Fiskarlag.

Table 34 -Summary of previous assessment conditions

Condition	PI(s)	Year closed	Justification
1.Carried over from Initial assessment: <u>All gear types</u>: The fishery must meet the overall SG80 equirement within the timescale of this certification, i.e. Main retained species should be highly likely to be within biologically based limits, or if outside the limits there should be a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.	2.1.1	2016	This condition was carried over from Norwegian Northeast Arctic Inshore Cod Fishery certification in 2010 (Intertek Moody Marine, 2010). The main retained species in question are two commercial species of redfish, the relatively more abundant beaked redfish Sebastes mentella and golden redfish S. norvegicus (previously S. marinus). As both species are named on the Norwegian Redlist (Gjøsæter et al., 2010) (S. mentella – vulnerable; S. norvegicus – endangered) they should be considered as ETP species (see Section 3.4.9.8 in re-assessment). As a result, this condition has been transferred to Condition 6 (2.3.1, all gears). The PI was rescored to 90 and the condition confirmed closed. The PCR dt. 06.10.2015 from the re-assessment has scored PI 2.1.1 for the entire NEA cod fishery (inshore and offshore) and for all gears within the UoC at 80 thereby implying the condition should have been closed during the re-assessment in 2015.
2. Carried over from Initial assessment: Trawl, longline, gill net, Danish seine: The fishery must meet the overall SG80 requirement within the timescale of this certification, i.e. - 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. - Direct effects are highly unlikely to create unacceptable impacts to ETP species. - Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.	2.3.1	2016	This condition was carried over from Norwegian North East Arctic Inshore Cod Fishery certification in 2010 (Intertek Moody Marine, 2010). This condition has been transferred to Condition 3 (2.3.1, gillnet) and Condition 4 (2.3.2, gillnet). Closed. The condition only related to sea birds and marine mammals. Harbour porpoise is not found in the CITES Appendix 1 list. Harbour porpoise is not recognised as ETP species in the Norwegian legislation but is protected in line with all other marine mammals. With the exception of the gillnet fishery, the body of evidence from ICES and NAMMCO working group reports is that there is no significant interaction between the NEA cod fishery and ETP species and the client is compliant. Golden redfish is not considered by the condition.

			The condition is closed based on the status of the harbour porpoise (IUCN as 'LC') and the data presented by Bjørge and Moan (2016). The client is compliant with the condition.
3. Gillnet: The quantity and quality of data available for estimating porpoise population size and fishery related mortalities must be improved to a level where effects of the fishery are known and can be shown to be highly likely within limits of national and international requirements for protection of ETP species; i.e. gillnet induced mortality rates must be within internationally agreed levels of sustainability.	2.3.1	2019	Condition is on target in 2018 andhas been closed in the fourth surveillance in 2019.
4. Gillnet: A strategy for managing the fishery's impact on porpoise shall be developed that includes measures to minimise gillnet-related mortality and is highly likely to achieve national and international requirements for the protection of ETP species, i.e. harbour porpoise.	2.3.2	2019	Condition is on target in 2018 and has been closed in the fourth surveillance in 2019.
5. Trawl, Danish seine: The fishery shall demonstrate that it is highly unlikely to reduce Pennatulacea (sea pens) habitat structure and function of to a point where there would be serious or irreversible harm.	2.4.1	2019	Condition is on target in 2018 and has been closed in the fourth surveillance in 2019.
6. All gears: The effects of the fishery on the golden redfish (i.e. Sebastes norvegicus, previously S. marinus) should be highly likely to be within limits of national and international requirements for protection of this ETP species. The client must present evidence that the direct effects of the fishery are highly unlikely to create unacceptable impacts to this ETP species.	2.3.1	2019	Condition is on target in 2018 and has been closed in the fourth surveillance in 2019.

9.1.2 Small-scale fisheries

Table 35 Small-scale fisheries

Unit of Assessment (UoA)	Percentage of vessels with length <15m	Percentage of fishing activity completed within 12 nautical miles of shore
NA	NA	NA

9.2 Evaluation processes and techniques

9.2.1 Site visits

The ACDR was prepared as a desk -study based on public available information and input from the Client, Norges Fiskarlag. Site visits are scheduled to be held on 2nd and 3rd December 2019.

The CRPRDR is a result of stakeholder interviews held on 2nd December 2019 at the DNV GL office in Bergen, 3rd December 2019 at the Ministry and the client's local offices in Oslo, Norway and on 9th December 2019 Skype meeting with NINA.

Stakeholders were informed 30 days before the site visit and given the opportunity to provide information in advance. Information from the client and stakeholders was reviewed by the assessment team before the on-site meetings. In some cases, information was not available at the on-site meeting but was supplied within the cut-off date requirements in FCP v.2.1. For details see the summary of the agenda below.

Table 36 Stakeholder interviews

	Topics
Day: Monday **Date:** 02.12.2019 **Time:** 08:00– 09:00 **Venue:** DNV GL Thormøhlens Gate 49A, 5006 Bergen Room: Sustainability	**Opening meeting – assessment team only**
Day: Monday **Date:** 02.12.2019 **Time:** 09:00– 15:30 **Venue:** DNV GL Thormøhlens Gate 49A, 5006 Bergen **Room:** Sustainability	**Meeting with Directorate of Fisheries and Institute of Marine Research:** Verification of any changes and new information (2018) - Function, role and responsibility of the institution - Role in stock assessments - Update on sampling programmes/levels of sampling and surveys including observer programmes - Integration of national data collection programmes and stock assessments with ICES assessments. - Update on stock status, stock structure and recruitment - Stock status of fish by-catch, if ICES assessment not available then IMR reports (if available) on stock status - Changes in monitoring programmes for bycatch, discard and ETP species - Levels of slipping/discards - Changes in impact of the fishery on marine habitats and the ecosystem. - Update on research strategy and programmes for the fisheries of the assessment. Information should be pertinent to the fisheries in 2018 - Catch composition (weight) by species by UoAs and UoC - Map of catch distribution based on VMS data (or if not available then on logbooks) - Changes in regulations (f.ex. executive orders) applicable to the UoC - Information on Monitoring, Control and Enforcement of the fisheries - Changes in monitoring programmes for bycatch, discard, and ETP species - Fishermen's compliance with laws and regulations. - Significant discrepancies found at landing control for the fisheries of the assessment in the last year - Changes in observed fishing pattern (gear used, fishing area, number of boats, fishing season) - Updated VMS data for the fisheries of the assessment - Traceability changes - Confirm IPI criteria still apply
Day: Monday **Date:** 02.12.2019	**Birdlife International:** seabird bycatch conditions, particularly independent data collection.

Time: 15:30– 16:00 **Venue:** DNV GL Thormøhlens Gate 49A, 5006 Bergen **Room:** Sustainability / Skype meeting	
Day: Tuesday **Date:** 03.12.2019 **Time:** 10:00– 12:00 **Venue:** Ministry of Trade, Industry and Fisheries Kongens gate 8, Oslo	**Meeting with Ministry of Trade, Industry and Fisheries** • 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 • Research strategy or programmes for the fisheries • Review of progress against conditions and recommendations (enclosed) of each of the fisheries covered by the scope of this agenda - any relevant information on progress for each of the conditions. **RBF**
Day: Tuesday **Date:** 03.12.2019 **Time:** 13:00– 17:00 **Venue:** *Norges Fiskarlag, Stenergata 2 near Oslo S*	**Meeting with client** **Verification of any changes and new information (2018)** 1. Review of basic info about the company: • Ownership or organizational structure • Roles and responsibilities in the MSC Fisheries certification process • Vessel/certificate member list 2. Review of fishing operations: • Fishing season, allocation of fishing days, fishing areas and gear used (specifications) • Recording of catch and effort data 3. Review of impact on ecosystem: • List of all by-catch of fish species (species and quantities 3 preceding years) • List of by-catch of marine mammals, birds, ETP species (species and quantities) • Recording of bycatch of fish and shellfish species, marine mammals, ETP species and birds • Discarding practices • Overlap of the fisheries with sensitive habitats and closed areas 4. Compliance with rules and regulations • Control, surveillance and monitoring routines

	• Disputes with national/ international authorities during 2018/2019. • Records of sanctions and penalties (if any) for 2018/2019. 5. Chain of Custody start: • Traceability system on board and at landing • Labelling of products/changes in labeling of products • List of landing sites in 2017/2018 • First point of landing • First point of sale • Main products/change in product range • Main markets 6. Review of progress against conditions and recommendations (enclosed) of each of the fisheries covered by the scope of this agenda - any relevant information on progress for each of the conditions. **RBF**- (Participation required by Tor Bjørklund Larsen plus anybody the client finds are relevant to provide input on the status of the stock and the population dynamics).
Day: Monday **Date:** 09.12.2019 **Time:** 13:30– 14:00 **Venue:** Skype	**NINA (The Norwegian nature conservation agency)** Any specific concerns about these fisheries regarding seabird bycatches. System for recording bycatch and feedback on bycatch from the fisheries Changes in fishing behaviour to avoid seabird bycatch. Recent analysis of seabird bycatch data. Recent publications on seabird bycatch

9.2.2 Stakeholder participation

There was no stakeholder participation for the ACDR.

Thirty days prior to the site visit, all stakeholders were informed of the visit and the opportunity to provide advance information to the auditors or to meet with the team during the site visit. DNV GL did not receive any stakeholder comment regarding the Norway North East Arctic haddock fishery.

The following participants were present at the different meetings:

Table 37 Stakeholder meeting participants

Date	Name	Organization	Meeting venue
02.12.2019	Modulf Overvik	Fisheries Directorate	DNV GL, Bergen
02.12.2019	Edda Johannesen	IMR	DNV GL, Bergen
02.12.2019	Tor B. Larsen	Norges Fiskarlag	DNV GL, Bergen
02.12.2019	Rory Crawford	Birdlife International	Skype
03.12.2019	Sara Lier Fagerbakke	Ministry of Trade, Industry and Fisheries	Ministry offices, Oslo
03.12.2019	Lena Brungot	Ministry of Trade, Industry and Fisheries	Ministry offices, Oslo
03.12.2019	Mari Didriksen	Ministry of Trade, Industry and Fisheries	Ministry offices, Oslo
03.12.2019	Tor B. Larsen	Norges Fiskarlag	Norges Fiskarlag, Oslo
03.12.2019	Willy Godtliebsen	Norges Råfisklag	Norges Fiskarlag, Oslo
03.12.2019	Jonetten Braathen	Norges Råfisklag	Norges Fiskarlag, Oslo
09.12.2019	Signe Christsen-Dalsgaard	NINA	Skype

09.12.2019	Kim Bærun	NINA	Skype
09.12.2019	Gudrun Gautian	Fisheries expert P2	Skype
All meetings	Hans Lassen	Fisheries expert P1 & P3	
All meetings	Lucia Revenga	Fisheries expert P2	
All meetings	Sandhya Chaudhury	DNV GL	

9.2.3 Evaluation techniques

The ACDR is based on a desk-top study with information from the client on request, and the client document checklist.

Information on the assessment process was made publicly available through www.msc.org at given stages of the assessment. DNV GL published the assessment announcement along with the Announcement Comment Draft report and the timeline for the assessment on 30th October 2019. These were published on the MSC website and followed by stakeholder notifications by direct emails.
In addition to that, all relevant stakeholders identified at the beginning of the assessment were reached through direct e-mails and given a possibility to monitor the assessment process and provide feedback to the assessment team. Relevant main stakeholders were interviewed in December 2019 as outlined in sections 8.2.1 and 8.2.2 above.

Information gathered is presented in this report and in the enclosed scoring tables. As no stakeholder comments were submitted during the stakeholder consultancy period prior to the site visit in Bergen, information gathered during the site visits formed the main basis of the stakeholder consultancy for this assessment.
The interviews were based on audit agenda sent to all involved stakeholders.
At these meetings, it was confirmed that the fishery has developed as in previous years, that there were no changes in the management, control and enforcement and that the fleet changes are reflected in the updated vessel list.

The default assessment tree from Annex SA of the MSC Fisheries Standard v2.0, without any modifications, was used for this assessment. Information was reviewed by the assessment team at the scoring meeting held on 2nd, 3rd and 9th December 2019. The team finalised scoring through Skype meetings as well as by email exchange. Each scoring issue was scored and then averaged to principle scores.

After all relevant information was compiled and analysed, the assessment team scored the Unit of Assessment against the Performance Indicator Scoring Guideposts (PISGs) in the final tree. The team discussed evidence together, weighed up the balance of evidence and used their judgement to agree on a final score following MSC FCP v2.1 process and based on consensus.
Individual Performance indicators were scored. Scores for individual PIs were assigned in increments of five points. Any divisions of less than five points were justified in the relevant scoring table. Scores for each of the three Principles were reported to the nearest one decimal.

Some scoring issues do not have a scoring guidepost at each of the 60, 80 and 100 levels. The scoring issues and scoring guideposts are cumulative; this means that a PI is scored first at the SG60 levels. If not all of the SG scoring issues meet the 60 requirements, the fishery fails, and no further scoring occurs.
If all of the SG60 scoring issues are met, the fishery meets the 60 level, and the scoring moves to SG80 scoring issues. If no scoring issues meet the requirements at the SG80 level, the fishery receives a score of 60. As the fishery meets increasing numbers of SG80 scoring issues, the score increases above 60 in proportion to the number of scoring issues met; PI scoring occurs at 5-point intervals. If the fishery meets half the scoring issues at the 80 level, the PI would score 70; if it meets a quarter, then it would score 65; and it would score 75 by meeting three-quarters of the scoring issues. If the fishery meets all of the SG80 scoring issues, the scoring moves to the SG100 level. Scoring at the SG100 level follows the same pattern as for SG80.

The final scores are based on group consensus within the assessment team. During the scoring process the assessment team discussed the information available for evaluating PIs with the intention to develop a broad opinion of performance of the fishery against each PI thus assurig that the assessment team was aware of the issues for each PI. Subsequently, the assessment team member responsible for each principle discussed the relevant scoring tables and provided provisional scores. The assessment team members reviewed the rationales and scores, and

recommended modifications as necessary, including possible changes in scores. PI scores were entered into MSC's Fishery Assessment Scoring Worksheet (Table 15) to arrive at Principle-level scores.

The assessment team recommends 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.

Principle scores result from averaging the scores within each component, and then from averaging the component scores within each Principle. If a Principle averages less than 80, the fishery fails.

9.3 Peer Review reports

PEER REVIEW A

Fishery	Assess-ment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Norway North East Arctic offshore haddock	2019	PR A	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	This is a very competent and comprehensive assessment of the Norway NEA haddock Fishery against the MSC Principles and Criteria for Sustainable Fisheries. The Report is well presented and provides an authoritative overview of the fishery and the issues that relate to the three MSC Principles. The scoring is clearly based on the evidence presented in the assessment report and has been well thought out, I agree with all the scores presented.	Thank you
Norway North East Arctic offshore haddock	2019	PR A	Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.2, 7.18.1 and sub-clauses]	Yes	The conditions and recommendations are appropriate. All the conditions are well connected to the identified gaps in the management of the fishery. They are achievable and have reasonable milestones throughout the certification period.	Thank you
Norway North East Arctic offshore haddock	2019	PR A	Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]		Note: Include this row for assessments completed against FCR v1.3 and v2.0, but not for FCP v2.1/v2.2 (in which the client action plan is only prepared at the same time as the peer review). Delete this text from the cell for FCR v1.3/v2.0 reviews or delete the whole row if FCP v2.1/v2.2.	

Norway North East Arctic offshore haddock	2019	PR A	Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	NA		
Norway North East Arctic offshore haddock	2019	PR A	Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Some typos remain in the text and should be corrected. eg. pg 118 the last line in the page 'swift' should be 'shift' More up to date ICES advice is available for the main primary species and could be updated for the PDCR. Pg 49 for the discussion on elasmobranchs it would be useful to discribe the fleets practices regarding these interactions. There are some randomn numbers throughout the text - maybe left over from footnotes? The background information for P3 is very limited and refers the reader to another report.	Thanks for appointing the typo on page 118. It has been corrected. As regards updated ICES advices, the cut off date for receiving information was 9th January 2020 (ref. FCP v2.1 § 7.20.3b), so updates on ICES advices should not be considered. However, as noted in the Executive Summary (text added) this updated advice did not change the perception of stock status. Regarding page 49 on the fleets practices, please read the second paragraph after Table 24 listing ETP species (Despite the legal requirement not to discard commercial species, most fishing vessels will return large sharks to the sea if they are still alive but some, e.g. basking shark Cetorhinus maximus and porbeagle Lamna nasus, can become enmeshed in gillnets and would be landed.) The updated details are found in the scoring Justifications and the narrative text has been updated to point this out to the reader.

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	1.1.1	Yes	Yes	NA	Scoring agreed	Thank you	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	1.1.2	NA (PI not scored)	NA (PI not scored)	NA	NA		NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	1.2.1	Yes	Yes	NA	Scoring agreed	Thank you	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	1.2.2	No (scoring implications unknown)	Yes	NA	(SIb) 'There are still some issues relating to scientific sampling of the landings and limited survey coverage.' further information on these issues would clarify the justification.	The sampling of commercial fishries were at a fairly low level 2010-2016 but has been remidied. The 2018 Russian winter survey was not conducted. These problems however, have not been of a magnitude that the general quality and robustness of the stock assessment has been at peril.	Accepted (no score change, change to rationale)

Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	1.2.2	No (scoring implications unknown)	Yes	NA	(SIc) 'However, the recent trend of setting TACs above the level advice as being sustainable by ICES cast doubt if the evidence clearly show that the exploitation levels are achieved.' I think this sentence could be clearer, does the assessor mean as F is above FMSY then the tools in use are clearly not achieving the exploitation levels required under the HCR.	JNRFC objectives include to maintain the stock at sustainable levels and the long-term stock status indicates that this objective is met. The text has been clarified.	Accepted (no score change, change to rationale)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	1.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	For (SIb) the rational is a bit vague about the 'issues with the sampling' is it just the survey coverage issue? If there is a good understanding of this uncertainty and the robustness of assessment to this uncertainty then the assessor could consider that SG 100 is met.	See comment under 1.2.2 SIb	Accepted (no score change, change to rationale)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	1.2.4	Yes	Yes	NA	Scoring agreed	Thank you	NA (No response needed)

Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.1.1	No (change to rationale expected, not to scoring)	Yes	NA	For longlines (UoA 2) and hooks and lines (UoA 5) the use of bait is not mentioned anywhere in the report. However, I expect the impact of the relatively low tonnage of these species used as bait within the fishery, in comparison to the direct fisheries for these species, would be expected to be minimal.	Information on bait species has been included both in the background section and on PI for minor primary species. UoA 2 (longlines) use different bait species which all acount as minor primary species. UoA 5 (hooks and lines) use artificial lures , not bait. The inclussion of bait species has not modified the final score of UoA 2.	Accepted (no score change, change to rationale)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.1.2	Yes	Yes	NA	Scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.1.3	Yes	Yes	NA	Scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.2.1	Yes	Yes	NA	Scoring agreed	Received with thanks	NA (No response needed)

Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.2.2	No (change to rationale expected, not to scoring)	Yes	NA	I think the scoring of (SIb) could benefit from reference to the management startegy as laid out in (SIa) or the measues detailed in (Sic).	Reference has been made in SIb to the rationale in SIa and SIc.	Accepted (no score change, change to rationale)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.2.3	Yes	Yes	NA	scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.3.1	No (change to rationale expected, not to scoring)	Yes	NA	(SIb)The justification of the 'interactions with seabids and marine mammals are not expected due to the different mitigation measures' is vague and could be strenghten by adding some information on numbers of birds/mammals caught or interations	Aditional information from the background section has been added to SIb.	Accepted (no score change, change to rationale)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.3.2	No (change to rationale expected, not to scoring)	Yes	NA	SIc) The justification at the SG 100 level is a bit weak as a strategy and quantitative analysis is mentioned at the SG 60 & 80 level. More specifics on how it fails to meet SG100 would help the justification here.	Reference made in PI 2.3.2. SIc to PI 2.3.1 SIb, which now describes conclussions by NINA and NAMMCO after quantitavy analysis showing limited interactions with seabirds or marine mammals.	Accepted (no score change, change to rationale)

Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.3.3	Yes	Yes	NA	scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.4.1	Yes	Yes	Yes	scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.4.2	Yes	Yes	Yes	scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.4.3	Yes	Yes	NA	scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.5.1	Yes	Yes	NA	scoring agreed	Received with thanks	NA (No response needed)

Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.5.2	Yes	Yes	NA	scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	2.5.3	Yes	Yes	NA	scoring agreed	Received with thanks	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	3.1.1	No (change to rationale expected, not to scoring)	Yes	NA	a) & b) NEAFC should be mentioned in the rationale	NEAFC plays a very minor role in the management of this fishery. The Justification is updated.	Accepted (no score change, change to rationale)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	3.1.2	Yes	Yes	NA	scoring agreed	Thank you	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	3.1.3	Yes	Yes	NA	scoring agreed	Thank you	NA (No response needed)

Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	3.2.1	Yes	Yes	NA	scoring agreed	Thank you	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	3.2.2	Yes	Yes	NA	scoring agreed	Thank you	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	3.2.3	Yes	Yes	NA	scoring agreed	Thank you	NA (No response needed)
Norway North East Arctic offshore haddock	2019	Haddock	Trawl, Longline, Gillnet, Danish seine, Hook & line	PR A	3.2.4	Yes	Yes	NA	scoring agreed	Thank you	NA (No response needed)

PEER REVIEW B

Fishery	Assess-ment Start Year	Peer Reviewer (A/B/C)	Question	Yes/No	**Peer Reviewer Justification (as given at initial Peer Review stage).** Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	**CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)**
Norway North East Arctic offshore haddock	2019	PR B	Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	Yes	Comments: The same apply here as to the cod fishery :*There is a fundamental question in my view on the separation between the cod and haddock targeting. How the two assessments are separated and in particular the P2 primary and secondary species are apportioned. Table 18 in the cod assessment also compares the cod and haddock apportionments of catch by each UoA but the same is not done in the haddock assessment. While the assessors articulate the P2 well and the rationale generally sound and consistent with the MSC standard, it is not explained anywhere how the targeting of the two species is designated. This may be a simple answer related to permit allocations, but it needs calrification. I have also added comments on ETP - while the scoring and rationale provided is good, the reliance on mammal and bird surveys provides poor direct information on gear-specific impacts i.e. each UoA. This would seem a weakness in the monitoring of the fishery. Also the overlap of the two fisheries with the "coastal" stocks and fisheries and the implications of this for the offshore assessment is not in my view adequately articulated.*	At the microlevel, the individual fisher, leaving the harbour in the morning, knows which species is being targeted. This can be based on the time of the year, the tide conditions, the exact place in which the gear is been set, and a range of different factors. On the macro level, there is no clrear separation on these fisheries as they are both considered as demersal fisheries. The assessment team has used data provided by the Norwegian Directorate of Fisheries who has segregated the data according to main catches in each individual landing (landings with 50% or more of cod have been consider to target cod and landings with 50% or more of haddock have been consider to target haddock). Table 18 in the cod report is taken from ICES advice for cod. ICES advice for haddock does not provide a similar table so it has not been used. Further information on the rationale has been added (taken from the background section) in relation to

						the specific impact of certain gear types on seabirds and marine mammals. Coastal stocks are not overlapped since this is an offshore fishery.As regards how P2 species are apportioned, information on catch composition by specific fishery and gear type is given by the Directorate of Fisheries. The decision on considerd them as primary or secondary species is mainly based on the different management measures that may apply. Note that bait species used by UoA2 have now been included and that they are all considered to be minor primary species.
Norway North East Arctic offshore haddock	2019	PR B	Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.2, 7.18.1 and sub-clauses]	Yes	Yes - as noted in the PI comments table both conditons, as with many other trawl fisheries, will be challenging to meet - so the CAP should provide clarity on their apporach.	Thank you.
Norway North East Arctic offshore haddock	2019	PR B	Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]		Note: Include this row for assessments completed against FCR v1.3 and v2.0, but not for FCP v2.1/v2.2 (in which the client action plan is only prepared at the same time as the peer review). Delete this text from the cell for FCR v1.3/v2.0 reviews or delete the whole row if FCP v2.1/v2.2.	

Norway North East Arctic offshore haddock	2019	PR B	Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?	NA		
Norway North East Arctic offshore haddock	2019	PR B	Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary). Add extra rows if needed below, including the codes in Columns A-C.	NA	Comment as per cod assessment : *The background information on P3 is sparse. While this is a reassessment and some reference should be made to the fisrst certification, the P3 background needs improvement in my view. The rationale provided in the scoring is however comprehensive and well referenced. However a diagram explaining the jurisdicitonal elements is needed, separation of the fishery from territorial / coastal limits and overlap with Norwegian and Russian EEZs. Some of this is provided in P2 but more explicit reference is appropriate in P3. P3 background, as is good practice, should provide background and reference material related to each of the main PIs.*	Thank you for the comment. The Justifications for the scoring have been updated and details are given here as you note. The fishery takes place almost entirely within Norwegian and Russian EEZ under Norwegian and Russian fisheries legislation and MCS systems. There has been no changes in the framwork for decades.

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.1.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine,	PR B	1.1.2	NA (PI not scored)	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

			Hook and Line								
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.3	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.4	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.1.1	Yes	Yes	NA	Scoring agreed	Received with thanks. Following a comment by PRA additional information has been added in relation to bait species. There are no changes to the scores.	NA (No response needed)

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.1.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.1.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.1.3	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.2.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.2.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.2.3	Yes	No (change to rationale expected, not to scoring)	NA	Scoring agreed : as for Cod : The scoring would seem appropriate although I am uneasy regarding explanatory text. How does VMS and electronic logbooks quantify minor species in catches? Sea-based inspections perhaps or are these scientific observer data that quantifies the proportions estimated. Clarification of this aspect should be provided to support SG80	Please note that minor species are only considered in the assessment for scoring in ranges between 80 and 100. Minor species are quantified as main fish species with the use of logbooks which record all catch. Moreover, minor species do not meet SG100 requirements for this assessment. The use of VMS ensures that the catch has not been taken in other areas (and therefore from other stocks). No changes have been made to the report.	Not accepted (no change)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl UoA1	PR B	2.3.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Longline UoA2	PR B	2.3.1	Yes	No (change to rationale expected, not to scoring)	NA	Scoring agreed : Comment - as with harbour porpoise the assessment team give no clear explantion regarding bird mortality in the Barents Sea, in particular related to cod longline. The use of tori lines is mentioned - quantification / proof of effectiveness in this particular fishery would strengthen the rationale for	Please see the rationale for PI 2.2.2.a and PI 2.2.2.c. Both marine mammals and bird populations are monitored by NINA and IMR in the UoA fishing grounds. Information on potential interactions with seabirds and harbour porpoise is given in the ETP background section but is now also included in the	Accepted (no score change, change to rationale)

									the scoring (the text is vague in this regard)	rationale for the PI table. Moreover, the (un)likely impacts of the fishery on harbour porpoise populations was already discussed at the 4th surveillance report.	
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.3.1	Yes	Yes	NA	Scoring agreed	Received with thanks. Note that additional information from rhe cackground section has ben added to this rationale. There are no changes in the scores.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Danish Seine UoA4	PR B	2.3.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Hook & Line UoA5	PR B	2.3.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.3.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine,	PR B	2.3.3	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

offshore haddock			Hook and Line								
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl UoA1	PR B	2.4.1	Yes	Yes	Yes	Comment as per cod assessment : The conditon (1) will be challenging to achieve, although as drafted, and if addressed appropriately by the client, should result in score improvement and closing of the condition within 4 years.	The condition reflects a common concern for most Barents Sea trawl fisheries. A common approach would surely benefit the outcome.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Longline UoA2	PR B	2.4.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.4.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Danish Seine UoA4	PR B	2.4.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Hook & Line UoA5	PR B	2.4.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl UoA1	PR B	2.4.2	Yes	Yes	Yes	Comment as per Cod assessment : *As with 2.4.1 Conditon for Trawl, this conditon (No 2) will be challenging to achieve, although as drafted, and if addressed appropriately by the client through their action plan), should result in score improvement and closing of the condition within 4 years.*	The condition reflects a common concern for most Barents Sea trawl fisheries. A common approach would surely benefit the outcome.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Longline UoA2	PR B	2.4.2	Yes	No (change to rationale expected, not to scoring)	NA	Scoring agreed : As per Cod assessment : Comment (applies to longline and gill net) : although the rationale would seem sound, the levels of mortality of harbour porpoise seem high and would probably not be acceptable in many other fisheries - though the explanantion is the relative mortality (to population size) there would seem no Norwegian legislation in place that specifically addresses the issue. A recommendation in this regard might be appropriate. Also there is no explicit mention of gear-specific bird mortality levels	The comment on potential mortalities of harbour porpoise does not relate to PI 2.4.2. Please see comments and amendments under PI 2.3.1 in relation to interactions with seabirds and marine mammals.	Not accepted (no change)
Norway North East Arctic	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.4.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

offshore haddock											
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Danish Seine UoA4	PR B	2.4.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Hook & Line UoA5	PR B	2.4.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.4.3	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.5.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	Not accepted (no change)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.5.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.5.3	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.1.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.1.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.1.3	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.2.1	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East	2019	North East Arctic haddock	Trawl, Longline, Gill Net,	PR B	3.2.2	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

Arctic offshore haddock			Danish Seine, Hook and Line								
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.2.3	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.2.4	Yes	Yes	NA	Scoring agreed	Received with thanks.	NA (No response needed)

PEER REVIEW B - Follow up comments

Fishery	Assess-ment Start Year	Peer Reviewer (A/B/C)	Question	Peer Reviewer comments at Public Comment Draft Report stage Insert additional rows for each clearly distinct issue raised.	CAB response to Peer Reviewer's Public Comment Draft Report stage comments (as included in Final Draft Report)
Norway North East Arctic offshore haddock	2019	PR B	Splitting of the cod and haddock data in a single demersal fishery to define separate assessments	I find the response to the apportionment of the catches between the cod and haddock fisheries inadequate - CAB has made no attempt to provide a clear explanation as to how the apportionment between cod and haddock directed effort for each of the UoAs has been apportioned (simply stating that the information is provided by IMR and assumed sufficient suggests that the asssessors have not investigated the methodology and are satisfied that the way the UoAs and two main species are apportioned is acceptable). The methodology used to apportion will then also have an effect on the interpretation of primary and secondary species and is fundamental to the assessments of both the cod and haddock offshore fisheries.	The assessment team specifically raised this question to the client and the Directorate of Fisheries after first PR comments (although it is agreed that the answer to this question was only listed here and not in the report). An additional paragraph has been added in the report just before catch composition tables (chapter 7.3.1) reading as follows "For the offshore fleet, there is no clear separation on the cod and haddock fisheries as they are both considered as demersal fisheries. The assessment team has used data provided by the Norwegian Directorate of Fisheries who has segregated all landing data according to main catches in each individual landing (landings with 50% or more of cod have been considered to target cod and landings with 50% or more of haddock have been considered to target haddock). This is how the demersal fishery has been split into 2 different fisheries, one targeting cod and one targeting haddock. Following this segregation, P2 species are apportioned according to landing data provided." The assessment team has investigated the methodology used to segregate the data and is satisfied with it.
Norway North East Arctic offshore haddock	2019	PR B	Principle 3 background and Jurisdiction	The P3 background material is inadequate to fully understand the jurisdictional aspects of the coastal and offshore fisheries as well as any national elements. Although the scoring rationale has detail the P3 background in my view is too brief and does not adequately meet the standard required by the MSC. More clearer descriptions might have been provided in previous certification material but that should not exclude the assessment team from articulating the governance of the fishery for reviewers to comprehend.	The background for P3 has been elaborated - please see chapter 7.4 of the Final Report. An additional paragraph has been added in the text for PI 3.1.1. The coastal zone is defined as the area up to the 12 nm off the baseline in conformity with UNCLOS. This section is only accessible for fishing vessels with a Norwegian Flag for the Norwegian sector of the Norwegian EEZ and similar for the Russian sector. The exclusion of non-Norwegian vessels follows from the agreements between Norway and countries with access to the NEA cod and haddock, i.e. Greenland, Iceland, Faroe Islands and EU countries including UK. The Norwegian coastal cod is only present within this coastal zone.

Norway North East Arctic offshore haddock	2019	PR B	Principle 2 : Main secondary and ETP	Additional scoring rational provided in 2.3.1 noted as well as the closing of the condition in SA4 re harbour porpoise: The rationale in the new assessment on birds is in my view remains tenuous. e.g. According to information recorded on electronic logbooks (which also record interaction on fatal interactions with out of scope species) for the different UoAs for years 2017-2019 as facilitated by the Directorate of Fisheries, there are no main secondary species to take into consideration for the different UoA's. Further there is no explicit reference to the differential impacts between the UoAs other than a 2009 report on seabirds and static gears and then a statement that "only 136 seabirds were captured (both gears combined) and no marine mammals (WGBYA, 2014). By observation and inference, therefore, these reports would tend to confirm the industry's contention that the capture of seabirds, by any method of fishing, is extremely rare". This is in my view unconvincing evidence that observation and inference and industry contention adequately identifies specific bird species portions impacted in static gears as well as the other UoAs.	Following information has been added to the ETP background section based on ICES 2018 JWGBIRD report and on the reference fleet data. This information has also been added to the scoring of PI 2.3.1.b, but not to the scoring of PI 2.2.1.a. Scoring of both PIs remains unchanged. "ICES JWGBIRD 2018 report summarizes the vulnerability of marine bird species and families to bycatch of different gear types, including all gears under assessment. Information on this report is broad and does refer to North East Atlantic however serves as an indicator to Norwegian waters too. According to this report, gillnets and/or hook gears (hand- and longlines) are reported to be the deadliest fishing gears for seabirds. Besides, Bærum et al. (2018) showed that coastal fisheries might represent a more general threat to a wider range of seabird species, as opposed to longline fisheries (e.g. Fangel et al. 2017). It is acknowledged that important gaps remain in the understanding of seabird bycatch (ICES JWGBIRD 2018). The ICES Working Group on Bycatch of Protected Species (WGBYC) identified a number of data sources related to bycatch numbers and fishing effort, but these are often incomplete with regards to seabird bycatch. Specifically related to Norway, "the Norwegian Reference Fleet (NRF), a group of Norwegian fishing vessels contracted by the Institute of Marine Research (IMR), provides detailed information on their fishing activity, to improve stock assessments and fisheries management (https://www.hi.no/hi/tokt/referanseflaten-1). The self-reported data collected by the NRF include bycatch of marine mammals and seabirds. This has resulted in a 10-year long time series of seabird bycatch data related to the fishery data from a large fleet of small-scale vessels fishing with gillnets along the Norwegian coast, and enabled estimation of the total bycatch of seabirds in the Norwegian small-vessel gillnet fishery (Bærum et al. 2018). The NRF has proven an effective way of collecting seabird bycatch data, yet caution is required when interpreting self-reported fisheries information". Detailed information on research and results by the Norwegian reference fleet, including information on species

					interacted, areas of research, and vessels in the reference fleet can be found at https://www.hi.no/hi/nettrapporter/rapport-fra-havforskningen-en-2020-8 . Researchers from the reference fleet were consulted at the site visit and they reported no significant incidents to take into consideration for the offshore cod and haddock fisheries." This information has also been added to the scoring of PI 2.3.1.b, but not to the scoring of PI 2.2.1.a. Scoring of both PIs remains unchanged.

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PR Comment Code	Peer Reviewer Justification (as given at Public Comment Draft Report (PCDR) stage)	CAB response to Peer Reviewer's comments (as included in the Final Draft Report)	CAB Response Code
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.1.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.1.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.2	Yes			

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.3	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	1.2.4	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.1.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.1.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.1.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.1.3	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.2.1	Yes			

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.2.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Danish Seine, Hook and Line	PR B	2.2.3	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl UoA1	PR B	2.3.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Longline UoA2	PR B	2.3.1	Yes	The additional rationale provided by the assessor is noted. Please refer to the comments in the general worksheet in this regard.	Thank you. Additional text has been added - ref. General worksheet.	Accepted (no score change, additional evidence presented)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.3.1	Yes	The additional rationale provided by the assessor is noted. Please refer to the comments in the general worksheet in this regard.	Thank you. Additional text has been added - ref. General worksheet.	Accepted (no score change, additional evidence presented)
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Danish Seine UoA4	PR B	2.3.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Hook & Line UoA5	PR B	2.3.1	Yes			

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.3.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.3.3	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl UoA1	PR B	2.4.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Longline UoA2	PR B	2.4.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.4.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Danish Seine UoA4	PR B	2.4.1	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Hook & Line UoA5	PR B	2.4.1	Yes			

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl UoA1	PR B	2.4.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Longline UoA2	PR B	2.4.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Gill Net UoA3	PR B	2.4.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Danish Seine UoA4	PR B	2.4.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Hook & Line UoA5	PR B	2.4.2	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.4.3	Yes			
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.5.1	Yes			
Norway North East Arctic	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish	PR B	2.5.2	Yes			

offshore haddock			Seine, Hook and Line					
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	2.5.3	Yes		
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.1.1	Yes		
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.1.2	Yes		
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.1.3	Yes		
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.2.1	Yes		
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.2.2	Yes		
Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.2.3	Yes		

Norway North East Arctic offshore haddock	2019	North East Arctic haddock	Trawl, Longline, Gill Net, Danish Seine, Hook and Line	PR B	3.2.4	Yes		

9.4 Stakeholder input

There was no stakeholder input on the ACDR or PCDR for this fishery assessment.

9.5 Conditions

Table 38 Condition 1 (Applies to UoAs 1: bottom trawlers)

Performance Indicator	2.4.1: The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates. . SIb: The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
Score	70
Justification	Bottom trawlers have an impact on VMEs when encountered. MSC FS v2.01 SA 3.13.3.2 describes how VMEs shall be defined and includes potential VMEs to cover situations when a governance body uses a precautionary approach. MSC FS v2.01 SA3.13.4.1 describes that in the case of VMEs the team shall interpret "serious or irreversible harm" as reductions in habitat structure and function below 80% of the unimpacted level. Following a "Notice of Objection" the Murmanseld 2 Barents Sea cod and haddock fishery has included potential VMEs in the consideration of VMEs. The inclusion of the identified vulnerable biotopes in the Norway haddock fishery looks for further evidence that the UoA is highly unlikely to reduce structure and function of any of these habitats to a point where there would be serious or irreversible harm, i.e. are highly unlikely (<30th %ile) to cause reductions in vulnerable biotopes (proxies for potential VME habitats) to below 80% of their current status (status at the time of identification as potential VMEs). As a result of uncertainties in the VMEs areas affected by the UoA on a precautionary approach the assessment team has determined that SG80 is not met for UoA 1 and a condition is raised on this PI.
Condition	The Client shall provide evidence that the UoA 1 fishery (trawl) are highly unlikely to reduce structure and function of the vulnerable biotopes to a point where there would be serious or irreversible harm (i.e. are highly unlikely (<30th %ile) to cause in the potential VME habitats to below 80% of their current status).
Milestones	**Year 1.** Prepare a plan to determine the extent of fishing by UoA 1 vessels in the locations of the vulnerable biotopes identified by MAREANO and other sources. Score 70. **Year 2 and 3.** Analyse the extent of interactions between UoA 1 vessels and these vulnerable biotopes. Score 70. **Year 4**. Provide evidence that UoA 1 is highly unlikely to reduce structure and function of the vulnerable biotopes to a point where there would be serious or irreversible harm. If and when this results in avoidance of the vulnerable biotopes, then this condition can also be considered to be closed as no further impacts would arise. Score 80.
Consultation on condition	

Table 39 Condition 2 (Applies to UoAs 1: bottom trawlers)

Performance Indicator	2.4.2: There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats. SId: There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
Score	75
Justification	While there is clear quantitative evidence that all UoAs comply with mandatory management requirements, there is uncertainty in relation to the compliance with protection measures afforded to VMEs by other MSC UoAs/ non MSC fisheries.

	The entire Norwegian ocean going fleet was a signatory member of the Cod Industry Group Agreement (also known as the Greenpeace agreement), which stipulated that from the 2016 season the catching sector will not expand their Cod fishing activities with trawl gear into those areas where regular fishing has not taken place before. This was a precautionary measure until similar measures were imposed by management authorities. As the affected fishing grounds are now managed through regulation J-61-2019 by the designation of “New fishing areas” where more restrictive rules apply, the Cod Industry group Agreement is no longer in place. There are however other voluntary protection measures afforded by other MSC UoAs in the area. - Development and implementation of lighter gear (several Russian fisheries e.g. Arkhangelsk, FIUN etc.) - Several Russian fisheries are developing and hoping to implement lighter bottom trawl gears. - Implementation of NEAFC Recommendation as regards the establishment of a move on rule of 5 nm when encountering 7 kg of seapens. - Recording by the crew of interactions with living corals and living sponges (AGARBA, FIUN) - The MSC AGARBA cod fishery has an internal Code of Conduct and internal move on rule so that vessels shall move 2 nm when encountering 200 kg sponges or 20 kg corals. - Agreement by Russian Barents Sea MSC fisheries to voluntarily protect a number of areas in the Barents Sea from demersal fishing (came into force on 1st August 2020). Two of these areas fall within Russian EEZ and one within Norwegian EEZ. The Norwegian bottom trawl haddock fishery (UoA 1) has not provided evidence of complying with these voluntary measures.
Condition	The client shall provide evidence that the UoA 1 (trawl) meets the SG80 requirements that there is some quantitative evidence that the UoA complies with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
Milestones	**Year 1**. Consult with other relevant MSC UoAs certified to CR v2.0, to determine precisely what protection measures have been implemented to protect VMEs. Score: 75. **Year 2**. Prepare a plan to implement relevant protection measures identified. Score 75. **Year 3.** Implement such protection measures. Score 75. **Year 4:** Provide quantitative evidence that Norway haddock bottom trawl fleet (UoA 1) complies with relevant protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries. Score 80.
Consultation on condition	

9.6 Client Action Plan

NORGES FISKARLAG
FISKARLAGETS SERVICEKONTOR AS

Vår dato	Vår referanse	Vår saksbehandler	Deres referanse
20.01.2021		Tor Bjørklund Larsen/	

Client Action Plan for meeting the certification conditions:
Reassessment of the Norway North East Arctic offshore haddock fisheries

The Norwegian Fisherman's Association (NFA) submits this action plan for meeting the conditions for the reassessment of the Norway North East Arctic offshore cod fisheries.
NFA agrees to make a good faith effort to meet the intent of the conditions set forth by the conformity assessment body DNV GL. This report determines that, with two conditions, the fisheries are sustainable and well-managed in accordance with the MSC principles and criteria for sustainable fisheries.

In the following sections we will address each of the conditions individually in the table provided by the CAB. The action plan is identical to that of Norway North East Arctic offshore cod.

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Condition 1 (applies to UoA 1: bottom trawlers)

Performance indicator	2.4.1: The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates. . SIb: The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
Condition	The Client shall provide evidence that the UoA 1 fishery (trawl) are highly unlikely to reduce structure and function of the vulnerable biotopes to a point where there would be serious or irreversible harm, i.e. are highly unlikely (<30th %ile) to cause in the potential VME habitats to below 80% of their current status.
Milestones	Year 1. Prepare a plan to determine the extent of fishing by UoA 1 vessels in the locations of the vulnerable biotopes identified by MAREANO. Score 70. Year 2 and 3. Analyse the extent of interactions between UoA 1 vessels and these vulnerable biotopes. Score 70. Year 4. Provide evidence that UoA 1 is highly unlikely to reduce structure and function of the vulnerable biotopes to a point where there would be serious or irreversible harm. If and when this results in avoidance of the vulnerable biotopes, then this condition can also be considered to be closed as no further impacts would arise. Score 80.
NFA action plan	NFA has commissioned a bottom habitat impact study with Bangor University, which analyzes VMS data from the fleet provided by the Directorate of Fisheries. Preliminary results have already been presented to the assessment team. NFA is confident that further findings in this project will satisfy scores at 80 or above at 2.4.1. If findings in year 1-2 indicate the opposite, actions/milestones may naturally need adjustment. **Action 1.1** NFA will continue the bottom impacts mapping project with Bangor University and Dr. Andrew Hough (and other future collaborators if necessary) to further map and estimate bottom impacts of the Norwegian fleet. NFA will report these findings at SA1-4. **Action 1.2** If deemed appropriate by findings at SA1, adjustments in research design may be considered. **Action 1.3** By SA4 at the latest, data supporting a rescore at SG80 or above will be presented.
Consultation on condition	The suggested CAP involves only NFA, Bangor University and private consultants as direct participants and DoF as an (already participating) data contributor. No consultation is needed.

	If actions were to be adjusted at SA1-3, relevant parties of cooperation may potentially include the Ministry, IMR and Directorate of Fisheries. As all scoring under principle 3 for these fisheries confirms, these three parties have close cooperation 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 and other issues. Although successful outcomes cannot be guaranteed, NFA input has heavy emphasis, and there is vast empirical evidence of this. No further consultation would be necessary in this scenario.

Condition 2 (applies to UoA 1: bottom trawlers)

Performance indicator	2.4.2: There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats. SId: There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
Condition	The client shall provide evidence that the UoA 1 (trawl) meets the SG80 requirements that there is some quantitative evidence that the UoA complies with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
Milestones	**Year 1.** Consult with other relevant MSC UoAs certified to CR v2.0, to determine precisely what protection measures have been implemented to protect VMEs. Consultation may include determination of the best approach given developing science. Score: 75. **Year 2.** Prepare a plan to implement relevant protection measures identified. Score 75. **Year 3**. Implement such protection measures. Score 75. **Year 4**: Provide quantitative evidence that Norway haddock bottom trawl fleet (UoA 1) complies with relevant protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries. Score 80.
NFA action plan	NFA will note that many of the "voluntary measures" suggested by DNV in the report highly likely fall into some of the following categories: -Regular incremental technological improvement in trawl gears at equivalent (or lower) level than similar improvements in the Norwegian trawl fleet. -Schemes that do not fall under 2.4.2.d) interpretation of voluntary measures as they may e.g.: -are equivalent or close to official regulations -Involve fishing areas where voluntary scheme owners in reality do not have operations. -Are declared by the voluntary scheme owners themselves to be of other reasons than scientific precautions.

	Some information on this was provided to DNV up front of assessments, but NFA admits that full information was difficult to provide at the time. Therefore it is warranted to establish a comprehensive overview of the different types of schemes that exist, and evaluate if they fall under 2.4.2 d. Action 2.1 NFA will consult with other relevant MSC UoAs to determine precisely what protection measures have been implemented to protect VMEs. NFA will report the details of these schemes and ask DNV to assess if they fall under the interpretation of 2.4.2 d. Action 2.2 If there are voluntary schemes that fall under 2.4.2 d) NFA will make plans implement such measures either through private sector initiative or official regulation. Action 2.3 At SA3, relevant protection measures will be implemented. Action 2.4 At SA4, NFA will provide evidence that the fleet complies with relevant protection measures under 2.4.2 d).
Consultation on condition	No consultation needed, as the actions fall directly under the control of NFA. If an official regulatory path were to be chosen under 2.2, comments under condition 1 apply.

9.7 Surveillance

Table 40 Fishery surveillance program

Surveillance level	Year 1	Year 2	Year 3	Year 4
Level 5	On-site	Off-site	On-site	On-site

Table 41 Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	26th April	April 2022	The annual audits for this fishery are most often integrated with audits/ assessments of other fisheries for the client NORGES FISKARLAG, each with varying anniversaries. The most viable period for all the relevant fisheries, their stakeholders and the client is decided on annually. Thi sis within the requirements of FCP v2.1 §7.28.8.1 allowing the co-ordination of site visits with other MSC fisheries, thereby minimising the inputs required from management agencies and stakeholders. The flexibility in audit schedule permitted by this clause means that all audits may not be held within the anniversary date of the certificate.
2	26th April	April 2023	
3	26th April	April 2024	
4	26th April	April 2025	

Table 42 Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
1, 3 & 4	On-site audit	1 auditor on-site with remote support from 1 auditor.	From client action plan it can be deduced that information needed to verify progress of the conditions can be provided remotely. Milestones indicate that both conditions will be closed in year 4. On-site audit with 1 auditor and remote support of 1 auditor will ensure that all information is collected and verified.
2	Off-site audit	2 auditors off-site	

9.8 Risk-Based Framework outputs

The Risk Based Framework has not been used in this second reassessment of the Norway North East Arctic haddock offshore (>12nm) fishery.

9.9 Harmonised fishery assessments

There are several fisheries targeting Barents Sea cod and haddock that are MSC Fisheries certified or undergoing the assessment process – see **Table 43** . This harmonisation process is defined by the Fisheries Certification Process v2.1 and the MSC's Interpretation log. The overlapping fisheries have been identified as fisheries operating within FAO area 27 ICES Subareas 1 and 2. Only MSC fisheries using the same version of the assessment tree (MSC Fisheries Standard v. 2.01 – Annex SA) have been harmonised, as required by FCP v2.1 Annex PB § 1.2.1)

The scoring for this fishery was analysed with the scoring of the relevant overlapping fisheries and any differences explained in table Table 49.

Principle 1
NE Arctic Haddock are fished by fleet listed in **Table 43** and PI 1.1.1, PI 1.2.1, PI 1.2.2, PI 1.2.3 and PI 1.2.4 are harmonised for these scoring elements.

Principle 2

All fisheries operating in FAO 27 subareas 1 & 2 were reviewed to identify any overlap in ETP species interaction and identification of VMEs. Under PI 2.3.1 (a) DNV-GL are required to harmonise recognition of any limits set for ETP species. Seven MSC fisheries were identified as interacting with Spiny dogfish (Squalus acanthias). Harmonisation of limits applicable to the different UoAs are shown in Table 46 below. Any scoring differences are explained in Table 49 below.

Under PI 2.4.1 (b) DNV-GL are required to harmonise the recognition of VMEs when operating in the same managed area. Eleven MSC fisheries were identified as operating in the Barents Sea. VMEs identified by each fishery are shown in Table 47 and any scoring differences are explained in Table 49 below.

The Norwegian NEA haddock offshore (>12nm) fishery operates in the same fishing grounds and with similar gears than the Norwegian NEA cod offshore (>12nm) fishery. There is direct harmonization of these two fisheries (both by the same CAB and assessment team).

Principle 3
The non-Norwegian fleet fish under Norwegian legislation when fishing in the Norwegian EEZ. However, the system for consultations etc differs between fleets based on their flag. The fishery specific part of principle 3 (3.2) is not up for harmonisation while 3.1.1 is harmonised.

Table 43 Overlapping fisheries

Fishery name	Certification status and date	Status	Assessment tree	FAO Area	ICES area	Gear	Performance Indicators to harmonise
Norway NEA haddock offshore (>12nm) fishery	Certified 26.04.2010 DNV GL	Reassessment ongoing	FS v2.01 Annex SA	27	I & II	Trawl, longline, gillnet, Danish seine, hook & line	Principle 1 PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Norway NEA cod offshore (>12nm) fishery	Certified 26.04.2010 DNV GL	Reassessment ongoing	FS v2.01 Annex SA	27	I & II	Trawl, longline, gillnet, Danish seine, hook & line	Principle 1 PI 2.3.1.a & PI 2.4.1.b

							PI 3.1.1; 3.1.2 & 3.1.3
Arkhangelsk Trawl fleet Norwegian and Barents Seas cod, haddock & saithe	Certified 26.01.2016 Lloyds Register	Reassessment ongoing (FR published)	FS v2.01 Annex S	27	Ia, Ib, IIa & IIb	Bottom trawl	Principle 1 PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Murmanseld 2 Barents Sea cod and haddock	Certified 05.03.2020 DNV GL		FCR v2.0 Annex SA	27	I & II	Bottom trawls	Principle 1 PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Oceanprom Barents Sea cod and haddock fishery	Certified 11.06.2019 DNV GL	Surveillance 1 ongoing	FCR v.2.0 Annex SA	27	I & II	Hooks & lines-longlines	Principle 1 PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
AGARBA Spain Barents Sea cod	Certified 28.11.2013 Bureau Veritas Certification	Surveillance 1	FCR v 2.0 Annex SA	27	I & II	Bottom trawl	PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Estonia North East Arctic cold water prawn and cod fishery	Certified 07.11.2013 DNV GL	Surveillance 1	FCR v 2.0 Annex SA	27	Ia	Bottom trawls-shrimp trawls	PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Faroe Islands North East Arcic cold water prawn	Certified 05.12.2013 DNV GL	Surveillance 2 ongoing	FCR v2.0 Annex SA	27	I & II	Bottom trawl with sorting grid	PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Norway North East Arctic cold water prawn	Certified 09.03.2012 DNV GL	Surveillance 2 ongoing	FCR v2.0 Annex SA	27	I & II	Bottom trawl	PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Russia Barents Sea Greenland halibut	Certified 07.04.2020 Lloyds Register		FS v2.01 Annex SA	27	Ia, 1B, Iia & Iib	Bottom Otter trawl	PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Russia Barents Sea Red King Crab	Certified 22.02.2018 Lloyds Register	Surveillance 2	FCR v2.0 Annex SA	27	Russian EEZ	Traps	PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3

Russia Barents Sea Opilio Trap	Certified 07.04.2020 Lloyds Register		FS v2.01 Annex SA	27	Ia & Ib	Traps (pots)	PI 2.3.1.a & PI 2.4.1.b PI 3.1.1; 3.1.2 & 3.1.3
Faroe Islands and Iceland North East Arctic cod, haddock and saithe	Certified 17.08.2012 DNV GL		CR v 1.3	27	I & II	Bottom trawl	NA
FIUN Barents & Norwegian Seas cod and haddock	Certified 25.06.2013 Lloyds Register		CR v 1.3	27	Ia, Ib, IIa & IIb	Bottom trawl and Hooks & Lines- longline	NA
Compagnie des Pêches Saint Malo and Euronor cod and haddock	Certified 17.04.2012 Control Union Pesca		CR v 1.3	27	I & II	Bottom trawl	NA
Russian Federation Barents Sea cod, haddock and saithe	Certified 06.05 2014 DNV GL		CR v1.3	27	I & II	Bottom trawl	NA
UK Fisheries/ DFFU/ Dogger Bank Northeast Arctic cod, haddock and saithe	Certified 03.05.2012 Control Union Pesca		CR v1.3	27	I & II	Bottom trawls-otter trawl	NA
Greenland cod, haddock and saithe trawl fishery	Certified 06.05.2015 Lloyds Register		CR v 1.3	27	I & II	Bottom trawl	NA
Barents Sea cod, haddock and saithe (Ocean Trawlers)	Certified 24.11.2010 Lloyds Register		CR v 1.3	27	I & II	Bottom trawl – otter trawls	NA
Norway North East Arctic saithe fishery	Certified 16.06.2008 DNV GL		CR v 1.3	27	I & II	Bottom trawls, Gillnets and Entangling Nets - Gillnets, Hooks and Lines, Seine Nets - Boat or vessel seines - Danish seines, Surrounding Nets - With purse lines (purse seines),	NA

Table 44 -Overlapping fisheries – harmonisation activities

Supporting information
Harmonisation of the Norway North East Arctic haddock offshore (>12nm) fishery was mainly done as desk top review of relevant fishery reports and agreed scoring process with the Arkhangelsk Trawl fleet Norwegian and Barents Seas cod, haddock & saithe. **Principle 1**: MSC certified fisheries targeting the same stock and assessed with default tree from Annex SA are listed in **Table 43**. Scores are harmonised in Table 45 and differences justified in Table 49. **Principle 2:** MSC certified fisheries targeting the same stock and assessed with default tree from Annex SA are listed in **Table 43**. Harmonization activities have been conducted in relation to PIs 2.3.1.a (limits set to ETP species) and PI 2.4.1.b (consideration of VMEs). Following conversations with other CABs the team has decided to

eliminate “burrowing megafauna” as potential VME for this fishery under reassessment and all other fisheries of this CAB (at surveillances stages).
Direct harmonization is only possible to the Norway NEA cod offshore (>12nm) fishery, as it operates with the same fishing gear in the same fishing grounds. There are other MSC certified non-Norwegian fleets operating in the Barents Sea using trawlers and targeting cod, haddock and saithe which could be partially harmonised. Differences in scores (when happening) account for differences in fishing grounds and seasons. Some of the fleets are targeting saithe at least for some period of their fishing trip in different fishing grounds along the Norwegian coast. Because of differences in fishing grounds direct harmonisation of habitats impacts is not possible. However, other overlapping fisheries such as the Murmanseld2 cod fishery in the Barents Sea have been taking into account and as a result conditions 1 and 2 have been raised (PI 2.4.1.b and PI 2.4.2.d), on the recognition of potential VMEs and management measures afforded by other UoAs in relation to the protection of vulnerable habitats.

Principle 3: There is very little difference between the relevant fisheries. Evaluations are consistent in relation to coring and differences justified in Table 49.

Was either FCP v2.2 Annex PB1.3.3.4 or PB1.3.4.5 applied when harmonising?	**No**
Date of harmonisation meeting	via email between April to June 2020
If applicable, describe the meeting outcome	
As agreed by email of 25.05.2020 this fishery is harmonised at the next assessment/audit with the Arkhangelsk Trawl fleet Norwegian and Barents Seas cod, haddock & saithe and differences justified in Table 49.	

Table 45 Scoring differences – Principle 1

Performance Indicators (PIs)	Norway NEA haddock offshore (>12nm)	Arkhangelsk Trawl fleet Norwegian and Barents Seas cod & haddock	Murmanseld 2 Barents Sea cod and haddock	Oceanprom Barents Sea cod and haddock
PI 1.1.1	100	100	100	100
PI 1.2.1	100	100	100	100
PI 1.2.2	95	95	95	100
PI 1.2.3	90	95	90	95
PI 1.2.4	100	100	95	100

Table 46 Scoring differences – Principle 2 PI 2.3.1a: Scoring differences, Spurdog Squalus acanthias.

Performance Indicators (PIs): 2.3.1.b. Scoring element: Spurdog.	Norway North East Arctic haddock	Norway North East Arctic Cod	Arkhangelsk Trawl fleet Norwegian & Barents Seas cod, haddock & saithe	NFA Norwegian Ling & Tusk and NFA Norwegian Lumpfish	Estonia North East Arctic cold water prawn and cod fishery	Oceanprom Barents Sea cod and haddock	Norway spring spawning herring	Norway North East Atlantic Blue whiting
PI 2.3.1a Score	80	80	80	N/A	80	N/A	80	N/A

Table 47 Scoring differences – Principle 2 PI 2.4.1.b
Identification of VMEs identified in the FAO 27 subdivision 1 & 2 area.

Performance Indicators (PIs)	Cold water Corals - Lophelia reefs & Solenosmilia variabilis reef	Coral Gardens - hard and soft	Sponges	Seapens	Burrowing Megafauna
Norway North East Arctic haddock	Yes	Yes	Yes	Yes	No
Norway North East Arctic Cod	Yes	Yes	Yes	Yes	No
Arkhangelsk Trawl fleet Norwegian & Barents Seas cod, haddock & saithe	Yes	Yes	Yes	Yes	No
AGARBA Spain Barents Sea cod	Yes	Yes	Yes	Yes	No
Estonia North East Arctic cold water prawn and cod fishery	Yes	Yes	Yes	Yes	Yes
Faroe Islands North East Arctic cold water prawn	Yes	Yes	Yes	Yes	Yes
Oceanprom Barents Sea cod and haddock	Yes	Yes	Yes	Yes	No
Norway North East Arctic cold water prawn	Yes	Yes	Yes	Yes	No
Murmansel d 2 Barents Sea cod and haddock	Yes	Yes	Yes	Yes	Yes
Russia Barents Sea Greenland Halibut	Yes	Yes	Yes	Yes	No
Russia Barents Sea Red King Crab	Yes	Yes	Yes	Yes	No
Russia Barents Sea Opilio Trap	Yes	Yes	Yes	Yes	No

Table 48 Scoring differences Principle 3

Performance Indicators (PIs)	Norway NEA haddock offshore (>12nm)	Norway NEA cod offshore (>12nm)	Arkhangelsk Trawl fleet Norwegian and Barents Seas cod & haddock	Murmanseld 2 Barents Sea cod and haddock	Oceanprom Barents Sea cod and haddock	AGARBA Spain Barents Sea cod	Estonia North East Arctic cold water prawn and cod	Faroe Islands North East Arcic cold water prawn	Norway North East Arctic cold water prawn	Russia Barents Sea Greenland halibut	Russia Barents Sea Red King Crab	Russia Barents Sea Opilio Trap
PI 3.1.1	95	95	100	100	90	100	95	95	95	100	95	95
PI 3.1.2	100	100	85	95	85	85	85	85	85	85	100	85
PI 3.1.3	100	100	80	100	100	100	100	100	100	80	100	80

Table 49 – Rationale for scoring differences

If applicable, explain and justify any difference in scoring and rationale for the relevant Performance Indicators (FCP v2.2 Annex PB1.3.6)
PRINCIPLE 1: Scoring differences are minimal with the scores between 90 and 100 for the relevant fisheries and are based on variations in the timings of the assessments and the assessment teams. PRINCIPLE 2: Harmonization activities related to PI 2.3.1.a and PI 2.4.1.b apply to the consideration of limits for ETP species or to the consideration of VMEs in a specific area. Burrowing megafauna used to be considered as VME as it is generally listed in relevant bibliography jointed to seapens. Since burrowing megafauna is too broad a term, with no specific species life histories or characteristics identified, CABs have now agreed not to consider burrowing megafauna as a VME and are on the process of modifying the relevant reports. It must be highlighted however that following an objection process the Murmanseld 2 fishery in the Barents Sea raised a condition in PI 2.4.1.b on impacts on potential VMEs. This approach has been considered and a condition is also raised under PI 2.4.1.b for the Norwegian NEA haddock offshore (>12nm) fishery and the Norwegian NEA cod offshore (>12nm) fishery. PRINCIPLE 3: Scoring differences are minimal with the scores between 80 and 100. Although there are differences these are based on differences in the Norwegian and the other Management systems which are different national, flag state, jurisdictions. Harmonisation, in most cases, has been restricted to the international components which are common to these fisheries. For the Norwegian fisheries the scores vary only where there is difference in interpretation in the different assessment teams and relevant stakeholder information.
If exceptional circumstances apply, outline the situation and whether there is agreement between or among teams on this determination
NA

9.10 Client agreements

Client Review

From: Tor Bjørklund Larsen <tor@fiskarlaget.no>
Sent: onsdag 20. januar 2021 17:24
To: Chaudhury, Sandhya <Sandhya.Chaudhury@dnvgl.com>
Cc: Erlend Moksness <Erlend.Moksness@fiskarlaget.no>
Subject: NEA cod and haddock draft report acceptance and CAPs

Dear Sandhya,

This is to confirm our acceptance of the two client draft reports for NEA cod and haddock fisheries.

We find it worth commenting that new information has arisen since the information cut-off-point. with regard to some issues such as the use of pingers (cod p.94 and haddock p.89), as these have now been implemented per 01.01.2021. Also relevant to conditions, there is information coming out of the Bangor project that would be useful. However all of this is information that will only serve towards *higher* scores in the fishery, so we do not see the need to e.g. invoke expedited audits, as it can also be presented at SA1.

Please see the attached (identical) CAPs for the two fisheries. Please let me know if you see any errors or if you have any questions.

Med vennlig hilsen

Tor Bjørklund Larsen | tor@fiskarlaget.no
Seniorrådgiver | Mobil 980 33 041
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Facebook: facebook.com/NorgesFiskarlag

NORGES FISKARLAG

ACDR:

From: Tor Bjørklund Larsen
To: Chaudhury, Sandhya
Subject: SV: Norway NEA cod and haddock fishery - ACDR for approval and confirmation of proceeding with Re-assessment.
Date: onsdag 30. oktober 2019 10:42:54

Dear Sandhya,

Although my time is limited to review the actual contents of the report, you may proceed with the process.

Tor Bjørklund Larsen | tor@fiskarlaget.no
Sustainability adviser | Phone 980 33 041
Norwegian Fishermen's Association
Twitter: @NorgesFiskarlag
Facebook: facebook.com/NorgesFiskarlag

NORGES FISKARLAG

Fra: Chaudhury, Sandhya [mailto:Sandhya.Chaudhury@dnvgl.com]
Sendt: 29. oktober 2019 19:28
Til: Tor Bjørklund Larsen
Emne: Norway NEA cod and haddock fishery - ACDR for approval and confirmation of proceeding with Re-assessment.
Viktighet: Høy

Dear Tor,

With reference to the last few conversations on this fishery yesterday and today I enclose the ACDR for your approval.
Please note there is no IPI in this report.
Coastal cod has been assessed in Principle 1 as recommended in the last reassessment.
RBF will be used for PI 1.1.1
Please also note that there are 4 conditions that are in open status in this report. The intention is to closed them in the 4th surveillance audit- they have all been on target in the last surveillance.
Would appreciate if you could revert with a formal decision to proceed with this assessment.

Unfortunately because of the coastal cod situation this report has been very delayed and I have to publish tomorrow afternoon but need your formal acceptance to proceed before that.

<< Fil: Norway NEA cod_haddock RA 2019 ACDR 291019.pdf >>
Thank you.

BR / MVH
For DNV GL Business Assurance Norway AS

9.11 Objection Procedure

No objections were received in the stakeholder consultancy period for the Final Report and Determination.

9.12 Landing list

Name	Alt. Name	Local council Nr	Local council name	County
Engelsviken		106	Fredrikstad	Østfold
Vikerkilen		106	Fredrikstad	Østfold
Brattestø		111	Hvaler	Østfold
Kjellvika	Kjelvika	111	Hvaler	Østfold
Lauer		111	Hvaler	Østfold
Papperhavn		111	Hvaler	Østfold
Skjærhalden		111	Hvaler	Østfold
Tisler		111	Hvaler	Østfold
Utgårdskilen		111	Hvaler	Østfold
Vikehavn	Vikerhavn	111	Hvaler	Østfold
Rørvik		136	Rygge	Østfold
Filtvedt, Filtvet		628	Hurum	Buskerud
Holmsbu		628	Hurum	Buskerud
Ringshaug		704	Tønsberg	Vestfold
Helgeroa		709	Larvik	Vestfold
Kjerringvik		709	Larvik	Vestfold
Lille Arøya		709	Larvik	Vestfold
Nevlunghavn		709	Larvik	Vestfold
Stavern / Fredriksvern		709	Larvik	Vestfold
Ula		709	Larvik	Vestfold
Grepan	Grepanbukta	723	Tjøme	Vestfold
Krukehavn	Krukebukta	723	Tjøme	Vestfold
Sandøya		805	Porsgrunn	Telemark
Langesund		814	Bamble	Telemark
Hombersund	Homborsund	904	Grimstad	Aust-Agder
Narestø		906	Arendal	Aust-Agder
Torsøya		1001	Kristiansand	Vest-Agder
Dyrstavågen	Dyrstadvågen	1002	Mandal	Vest-Agder
Haugestrand	Haugestranda	1003	Farsund	Vest-Agder
Jøllestø		1003	Farsund	Vest-Agder
Listahavn m/Borshavn, Brekneholmen	Baardshavn	1003	Farsund	Vest-Agder
Snekkestø		1003	Farsund	Vest-Agder
Stavestø		1003	Farsund	Vest-Agder
Tjørvebukten		1003	Farsund	Vest-Agder
Tranevåg		1003	Farsund	Vest-Agder
Ullerøy		1003	Farsund	Vest-Agder
Verevågen		1003	Farsund	Vest-Agder
Østhasselstrand	Østhasselstranda	1003	Farsund	Vest-Agder
Andabeløy		1004	Flekkefjord	Vest-Agder

Kirkehavn		1004	Flekkefjord	Vest-Agder
Kjødevågen/Litla	Litlasund	1004	Flekkefjord	Vest-Agder
Undhammer		1004	Flekkefjord	Vest-Agder
Goksem		1029	Lindesnes	Vest-Agder
Lillehavn		1029	Lindesnes	Vest-Agder
Korshavn		1032	Lyngdal	Vest-Agder
Selør, Sælør		1032	Lyngdal	Vest-Agder
Egersund		1101	Eigersund	Rogaland
Hellevik	Hellvik	1101	Eigersund	Rogaland
Nålaugvika	Nålaugviken	1101	Eigersund	Rogaland
Melingsvåg, Imly		1103	Stavanger	Rogaland
Røvær		1106	Haugesund	Rogaland
Nesvåg		1111	Sokndal	Rogaland
Sanden, Åna Sira		1111	Sokndal	Rogaland
Sogndalstrand		1111	Sokndal	Rogaland
Kvassheim		1119	Hå	Rogaland
Madlandstranda		1119	Hå	Rogaland
Obrestad		1119	Hå	Rogaland
Sirevåg		1119	Hå	Rogaland
Vatnemoholmane/Holmane		1119	Hå	Rogaland
Hellestø		1124	Sola	Rogaland
Rott		1124	Sola	Rogaland
Tananger		1124	Sola	Rogaland
Ølbergstranda	Ølbergstranden, Ølberg	1124	Sola	Rogaland
Dusevik	Dusavik	1127	Randaberg	Rogaland
Hjelmelandsvågen		1133	Hjelmeland	Rogaland
Jelsa		1134	Suldal	Rogaland
Jørstadvågen	Jørstadvåg	1141	Finnøy	Rogaland
Hodnefjellsvik		1142	Rennesøy	Rogaland
Østhusvik		1142	Rennesøy	Rogaland
Aurviken	Aurviken Kanal	1144	Kvitsøy	Rogaland
Grønningen		1144	Kvitsøy	Rogaland
Kvitsøy/Rossøysund	Straumsund, Naustvollvågen	1144	Kvitsøy	Rogaland
Leiasund	Leiasundet	1144	Kvitsøy	Rogaland
Ystebøsundet	Ystebøshavn	1144	Kvitsøy	Rogaland
Alvestad Bokn	Alvestadkroken	1145	Bokn	Rogaland
Føresvik Bokn		1145	Bokn	Rogaland
Knarholmen		1145	Bokn	Rogaland
Tysværstrømmen		1146	Tysvær	Rogaland
Ferkingstad		1149	Karmøy	Rogaland
Hemnes		1149	Karmøy	Rogaland

Kvalavåg		1149	Karmøy	Rogaland
Osneshavn		1149	Karmøy	Rogaland
Otravik		1149	Karmøy	Rogaland
Sandve		1149	Karmøy	Rogaland
Skjærsundet		1149	Karmøy	Rogaland
Skudeneshavn		1149	Karmøy	Rogaland
Strømsundet		1149	Karmøy	Rogaland
Syrevågen		1149	Karmøy	Rogaland
Sævelandsvik		1149	Karmøy	Rogaland
Vedavågen	Vedavåg	1149	Karmøy	Rogaland
Vik		1149	Karmøy	Rogaland
Åkra	Åkrehamn, Åkrehavn	1149	Karmøy	Rogaland
Norevågen	Nordvågen Utsira, Nordrevågen Nedre Våge	1151	Utsira	Rogaland
Sørevågen		1151	Utsira	Rogaland
Holmen		1160	Vindafjord	Rogaland
Vikedalsosen		1160	Vindafjord	Rogaland
Ølensjøen		1160	Vindafjord	Rogaland
Lyngholmen		1216	Sveio	Hordaland
Espevær		1219	Bømlo	Hordaland
Gjeitung		1219	Bømlo	Hordaland
Hiskjo		1219	Bømlo	Hordaland
Holme		1219	Bømlo	Hordaland
Kastevika ved Brandasund		1219	Bømlo	Hordaland
Lyklingholmane	Lyklingholmen	1219	Bømlo	Hordaland
Lyklingvåg	Løklingvåg	1219	Bømlo	Hordaland
Vika		1219	Bømlo	Hordaland
Øklandsvåg		1219	Bømlo	Hordaland
Kobbebukta		1224	Kvinnherad	Hordaland
Baldersheim		1241	Fusa	Hordaland
Vinnes		1241	Fusa	Hordaland
Bekkjarvik		1244	Austevoll	Hordaland
Gauksheim		1244	Austevoll	Hordaland
Heimarkstraumen/-strømmen		1244	Austevoll	Hordaland
Hevrøy	Hevringen	1244	Austevoll	Hordaland
Klepsvik/ Bakkasund		1244	Austevoll	Hordaland
Kolbeinsvik		1244	Austevoll	Hordaland
Kvalvåg	Kvalvåg Stolmen	1244	Austevoll	Hordaland
Litlekalsøy	Lille Kalsøy / Kalsøy	1244	Austevoll	Hordaland
Møkster		1244	Austevoll	Hordaland
Rabben		1244	Austevoll	Hordaland

Salthella		1244	Austevoll	Hordaland
Stangelandsvågen		1244	Austevoll	Hordaland
Golten		1245	Sund	Hordaland
Høilandskjær Losst		1245	Sund	Hordaland
Kleppe		1245	Sund	Hordaland
Steinsland		1245	Sund	Hordaland
Toftevika		1245	Sund	Hordaland
Trellevik		1245	Sund	Hordaland
Hitsøy		1246	Fjell	Hordaland
Misje		1246	Fjell	Hordaland
Solsvik		1246	Fjell	Hordaland
Turøyvågen		1246	Fjell	Hordaland
Follese	Follesø	1247	Askøy	Hordaland
Ramsøy		1247	Askøy	Hordaland
Hellesøy		1259	Øygarden	Hordaland
Hernar/Hernarsundet		1259	Øygarden	Hordaland
Kjøpmannsvågen		1259	Øygarden	Hordaland
Lyngøy		1259	Øygarden	Hordaland
Nordøysund		1259	Øygarden	Hordaland
Sanden		1259	Øygarden	Hordaland
Vik på Toftøy		1259	Øygarden	Hordaland
Fonnes		1264	Austrheim	Hordaland
Hoplandsvik		1264	Austrheim	Hordaland
Krossvik/ Krossøy		1264	Austrheim	Hordaland
Kirkevågen/ Kirkehavn		1265	Fedje	Hordaland
Moldøysundet	Moldøsundet	1265	Fedje	Hordaland
Rognsvågen		1265	Fedje	Hordaland
Æskjær/Storemark		1265	Fedje	Hordaland
Espesetvika	Espesetvik	1401	Flora	Sogn og Fjordane
Florø		1401	Flora	Sogn og Fjordane
Gjerdevika		1401	Flora	Sogn og Fjordane
Kinnesund		1401	Flora	Sogn og Fjordane
Rognaldsvåg		1401	Flora	Sogn og Fjordane
Skorpevågen		1401	Flora	Sogn og Fjordane
Standalsvik		1401	Flora	Sogn og Fjordane
Æsøysundet		1401	Flora	Sogn og Fjordane
Bremnes/Naustvågen		1411	Gulen	Sogn og Fjordane
Ingeborgskjærsund		1411	Gulen	Sogn og Fjordane
Leirvik		1411	Gulen	Sogn og Fjordane
Negardsvik		1411	Gulen	Sogn og Fjordane
Nesvågen		1411	Gulen	Sogn og Fjordane
Skjerjehamn		1411	Gulen	Sogn og Fjordane
Færøy		1412	Solund	Sogn og Fjordane

Gardsvågen, Nautøy		1412	Solund	Sogn og Fjordane
Hersvik		1412	Solund	Sogn og Fjordane
Kvalvik		1412	Solund	Sogn og Fjordane
Lundsholet	Lundsstraumen	1412	Solund	Sogn og Fjordane
Saltskår		1412	Solund	Sogn og Fjordane
Steinsøysundet/Oldersundet		1412	Solund	Sogn og Fjordane
Storøy	Storøy i Solund	1412	Solund	Sogn og Fjordane
Trovåg		1412	Solund	Sogn og Fjordane
Utvær		1412	Solund	Sogn og Fjordane
Brensdal		1413	Hyllestad	Sogn og Fjordane
Eide		1413	Hyllestad	Sogn og Fjordane
Gulenakken - Slottet		1428	Askvoll	Sogn og Fjordane
Havna Værøy		1428	Askvoll	Sogn og Fjordane
Herlandsvik		1428	Askvoll	Sogn og Fjordane
Høyvik		1428	Askvoll	Sogn og Fjordane
Melværvågen		1428	Askvoll	Sogn og Fjordane
Nekøyosenn	Nikøy, Bulandet (Fedøy-Gjelsa)	1428	Askvoll	Sogn og Fjordane
Sandøy		1428	Askvoll	Sogn og Fjordane
Stavestrand		1428	Askvoll	Sogn og Fjordane
Stroka - Værlandet		1428	Askvoll	Sogn og Fjordane
Værøyhamn	Kleivavåg	1428	Askvoll	Sogn og Fjordane
Bakkevik		1438	Bremanger	Sogn og Fjordane
Iglandsvik	Iglandsvika	1438	Bremanger	Sogn og Fjordane
Kalvåg		1438	Bremanger	Sogn og Fjordane
Klubbevika		1438	Bremanger	Sogn og Fjordane
Oldersundet	Oldersund	1438	Bremanger	Sogn og Fjordane
Struen		1438	Bremanger	Sogn og Fjordane
Vetvik		1438	Bremanger	Sogn og Fjordane
Husevåg		1439	Vågsøy	Sogn og Fjordane
Kråkenes		1439	Vågsøy	Sogn og Fjordane
Kvalheim		1439	Vågsøy	Sogn og Fjordane
Måløy		1439	Vågsøy	Sogn og Fjordane
Osmundsvåg	Osmundvåg	1439	Vågsøy	Sogn og Fjordane
Raudeberg		1439	Vågsøy	Sogn og Fjordane
Refvik		1439	Vågsøy	Sogn og Fjordane
Silden, Silda		1439	Vågsøy	Sogn og Fjordane
Borgundvåg		1441	Selje	Sogn og Fjordane
Drage	Drage Statlandet	1441	Selje	Sogn og Fjordane
Eltvik		1441	Selje	Sogn og Fjordane
Ervik		1441	Selje	Sogn og Fjordane
Flatraket		1441	Selje	Sogn og Fjordane
Hoddevik		1441	Selje	Sogn og Fjordane

Honningsvåg	Honningsvåg Stad	1441	Selje	Sogn og Fjordane
Indre Fure		1441	Selje	Sogn og Fjordane
Leikanger		1441	Selje	Sogn og Fjordane
Refvik-Selje		1441	Selje	Sogn og Fjordane
Røysetstranda	Røisetstranden	1441	Selje	Sogn og Fjordane
Solvåg		1441	Selje	Sogn og Fjordane
Ytre Fure/Kjøila		1441	Selje	Sogn og Fjordane
Nordfjordeid		1443	Eid	Sogn og Fjordane
Molde		1502	Molde	Møre og Romsdal
Grip		1503	Kristiansund	Møre og Romsdal
Kristiansund N		1503	Kristiansund	Møre og Romsdal
Holmeskjærvika	Holmskjærvik	1504	Ålesund	Møre og Romsdal
Flugevåg		1511	Vanylven	Møre og Romsdal
Kløvningsviken	Klovningsvike	1511	Vanylven	Møre og Romsdal
Rovde		1511	Vanylven	Møre og Romsdal
Åramsundet		1511	Vanylven	Møre og Romsdal
Bringsinghaug	Brisinghaug	1514	Sande	Møre og Romsdal
Gjerdsvika		1514	Sande	Møre og Romsdal
Haugsbygda		1514	Sande	Møre og Romsdal
Haugsholmen		1514	Sande	Møre og Romsdal
Sandshamn		1514	Sande	Møre og Romsdal
Bøvågen		1515	Herøy	Møre og Romsdal
Fosnavåg		1515	Herøy	Møre og Romsdal
Kopperstad		1515	Herøy	Møre og Romsdal
Kvalsund		1515	Herøy	Møre og Romsdal
Kvalsvik		1515	Herøy	Møre og Romsdal
Leinevika		1515	Herøy	Møre og Romsdal
Remøy		1515	Herøy	Møre og Romsdal
Runde		1515	Herøy	Møre og Romsdal
Sandebukta	Sandebukten	1515	Herøy	Møre og Romsdal
Skorpa		1515	Herøy	Møre og Romsdal
Fløø		1516	Ulstein	Møre og Romsdal
Ulsteinvik		1516	Ulstein	Møre og Romsdal
Brandal		1517	Hareid	Møre og Romsdal
Hareid		1517	Hareid	Møre og Romsdal
Hjørungavåg		1517	Hareid	Møre og Romsdal
Vartdal		1520	Ørsta	Møre og Romsdal
Urkevik/Holen	Urkevika	1531	Sula	Møre og Romsdal
Alnes		1532	Giske	Møre og Romsdal
Blindheim		1532	Giske	Møre og Romsdal
Geilevika	Gjelvika	1532	Giske	Møre og Romsdal
Giskegård		1532	Giske	Møre og Romsdal
Giskeødegård		1532	Giske	Møre og Romsdal

Roald		1532	Giske	Møre og Romsdal
Skjong		1532	Giske	Møre og Romsdal
Valderhaugstranda		1532	Giske	Møre og Romsdal
Valkve	Hvalkve	1532	Giske	Møre og Romsdal
Vikebukt		1532	Giske	Møre og Romsdal
Austnes		1534	Haram	Møre og Romsdal
Flem	Flemsvik	1534	Haram	Møre og Romsdal
Haram		1534	Haram	Møre og Romsdal
Hellandshavn		1534	Haram	Møre og Romsdal
Lausund		1534	Haram	Møre og Romsdal
Longva		1534	Haram	Møre og Romsdal
Rogne		1534	Haram	Møre og Romsdal
Søvik-Gamlem		1534	Haram	Møre og Romsdal
Vågholmane		1534	Haram	Møre og Romsdal
Drønnesundvågen		1545	Midsund	Møre og Romsdal
Uggelvik	Ugelvik	1545	Midsund	Møre og Romsdal
Finnøy		1546	Sandøy	Møre og Romsdal
Havnevågen		1546	Sandøy	Møre og Romsdal
Myklebust		1546	Sandøy	Møre og Romsdal
Ona		1546	Sandøy	Møre og Romsdal
Orten		1546	Sandøy	Møre og Romsdal
Steinshamn		1546	Sandøy	Møre og Romsdal
Rindarøy		1547	Aukra	Møre og Romsdal
Bud		1548	Fræna	Møre og Romsdal
Harøysund/Håsundet		1548	Fræna	Møre og Romsdal
Nordre Bjørnsund		1548	Fræna	Møre og Romsdal
Storholmvågen		1548	Fræna	Møre og Romsdal
Søndre Bjørnsund		1548	Fræna	Møre og Romsdal
Vikan, Fræna		1548	Fræna	Møre og Romsdal
Gjengstøbukta/Smørholmen		1551	Eide	Møre og Romsdal
Bjellvåg/Størkevåg		1554	Averøy	Møre og Romsdal
Honningsøy-Kjønnøy		1554	Averøy	Møre og Romsdal
Rødeggen		1554	Averøy	Møre og Romsdal
Sandøysundet		1554	Averøy	Møre og Romsdal
Dyrnesvågen		1573	Smøla	Møre og Romsdal
Edøy		1573	Smøla	Møre og Romsdal
Nordvika		1573	Smøla	Møre og Romsdal
Ringsøy / Ringsøykjeila		1573	Smøla	Møre og Romsdal
Steinsøy		1573	Smøla	Møre og Romsdal
Veidholmen/Ringbukta		1573	Smøla	Møre og Romsdal
Veidholmen/Været		1573	Smøla	Møre og Romsdal
Bekkholmleira		1576	Aure	Møre og Romsdal
Gjerdevika		1576	Aure	Møre og Romsdal

Leirvalen		1576	Aure	Møre og Romsdal
Vikan, Aure		1576	Aure	Møre og Romsdal
Ansnes		1617	Hitra	Sør-Trøndelag
Balsnesaunet		1617	Hitra	Sør-Trøndelag
Børøysund	Buarøysund	1617	Hitra	Sør-Trøndelag
Helsøysund		1617	Hitra	Sør-Trøndelag
Kjerringvåg		1617	Hitra	Sør-Trøndelag
Kuøya		1617	Hitra	Sør-Trøndelag
Aursøyane		1620	Frøya	Sør-Trøndelag
Bremnesvågen		1620	Frøya	Sør-Trøndelag
Dyrvik		1620	Frøya	Sør-Trøndelag
Halten		1620	Frøya	Sør-Trøndelag
Hammervågen		1620	Frøya	Sør-Trøndelag
Inntian		1620	Frøya	Sør-Trøndelag
Kya		1620	Frøya	Sør-Trøndelag
Måøy-Gårdsøy/Mausund		1620	Frøya	Sør-Trøndelag
Nesset		1620	Frøya	Sør-Trøndelag
Sandvik		1620	Frøya	Sør-Trøndelag
Sauøya		1620	Frøya	Sør-Trøndelag
Sistranda		1620	Frøya	Sør-Trøndelag
Sula		1620	Frøya	Sør-Trøndelag
Sætervågen		1620	Frøya	Sør-Trøndelag
Sørburøya	Sørburøy	1620	Frøya	Sør-Trøndelag
Titran		1620	Frøya	Sør-Trøndelag
Ørnflaugvågen		1620	Frøya	Sør-Trøndelag
Garten		1621	Ørland	Sør-Trøndelag
Uthaug		1621	Ørland	Sør-Trøndelag
Junkerbukta	Junkerbukten / H.Vika	1624	Rissa	Sør-Trøndelag
Røberg		1624	Rissa	Sør-Trøndelag
Råkvåg		1624	Rissa	Sør-Trøndelag
Sivertsvik		1624	Rissa	Sør-Trøndelag
Dypfestvågen		1627	Bjugn	Sør-Trøndelag
Eidsbukta		1627	Bjugn	Sør-Trøndelag
Høybakken	Høibakken	1627	Bjugn	Sør-Trøndelag
Flatholmsundet	Stokksund	1630	Åfjord	Sør-Trøndelag
Linesøya		1630	Åfjord	Sør-Trøndelag
Kiran		1632	Roan	Sør-Trøndelag
Kråkøysundet		1632	Roan	Sør-Trøndelag
Roan		1632	Roan	Sør-Trøndelag
Hepsøy		1633	Osen	Sør-Trøndelag
Strand		1633	Osen	Sør-Trøndelag
Sætervika		1633	Osen	Sør-Trøndelag

Vingsand		1633	Osen	Sør-Trøndelag
Yttervågen		1633	Osen	Sør-Trøndelag
Stjørdalshalsen		1714	Stjørdal	Nord-Trøndelag
Småland		1717	Frosta	Nord-Trøndelag
Hasvåg/Flatan		1749	Flatanger	Nord-Trøndelag
Kvaløysæter		1749	Flatanger	Nord-Trøndelag
Utvorda		1749	Flatanger	Nord-Trøndelag
Borgan		1750	Vikna	Nord-Trøndelag
Flerengstrand		1750	Vikna	Nord-Trøndelag
Nordøyan		1750	Vikna	Nord-Trøndelag
Risøyvalen Bondøy		1750	Vikna	Nord-Trøndelag
Rørvik		1750	Vikna	Nord-Trøndelag
Sørgjeslingan		1750	Vikna	Nord-Trøndelag
Valøy		1750	Vikna	Nord-Trøndelag
Vansøyvågen		1750	Vikna	Nord-Trøndelag
Abelvær		1751	Nærøy	Nord-Trøndelag
Arnøy		1751	Nærøy	Nord-Trøndelag
Gjerdingen		1751	Nærøy	Nord-Trøndelag
Landskjærbukta		1751	Nærøy	Nord-Trøndelag
Lund		1751	Nærøy	Nord-Trøndelag
Måneset		1751	Nærøy	Nord-Trøndelag
Ottersøya		1751	Nærøy	Nord-Trøndelag
Skagestranda		1751	Nærøy	Nord-Trøndelag
Haug		1755	Leka	Nord-Trøndelag
Nord-Gutvik		1755	Leka	Nord-Trøndelag
Sklinna		1755	Leka	Nord-Trøndelag
Sør-Gutvik		1755	Leka	Nord-Trøndelag
Bodø		1804	Bodø	Nordland
Vokkøy		1804	Bodø	Nordland
Holm		1811	Bindal	Nordland
Vikvågen		1812	Sømna	Nordland
Brønnøysund		1813	Brønnøy	Nordland
Bremstein	Bremstenvær	1815	Vega	Nordland
Skjærvær		1815	Vega	Nordland
Sandsundvær		1818	Herøy	Nordland
Sandnessjøen		1820	Alstahaug	Nordland
Tjøtta		1820	Alstahaug	Nordland
Fagervik		1822	Leirfjord	Nordland
Nesna		1828	Nesna	Nordland
Lovund		1834	Lurøy	Nordland
Husøy		1835	Træna	Nordland
Sanna		1835	Træna	Nordland
Selvær		1835	Træna	Nordland

Myken		1836	Rødøy	Nordland
Valvær		1836	Rødøy	Nordland
Bolga		1837	Meløy	Nordland
Reipå		1837	Meløy	Nordland
Støtt	Søtt	1837	Meløy	Nordland
Ertenvåg		1838	Gildeskål	Nordland
Storvik		1838	Gildeskål	Nordland
Sør-Arnøy	Sørarnøy	1838	Gildeskål	Nordland
Sør-Fugløy	Sørfugløy	1838	Gildeskål	Nordland
Våg		1838	Gildeskål	Nordland
Rørstad		1845	Sørfold	Nordland
Styrkesnes		1845	Sørfold	Nordland
Helnessund		1848	Steigen	Nordland
Nordfold		1848	Steigen	Nordland
Skutvik		1849	Hamarøy	Nordland
Korsnes		1850	Tysfjord	Nordland
Lysvold		1850	Tysfjord	Nordland
Skarstadhamn		1854	Ballangen	Nordland
Nesvågen		1856	Røst	Nordland
Måstad		1857	Værøy	Nordland
Røstenesvågen	Røstnesvågen, Værøy, Tyvsnes	1857	Værøy	Nordland
Sørlandsvågen		1857	Værøy	Nordland
Fredvang		1859	Flakstad	Nordland
Napp		1859	Flakstad	Nordland
Nesland		1859	Flakstad	Nordland
Ramberg		1859	Flakstad	Nordland
Ballstad		1860	Vestvågøy	Nordland
Eggum		1860	Vestvågøy	Nordland
Kleivan		1860	Vestvågøy	Nordland
Mjåsund	Mortsund	1860	Vestvågøy	Nordland
Mortsund		1860	Vestvågøy	Nordland
Stamsund		1860	Vestvågøy	Nordland
Tangstad		1860	Vestvågøy	Nordland
Vestresand		1860	Vestvågøy	Nordland
Henningsvær		1865	Vågan	Nordland
Hovsund		1865	Vågan	Nordland
Kabelvåg		1865	Vågan	Nordland
Kleppstad		1865	Vågan	Nordland
Laukvik		1865	Vågan	Nordland
Skrova		1865	Vågan	Nordland
Svolvær		1865	Vågan	Nordland
Hennes		1866	Hadsel	Nordland

Melbu		1866	Hadsel	Nordland
Gaukværøy	Skjærdingstad	1867	Bø	Nordland
Hovden		1867	Bø	Nordland
Nykvåg		1867	Bø	Nordland
Steinesjøen		1867	Bø	Nordland
Alsvåg		1868	Øksnes	Nordland
Sommarøy-Myre	Myre	1868	Øksnes	Nordland
Stø		1868	Øksnes	Nordland
Andenes		1871	Andøy	Nordland
Bleik		1871	Andøy	Nordland
Dverberg	Dvergberg, Myre	1871	Andøy	Nordland
Nordmela		1871	Andøy	Nordland
Stave		1871	Andøy	Nordland
Åknes		1871	Andøy	Nordland
Bogen		1874	Moskenes	Nordland
Hamnøy		1874	Moskenes	Nordland
Moskenesvågen	Moskenes og Breiland	1874	Moskenes	Nordland
Reine		1874	Moskenes	Nordland
Tind		1874	Moskenes	Nordland
Å		1874	Moskenes	Nordland
Lundenes		1901	Harstad	Troms
Rogla		1901	Harstad	Troms
Breivikeidet		1902	Tromsø	Troms
Gammelgård		1902	Tromsø	Troms
Oldervik		1902	Tromsø	Troms
Sommarøy Tromsø		1902	Tromsø	Troms
Tromsø		1902	Tromsø	Troms
Tromvik		1902	Tromsø	Troms
Vengsøy		1902	Tromsø	Troms
Tovik		1913	Skånland	Troms
Nergårdshavn		1915	Bjarkøy	Troms
Nordsand		1915	Bjarkøy	Troms
Bolla		1917	Ibestad	Troms
Engenes		1917	Ibestad	Troms
Laupstad		1917	Ibestad	Troms
Dyrøyhamn		1926	Dyrøy	Troms
Rødsand		1927	Tranøy	Troms
Skrolsvik		1927	Tranøy	Troms
Flakstadvåg		1928	Torsken	Troms
Grunnfarnes		1928	Torsken	Troms
Gryllefjord		1928	Torsken	Troms
Bøvær i Senjen		1929	Berg	Troms

Ersfjord	Rognan	1929	Berg	Troms
Hamn	Havn 1 Senja	1929	Berg	Troms
Mefjordvær		1929	Berg	Troms
Husøy	Husøysund	1931	Lenvik	Troms
Tennes		1933	Balsfjord	Troms
Fakkekjeila		1936	Karlsøy	Troms
Holmesletta		1936	Karlsøy	Troms
Karlsøy		1936	Karlsøy	Troms
Kristoffervalen		1936	Karlsøy	Troms
Nordeidet		1936	Karlsøy	Troms
Nordfugløy		1936	Karlsøy	
Slettnes		1936	Karlsøy	Troms
Torsvåg		1936	Karlsøy	Troms
Vannvåg		1936	Karlsøy	Troms
Lenangsøra	Lenangsøyra	1938	Lyngen	Troms
Nord Lenangen		1938	Lyngen	Troms
Lauksund		1941	Skjervøy	Troms
Skjervøy		1941	Skjervøy	Troms
Årviksand		1941	Skjervøy	Troms
Sørkjosen		1942	Nordreisa	Troms
Segelvik		1943	Kvænangen	Troms
Splidra	Spildra	1943	Kvænangen	Troms
Kiberg		2002	Vardø	Finnmark
Svartnes		2002	Vardø	Finnmark
Vardø		2002	Vardø	Finnmark
Store Ekkerøy		2003	Vadsø	Finnmark
Vadsø		2003	Vadsø	Finnmark
Vestre Jakobselv		2003	Vadsø	Finnmark
Hammerfest		2004	Hammerfest	Finnmark
Rypefjord		2004	Hammerfest	Finnmark
Store Vinna	Skjærbukten	2004	Hammerfest	Finnmark
Kongshus		2012	Alta	Finnmark
Storekorsnes		2012	Alta	Finnmark
Loppa		2014	Loppa	Finnmark
Sandland		2014	Loppa	Finnmark
Øksfjord		2014	Loppa	Finnmark
Breivik	Breivik Sørøy	2015	Hasvik	Finnmark
Breivikbotn		2015	Hasvik	Finnmark
Hasvik		2015	Hasvik	Finnmark
Sørvær		2015	Hasvik	Finnmark
Klubbukt	Klubbukta	2017	Kvalsund	Finnmark
Kokelv		2017	Kvalsund	Finnmark
Kvalsund		2017	Kvalsund	Finnmark

Gunnarnes		2018	Måsøy	Finnmark
Havøysund		2018	Måsøy	Finnmark
Ingøy		2018	Måsøy	Finnmark
Måsøy		2018	Måsøy	Finnmark
Snøfjord	Snefjord	2018	Måsøy	Finnmark
Honningsvåg	Storbukt	2019	Nordkapp	Finnmark
Kamøyvær		2019	Nordkapp	Finnmark
Skarsvåg		2019	Nordkapp	Finnmark
Holmbukt		2020	Porsanger Porsángu Porsanki	Finnmark
Dyfjord		2022	Lebesby	Finnmark
Kjøllefjord		2022	Lebesby	Finnmark
Skjøtningberg	Skjøtningsberg	2022	Lebesby	Finnmark
Veidnes		2022	Lebesby	Finnmark
Gamvik		2023	Gamvik	Finnmark
Mehamn	Mehavn	2023	Gamvik	Finnmark
Berlevåg		2024	Berlevåg	Finnmark
Kongsfjord		2024	Berlevåg	Finnmark
Nesseby		2027	Unjárga Nesseby	Finnmark
Båtsfjord		2028	Båtsfjord	Finnmark
Hamningsberg	Havningberg	2028	Båtsfjord	Finnmark
Syltefjord Nordfjord		2028	Båtsfjord	Finnmark
Bugøynes		2030	Sør-Varanger	Finnmark
Grense Jacobselv	Grense Jakobselv	2030	Sør-Varanger	Finnmark
Bøvågen		1515	Herøy	Møre og Romsdal
Fosnavåg		1515	Herøy	Møre og Romsdal
Kopperstad		1515	Herøy	Møre og Romsdal
Kvalsund		1515	Herøy	Møre og Romsdal
Kvalsvik		1515	Herøy	Møre og Romsdal
Leinevika		1515	Herøy	Møre og Romsdal
Remøy		1515	Herøy	Møre og Romsdal
Runde		1515	Herøy	Møre og Romsdal
Sandebukta	Sandebukten	1515	Herøy	Møre og Romsdal
Skorpa		1515	Herøy	Møre og Romsdal
Fløø		1516	Ulstein	Møre og Romsdal
Ulsteinvik		1516	Ulstein	Møre og Romsdal
Brandal		1517	Hareid	Møre og Romsdal
Hareid		1517	Hareid	Møre og Romsdal
Hjørungavåg		1517	Hareid	Møre og Romsdal
Vartdal		1520	Ørsta	Møre og Romsdal
Urkevik/Holen	Urkevika	1531	Sula	Møre og Romsdal
Alnes		1532	Giske	Møre og Romsdal
Blindheim		1532	Giske	Møre og Romsdal

Geilevika	Gjelvika	1532	Giske	Møre og Romsdal
Giskegård		1532	Giske	Møre og Romsdal
Giskeødegård		1532	Giske	Møre og Romsdal
Roald		1532	Giske	Møre og Romsdal
Skjong		1532	Giske	Møre og Romsdal
Valderhaugstranda		1532	Giske	Møre og Romsdal
Valkve	Hvalkve	1532	Giske	Møre og Romsdal
Vikebukt		1532	Giske	Møre og Romsdal
Austnes		1534	Haram	Møre og Romsdal
Flem	Flemsvik	1534	Haram	Møre og Romsdal
Haram		1534	Haram	Møre og Romsdal
Hellandshavn		1534	Haram	Møre og Romsdal
Lausund		1534	Haram	Møre og Romsdal
Longva		1534	Haram	Møre og Romsdal
Rogne		1534	Haram	Møre og Romsdal
Søvik-Gamlem		1534	Haram	Møre og Romsdal
Vågholmane		1534	Haram	Møre og Romsdal
Drønnesundvågen		1545	Midsund	Møre og Romsdal
Uggelvik	Ugelvik	1545	Midsund	Møre og Romsdal
Finnøy		1546	Sandøy	Møre og Romsdal
Havnevågen		1546	Sandøy	Møre og Romsdal
Myklebust		1546	Sandøy	Møre og Romsdal
Ona		1546	Sandøy	Møre og Romsdal
Orten		1546	Sandøy	Møre og Romsdal
Steinshamn		1546	Sandøy	Møre og Romsdal
Rindarøy		1547	Aukra	Møre og Romsdal
Bud		1548	Fræna	Møre og Romsdal
Harøysund/Håsundet		1548	Fræna	Møre og Romsdal
Nordre Bjørnsund		1548	Fræna	Møre og Romsdal
Storholmvågen		1548	Fræna	Møre og Romsdal
Søndre Bjørnsund		1548	Fræna	Møre og Romsdal
Vikan, Fræna		1548	Fræna	Møre og Romsdal
Gjengstøbukta/Smørholmen		1551	Eide	Møre og Romsdal
Bjellvåg/Størkevåg		1554	Averøy	Møre og Romsdal
Honningsøy-Kjønnøy		1554	Averøy	Møre og Romsdal
Rødeggen		1554	Averøy	Møre og Romsdal
Sandøysundet		1554	Averøy	Møre og Romsdal
Dyrnesvågen		1573	Smøla	Møre og Romsdal
Edøy		1573	Smøla	Møre og Romsdal
Nordvika		1573	Smøla	Møre og Romsdal
Ringsøy / Ringsøykjeila		1573	Smøla	Møre og Romsdal
Steinsøy		1573	Smøla	Møre og Romsdal
Veidholmen/Ringbukta		1573	Smøla	Møre og Romsdal

Veidholmen/Været		1573	Smøla	Møre og Romsdal
Bekkholmleira		1576	Aure	Møre og Romsdal
Gjerdevika		1576	Aure	Møre og Romsdal
Leirvalen		1576	Aure	Møre og Romsdal
Vikan, Aure		1576	Aure	Møre og Romsdal
Ansnes		1617	Hitra	Sør-Trøndelag
Balsnesaunet		1617	Hitra	Sør-Trøndelag
Børøysund	Buarøysund	1617	Hitra	Sør-Trøndelag
Helsøysund		1617	Hitra	Sør-Trøndelag
Kjerringvåg		1617	Hitra	Sør-Trøndelag
Kuøya		1617	Hitra	Sør-Trøndelag
Aursøyane		1620	Frøya	Sør-Trøndelag
Bremnesvågen		1620	Frøya	Sør-Trøndelag
Dyrvik		1620	Frøya	Sør-Trøndelag
Halten		1620	Frøya	Sør-Trøndelag
Hammervågen		1620	Frøya	Sør-Trøndelag
Inntian		1620	Frøya	Sør-Trøndelag
Kya		1620	Frøya	Sør-Trøndelag
Måøy-Gårdsøy/Mausund		1620	Frøya	Sør-Trøndelag
Nesset		1620	Frøya	Sør-Trøndelag
Sandvik		1620	Frøya	Sør-Trøndelag
Sauøya		1620	Frøya	Sør-Trøndelag
Sistranda		1620	Frøya	Sør-Trøndelag
Sula		1620	Frøya	Sør-Trøndelag
Sætervågen		1620	Frøya	Sør-Trøndelag
Sørburøya	Sørburøy	1620	Frøya	Sør-Trøndelag
Titran		1620	Frøya	Sør-Trøndelag
Ørnflaugvågen		1620	Frøya	Sør-Trøndelag
Garten		1621	Ørland	Sør-Trøndelag
Uthaug		1621	Ørland	Sør-Trøndelag
Junkerbukta	Junkerbukten / H.Vika	1624	Rissa	Sør-Trøndelag
Røberg		1624	Rissa	Sør-Trøndelag
Råkvåg		1624	Rissa	Sør-Trøndelag
Sivertsvik		1624	Rissa	Sør-Trøndelag
Dypfestvågen		1627	Bjugn	Sør-Trøndelag
Eidsbukta		1627	Bjugn	Sør-Trøndelag
Høybakken	Høibakken	1627	Bjugn	Sør-Trøndelag
Flatholmsundet	Stokksund	1630	Åfjord	Sør-Trøndelag
Linesøya		1630	Åfjord	Sør-Trøndelag
Kiran		1632	Roan	Sør-Trøndelag
Kråkøysundet		1632	Roan	Sør-Trøndelag
Roan		1632	Roan	Sør-Trøndelag

Hepsøy		1633	Osen	Sør-Trøndelag
Strand		1633	Osen	Sør-Trøndelag
Sætervika		1633	Osen	Sør-Trøndelag
Vingsand		1633	Osen	Sør-Trøndelag
Yttervågen		1633	Osen	Sør-Trøndelag
Stjørdalshalsen		1714	Stjørdal	Nord-Trøndelag
Småland		1717	Frosta	Nord-Trøndelag
Hasvåg/Flatan		1749	Flatanger	Nord-Trøndelag
Kvaløysæter		1749	Flatanger	Nord-Trøndelag
Utvorda		1749	Flatanger	Nord-Trøndelag
Borgan		1750	Vikna	Nord-Trøndelag
Flerengstrand		1750	Vikna	Nord-Trøndelag
Nordøyan		1750	Vikna	Nord-Trøndelag
Risøyvalen Bondøy		1750	Vikna	Nord-Trøndelag
Rørvik		1750	Vikna	Nord-Trøndelag
Sørgjeslingan		1750	Vikna	Nord-Trøndelag
Valøy		1750	Vikna	Nord-Trøndelag
Vansøyvågen		1750	Vikna	Nord-Trøndelag
Abelvær		1751	Nærøy	Nord-Trøndelag
Arnøy		1751	Nærøy	Nord-Trøndelag
Gjerdingen		1751	Nærøy	Nord-Trøndelag
Landskjærbukta		1751	Nærøy	Nord-Trøndelag
Lund		1751	Nærøy	Nord-Trøndelag
Måneset		1751	Nærøy	Nord-Trøndelag
Ottersøya		1751	Nærøy	Nord-Trøndelag
Skagestranda		1751	Nærøy	Nord-Trøndelag
Haug		1755	Leka	Nord-Trøndelag
Nord-Gutvik		1755	Leka	Nord-Trøndelag
Sklinna		1755	Leka	Nord-Trøndelag
Sør-Gutvik		1755	Leka	Nord-Trøndelag
Lyngholmen		1216	Sveio	Hordaland
Espevær		1219	Bømlo	Hordaland
Gjeitung		1219	Bømlo	Hordaland
Hiskjo		1219	Bømlo	Hordaland
Holme		1219	Bømlo	Hordaland
Kastevika ved Brandasund		1219	Bømlo	Hordaland
Lyklingholmane	Lyklingholmen	1219	Bømlo	Hordaland
Lyklingvåg	Løklingvåg	1219	Bømlo	Hordaland
Vika		1219	Bømlo	Hordaland
Øklandsvåg		1219	Bømlo	Hordaland
Kobbebukta		1224	Kvinnherad	Hordaland
Baldersheim		1241	Fusa	Hordaland
Vinnes		1241	Fusa	Hordaland

Bekkjarvik		1244	Austevoll	Hordaland
Gauksheim		1244	Austevoll	Hordaland
Heimarkstraumen/-strømmen		1244	Austevoll	Hordaland
Hevrøy	Hevringen	1244	Austevoll	Hordaland
Klepsvik/ Bakkasund		1244	Austevoll	Hordaland
Kolbeinsvik		1244	Austevoll	Hordaland
Kvalvåg	Kvalvåg Stolmen	1244	Austevoll	Hordaland
Litlekalsøy	Lille Kalsøy / Kalsøy	1244	Austevoll	Hordaland
Møkster		1244	Austevoll	Hordaland
Rabben		1244	Austevoll	Hordaland
Salthella		1244	Austevoll	Hordaland
Stangelandsvågen		1244	Austevoll	Hordaland
Golten		1245	Sund	Hordaland
Høilandskjær Losst		1245	Sund	Hordaland
Kleppe		1245	Sund	Hordaland
Steinsland		1245	Sund	Hordaland
Toftevika		1245	Sund	Hordaland
Trellevik		1245	Sund	Hordaland
Hitsøy		1246	Fjell	Hordaland
Misje		1246	Fjell	Hordaland
Solsvik		1246	Fjell	Hordaland
Turøyvågen		1246	Fjell	Hordaland
Follese	Follesø	1247	Askøy	Hordaland
Ramsøy		1247	Askøy	Hordaland
Hellesøy		1259	Øygarden	Hordaland
Hernar/Hernarsundet		1259	Øygarden	Hordaland
Kjøpmannsvågen		1259	Øygarden	Hordaland
Lyngøy		1259	Øygarden	Hordaland
Nordøysund		1259	Øygarden	Hordaland
Sanden		1259	Øygarden	Hordaland
Vik på Toftøy		1259	Øygarden	Hordaland
Fonnes		1264	Austrheim	Hordaland
Hoplandsvik		1264	Austrheim	Hordaland
Krossvik/ Krossøy		1264	Austrheim	Hordaland
Kirkevågen/ Kirkehavn		1265	Fedje	Hordaland
Moldøysundet	Moldøsundet	1265	Fedje	Hordaland
Rognsvågen		1265	Fedje	Hordaland
Æskjær/Storemark		1265	Fedje	Hordaland
Espesetvika	Espesetvik	1401	Flora	Sogn og Fjordane
Florø		1401	Flora	Sogn og Fjordane
Gjerdevika		1401	Flora	Sogn og Fjordane
Kinnesund		1401	Flora	Sogn og Fjordane

Rognaldsvåg		1401	Flora	Sogn og Fjordane
Skorpevågen		1401	Flora	Sogn og Fjordane
Standalsvik		1401	Flora	Sogn og Fjordane
Æsøysundet		1401	Flora	Sogn og Fjordane
Bremnes/Naustvågen		1411	Gulen	Sogn og Fjordane
Ingeborgskjærsund		1411	Gulen	Sogn og Fjordane
Leirvik		1411	Gulen	Sogn og Fjordane
Negardsvik		1411	Gulen	Sogn og Fjordane
Nesvågen		1411	Gulen	Sogn og Fjordane
Skjerjehamn		1411	Gulen	Sogn og Fjordane
Færøy		1412	Solund	Sogn og Fjordane
Gardsvågen, Nautøy		1412	Solund	Sogn og Fjordane
Hersvik		1412	Solund	Sogn og Fjordane
Kvalvik		1412	Solund	Sogn og Fjordane
Lundsholet	Lundsstraumen	1412	Solund	Sogn og Fjordane
Saltskår		1412	Solund	Sogn og Fjordane
Steinsøysundet/Oldersundet		1412	Solund	Sogn og Fjordane
Storøy	Storøy i Solund	1412	Solund	Sogn og Fjordane
Trovåg		1412	Solund	Sogn og Fjordane
Utvær		1412	Solund	Sogn og Fjordane
Brensdal		1413	Hyllestad	Sogn og Fjordane
Eide		1413	Hyllestad	Sogn og Fjordane
Gulenakken - Slottet		1428	Askvoll	Sogn og Fjordane
Havna Værøy		1428	Askvoll	Sogn og Fjordane
Herlandsvik		1428	Askvoll	Sogn og Fjordane
Høyvik		1428	Askvoll	Sogn og Fjordane
Melværvågen		1428	Askvoll	Sogn og Fjordane
Nekøyosenn	Nikøy, Bulandet (Fedøy-Gjelsa)	1428	Askvoll	Sogn og Fjordane
Sandøy		1428	Askvoll	Sogn og Fjordane
Stavestrand		1428	Askvoll	Sogn og Fjordane
Stroka - Værlandet		1428	Askvoll	Sogn og Fjordane
Værøyhamn	Kleivavåg	1428	Askvoll	Sogn og Fjordane
Bakkevik		1438	Bremanger	Sogn og Fjordane
Iglandsvik	Iglandsvika	1438	Bremanger	Sogn og Fjordane
Kalvåg		1438	Bremanger	Sogn og Fjordane
Klubbevika		1438	Bremanger	Sogn og Fjordane
Oldersundet	Oldersund	1438	Bremanger	Sogn og Fjordane
Struen		1438	Bremanger	Sogn og Fjordane
Vetvik		1438	Bremanger	Sogn og Fjordane
Husevåg		1439	Vågsøy	Sogn og Fjordane
Kråkenes		1439	Vågsøy	Sogn og Fjordane
Kvalheim		1439	Vågsøy	Sogn og Fjordane

Måløy		1439	Vågsøy	Sogn og Fjordane
Osmundsvåg	Osmundvåg	1439	Vågsøy	Sogn og Fjordane
Raudeberg		1439	Vågsøy	Sogn og Fjordane
Refvik		1439	Vågsøy	Sogn og Fjordane
Silden, Silda		1439	Vågsøy	Sogn og Fjordane
Borgundvåg		1441	Selje	Sogn og Fjordane
Drage	Drage Statlandet	1441	Selje	Sogn og Fjordane
Eltvik		1441	Selje	Sogn og Fjordane
Ervik		1441	Selje	Sogn og Fjordane
Flatraket		1441	Selje	Sogn og Fjordane
Hoddevik		1441	Selje	Sogn og Fjordane
Honningsvåg	Honningsvåg Stad	1441	Selje	Sogn og Fjordane
Indre Fure		1441	Selje	Sogn og Fjordane
Leikanger		1441	Selje	Sogn og Fjordane
Refvik-Selje		1441	Selje	Sogn og Fjordane
Røysetstranda	Røisetstranden	1441	Selje	Sogn og Fjordane
Solvåg		1441	Selje	Sogn og Fjordane
Ytre Fure/Kjøila		1441	Selje	Sogn og Fjordane
Nordfjordeid		1443	Eid	Sogn og Fjordane

9.13 Vessel list – 25.03.2021

Vessel number	Callsign
TR0002NR	A-BAS
R0010S	ABYSS
N0008V	ADA M
F0053P	ADA MARIE
T0046K	ADA-SOFIE
F0108M	ADELEN S
N0024SO	ADINE
F0044A	ADMIRAL F.
T0012T	ADRIAN JR
F0500VS	ADRIAN JR.
F0050G	ADRIAN-SENIOR
N0011DA	AGNETHA
F0181N	AIKO
F0006N	AILIDA
F0112BD	AINO
N0097VA	AJAX
M0030HØ	AKONO
F0033G	AKSEL ANDRE
T0017T	AKSEL B
T0077BG	AKSELSON
N0148SG	AKTERØY
N0248SG	AKTERØY
F0016SV	AKTIV 2
TF0002HV	AKTIV 2
T0143K	ALANGEN
N0118V	ALBATROSS
N0116V	ALBATROSS III
ST0003AA	ALBION
SF0016F	ALDA
F0031G	ALDIS LIND
N0006L	ALDRA
F0017HV	ALEXANDER
F0123TN	ALEXANDRA
N0042VV	ALEXANDRA
F0057B	ALF
N0179H	ALF MARTIN
M0037F	ALF SENIOR
N0010VV	ALF SENIOR
N0566F	ALF SIGMUND
H0003MF	ALFEN
N0006RT	ALF-JENS
F0083NK	ALFON R
T0015H	ALTEVAAG
F0036BD	ALVA VIKTORIA
N0015Ø	ALVE
N0321A	ALVESTAD
H0008ØN	ALVØY
ST0270H	AMALIE
TF0003L	AMALIE
LG6648	AMALIE LHØRE
F0039G	AMALIE SOFIE
F0028N	AMANDA
M0282A	AMANDA
T0122TK	AMANDA
TF0001N	AMAY
T0214T	AMIGO
F0068NK	ANDANTE
N0083V	ANDENESVÆRING
T0081KN	ANDENESVÆRING
TF0002VS	ANDERSBYJENTA
N0174MS	ANDERS-O
TR0174T	ANDERS-O
NT0164V	ANDERØY
N0009L	ANDFJELL II
F0011VS	ANDFJORD
N0132A	ANDHELLA
F0043BD	ANDOPSVÆRING
F0095V	ANDRE
F0040SV	ANDREA
H0014AV	ANDREA
M0049SM	ANDREA
N0029RT	ANDREA
N0031RT	ANDREASSEN JUNIOR
N0035MS	ANDRINE
TF0002M	ANDRINE
F0062BD	ANDUNGEN
TR0003V	ANDY
N0030A	ANDØYFISK
N0200A	ANDØYGUTT
ST0010H	ANE
F0092NK	ANETTA
N0018SG	ANETTE
T0136T	ANFIELD
TF0001M	ANFIELD

T0012B	ALICE ANDREA
N0034V	ALINE
T0004LK	ALISA
T0080K	ALISE
M0092AV	ALLJO
T0290T	ALM
T0012SA	ALMA LAVINE
N0016NA	ALSØYJENTA
TF0003TN	ANITA
F0077V	ANITA HELEN
M0056AV	ANJA
N0061V	ANN
N0298MS	ANN BRITA
TF0008T	ANN KARIN
T0224K	ANN TOVE
N0064Ø	ANNA
T0038K	ANNA
TF0004HV	ANNA CECILIE
R0057K	ANNA CHRISTINE
F0047G	ANNA KARINE
N0009DA	ANNA LOVISE
M0267F	ANNA MARIA
N0030VV	ANNA MARIELL
N0070BR	ANNA THERESE
N0096BR	ANNA THERESE
N0019MS	ANNA-SOFIE
T0014I	ANNBIDA
T0116T	ANNE
F0003B	ANNE G
T0771T	ANNE GRETHE
N0015SO	ANNE HEIDI
R0001SS	ANNE KATHARINA
N0036V	ANNE MARIE
F0085NK	ANNE METTE
M0040SM	ANNE-ALIDA
N0400VV	ANNE-GRETHE
N0011HR	ANNE-IDA
F0187NK	ANNE-K
N0026DA	ANNE-MARIE
T0056K	ANNE-MERETE
N0022MS	ANNE-METTE
F0049HV	ANN-FRIDA
N0059MS	ANN-HELEN
T0010B	ANN-HELEN
N0039SO	ANNIE
N0026F	ANNIE-MARI
N0029VV	ANGEL
F0037B	ANGELICA
TR0012H	ANGELICA
N0060F	ANGELSEN JUNIOR
N0200F	ANGELSEN SENIOR
F0021NK	ANITA
N0009VN	ANITA
T0135S	ANITA
F0111L	AQVARIUS
VA0040M	ARCTIC
T0081T	ARCTIC OCEAN
F0135A	ARCTIC SWAN
TF0135A	ARCTIC SWAN
ST0021H	ARES
M0016HØ	ARGO
SF0010S	ARGO JUNIOR
LM5357	ARGUS
N0289B	ARGUS
N0153V	ARIADNE
N0038SO	ARIEL
T0064G	ARIEL
TF0002TS	ARIEL
TR0041NR	ARIEL
N0001VR	ARIEL HARDY
TF0001B	ARIELLE
ST0488F	ARILDSON
NT0027F	ARINA
N0034BØ	ARJO
F0098G	ARK
TF0001LB	ARK
M0085AV	ARKTOS
T0065K	ARME DRENGEN
F0188M	ARNBORG
N0201DA	ARNE JOHAN
N0072V	ARNE-JOHANNE
T0142T	ARNT IVAR
T0006N	ARNVID
NT0030NR	ARNØYFJORD
F0240NK	ARNØYGUTT
T0008S	ARNØYTIND
NT0025NR	ARNØYVÆR
F0163NK	ARSBUEN
M0053G	ARTHUR
N0070V	ARTNES
F0033B	ARYA
T0042T	ASBJØRN SELSBANE

N0075SO	ANNIKA
F0216NK	ANNJA
T0048T	ANN-KARIN
N0035AH	ANN-RITA
M0072AE	ANNY LOVISE
N0067HM	ANTARES
N0067VV	ANTARES
TR0001SI	ANTARES
VA0001M	ANTILDE
LI4781	ANTOKI
T0049T	ANTON
NT0041V	ANTON JUNIOR
R0156K	APOLLO
F0096G	ASTERIX
F0023G	ASTRID
F0050TN	ASTRID
F0060A	ASTRID
N0262B	ASTRID
TF0004A	ASTRID
N0238Ø	ASTRID CHRISTINA
VA0086LS	ASTRID EMILIE
TF0006LB	ASTRID HELENE
N0169F	ASTRID MARIE
T0031T	ATINA
M0001A	ATLANTIC
M0019A	ATLANTIC
M0111G	ATLANTIC STAR
TF0111BD	ATLANTIC STAR
M0110G	ATLANTIC STAR
M0068G	ATLANTIC VIKING
SF0055A	ATLØY VIKING
TF0010NA	AUD
T0064SA	AUD-JORUNN
M0026SM	AUGUST
ST0022H	AUKAN
TR0006T	AUKNES
M0022AK	AUKRAVÆRING
T0046H	AUNEGUT
TR0161V	AUNSKJÆR
F0041NK	AURORA
N0028V	AURORA
T0116K	AURORA
M0014K	AURORA BOREALIS
F0052HV	AURORA J
N0003TF	AURSØY
H0022T	AUSTBRIS
T0004KN	ASBJØRNSON
N0195VV	ASIA
H0009R	ASK
ST0231F	ASKATI
H0057B	ASKELADDEN
M0115AV	ASLAK
T0143T	ASMUND SENIOR
F0036M	ASNES
M0046K	ASPHOLM
F0079HV	ASTA
F0090V	ASTA
F0147NK	ASTA
N0021TN	ASTERIAS
N0050VV	BALLSTADGUTT JR
N0028VV	BALLSTADJENTA
N0300VV	BALLSTADVÆRING
N0003VV	BALLSTADØY
N0099VV	BALLSTADØY
F0030P	BAMSE
F0061M	BAMSE
N0009BR	BAMSE
H0024ØN	BARACUDA
TF0007B	BARENTS
F0031P	BARJO
M0115SM	BARRY
N0196B	BARSKIÆR
F0024N	BARSNES
F0025N	BARSNES
SF0069SU	BARSTEIN
N0005ME	BARSTIND
N0038ME	BAS
T0007KD	BASSØY
R0004SO	BASTIAN
F0053NK	BASTUS
N0046BØ	BASTUS
F0023B	BEATE
SF0156V	BEATE
TF0006A	BEATE
T0018KD	BEKKA
F0199NK	BEKKVIK JUNIOR
N0010LF	BELLA
N0068RT	BELLA MARINA
VA0011LS	BELL-ROCK
R0025S	BELLSUND
T0022BG	BEN HUR
N0038H	BENEDICTE

N0008LF	AUSTBRIS
TF0008LB	AUSTBRIS
F0107G	AUSTHAVET
N0207V	AUSTNESFJORD
H0049ØN	AUSTVÅG
N0058VR	BAILEYS
F0068HV	BAILOTT
M0101AV	BAKKE JR
NT0023V	BAKKEBUEN
T0248T	BAKKEBÅEN
M0006HS	BAKKEGUT
TR0081V	BAKKEVÆRING
F0090H	BAKKOS
NT0008V	BALA
F0045VS	BALDER
F0224NK	BALDER
M0002SJ	BALDER
NT0364V	BALDUSKA
M0009SØ	BERGSUND
T0017H	BERGSVÅG
A0002AS	BERINGHAV
F0042B	BERLEVÅGJENTA
F0281NK	BERNT
N0020MS	BERNT OSKAR
N0083A	BERNT STEINAR
M0065SM	BESTEFAR
N0030BR	BESTEFAR
ST0117F	BETTINA
F0034G	BETTY ILONA
F0002G	BIBBA SVALA
F0013VS	BIFANGST
NT0010F	BIG BOSS
T0140K	BILLY
NT0005NR	BIRGER JOHAN
T0052T	BIRGERSON
T0003K	BIRGITTE
TF0007K	BIRGITTE
TF0002H	BIRK
TF0006TN	BIRK
F0055M	BIRTU-LIAS
F0060G	BISPEN
N0060ME	BITTA
N0041BØ	BITTE
F0004H	BJARNE NILSEN
F0008BD	BJØRKÅSBUEN
F0024BD	BJØRKÅSBUEN
H0051K	BENJACO
F0072NK	BENONI
TR0001L	BENONI
N0088VV	BENTE
TR0004NR	BENTE SENIOR
T0048I	BENTEMOR
T0119T	BENTSJORDTINDEN
N0005VR	BERG JR
	BERG SENIOR
T0036TK	BERGEBAS
ST0043AA	BERGEBUEN
F0001N	BERGEBYJENTA
TR0491F	BERGEGUTTEN
F0053A	BERGENSFJORD
F0125M	BERGENSFJORD
M0306A	BERGHOLM
SF0024S	BERGHOLM
T0008BG	BERGLIBUEN
F0044NK	BLESSILA
LEEM	BLOMØY
N0049V	BLUE MASTER
F0111LB	BLÅFJELL
F0153NK	BLÅFJELL
T0012LK	BLÅFJELL
F0023VS	BLÅMANN
N0019TN	BLÅMYRA
T0481K	BLÅTIND
H0062S	BOGASKJÆR
H0021S	BOGASUND
R0011SO	BOIE
LGIM	BOLGA
N0011TN	BOLGA
ST0002SK	BOREAS
F0076NK	BORGAFELLI
N0103V	BORGENFJORD
N0027VV	BORGVÆR
O0027O	BOTTA
N0010V	BOY-ANGEL
F0081BD	BOYSEN
F0031H	BR. ISAKSEN
N0060VV	BRAGE
ST0093F	BRAKAR
N0039VV	BRA-KAR
N0068A	BRAKEN
H0013B	BRANDASUND
ST0030R	BRANDY

T0005TK	BJØRN
M0020VD	BJØRN MARTIN
M0200VD	BJØRN MARTIN
M0010GS	BJØRN ROBIN
M0042SM	BJØRN STEINAR
M0080AV	BJØRNES
M0088H	BJØRNHAUG
M0080A	BJØRNHAUG
TF0014NK	BJØRNHAUG
F0091LB	BJØRNNES
N0019BR	BJØRNSON
N0052F	BJØRNSON
N0090BR	BJØRNSON
M0330SM	BJØRNSTEIN
N0141Ø	BJØRNSTEIN
N0091HR	BJØRNSVIK
N0120F	BJØRNTIND
T0034S	BJØRNTIND
T0084S	BJØRNTIND
F0121L	BJØRNVIKVÆRING
T0009SD	BJØRNØY
T0026K	BLANKFISK
N0151A	BLEIKSØY
N0007L	BREMNES
T0284T	BREMNES
F0025SV	BREMSJØ
TF0025SV	BREMSJØ
T0141T	BREMSUND
N0487V	BREMVÆRING
F0023P	BRENNAJENTA
TF0023LB	BRENNAJENTA
H0099B	BRENNING
N0121V	BRENNINGEN
F0009KD	BRENSVIKFISK
M0305SM	BRIGG
M0002AV	BRIM
M0025VD	BRIMØY
N0075L	BRINCA
T0047B	BRINGTIND
TF0047SE	BRINGTIND
T0105S	BRIS
T0127L	BRIS
T1468T	BRIS
F0043NK	BRITA
N0187VV	BRITT
F0005HV	BRITTEMOR
F0089LB	BRANDØYBUEN
N0026SG	BRANNØY
N0032HM	BRANNØY
N0089Ø	BRASØYFISK
N0019F	BRATTFJELL
M0049AV	BRATTHOLM
VA0021M	BRATTHOLM
M0001AV	BRATTHOLM
M0086AV	BRATTHOLM 2
F0002HV	BRATTHOLMEN
N0034F	BRATTHOLMEN
TF0003SA	BRATTHOLMEN
N0026LN	BRATTLAND
M0066SM	BRATTVÆRING
F0043VS	BRATTØY
NT0009SD	BRAVOUR
N0084F	BREITIND
T0404LK	BREITIND
T0055BG	BREITIND 1
T0035BG	BREITINN II
SF0060F	BREIVIK JUNIOR
T0125LK	BREIVIK SENIOR
T0044I	BREIVOLL
T0051K	BURØY
T0133K	BURØYVÆRING
NT0088N	BUSTER
T0154KD	BUSTER
N0023RT	BUVÆR
N0116VV	BUØY
TR0015ND	BUØY
TR0042V	BUØY
N0004BØ	BØBAS
F0015G	BØEN
M0038HØ	BØFJORD
N0027BØ	BØFJÆRING
N0172BØ	BØHOLM
F0042VS	BØLGEN
H0061B	BØLGEN
M0030SA	BØLGEN
N0012L	BØLGEN
N0042MS	BØLGEN
N0172F	BØLGEN
NT0018NR	BØLGEN
T0405T	BØLGEN
F0016TN	BØME
N0188F	BØRFJELL

ST0035O	BROR
T0720T	BROR
VA0009K	BROSMA
N0076SG	BROTT
N0085B	BROTT
SF0094A	BRUFJORD
T0898T	BRUNVOLL
NT0036V	BRUSØYSKJÆR
TR0400V	BRUSØYSKJÆR
N0032VV	BRUTUS
N0057ME	BRUTUS
N0155Ø	BRUTUS
F0049BD	BRYNDIS
N0288BR	BRØNNØYVERING
M0081F	BUAGUTT
SF0045A	BUEFJORD
R0003SK	BUEN
F0021SV	BUGØY
F0005SV	BUGØYFISK
F0029SV	BUGØYJENTA
F0078SV	BUGØYVÆRING
N0037VR	BUHOLMEN
N0056VV	BUKSNESFJORD
F0055G	BULLDER
F0070N	BUNES
N0013MS	BUNES
N0013DA	BUNESJENTA
F0056P	BURSTIND
F0075P	CAPE VICTORIA
N0078Ø	CAPELLA
M0058A	CAPELLA
ST0165F	CAPRI
F0037P	CARA ALICE
T0018T	CARDINAL
F0117H	CARIANE
F0040A	CARINA
N0159MS	CARINA
R0002SO	CARISA
T0012KF	CARISMA
F0121A	CAROLEVA
F0017G	CAROLINE
F0123LB	CAROLINE
N0077ME	CAROLINE
TF0005LB	CAROLINE
N0035ME	CATHRINE
F0115NK	CECILIE
N0010A	BØRHELLA
N0127BØ	BØRINGEN
F0022NK	BØRNES
N0036VV	BØRRESEN JR
N0069VV	BØRØY II
N0141BØ	BØTIND
N0012BØ	BØVÆRING
N0014BØ	BØVÆRING
T0014T	BØVÆRING
F0009L	BÅRABUEN
T0100T	BÅRAGUTT
F0015LB	BÅRDFJORD
N0014DA	BÅREGUTT
N0116Ø	BÅRHOLMEN
F0071NK	BÅR-SAMUEL
F0025HV	BÅRSELVFISK
N0218VV	BÅRSUND
F0110BD	BÅTSFJORD
N0031VV	BÅTSFJORD
ST0111O	BÅTSKJÆR
ST0029T	BÅTSMANN
ST0039T	BÅTSMANN III
T0060H	CADO
N0001HR	CAMILLA
N0002FE	CAMILLA
T0117T	CAMILLA
F0180NK	CAMP
M0017G	CANTONA
N0105MS	DAG VIGGO
T0322T	DAGFINN
N0029BR	DAG-MONA
TF0020A	DAGNY
N0054VR	DAG-SENIOR
N0058F	DAINORA
N0096Ø	DAINORA
N0055Ø	DALBUEN
T0124LK	DALGÅRD
F0014SV	DANSKEN
F0028TN	DANØY
TF0001TN	DANØY
TF0062M	DARJA
F0044M	DAVI
F0035VS	DELFIN
F0037NK	DELFIN
M0200F	DELFIN
M0269HØ	DELFIN

N0048AH	CECILIE
N0180V	CECILIE
T0001SK	CECILIE
N0007RT	CELINA
F0020P	CELINE
N0082SO	CELINN
R0081K	CHANTELLE
N0003B	CHARLOTTE
F0007G	CHARMI
F0068TN	CHARMI
N0016BØ	CHRISIDA
N0058BØ	CHRISIDA
F0025V	CHRISTINA
F0036P	CHRISTINA
F0047A	CHRISTINA
T0040K	CHUBBA
M0081H	CINDY
N0005AH	CINITA
F0007TN	CLARA
TF0056M	COLONA
N0038RT	CONQUEST
R0068H	CONVOY
T0006L	CONVOY
N0108V	COREVI
TF0027LB	COREVI
TF0001VS	COSTA LITT
F0051NK	COYGFISK JR
R0014S	COYGFISK JR
N0140RT	CRISTINA R
F0202NK	CRYSTAL
F0030H	DABBEN
F0044BD	DADDI
N0046BL	DAG
F0087SV	DRUEN II
N0118A	DRØM
H0071AV	DRØNSBAS
M0196AE	DUEN
F0074BD	DUKAT
T0070KN	DUNVIK
TF0010NK	DUPPEN
T0201K	DUSJA
TF0012K	DUSMA
F0095LB	DYFJORD
N0037VV	DYNSKJÆR
F0010B	DYPFJORD
F0082M	DYPFJORD
T0001LK	DELFIN
TF0019T	DELFIN
N0006G	DEMRING
N0152MS	DEMRING
F0130LB	DENNIS
N0091L	DENNIS OLAI
N0075V	DENTAX SENIOR
F0197NK	DIANA
N0003R	DIANA
R0048U	DIMANN
N0093BØ	DINA
NT0030V	DINA
T0039K	DINA
N0087L	DINABØEN
TF0003V	DISCOVERY
F0014N	DIXI
ST0002O	DJUPASKJÆR
SF0076S	DJUPAVIK
F0017VS	DOGGEN
F0014H	DOGGI
F0017H	DOGGI
N0122VV	DOGGI
T0012SK	DOLMAUNE
F0086NK	DORADO
TF0010HV	DORRIS
T0165T	DRAGEN
TR0004V	DRAGEN
SF0218V	DRAGON
R0171K	DRISTIG
R0177K	DRISTIG
T0021I	DRIVAR
F0052P	DRONNINGA
N0017HM	DRONNINGA
N0176V	EIEVÆRING
F0184NK	EINAR
N0031Ø	EINAR
TF0007G	EINAR
TF0010K	EINAR
N0025ME	EINAR ERLEND
T0213K	EINAR MAGNUS
F0030L	EINAR-ANDRE
T0016LK	EINARSON
ST0033F	EINES
TF0006K	EINES
TR0057F	EINES
ST0024H	EINVIKBUEN

TF0082LB	DYPFJORD
T0004BG	DYPHAV
M0158SM	DYRNESVÅG
T0039D	DYRØY
N0068F	DYVÅG
F0057LB	DÆNG
F0008VS	DØNNING
F0063G	DØNNING
F0130NK	DØNNING
T0075KF	DØNNING
N0017AH	DØNNLAND
N0114BØ	DØNNVÆR
N0252DA	DØNNVÆR
T0055K	DÅSA
T0034TK	E. JENSEN
N0251V	EA
F0101VS	EDEL M.
F0122NK	EDEL MARIA
T0094K	EDEL VIND
N0057B	EDGAR
TR0007T	EDGAR
TR0030T	EDGAR
F0024P	EDITH
N0064VV	EDITH
N0013HR	EDITH HELENE
N0024HR	EDITH HELENE
ST0018F	EDNA SYNNØVE
T0008SA	EDVARD SENIOR
N0323ME	EDVIND OLAI
N0023VV	EGGLAND
N0076VV	EGGUMSVÆRING
R0038K	EGGØY
N0311V	EGILSON
N0061SA	EGON
T0014TK	EIDEGUTT
N0088VA	EIDEM SENIOR
N0094Ø	EIDSFJORD
F0186H	EIDVÅGFISK
T0015KN	ELISABETH
F0002SV	ELISABETH II
N0023V	ELISE
N0210A	ELISE
T0169LK	ELISE KRISTIN
T0123T	ELIT
T0076H	ELJAN
TR0011Ø	ELLA
H0006S	EIRIK
T0049K	EIRIK
F0086L	EIRIN
T0691T	EISTEBÅEN
ST0075R	EIVÆRING
T0003SD	EKENBORG
N0019BØ	EKKO
N0161Ø	EKKO
F0121NK	EKVATOR
N0049SO	ELAN
M0012S	ELDORADO
T0025L	ELDORADO
TR0010V	ELDORADO
VA0091FS	ELDORADO
T0009LK	ELENA
N0068MS	ELENA MARIE
H0087B	ELIANNE
F0108TN	ELIAS
H0002O	ELIAS
M0035SM	ELIAS
M0043SM	ELIAS
N0078MS	ELIAS
N0043F	ELIDA
ST0348H	ELIJENTA
F0003KD	ELIN
F0093NK	ELIN
M0075SM	ELIN
TF0003H	ELIN
F0067V	ELIN MARIA
N0048MS	ELIN RENATE
F0035LB	ELINA
F0043G	ELINA
F0022BD	ELINE
F0022H	ELINE
N0003L	ELINE
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N0150VV	ELIN-TORIL
N0110B	ERATO
T0330K	ERGO
F0250NK	ERIK ANDRE
N0266VV	ERIK-MAGNUS
N0055F	ERIKSEN SENIOR
TR0016F	ERLE
	ERLEND
F0035BD	ERNA

N0068VR	ELLBØEN
T0003H	ELLEN
F0086G	ELLI KETILS
T0061T	ELLINOR
M0011F	ELNESFISK
F0155VS	ELSE-K
M0037HØ	ELVEBUEN
M0020HØ	ELVEGUTT
N0006TF	ELVINE
T0007BG	ELVIRA
H0025BN	ELVIS
N0008L	EMBLA
N0012A	EMBLA
T0059T	EMI
ST0007T	EMIL
TF0007A	EMIL
N0183VV	EMIL ANDRE
N0028Ø	EMIL LEANDER
N0012HR	EMILIAN
M0020MD	EMILIE
N0069ME	EMILIE
N0075DA	EMILIE
N0300DA	EMILIE
F0009NK	EMILY
N0006N	EMILY
F0009P	EMMA
F0088TN	EMMA
M0064MD	EMMA
N0029A	EMMA
NT0400V	EMMA
F0039M	EMMA O
H0146AV	EMMA OLAVA
T0188LK	EMMA SOFIE
T0138LK	EMMA-SOFIE
F0004NK	EMMA-V
F0027TN	EMMETT
N0111Ø	EMMY
N0035SG	ENGELØYVÆRING
T0086I	ENGENESVÆRING
N0050DA	ENGEVIK JUNIOR
N0033ME	ENGØY
N0044ME	ENGØY
F0012BD	ENJA
SF0025F	FANØYVÅG
ST0014T	FARK
T0258S	FAVORITT
N0098B	EROS
F0159LB	ERSNES
F0012SV	ESBEN ANDERS
F0154SV	ESKIL
T0084K	ESPEN
N0086RT	ESPEN CATO
F0058N	ETTENA
M0003GS	EVA
M0008GS	EVA
SF0045F	EVA
N0004G	EVA MARIE
N0040BØ	EVA SOFIE
T0109T	EVAN
M0008SM	EVELYN
M0028SM	EVELYN
F0049G	EVITA
N0037MS	EVRO
F0024NK	EWUNIA
F0077TN	EXEN
F0400VS	EXEN
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F0074SV	FAGERHEIM
N0053G	FAGERSKJÆR
T0008T	FAGERVÆR
F0052V	FAKTURA
R0097K	FALCON
VL0032KI	FALITT
N0077B	FALK
ST0312F	FALK
M0345SM	FALKEN
N0020HR	FALKEN
N0100F	FALKEN
N0124Ø	FALKEN
LI7303	FALKHOLMEN
F0058P	FANAS
N0005VN	FANDANGO
F0053H	FANGST
F0420M	FANGST
M0005M	FANGST
N0068L	FANGST
N0088BR	FANGST
SF0158F	FANGTIND
T0160T	FANTEN
T0021L	FJORDBUEN
TF0002B	FJORDBUEN
N0013VV	FJORDBØEN

M0027AV	FAY
F0006SV	FEIESKJÆR
M0127HØ	FEIRVIK
F0115G	FENRIS
N0153VV	FESKARGUTTEN
N0079SG	FESTUS
NT0185V	FESTUS
N0014MS	FIA
T0128S	FIA
T0180T	FIDEL
ST0185F	FILIP
N0039L	FINN-ERIK
T0755T	FINNES
T0024S	FINNVIK
F0017NK	FINNVIKGUTT
LM9133	FIRITIDSBÅT
N0083Ø	FIRST
H0015AM	FISK
M0060U	FISKAREN
M0101SM	FISKEBANK
TF0010T	FISKEDRITA
T9800T	FISKEFESTIVALER
N0179F	FISKELADDEN
M0057SM	FISKEN
M0010SA	FISKENES
M0030A	FISKENES
T0030TK	FISKENES
M0040SA	FISKENES
N0003A	FISKERINNEN
F0014B	FISKESKJÆR
F0249NK	FISKETIND
N0438V	FISKHOLMEN
F0215NK	FISKUR
N0106V	FISKØRN
N0067HR	FISKØY
N0143SG	FIX
N0056BR	FJELL
SF0090S	FJELLMØY
T0149KN	FJELLNES
F0031VS	FJELLTIND
F0033N	FJORDBAS
ST0060R	FJORDBAS
T0012L	FJORDBAS
F0006P	FJORDBRIS
N0007SG	FJORDBRIS
N0045BØ	FJORDBRIS
T0099LK	FJORDCAT
TR0030NR	FJORD-DØNNING
N0002AH	FJORDEGG
N0022B	FJORDFANGST
T0005BG	FJORDFANGST
T0081LK	FJORDFANGST
F0061V	FJORDFISK
F0335LB	FJORDFISK
M0008SK	FJORDFISK
N0011MS	FJORDFISK
N0077MS	FJORDFISK
T0084T	FJORDFISK
H0098O	FJORDGLANS
N0083F	FJORDGUTT
F0023LB	FJORDHEKSA
F0023SV	FJORDHEKSA
T0080L	FJORDHUNTER
TF0009A	FJORDHUNTER
N0117VV	FJORDPRINS
F0090M	FJORDSNURP
H0003FS	FJORDVÅG
TF0002NK	FJUKSTAD
AA0033T	FJUKSTAD
TF0004NK	FJUKSTADBUEN
NT0029NR	FLAMINGO
F0101LB	FLATVÆR
N0020G	FLEINBUEN
N0041Ø	FLID
M0110AE	FLINK
F0067SV	FLIPPER
F0075V	FLIPPER
F0078NK	FLIPPER
F0134NK	FLIPPER
H0040AV	FLIPPER
N0018VS	FLIPPER 2
N0006NA	FLO
T0014BG	FLOBJØRN
N0003LF	FLOING
M0002AK	FLOYD
T0033KN	FLYFISK
T0001BG	FLÆSBUEN
N0047B	FLØHAV
N0074ME	FLØSKJÆR
N0088SO	FLØYFISK
TR0001FL	FOLLABUEN
TR0100NR	FOLLABUEN

F0001P	FJORDBUEN
F0057G	FJORDBUEN
N0110A	FORRØY
M0089G	FORSØK
F0048P	FORTUNA
T0161LK	FORTUNA
F0020V	FORTUNE
F0058A	FRAM
T0192T	FRAM
TR0058F	FRAM
TR0100NL	FRAM
F0049P	FRAMMEN
TF0010LB	FRAMTI
N0009FE	FRANGO
M0150SM	FRANK
T0253K	FRANKLIN
T0033TK	FRANTZEN
N0150A	FREDRIK
N0009A	FREDRIKKE
M0073HØ	FREDØY
F0210NK	FREIDIG
M0149F	FREKØY
N0111F	FREMTID
ST0001RS	FRENGEN
N0011SG	FREYA
N0079V	FRIDA
ST0016F	FRIDA
T0007TK	FRIDA
T0027TN	FRIDA
F0073M	FRIDA K
N0177B	FRIDA LINNEA
F0098LB	FRIDA MARIA
F0700HV	FRIDAS
N0081SO	FRIDE SOFIE
LH2960	FRIDTIDSFARTØY
N0120L	FRIDTJOF K
M0152AV	FRIGG
N0074MS	FRIGG
N0002SO	FRIGGEN
T0003KF	FRISCO
N0062H	FRITHJOFSON
T0014SK	FROAN
ST0105H	FRODE
T0011TK	FRODE
M0074HØ	FROMAR
T0120T	FRU JANNE
F0074G	FOMA
T0009KF	FONN
F0040BD	FRØYA
F0140BD	FRØYA
N0009HR	FRØYA
TF0001BD	FRØYA B
F0100A	FRØYA MARIE
SF0005B	FRØYABUEN
SF0001S	FRØYANES
SF0004S	FRØYANES JUNIOR
SF0014S	FRØYANES SENIOR
N0272MS	FRØYBANKEN
ST0023F	FRØYFISK
ST0048F	FRØYMANN
TR0097F	FRØYSJØ
ST0005F	FRØYSTEIN
ST0011F	FRØYVÆRING
TR0007F	FRØYVÆRING
N0328G	FUGLØYBUEN
N0020B	FUGLØYFALK
N0086B	FUGLØYFISK
T0002L	FUGLØYFJORD
T0051T	FURBÅEN
F0080P	FURESUND
F0053HV	FURØY
N0023BØ	FUTEN
H0015B	FYRHOLM
N0083RT	FÆRØYFISK
M0004S	FØNIKS
SF0018B	FØRDE
N0017HR	FØYKEN
F0078LB	GABRIEL
F0042NK	GABRIELLE
F0116NK	GABRIELLE
N0051V	GADUS JR
N0081B	GADUS JR
F0055BD	GADUS NEPTUN
N0125VV	GADUS NJORD
F0032BD	GADUS POSEIDON
VA0010S	GALANT
F0122LB	GAMMEL JOYKEN
F0038LB	GAMMEL TRÅLE
N0008LN	GANAS
H0034AV	GARDAR
N0009SG	GAUTE
N0015V	GAUTIND

T0114T	FRUHOLMEN
N0057F	FRYDHOLMEN
N0034AH	FRØGRUNN
T0017BG	FRØGRUNN
N0006SF	FRØKNA
M0010SM	FRØY
T0009B	FRØY
T0110T	GEMI
N0200N	GENERAL`N
N0100N	GENERALN
M0097G	GENESIS
TF0007SE	GERD
N0010L	GERD JORID
TR0002V	GERDA
H0032AV	GERDA MARIE
F0005L	GERD-ELI
N0004F	GERHARD JAKOBSEN
N0123F	GERHARD JAKOBSEN
T0200T	GIGGEN
N0055VV	GILL
T0591K	GILL
M0048A	GISKE
N0080F	GISLØYVÆRING
N0197B	GIVÆR
N0084MS	GJETT
N0065F	GJØA
Ø0001M	GLAD
T0005SA	GLADIATOR
F0083M	GLIMT
F0093G	GLIMT
M0045SM	GLIMT
N0022RT	GLIMT
N0069Ø	GLIMT
T0027L	GLIMT
N0010ME	GLOMNES
F0047V	GLUECIFER
T0215T	GODTHÅP
T0701T	GODØNES
M0015G	GODØYGUTT
N0087SO	GO-LINER
F0012VS	GOLNES
M0014AE	GOMO
F0181HV	GORM III
H0011AV	GRANIT
F0045N	GRETA
M0373SM	GRIM
M0123A	GEIR
T0006SK	GEIR
F0109G	GEIR ARNE
M0012H	GEIR II
N0115VR	GEIR MAGNE
F0006NK	GEIR RUNE
F0079M	GEITINGEN
T0001SL	GRYLLEFJORD
M0028HØ	GRØNHOLM
TR0010B	GRØNTVEDT
N0181ME	GRØNØYTRÅL
F0011M	GRØTEN
T0044T	GRØTØY
T0168LK	GUBBEN
M0005AV	GULARØY
T0099K	GULLE
T0043LK	GULLFESKEN
N0112F	GULLFISK
NT0010NR	GULLFISK
T0045L	GULLFJELL
T0007KF	GULLHOLM
F0500M	GULLHOLMEN
F0001BD	GULLKISTA
F0028G	GULLONGEN
F0004M	GULLSKJÆR
H0108A	GULLSKJÆR JR.
N0250F	GUNN
M0082G	GUNN II
F0064LB	GUNNAR
N0043Ø	GUNNAR
M0040K	GUNNAR EGIL
N0014Ø	GUNNAR JARL
N0346Ø	GUNNAR K
M0204SM	GUNNHILD
N0202V	GUNN-LOTTE
F0055HV	GUNN-RANDI
N0051VV	GURATIND
M0011AE	GURI
F0055A	GURI MARIE
F0041B	GUSTAV
TF0006SE	GUTEN
M0017AV	GÅRDEN SENIOR
T0020K	GÅSAN
T0195LK	H LARSEN
F0300LB	H MARIE
N0107V	H NILSEN

T0180LK	GRIM
F0206NK	GRIMEN
N0008G	GRIMSHOLM
NT0098V	GRIMSHOLM
T0011K	GRIMSHOLM
N0066RT	GRIMSØY
M0025K	GRIPAR
F0105LB	GROGIS
SF0088B	GROTLE
F0136NK	GRUNNBØEN
TF0001P	GRUNNBØEN
T0051S	GRY JANNE
M0206H	HALTENTRÅL
N0017F	HALVARDGUTT
ST0012R	HAMNAHOLM
M0038AE	HAMNASUND
N0083VV	HANNA
F0177V	HANNA B
N0052R	HANNA CAROLINE
F0016H	HANNA INGEBORG
F0125H	HANNA MARIE
N0064BØ	HANNAH
M0017AE	HANNE
N0021H	HANNE
M0100AE	HANNE MARIE
F0048G	HANNE MARTINE
M0155AV	HANS
F0170L	HANS BERNART
F0044VS	HANS ROBERT
LKJM	HANSEN HJALMAR
F0026A	HANS-ERLEND
TF0026HV	HANS-ERLEND
M0050AE	HANS-R
N0072H	HANSVIK
F0003G	HANSØY
TF0019SE	HARALD
NT0076V	HARALD BERGE
F0063M	HARALD JOHAN
M0008VD	HARALD JR.
N0003SO	HARDHAUS
N0039MS	HARDHAUS
F0142NK	HARDY-GUTTEN
M0094H	HARHAUG I
N0105V	HARINGBUEN
N0044BR	HARMFJORD
N0083BR	HARMONI
T0085T	H. LINDRUP
ST0001H	H.A.H.
N0060L	HAFBJØRG
TF0003SV	HAGBAREN
N0084B	HAGTIND
N0058L	HALDORSON
F0065HV	HALFDAN JR
N0084V	HALIBUT
F0018G	HALLINGEN
H0110AV	HALLVARD
T0501LK	HALLVARDSON
ST0081F	HALTENFISK
N0080ME	HAUGHEI
F0245NK	HAUGSJØ
M0002S	HAUGSTAD
N0121VV	HAUGVIKA
N0024TF	HAUKØY
N0004TF	HAUKØYFJORD
T0002T	HAUNES
TR0022V	HAV
N0007V	HAVBAS
N0010BØ	HAVBAS
F0160V	HAVBLIKK
NT0026V	HAVBLOMST
M0005VD	HAVBLÅ
F0068SV	HAVBRIS
F0280NK	HAVBRIS
M0055SM	HAVBRIS
N0008RA	HAVBRIS
N0045Ø	HAVBRIS
N0078L	HAVBRIS
N0138V	HAVBRIS
N0142Ø	HAVBRIS
N0152VV	HAVBRIS
N0205R	HAVBRIS
N0472A	HAVBRIS
ST0010B	HAVBRIS
VA0007FS	HAVBRIS
N0026Ø	HAVBRIS JR
N0133VV	HAVBRIS JR
TR0001MH	HAVBROTT
M0325H	HAVBRYN
N0019Ø	HAVBRYN
N0025G	HAVBRYN
N0089BØ	HAVBRYN
T0015TK	HAVBRYN

N0078H	HARPAREN
T0018H	HARSTADVÆRING
H0015K	HARTHO
M0061SØ	HARTO
F0006HV	HARVESTER
TF0021HV	HARVESTER II
M0024U	HASUND
F0071P	HATLAND
H0021BN	HATLAND
M0005RA	HATLEVIKEN
M0050A	HATLEVIKEN
M0044SJ	HAUGE JUNIOR
M0044A	HAUGE JUNIOR
M0003VN	HAUGEN
M0036SM	HAUGEN
M0058VN	HAUGEN JUNIOR
M0012VN	HAUGEN SENIOR
T0078K	HAVELLA
TF0021NK	HAVELLA
TR0011B	HAVFISK
T0019SK	HAVFISK JR
T0041LK	HAVFJELL
T0041SA	HAVFJELL
N0037TN	HAVFLORA
T0084LK	HAVFLORA
SF0212V	HAVFLUD
Ø0112S	HAVFLUD JUNIOR
N0076RT	HAVFRØKNA
H0005ØN	HAVGLANS
M0001U	HAVGLIMT
N0109VR	HAVGLIMT
T0006K	HAVGLIMT
T0007S	HAVGLIMT 3
N0031VR	HAVGLØTT
N0104VV	HAVGULL
T0241T	HAVGULL
M0015AE	HAVGUTT
N0011VV	HAVGUTT
ST0051F	HAVGUTT
TR0051F	HAVGUTT
H0266B	HAVHELD
N0030RT	HAVHESTEN
F0011P	HAVKATT
TF0008HV	HAVKATT
H0095AM	HAVLEIK
N0007B	HAVLEIK
N0044A	HAVBRÅTT I
N0009R	HAVBUEN
T0271TK	HAVBUEN
N0130VR	HAVBØEN
T0101T	HAVBÅEN
N0077Ø	HAVBÅRA
F0056G	HAVDIS
F0090BD	HAVDUR
N0009B	HAVDUR
M0030AE	HAVDØNN
F0008NK	HAVELLA
F0076V	HAVELLA
N0001R	HAVELLA
N0010TN	HAVELLA
N0015L	HAVELLA
N0078SG	HAVELLA
N0090Ø	HAVELLA
T0161T	HAVSOL
M0090HØ	HAVSTEIN
M0225H	HAVSTRAND
M0525H	HAVSTRAND
M0225G	HAVSTRAND
N0088L	HAVSTRAUM
M0300A	HAVSTÅL
F0010V	HAVSULA
F0029V	HAVSULA
F0046BD	HAVSULA
N0019LN	HAVSULA
N0124VV	HAVSULA
N0262ME	HAVSULA
T0020G	HAVSULA
AA0081A	HAVSULA
N0073Ø	HAVSULEN
N0019B	HAVSUND
VA0020F	HAVSUND
NT0037LA	HAVSØLV
LG7996	HAVTERNA
M0027K	HAVTERNA
N0010H	HAVTIND
N0007G	HAVTOR
N0085RT	HAVUR
N0019H	HAVØRN
N0051RT	HAVØRN
N0154VV	HAVØRN
AA0012A	HAVØRN
H0127B	HAVØRN 2

N0063MS	HAVLEIK
TF0011NK	HAVLEIK
F0086M	HAVLINER
NT0208V	HAVLINER
TF0008K	HAVLY
R0010K	HAVLYN
F0022L	HAVMANN
R0006SO	HAVMANN
N0046ME	HAVMUSA
T0019K	HAVNES
N0096ME	HAVNÆRINGEN
N0015BR	HAVPIL
F0001B	HAVPRINS
F0002P	HAVPRINS II
N0030V	HAVPRYD
SF0081B	HAVRAND
F0028B	HAVSJY
T0059K	HAVSJØ
N0013G	HAVSKØY I
F0097V	HAVSKÅREN
N0012SO	HAVSOL
R0001RB	HAVSOL
N0173VV	HELEN
N0007VV	HELENA
R0178K	HELENA
T0030N	HELENA
O0014O	HELENE
T0180KD	HELENE
TR0021F	HELENE
ST0011R	HELETO
TF0004V	HELGA
T0026T	HELGE VIDAR
N0095MS	HELL
F0094BD	HELLA
N0098Ø	HELLA
N0086BR	HELLEFISK
ST0094F	HELLEFISK
F0077VS	HELLEGUTT
N0021MS	HELLODDEN
N0058MS	HELLSEGGA
M0003F	HELLSKJÆR
N0025RT	HELLSKJÆR
N0032MS	HELLVÅG
F0042G	HELLØY
N0017ME	HELLØY
T9300T	HELMER HANSSEN
F0029H	HAVØRNA
F0031A	HAVØRNA
T0016SA	HAVØRNA
F0075M	HAVØY
T0350S	HAVÅL
N0028L	HAZARD
N0025BØ	HEBE
N0080MS	HEGE
NT0055NR	HEGE
ST0026F	HEGE ANITA
T0026BG	HEGE THERESA
ST0016H	HEGE-CARINA
ST0077F	HEGO
N0002BR	HEIDI
TF0025NK	HEIDI ANITA
T0297LK	HEIDI KRISTIN
M0021AV	HEIM
M0035AV	HEIM
F0145NK	HEIMDAL II
F0171NK	HEIMEN
N0021HR	HEIMSKJÆR
N0200HR	HEIMSKJÆR
TF0077SE	H-EVEN
H0116AV	HEVRØY
N0010F	HG WILLASSEN
N0025TN	HILDE HELENE
M0023AV	HILDE IREN
N0001TN	HILDRINGEN
N0045B	HILMARSON
N0093F	HILMARSON
ST0106F	HILMARSON
TR0106F	HILMARSON
N0200MS	HIMMELTIND
N0002H	HINNØY
ST0052H	HITTERVÆRING
ST0055H	HITTERØ
ST0227H	HJERTØYBUEN
F0037VS	H-JUNIOR
TR0003B	HJØRDIS
F0100N	HM SENIOR
F0072LB	HMB
LK9128	HOLIDAY PRINCE
R0090K	HOLM
	HOLMBØEN
F0013HV	HOLMEN
F0013TN	HOLMEN

N0178Ø	HELMINE
F0031HV	HELNESVÆRING
F0191NK	HELØYGUTT
F0192NK	HELØYGUTT II
F0288NK	HELØYGUTT III
F0079NK	HELØYGUTT IV
F0333NK	HELØYGUTT V
F0108NK	HELØYGUTT VI
F0361NK	HELØYGUTT X
N0220VV	HEMMINGODDEN JR
SF0010V	HENDANES
F0042A	HENRIETTE
F0500NK	HENRIETTE E
T0009KD	HENRY
N0166V	HENRY J
ST0040O	HEPSØFJORD
TR0200O	HEPSØFJORD
R0007R	HERKULES 2
F0018A	HERMANN
F0007L	HERMES
F0058BD	HERMES
M0055AV	HERMON
N0051B	HERR OLSEN
T0104T	HERSØY
N0028LN	HESTEN
N0200V	HESTHOLMEN
SF0048F	HETLEVIKING
N0015TN	HUSØYGUTT
T0018LK	HUSØYSUND
T0022LK	HUSØYVÆRING II
NT0019V	HYDRA
F0093M	HØGHOLMEN
N0057BØ	HØGHOLMEN
F0175A	HØIVIKBAAEN
T0074H	HØKEN
N0018DA	HØLABUEN
M0094K	HØLINGEN
H0032O	HØTTEN
ST0056R	HØVDING
N0010SG	HØVDINGEN
TR0072F	HØVIK
R0017R	HØVRING
F0143L	HÅBRAND
H0059AV	HÅBRAND
H0049B	HÅBRANN
R0022B	HÅFLU
F0049VS	HOLMEN
N0035F	HOLMEN
M0024AV	HOLMEN SENIOR
N0009BL	HOLMEN-JUNIOR
N0059L	HOLMSUND
N0050SO	HOLMØY
M0044SM	HOPAVÅG
F0061G	HOPSFJORD
R0055K	HOPVÅG
N0240B	HORISONT
F0016NK	HORNGRUNN
N0029V	HORNSUND
N0090ME	HORNTIND
SF0002S	HOVDEN VIKING
F0069G	HRØNN B
F0027M	HTIND
TR0080B	HUBORG
N0077BR	HUGIN
T0299T	HUGIN
M0043HØ	HUGNAD
ST0017Ø	HUGNAD
F0038P	HUNTER
N0003BR	HURTIG
M0033MD	HUSAR
F0070V	HUSVÆR
F0028BD	HUSVÆRSUND
T0055LK	HUSØY
F0110V	IDA-MARI
F0126L	IDA-MOR
H0002R	IDEFIKS
N0016SO	IDUN
N0066Ø	IDUN
T0047S	IDUN
T0041S	IDUNSON
F0059HV	IEVA
N0130V	IGNIS
M0131AE	IMARSUND
F0105G	IMSA
F0077G	INE MARIE
F0026SV	INE MARITA
F0096V	INESA
F0128LB	INGA HAFDIS
TF0128G	INGA HAFDIS
T0047I	INGE
TF0001L	INGEBORG
NT0034V	INGER

F0004HV	HAAGRUNN
N0094MS	HAAKON-JR
TR0094T	HAAKON-JR
N0094L	HÅLØYGER
T0016T	HÅR-BÅEN
F0018N	HÅREK
SF0069F	HÅSKJÆR
F0061P	HÅTIND
N0074R	HÅVARD
N0162V	HÅVARD
F0108G	HÅVARD. A
N0002MS	HÅVARD. A
NT0040V	HÅVTIND
M0030SØ	HAAVÆRBUEN
N0059ME	ICE
F0003A	IDA
F0026N	IDA
F0036A	IDA
M0200SM	IDA
N0004VV	IDA
N0007LN	IDA
N0048SO	IDA
T0043T	IDA
TR0016ND	IDA
Ø0161F	IDA
N0300F	IDA AMALIE
N0093VV	IDA ANGELICA
N0143V	IDA BEATE
N0020TN	IDA KONTANSE
M0009K	IDA MARIE
F0045V	IDA SYNNØVE
T0040T	IDA THERESE
N0013R	ISAK OLAI
	ISBJØRN
H0089O	ISBJØRN
N0049Ø	ISBJØRN
N0077R	ISBJØRN
T0118S	ISBÅEN
N0036G	ISELIN
TF0022P	ISELIN A
N0131Ø	ISFUGL
M0011A	ISHAVET
F0089NK	ISICA
N0091VR	ISLOMEN
F0019NK	ISRYPA
T0008KD	IVAN
N0072R	INGER ANN
F0009A	INGER LISBETH
F0500BD	INGER VICTORIA
N0106R	INGER-ANN
N0139A	INGER-LISE
N0023HR	INGMUNDSON
N0144V	INGO
N0144Ø	INGRID
N0285Ø	INGRID
T0002KN	INGRID
F0155BD	INGRID ALEKSANDRA
F0184M	INGRID MAJALA
F0015L	INGRID MARIE
F0167NK	INGRID MARIE
N0111VV	INGRID MARIE
N0025VS	INGRID-KRISTINE
F0046G	INGRID-VIKTORIA
F0045LB	INGUN
F0006BD	INGVALDSON
F0095H	INGVARDSON
N0045H	INGVILD
F0012M	INGØYVÆRING
N0008VS	INNVÆR
F0044G	IRENE
N0021AH	IRENE
F0089M	IRENE RE
F0103G	IRINA MARIE
T0183T	IRINA MARIE
F0017SV	ISABEL
N0022HR	ISABELL
T0193T	ISAC ALEXANDER
TF0001NA	ISAK
M0196HØ	JANSON
N0055BØ	JAN-TANITA
M0070AK	JANTO JR
F0177NK	JAN-TORE
T0313T	JARA
N0089F	JENNEGGA
F0048M	JENNI SOFIE
N0002F	JENNY
N0258BØ	JENNY
ST0185R	JENNY
N0075F	JENNY 2
TF0005T	JENNY HELENE
F0124A	JENNY OLINE
T0052SA	JENS BERG

N0012R	IVAR JUNIOR
ST0074F	IVERS
N0049VV	IVERSEN JUNIOR
F0140LB	IVO ELANDER
VA0019LS	IVÅGEN
N0063B	J.A. SENIOR
T0001H	J.BERGVOLL
N0005G	JAKOB
M0009VN	JALLA
F0022A	JAN BØRRE
F0200NK	JAN EGIL
F0034N	JAN GUNNAR
N0101V	JAN GUNNAR
N0141VV	JAN H
ST0001F	JAN HALVAR
NT0001VN	JAN IVAR
N0026A	JAN OSKAR
N0052B	JAN ROBERT
T0112S	JAN TORE
M0004EE	JAN ÅGE
O0012O	JANA MARI
M0023F	JANBU
F0088NK	JANE
SF0019F	JANICA
T0042K	JANITA
F0214NK	JAN-KJETIL
ST0058F	JANN GEORG
N0048V	JANN YNGVE
N0015VV	JANNE
N0044SF	JANNE-KATRIN
NT0260V	JANNE-LISE
T0005K	JANNE-MARIE
T0047K	JANNE-MARIE
TF0014LB	JANNE-V
F0007P	JANNI
TR0001S	JANNI
N0058RT	JANN-ROAR
T0177T	JOHN YNGVE
N0013ME	JOHN-IVAR
T0038TK	JOHNNY DAG
F0010LB	JOHN-REIDAR
N0044VV	JOKER
N0086VV	JOKER
N0086Ø	JOKER
T0378T	JON ÅGE
F0011SV	JONAS
F0099BD	JENS EILERT
F0086A	JENS KRISTIAN
T0005I	JENS-B
T0062LK	JENSEGUTT
H0285AV	JESPER JR
F0111V	JIM HÅVARD
F0083B	JIM LENNART
F0027P	JIM LEVI
N0037DA	JIM ROGER
N0139VV	JIM-ROGER
T0032LK	JM SENIOR
F0072H	JOAKIM
N0134V	JOAKIM
F0046VS	JOFFRE
F0096NK	JOFFRE
N0145VR	JOHAN BERG
T0121TK	JOHAN F
ST0064F	JOHAN HÅKON
N0254VV	JOHAN MARTIN
T0410LK	JOHAN MARTIN
N0008ME	JOHAN R
N0073ME	JOHAN R
F0034NK	JOHANNA
TR0060H	JOHANNA
F0005B	JOHANNE
F0034H	JOHANNE
F0152NK	JOHANNE
N0028G	JOHANNE
N0055V	JOHANNE
T0005SK	JOHANNE
F0043A	JOHANNES H
R0015K	JOHLENA
F0001TN	JOHN ANDREAS
F0018BD	JOHN MARTIN
M0002K	JOHN SENIOR
M0020K	JOHN SENIOR
N0011H	JOHN SVERRE
N0096V	JYLDNER
F0020G	JØRGEN
N0004VA	JØRN
T0017N	JØRN ANDRE
F0002LB	JØRN Y
H0158AV	JØRNESKJÆR
N0065RT	JØRN-HARALD
F0118NK	JÅNSKY
T0088T	K.AMALIE

ST0300F	JONAS
H0014F	JONE
N0038DA	JON-VIKTOR
T0112T	JOR
T0205T	JORUNN B
N0001F	JOSBERG
N0051F	JOSBERG
F0049V	JOSEFINE
F0333H	JOSEFINE
N0055SO	JOTIND
F0022M	JOVITA
F0061NK	JR SENIOR
F0800M	JSF JUNIOR
F0700H	JSF-SENIOR
M0054SM	JUANITA
N0161RT	JULIAN
NT0161V	JULIAN
TR0061V	JULIAN
N0052SO	JULIANE
T0204T	JULIANNE MADELEN
N0170Ø	JULIE
N0009ME	JULIE M
N0025DA	JULIUS
F0008V	JUNE
F0015NK	JUNE
F0188NK	JUNE
N0005TF	JUNE
N0084ME	JUNGMANN
F0057H	JUNI
N0069V	JUNI
N0011RT	JUNIOR
N0029TN	JUNIOR
T0144T	JUNIOR
TR0008B	JUNIOR
N0093A	JUNITA
F0101G	JUNO
N0048VA	JUSIKA
N0086AH	JUSTAD JUNIOR
ST0044H	JUTINA
F0081LB	JUVEL
N0025MS	JUVEL
N0146F	JUVEL
N0008FE	KARINA
N0018AH	KARINA
T0198T	KARINA
N0012AH	KARL EMIL
N0178VV	K.R. SENIOR
F0174M	KAIA
N0001DA	KAIA
T0074K	KAIA
TF0174LB	KAIA
N0021RT	KAIA CICILIE
F0053V	KAJA
F0253NK	KAJA
F0149H	KAJA MARIE
F0038TN	KALLEGUTT
H0098AV	KALSØY
H0097AV	KALSØYBAS
H0086AV	KALSØYJENTO
M0306H	KAMARO
SF0007S	KAMARO
F0179NK	KAMERATEN
ST0099F	KAMHOLMEN
F0014VS	KAMILLA
F0257L	KAMILLA
N0012V	KAMILLA
N0050Ø	KAMILLA GRANDE
F0103M	KAMILLA KATRINE
TF0008SE	KAMILLA MARI
M0007HØ	KAMPEN
T0027S	KAMPEN
T0026S	KAMØ
F0243L	KANES
N0080LN	KANSTADBUEN
M0206A	KAP FARVEL
T0001SA	KAPELLA
T0055T	KAPP LAILA
T0194T	KARA
T0178SK	KARAT
M0001SM	KARDINAL
TR0042F	KARI
N0018MS	KARI ANNE
N0019DA	KARI WAADE
F0036H	KARIANNE
N0417B	KARIANNE
N0024MS	KARIDA
T0098TK	KARIN
F0057HV	KARINA
N0040VA	KILVÆRFJORD
N0071VV	KIM
TR0001VL	KIM
F0008G	KIM ANDRE

T0019SA	KARL MARTIN
T0028N	KARL OSKAR
T0031TK	KARL ROBIN
T0012SL	KARL SKOG
F0045NK	KARL VILMAR
T0001S	KARL WOLMAR
T0158T	KARL-JOHAN
T0221K	KARLO
F0027G	KARLSTAD
N0311B	KARLSØYFJORD
N0232B	KARLSØYVÆR
F0137G	KARL-TORGEIR
T0034K	KARLUF
N0037V	KARL-VIKTOR
M0020SA	KAROLENE
H0027S	KAROLI
F0002VS	KAROLINE
F0077NK	KAROLINE
T0022H	KAROLINE
T0100K	KAROLINE
TF0022G	KAROLINE
F0118LB	KAROLINE VIKTORIA
N0075ME	KAROLIUS
F0073LB	KASPARA
F0005M	KASPER
N0017BR	KASPER
N0049ME	KASPER
TF0004H	KASPER ANDRE
H0084B	KASTEVIK
N0009VA	KATHARINA
T0138S	KATLA
M0192SØ	KATO
	KAY-ERLEND
F0077M	KEILA
F0092G	KEILA
T0080LK	KEIPNES
N0045MS	KEN STIAN
N0019VS	KEN-ELIN
T0007T	KEN-MICHAEL
F0017B	KENNETH JOHAN
F0156NK	KENT ARE
N0023LF	KENT-RUNE
F0014HV	KETIL
N0058HR	KEVIN
F0111P	KGB
N0080VS	KILBUEN
N0086VR	KIM RICHARD
T0053BG	KIM ROBIN
N0004MS	KIM ROGER
TR0005V	KIM ROGER
N0028BØ	KIMA
T0381S	KIMMEN
F0240G	KINDVIK
N0092VV	KINE
N0035DA	KINE JOHANNE
N0049RT	KINE MARTINE
F0080V	KING MARCUS
F0444NK	KING NORDKAPP
F0441NK	KING NORDKAPP 1
NT0031NR	KIO
T0005KD	KIRA
N0018VA	KIRKØYBUEN
TF0003M	KIRSTEN TOVE
TF0002TN	KITTI
F0049NK	KJ NORDKAPP
T0011KD	KJAPP
TR0001V	KJAPP
N0159V	KJARTAN K.
TR0008NR	KJELL
T0006H	KJELL OTTO
F0006H	KJELL STEINAR
	KJELLABUEN
N0039B	KJENGBØEN
F0059NK	KJETIL
N0157VV	KJEØY
F0051LB	KJÆMTIND
TF0051LB	KJÆMTIND
N0093ME	KJØNSKJÆR
F0183NK	KLAKKEN
F0246NK	KLAKKEN
N0045V	KLARA
F0010SV	KLAR-SELIN
F0112NK	KLAUDIA
T0190T	KLEIVA
N0041L	KLEPPABAS
F0209NK	KLO
N0090VV	KLOGRUNN
N0011ME	KLOMPEN
N0103Ø	KLOTIND
N0143Ø	KLOTIND
N0024LF	KLUBBEN
F0118H	KLUBBFISK

F0066BD	KILDIN
F0072N	KLØVNESJENTA
M0010A	KNAPPEN
F0105M	KNARVIK
F0050L	KNERTEN
H0250AV	KNERTEN
N0002RA	KNERTEN
M0019AE	KNOTT
F0174NK	KNOTTEN
T0061K	KNOTTIND
T0270K	KNOTTIND
	KNUDSEN FISK
	KNUDSENFISK
F0073HV	KNUT M
M0010VN	KNUT O
N0003V	KNUT OLAV
N0025V	KNUT P
N0037ME	KOLBJØRN M
TR0012AA	KOMA
F0105P	KOMET
N0057SO	KOMET
H0006ØN	KOMPIS
F0014NK	KONFLIKT
TF0050BD	KONGSFJORD
N0115VV	KONGSHOLM
H0153AV	KONGSVARD
F0032TN	KONTEPELLA
T0020TN	KONVOY
N0042G	KORAL
M0111AV	KORALEN
M0406H	KORALHAV
F0018L	KORSHOLM
F0039BD	KORSNES
F0202P	KORSNESJENTA
F0032A	KORSNESVÆRINGEN
TF0010B	KRABAT
F0221NK	KRABBE DRONNINGEN
N0037F	KRABBEN
F0058VS	KRAMPENES
N0140V	KRANEGUTT
N0036MS	KRANSVIK JR
N0067V	KRANSVIK JR
N0021BØ	KRASEN
T0092LK	KRAVIK
N0033Ø	KRILEN
F0007NK	KRISTIAN GERHARD
N0014A	KLÆVTIND I
N0018FE	KRISTINA
R0004ST	KRISTINA
TF0070NK	KRISTINA
M0057AV	KRISTINA K
N0040B	KRISTIN-ANITA
F0074A	KRISTINE
N0027SO	KRISTINE
T0008KF	KRISTINE
T0018SK	KRISTINE
F0070NK	KRISTINE ELISABETH
F0049LB	KRISTINE ELISE
H0167B	KRISTINE JOHANNA
T0075L	KRISTINE W
F0066V	KRISTJAN
T0250TK	KRISTOFFER
N0043VV	KROGH SENIOR
F0075G	KROSSANES
N0022BØ	KRUSHOLMEN
N0015VR	KRUSNING
M0100AV	KRYSSHOLM
TR0111Ø	KRÅKVÅGFJORD
M0059HØ	KRÅKØYSUND
F0010H	KULING
N0027B	KULING
F0104G	KUNTZEGUTT
N0143VV	KURT H
N0236VV	KURT H
T0400T	KURT-ENDRE
R0001SO	KURTI
F0328L	KURT-VIDAR
M0009HØ	KVALNES
N0021R	KVALVIK
N0102MS	KVALVIK JR
F0043B	KVALVIK SENIOR
N0232MS	KVALVIKVÆRING
V0014L	KVALVÅG
F0126A	KVALØY
NT0024V	KVALØYFJORD
N0112BR	KVEINSJØ
VA0077M	KVEITA
N0014HR	KVIKKEN
N0073VV	KVILHOLMEN
T0139T	KVITBJØRN
F0100HV	KVITHOLMEN
M0015SM	KVITHOLMEN

N0018ME	KRISTIAN T
LE3877	KRISTIANSEN STIG LENNART
N0092VR	KRISTIN MARITA
F0105NK	KRISTINA
M0187F	KRISTINA
N0017BØ	KRISTINA
F0104NK	KYA
	KYA
ST0041F	KYAHAVET
SF0030A	KYSTBAS
T0174T	KYSTBAS
N0150V	KYSTEN
T0014L	KYSTFESK
F0040M	KYSTFISK
N0253Ø	KYSTFISK
N0053Ø	KYSTFISK JR.
N0051MS	KYSTVÆRING
T0019H	KÅGTIND II
ST0027R	KÅPA
T0016H	KÅRE
T0038T	KÅRØY
TF0001G	KÅVNES
TF0005G	LA VIDA
M0091AV	LADY ALUDIA
F0003L	LADY M
F0053VS	LAGERTHA
F0008H	LAGOM
F0071HV	LAGUN
N0029SO	LAGUN
N0088H	LAGUN
H0170B	LAILA
N0004BL	LAILA-ANITA
M0069SM	LAKSBERG
M0047HS	LAKSEN
N0017LN	LAKSEN
T0050KF	LAKSEN
N0270B	LAKSHMI
F0021TN	LAKSNES
F0197P	LAMØY
H0036K	LANDAVÅG
F0043V	LANES
T0016SK	LANGBÅEN
M0035A	LANGENES
N0302Ø	LANGENES
T0035I	LANGENES
TR0029AA	LANGHOLM
N0025VA	KVITHOLMEN
N0061Ø	KVITHOLMEN
T0042LK	KVITHOLMEN
F0029G	KVITNAKKEN
F0061TN	KVITNES
N0116BR	KVÆRSTEIN
N0007HM	LARSEN JUNIOR
LM4033	LARSEN LARS-ÅGE
N0328ME	LARS-GØRAN
F0014V	LARVIKGUTEN
LG6192	LASKJÆR
F0058M	LATØY
F0114M	LAUKHOLMEN 6
N0270V	LAUKVIKVÆRING
T0135K	LAUNES
N0250V	LAUPSTADVÆRING
N0061R	LAXEN
T0018S	LEA ELINA
T0061L	LEAH
F0150V	LEAH MARIE
F0057M	LEANDER
N0005Ø	LEANDER
N0220Ø	LEANDER
	LEANDER II
T0034LK	LEGØY
N0146VV	LEIBØEN
	LEIF H
T0408T	LEIF HARALD
T0051LK	LEIF HELGE
TF0141SE	LEIF HELGE
N0253VV	LEIF OLE
SF0025SU	LEIK
F0057P	LEIKA
ST0057AA	LEIKNY
M0505HØ	LEINEBRIS
N0067LF	LEIRFJORDVÆRING
N0014TN	LEISKJÆR
N0038VR	LEISKJÆR
F0096M	LEISUND
TR0001LA	LEKAMØY
NT0121LA	LEKAVÆRING
TR0005LA	LEKNESBUEN
F0098NK	LEMMY
N0022ME	LENA
T0399K	LENA
F0051VS	LENA-ELIAS

F0021G	LANGNES
F0139NK	LANGNES
T0278K	LANGNES
N0036BR	LANGNES JR
N0059Ø	LANGNESVÆRING
N0100SO	LANGØY
F0045TN	LANGØYSUND
M0147AV	LANGØYSUND
M0166AV	LANGØYSUND
N0056RT	LANO
ST0307F	LANOFISK
F0030TN	LAPU-LAPU
T0043K	LARISSA
F0213M	LARS EINAR
H0031O	LARS EINAR
T0008LK	LARS-AINA
T0176B	LARS-ANDREAS
R0082K	LIEGUTT
N0164VA	LILJA
F0124NK	LILJEN
TR0005NR	LILJEN
F0176NK	LILJO
T0074LK	LILL
N0264Ø	LILL RAINER
N0011B	LILLE BREIVIKBUEN
F0115V	LILLE PERLE
T0097T	LILLEBAKK
F0062M	LILLEBÅEN
F0010M	LILLEGRUNN
F0024KD	LILLEGUTT
TR0076V	LILLESKJÆR
F0006L	LILLI
F0116SV	LILLI
N0008DA	LILLI KARINE
T0011N	LILL-JENNY
T0035T	LILL-NORA
F0032H	LILL-TOVE
M0072SM	LILLY
N0003HS	LILLØY
F0056HV	LINA
N0003HM	LINA
N0011L	LINAS
N0048ME	LINAS
N0124V	LINDA
T0266K	LINDA
F0010KD	LINDA MERETE
N0151B	LENE K
VA0005FS	LENE MARI
N0089V	LENE MARIE
F0033SV	LENE W
F0087M	LENNART
F0071VS	LEODEGAR
M0221SM	LEON
TR0100F	LEON OLAI
TR0400F	LEON OLAI
N0017VA	LEONARD
F0099NK	LERO
N0175Ø	LEX GRANDE
TF0029NK	LIAFRES
M0011AV	LIAHOLM
N0017L	LIBERTA
N0018TN	LIBERTA
NT0005V	LIBU
F0240A	LISA
SF0026V	LISA
N0024BR	LISA BELL
F0097LB	LISBETH
T0100LK	LISE-BEATE
T0015S	LISTER
TF0015G	LISTER
N0037VA	LISØYSUND
N0010MS	LITJ SKJÆRET
F0033VS	LIV
N0454R	LIV GERD
N0022SO	LIV ODDNY
F0610V	LIVE ELISE
N0136VV	LOBO
R0180K	LOBSTER
N0016LN	LODEK
T0010K	LODEK
N0220F	LOFOTFISK
N0140VV	LOFOTHAV
F0088M	LOFOTLOVE
F0038V	LOFOTVÆRING
F0116V	LOFOTVÆRING
N0062VV	LOFOTVÆRING
N0202VV	LOFOTVÆRING
T0033T	LOFOTVÆRING
T0096LK	LOGGEN
T0103TK	LOKE
N0128VV	LOMEN
T0005TN	LOMSTIND

TF0002A	LINDA MERETE
F0013A	LINDA SOFIE
F0033V	LINDA SOFIE
N0214VV	LINDA-MARI
F0037V	LINDFISK
F0057V	LINDFISK
F0068V	LINDFISK
SF0001B	LINDHOLM
R0078K	LINDISFARNE
SF0012S	LINDISFARNE
F0356M	LINE
N0057VR	LINE MARIE
F0094V	LINEA
SF0019B	LINEBAS
F0035NK	LINEFISK
N0038B	LING
F0031NK	LINN
N0052H	LINNEA
F0009B	LINNI
F0073A	LINN-JOHANNE
F0006V	LINN-TORRY
F0236NK	LINSKJÆR
N0044RT	LINUS
T0016K	LIPELLA
F0037TN	LISA
T0093K	LUNDE
LH3045	LUNDØY
F0029LB	LUNHEIM SENIOR
N0002HR	LURINGEN
TF0009G	LURINGEN
N0114L	LURØYBAS
F0133NK	LUSIU
F0046SV	LUSKIN
M0105SM	LUTON
M0032AE	LYDIA
T0045K	LYKKELITEN
N0320Ø	LYKKEN
TF0012NK	LYKKEN
N0018LN	LYKKEN JUNIOR
N0071V	LYKKENS PRØVE
SF0220S	LYNGNES
N0006BR	LYNGVÆR
N0012B	LYNGØY
N0021ME	LYNGØY
SF0015SU	LYNGØY
NT0064V	LYNN MARY
N0122VA	LOMSØY
T0024N	LOMSØY
N0152SG	LOMVI
N0038SG	LOMWI
NT0401NR	LOPPA
TR0014ND	LOPPA
M0012G	LORAN
ST0002A	LORINE
SF0222SU	LOSFISK
ST0021R	LOTHE
VA0050S	LOTTA
N0029G	LOVISA
N0100L	LOVUNDVÆRING
T0003T	LUCAS
N0085A	LUDVIK
F0066HV	LUKAS
R0116K	LUKKA
H0054AV	LUKKO
M0019AV	LUMPFISH
F0028VS	LUNA
F0033NK	LUNA
F0055LB	LUNA
M0018HØ	LUNA
T0005S	LUNA
TF0003G	LUNA
N0444ME	MAGNY
T0031K	MAIBLOMSTEN
T0088B	MAIKEN
F0100VS	MAIKEN-JENTA
ST0024B	MAILEN
N0075SG	MAILENA
N0026BR	MAJA
N0029TF	MAJA
N0092V	MAJA
N0161VV	MAJA 2
T0120I	MAJA IREN
T0035N	MAJA SOFIE
F0125LB	MAKIRILD
T0350LK	MALANGSFJORD
T0001B	MALANGSGUTT
T0093B	MALANGVAAG
F0064TN	MALENE
T0200L	MALENE
M0003SJ	MALI
M0005SJ	MALI
F0080G	MALIN

F0162NK	LYRA
N0119F	LYSBØEN
N0168F	LYSBØEN
TF0138SV	LYSSTRÅLEN
N0074B	LYSTIND
N0031ME	LYSVOLD JR
F0024LB	LYSØY
T0028KF	LYSÅ JR.
F0015V	LØKKI
T0157T	LØKSTIND
F0039NK	LØNNEGGA
H0030B	LØNNINGEN
V0045S	LØVEN
T0531T	LØVENG
F0030A	LØVSKJÆR
N0027LF	LÅRINGEN
N0109VV	M JØRGENSEN
N0119V	M MALNES
T0094T	M. JENSEN
N0307LN	M.YTTERSTAD
N0036B	MACH I
F0024A	MADELEINE
ST0025A	MADELEN
TF0007HV	MADS HELGE
F0137M	MAGGAN
N0619V	MAGNA
F0046P	MAGNARSON
T0046BG	MAGNARSON
F0141V	MAGNHILD
F0095NK	MAGNUS
N0097MS	MAGNUS
SF0024A	MAGNUS
	MAGNUSSEN
TF0004K	MARIE
TF0016A	MARIE
TR0001OP	MARIE
F0063V	MARIE BANG
N0041F	MARIELL
M0134F	MARILENA MI
N0089VV	MARINA
N0270SF	MARINA
T0086T	MARION HELEN
TR0002T	MARISOL
H0137AV	MARIT
N0024B	MARIT INGA
T0023SD	MARIT MARIE
M0025F	MALIN
N0029B	MALIN
T0392K	MALIN AMANDA
T0068I	MALOFISK
T0073LK	MALOGUTT
R0056K	MANNESBUEN
F0015HV	MANTAS
F0153H	MARA
F0111NK	MARCUS
ST0015T	MAREN
TF0007LB	MAREN
N0042H	MARGARET
F0030B	MARGARETH
N0032B	MARGRUNN
T0011T	MARI
M0061AV	MARIA
N0027SF	MARIA
T0019N	MARIA
TR0012Ø	MARIA
TF0009HV	MARIA AILEN
F0026G	MARIA ANDREA
TF0024V	MARIA ANDREA
	MARIANN
F0109V	MARIANN
F0352M	MARIANN
M0020VS	MARIANN
N0079HR	MARIANNE
T0014K	MARIANNE
T0094LK	MARIANNE
M0051SM	MARIANNE ELISE
F0187LB	MARIE
M0069MD	MARIE
N0233ME	MARIE
ST0022F	MATHIAS
F0211NK	MATHILDE
M0013AV	MATHILDE
M0080HØ	MATHILDE
N0035V	MATHILDE
F0211V	MATILDE
N0067Ø	MATS BØRGE
N0109A	MATS-ERIK
F0014BD	MAX
F0065P	MAX WILLIAM
N0021V	MAY
N0211VV	MAY
N0075BØ	MAY CELIN

F0041LB	MARITA
M0040AV	MARITA
F0006M	MARITA KATHRIN
F0106M	MARITA KATHRIN
N0068AH	MARITA-HELEN
N0068Ø	MARITA-HELEN
F0277NK	MARITA-O
F0098M	MARITHA
T0188T	MARIT-KRISTINE
F0101L	MARIUS
N0010R	MARIUS
N0172MS	MARIUS
T0058T	MARIUS
T0131K	MARJELLA
N0033L	MARKUS
T0090K	MARKUS
T0220T	MARKUS
N0091V	MARLEN
F0141NK	MARLOV SENIOR
F0196NK	MARNA
N0123BR	MARNA
F0012HV	MARQUEZ
N0013H	MARTHE
F0015TN	MARTIN
F0080TN	MARTIN
F0173NK	MARTIN
M0051K	MARTIN
F0092LB	MARTINA
T0019TK	MARTINE
T0196S	MARTINE
N0030L	MARTINE SOFIE
N0058Ø	MARTYNA
N0090L	MARY JANE
NT0072NR	MARØYSKJÆR
M0041K	MARØYSUND
ST0010R	MASKOT
N0021BR	MASTER
M0046SM	MATHEA
N0040VV	MATHEA
T0108T	MATHEUS
F0066G	MATHIAS
N0063SG	MHAUKØY
N0350V	MIA
T0026LK	MICHELLE
N0008VR	MIDNATSOL
TR0112V	MIDTHOLM
F0010BD	MAY LIS
TF0010BD	MAY LIS
NT0001I	MAY VANJA
F0100LB	MAYA
N0068V	MB NJORD
F0010G	MEA
F0016A	MEA
F0050N	MEA
N0053A	MEA
N0064H	MEA
N0070Ø	MEA
F0090VS	MEBAS
F0110NK	MEDTIND
N0340VV	MEFJORD
T0182BG	MEFJORD
NT0010L	MEHAV
ST0400F	MEHOLM
N0008B	MEHOLMEN
T0017LK	MEIBEL
N0011SF	MELITA
M0033SM	MELODI
N0188ME	MELØYBAS
N0051ME	MELØYFJORD
N0001Ø	MELØYJENTA
N0041ME	MELØYSUND JR
N0042ME	MELØYVÆRING
N0440F	MELØYVÆRING
M0112AE	MENTEL
M0052AE	MENTELL II
N0022BR	MEONGEN
N0348V	MERCEDES
ST0500F	MERCUR
T0135N	MERETHE II
T0022L	MERKUR
NT0069F	MERLIN
F0035V	MESKJÆR
F0042M	MESKJÆR
M0037M	METHO
F0085LB	MEVÆR
F0184L	MEVÆR
F0051M	MEYBELL
T0015SA	MOLLY
M0069G	MOLNES
ST0030F	MONA
TR0003H	MONA
TR0006H	MONA

M0053K	MIDVAGUR
M0080MD	MIDØY
M0014MD	MIDØY VIKING
F0083G	MIE
T0018K	MIE
M0090MD	MIFJORD
N0036RT	MIKAEL
ST0214F	MIKAEL
F0015M	MIKKELENG
F0100BD	MIKKELSEN
F0093V	MILDA
F0101V	MILDA
T1129T	MILDRID
N0035A	MILIAN
SF0015A	MILLA
F0004G	MILTON
N0011TF	MIMI
F0099M	MINA
N0017DA	MINA MARIE
N0208F	MINIBANKEN
N0208ME	MINIBANKEN
T0015SK	MINIBANKEN
T0277T	MINIBANKEN
N0098VA	MINOR
N0183A	MIRA
N0183Ø	MIRA
R0001B	MIRA
TF0004VS	MIRA
TF0010SE	MIRA
N0195V	MIRANDA
	MIRANDA
N0087MS	MIRO
F0037G	MIST
Ø0022S	MISTRAL
T0202T	MJOSUND
F0099LB	MJØLNER
ST0011T	MJØLNER
T0115T	MJØLNER
T0148T	MJØLNER
TR0001H	MJØLNER
TR0005H	MJØLNER
TR0011T	MJØLNER
T0199K	MJØNES
N0004A	MJÅSUND
N0008A	MJÅSUND
F0154NK	MODDY
H0037F	MONICA
N0023H	MONICA
N0155VV	MONICA
N0073BR	MONICA M
N0019HR	MONIKA
TF0009P	MONIKA
N0013SG	MONSBØEN
N0113SG	MONSBØEN
F0089V	MONSNES
F0047M	MONSUN
T0006SA	MONSUN
N0041H	MONTY
TR0001SD	MORGAN
N0027Ø	MORGENSTJERNE
N0177Ø	MORGENSTJERNE
F0024VS	MORILD
H0149AV	MORILD
M0041AE	MORILD
N0032L	MORILD
ST0010Ø	MORILD
Ø0025F	MORILD
T0036K	MORTEN
H0402AV	MORTEN EINAR
T0164T	MORTENVIK
N0174VV	MORTSUNDVÆRING
N0096VV	MORTSUNDVÆRINGEN
N0098ME	MORTSUNDVÆRINGEN
N0666MS	MOSKEN
H0569B	MOSTEIN
H0221B	MOSTEIN 1
N0015MS	MOT
T0069K	MR. RALF
TF0018LB	MR. RALF
N0071G	M-SVENDSEN
T0021K	MT SENIOR
T0209K	MT SENIOR
N0023BR	MUDDVÆRING
F0068G	MULAN
N0071Ø	MULEGGA
TF0022T	MULEN
M0214HØ	MULØYBUEN
TR0025V	MUSTANG
TR0027ND	MYHREGUTT
H0081AV	MYLING
N0087Ø	MYLING
F0058V	MYNTEVIK

F0109LB	MOEN
H0023BN	MOFFEN
R0020K	MOLINERGUTT
N0061RT	MYRENG
TF0003A	MYRENG
F0053BD	MYRENG FISK
N0202Ø	MYREVÆRING
T0303T	MYRNES SENIOR
F0030N	MYSTIC OCEAN
TF0015SE	MÆLØY
N0046Ø	MØYSALEN
N0101H	MØYSALFISK
F0127VS	MÅKEN
N0084Ø	MÅKEN
N0190BR	MÅKEN
N0340V	MÅKEN
N0021SG	MÅKØY
M0015RA	MÅNA
T0026B	MÅRFJELL
F0051BD	MÅRNES
TF0051H	MÅRNES
N0120BØ	MÅRSUND
TF0017T	MÅSNES
AA0017G	MÅSNES
N0058BR	MÅSØYGUTT
N0015A	MÅTIND
N0123VA	MÅØYSUND
N0041V	NAG
N0031BØ	NAKKEN
TR0005T	NAMI
F0115M	NANNA KRISTINE
N0091F	NAPPSGUTT
N0020L	NARGTIND
F0006G	NARTIND
NT0013V	NATALIE
TF0001K	NATALY
N0217ME	NATHANIEL
F0070P	NATSHA
M0038K	NAUTICA
F0300A	NAVIGER
N0076SO	NEMINE
F0006B	NEMO
F0119NK	NEMO
SF0001F	NEMO
F0035H	NENITTA
F0036LB	NENNIK
M0022F	MYRBØ JUNIOR
N0169Ø	MYREBAS
N0168Ø	MYREBUEN
VA0087LS	NESEJENTA
AG0001LS	NESEJENTA
N0013F	NESHEIM
N0465V	NESODD
F0138M	NESSODD
N0027R	NESØYFISK
N0001L	NESØYFJORD
N0038L	NESØYFJORD
N0171R	NESØYVÆRING
F0054V	NETTO
N0177V	NICHOLAS
T0003SK	NICO
N0044V	NICOLINE
SF0122B	NIGARDSØY
N0047SO	NIKE
T0371K	NIKE
F0034LB	NIKITA
N0058V	NIKITA
N0065VV	NIKKO
N0001RT	NIKLAS
N0016MS	NIKLAS
F0044V	NIKON
T0023B	NILS EIVIND
N0101L	NILSEN JR
N0004HM	NIMROD
N0007NA	NIMROD
T0025BG	NINA IREN
T0097K	NINA MARI
F0110M	NIPEN
F0201NK	NISSKJÆR
F0019V	NITTAYA
F0025M	NJORD
R0030F	NJORD
T0125L	NJORD
N0053V	NO PROBLEM II
T0098K	NOAH
N0016TN	NOAH ANDRE
T0288T	NOATUN
F0070VS	NOBEL
T0338K	NOJUS
F0037BD	NOKASA
N0180VV	NONSTIND
T0053K	NONSTIND

F0126M	NEPTUN
N0125ME	NEPTUN
ST0333F	NEPTUN
VA0006LD	NEPTUN
H0006B	NERA
TR0345ND	NERGÅRD JR
TR0346V	NERGÅRD JR
M0104AV	NESABUEN
M0071G	NESBAKK
F0114BD	NESBUEN
R0001TV	NESBUEN
N0005BØ	NORBUEN
F0095TN	NORDAFØRR
TF0025SE	NORDAL
M0030G	NORDBAS
N0032V	NORDBLINK
T0042H	NORDBUEN
N0021Ø	NORDBØEN
N0240F	NORDEGG
N0032A	NORDENG
N0096RT	NORDFANGST
N0001B	NORDFISK
N0034DA	NORDFISK
N0058A	NORDFLU
N0094BØ	NORDFLU II
N0037BØ	NORDGRUNN
N0223Ø	NORDGRUNN
N0219VV	NORDHAUG SENIOR
N0121B	NORDHAV
T0001I	NORDHAVET
N0062VR	NORDHAVN
N0091MS	NORDHOLMEN
ST0004F	NORDHOLMEN
F0045M	NORDIC QUEEN
R0010TV	NORDIC QUEEN
N0006BL	NORDLYS
N0028HM	NORDLYS
N0054B	NORDLYS
N0477ME	NORDLYS
N0479ME	NORDLYS
NT0129NR	NORDLYS
NT0157V	NORDLYS
F0036HV	NORDLYSFISK
F0039LB	NORDMANNSET
TF0014SE	NORDMANNSET
T0001KD	NORDNES
F0046NK	NOR
F0033HV	NORA
F0220NK	NORA
LK8266	NORA
T0001K	NORA
TR0200F	NORA
TF0003HV	NORA KRISTINE
F0071M	NORAH
F0002B	NORBANKEN
N0042SA	NORBAS
M0218HØ	NORBRIS
F0252NK	NORFANGST
F0140M	NORFJELL
T0022SD	NORFJELL
N0043A	NORHAV
N0182Ø	NORHAVET
N0054Ø	NORLINER
F0028A	NORLYS
H0074B	NORMANN
N0052VV	NORMANN
T0006S	NORMATIR
F0012KD	NORODD
M0022AE	NORODD
F0048BD	NORPYNT
N0134VV	NORPYNT
	NORSKOTTIND
N0022A	NORSOL
T0020SA	NORSUND
NT0017NR	NORVEIG
F0025TN	NORWASTERN
	NORØY
N0053MS	NORØY
N0263VV	NORØY
N0181VV	NYBAKK SENIOR
N0041B	NYBAS
N0094V	NYBERG
F0087G	NYBJØRN
F0182V	NYBROTT
M0009AV	NYBROTT
M0150AV	NYBØEN
N0157F	NYBØEN
T0026TK	NYBÅEN
TR0007NR	NYDØNNING
N0066ME	NYEGGA
T0119KN	NYEGGA
F0128H	NYFISK

T0002KD	NORDNES
F0050A	NORDSILD
N0008VN	NORDSTADBUEN
M0085G	NORDSTAR
F0040G	NORDSTJERNA
F0100KD	NORDSTRAND
VA0097M	NORDSØ
F0130A	NORDTIND
F0207NK	NORDTIND
F0236V	NORDTIND
N0006VV	NORDTIND
N0060VR	NORDTIND
TF0010H	NORDTIND
F0161NK	NORDTUR
F0054P	NORDVESTEN
F0001V	NORDVÅG
F0109NK	NORDVÅG
N0085MS	NOREGG
N0108VV	NOREGGA
ST0202F	NYSTUBUEN
F0005V	NYSVANEN
F0075LB	NYTELSE
N0007F	NY-TERJE
N0081F	NY-TERJE
N0135F	NY-TERJE
F0080NK	NYTIND
F0094G	NYTIND
N0016B	NYTIND
N0044F	NY-TROFAST
T0537T	NYTUN JUNIOR
F0083BD	NY-VIKING
M0020SM	NY-VIKING
M0128G	NYVOLL SENIOR
F0029A	NYVOLLGUTTEN
M0055HØ	NÆRØYBUEN
M0208SM	NÆSSFLU
T0022KN	NÆVERNES
M0401AK	O. SOLEM
N0400V	O. SOLEM
F0065V	O.B.JUNIOR
M0161AV	O.HUSBY
M0007AV	OBELIX
N0018F	OCEAN
N0020SO	OCEAN
T0009T	OCEAN BLUE
M0068A	OCEAN JR
T0035B	NYFLØ
N0145H	NYGRUND
N0109BØ	NYGRUNN
N0325VV	NYGRUNN
N0228F	NYGÅRD SENIOR
N0010HR	NYHAV
N0042B	NYHAV
N0101B	NYHAV
NT0002L	NYHOLM
F0143NK	NY-HURTIG
N0253F	NY-KVIKK
F0029P	NYLAND
T0040KN	NYLAND
N0011LN	NYLON
M0090F	NYMØRE
N0151MS	NY-MÅTIND
F0012LB	NY-ODD
T0002SK	NYSTART
M0050MD	NYSTRØM
NT0233V	ODIN OLIVER
N0054BR	ODIN SENIOR
F0067LB	OKSEFJORD
M0053AV	OLAF
TF0015LA	OLAF
N0032Ø	OLAFUR
N0099Ø	OLAFUR II
N0001SO	OLAGUTT
N0007SO	OLAGUTT
N0201Ø	OLAGUTT
N0022G	OLASKJÆR
TR0015H	OLASVÅG
H0065FJ	OLAUG
AA0030T	OLAV
F0126LB	OLAV DALEN
ST0147F	OLAV JUNIOR
N0110Ø	OLAV NILSEN
N0281ME	OLAV SELVÅG
M0082AV	OLAV U
N0109V	OLAV-BØRRE
H0004R	OLDEFAR
T0072S	OLDERFJORD
T0845T	OLDERVIK
AA0016T	OLE
TF0008NK	OLE 2
F0053G	OLE ANDRE
N0115HR	OLE EINAR

TR0015R	ODA
	ODA V
N0400Ø	ODANE
M0018SM	ODD EINAR
F0087NK	ODD INGE
TR0005O	ODD IVAR
TR0018O	ODD IVAR
T0012KN	ODD JONNY II
N0052A	ODD JUNIOR
T0551T	ODD KRISTIAN
T0004T	ODD LINDBERG
N0147MS	ODD ROGER
T0044K	ODD YNGVE
F0064M	ODD-EGIL
M0270AV	ODDEN
F0207H	ODDGEIR JR
N0157MS	ODDNY
N0089SO	ODDVAR JUNIOR
F0016VS	ODIN
F0060P	ODIN
F0065BD	ODIN
N0051VR	ODIN
N0223BR	ODIN
T0055H	ODIN
T0111S	ODIN
TF0040SE	ODIN
TF0048VS	ODIN
N0091Ø	OPPMYRBUEN
R0012SO	OPTIMIST
R0003SS	ORCA
M0058AV	ORFJORD
SF0133A	ORIANA
SF0138A	ORIANA
F0047BD	ORIGO
F0088V	ORION
M0001SA	ORION
N0019HS	ORION
N0046RT	ORION
N0057Ø	ORION
LLXC	ORKAN
M0096AE	ORMEN RASKE
TR0015F	ORMSKJÆR
N9301G	OSCAR SUND
N0029DA	OSKAR
N0115Ø	OSKAR S
N0007TN	OSKAR ZAHL
N0063A	OLE ELVAN
N0167A	OLE ELVAN
N0024H	OLE HARTVIG
F0145B	OLE HENDRIK
N0074VV	OLE INGE
NT0125NR	OLE J
N0024V	OLE OSKAR
N0002ME	OLEA
T0005H	OLE-ARVID NERGÅRD
N0024VV	OLEGUTT
N0095VV	OLE-JOHAN
M0068F	OLEMANN
T0077T	OLGA
N0165Ø	OLINE
TF0003LB	OLIVIA
TR0095V	OLIVIA
TR0004Ø	OLSEN JUNIOR
F0038A	OLSEN SENIOR
N0206MS	OLSTIND
F0073V	OLUF
M0360HØ	OLYMPIC PRAWN
F0054G	OMEGA
N0059F	OMEGA
T0001SD	OMEGA
M0006HD	ONSØYGUTT
F0023V	ONSØYGUTT II
F0045BD	ONYX
T0014SD	PERHOLM
T0079TN	PER-IVAR
F0017A	PERLA
N0177VV	PERLEMOR
ST0003R	PERLEN
M0372SM	PERLON
F0098V	PERNILLE
M0010HØ	PERO
M0045F	PERO
N0013V	PETRA
M0100SM	PETTERSON
N0027BR	PIA
T0063LK	PIA
F0018HV	PILEN
F0129LB	PILEN
M0016SM	PILEN
N0082F	PILEN
TF0001HV	PILEN
N0185VV	PILTEN

N0018BØ	OSLOGUTTEN
F0286NK	OSTAD SENIOR
H0002ØN	OSUND
F0148H	OSVALDSON
T0049S	OTELIE
F0217NK	OTERSTEIN
M0001HS	OTNES
N0087BØ	OTTARSON
F0118G	OTTERØY
N0100VV	OVESEN JR
M0029SM	PALMA
F0060LB	PARTNER
N0034RT	PASAT
N0032RT	PASAT II
T0064K	PAUL KJETIL
M0174AV	PAUL SENIOR
F0055NK	PAULINE
T0076LK	PAX
N0070MS	PEDER B
N0230MS	PEDER ELIAS
M0211AE	PEDER J
F0081M	PEGASUS
F0043HV	PEIK
TR0001ND	PEIK
TR0015V	PEIK
TR0055V	PEIK
N0008BL	PELLE
T0061BG	PELLE
TF0003B	PELSEN
N0207MS	PEON
T0098LK	PER
N0157SG	PER EGIL
F0015A	PER GUNNAR
F0011BD	PER ROGER
H0051O	PERAGUTT
M0075AV	PRØVEN
N0005A	PRØVEN
N0044H	PRØVEN
N0093BR	PRØVEN
TR0280T	PUSKAS
ST0121H	PÅL
M0025AE	PÅL MAGNAR
N0155MS	PÅL MAGNUS
T0231LK	PÅL-STIAN
	QUEEN
M0056A	QUO VADIS
F0040TN	PINTA
VA0043M	PION
TF0020SE	PIRATEN
N0077BØ	PIRAYA
M0050AV	PIT
F0006KD	PIUNGEN
N0107SF	PLUGGEN
M0078SM	PLUTO
T0251KN	PLUTO
T0561T	PLUTO
F0094NK	PLUTOS
SF0071SU	PLØY
N0058ME	POLAR ATLANTIC
TF0020LB	POLARFANGST
N0101HR	POLARGUTTEN
N0016ME	POLARHAV
N0009VV	POLARIS
F0029BD	POLARJO
F0110G	POLARJO
F0001LB	POLARLINER
ST0008Ø	POLARLYS
F0020H	POLARSTJERNA
F0022N	POLARVIND
N0029R	POLARVIND
F0069LB	PONDUS
F0102NK	PONTOS
ST0002F	PONTUS
N0023SG	POSEIDON
TF0001V	POSEIDON
N0445Ø	PRESTFJORD
N0052G	PRIKKEN
TF0002LB	PRIMA
N0003HR	PROCEANA
N0085F	PROPELLA
M0034AV	PRØVEN
T0052K	RASA
NT0006NR	RASKEN
N0079MS	RASMUSS
M0084AV	RATTO
H0008S	RAUNEFJORD
TR0004O	RAV
TR0226ND	RAVINDA
TR0226V	RAVINDA
ST0025T	RAVN
N0046V	RAVNØY
F0188G	RAYA

R0050K	QUO VADIS
F0164NK	R. VEGAR
H0265AV	RABBAGUTT
F0001M	RABBAJENTO
TF0182BD	RADEBE
T0338T	RADIAN
ST0056Ø	RAGNA ELIN
F0056BD	RAGNAR LODBROK
N0095HR	RAGNARSON
F0077A	RAGNHILD
N0024VA	RAGNHILD
T0030S	RAGNHILD
TF0001H	RAGNHILD
M0014AK	RAGNHILD KRISTINE
N0002Ø	RAGNI
F0035TN	RAGNI ELISE
N0078V	RAGNI MERETHE
N0134Ø	RAINER
F0084M	RAKEL
N0054MS	RALLAREN
F0148NK	RAMBO
TR0001O	RAMBO
F0100NK	RAMBO I
F0026NK	RAMBO II
F0042P	RAMGRUNN
M0001VD	RAMOEN
H0043KM	RAMONA
N0018V	RAMONA
F0129NK	RAMPEN
T0129LK	RAMPEN
N0021F	RAMSBØEN
N0072F	RAMSEVIK
F0078A	RAMSKJÆR
ST0003O	RAMSØY
M0144SM	RAMSØYFJORD
F0092A	RANDI
N0005LF	RANDI ELISE
F0193A	RANDI HELENE
T0080T	RANDI HELENE
M0087SM	RANGNES
F0025NK	RAPPEN
N0004DA	RAPTUS
N0155V	RASA
M0003SR	RINGSØY
N0048LN	RINØY
TF0020HV	RISTON
N0086HR	RAYON
N0028SG	RAYWAN
T0227T	REBBENES SR
N0206DA	REFORM
N0011F	REGATE
H0050FS	REIDAR
M0082H	REIDAR
F0011B	REINBØEN
N0090MS	REINEBUEN
N0086MS	REINEFANGST
F0011G	REINESBUEN
F0015BD	REINEVÆRING
N0017VV	REINEVÆRING
TF0037BD	REINEVÆRING
N0162BØ	REINSBÅEN
F0062G	REIPNAKKEN
T0003N	REISAVÆRINGEN
M0144HØ	REITEGUTT
N0051L	RELØYGUTTEN
F0040LB	REMI
N0180B	REMI
N0115BØ	REMI ANDRE
T0330T	REMO
N0010B	REMSKJÆR
F0012G	REMY
NT0022V	REMY
M0099HØ	REMØY
M0009HØ	REMØYBUEN
T0194S	RENATO III
T0107LK	RENNEBUEN
T0373T	RENNEBÅEN
F0008KD	REPPARFJORD
F0158NK	RESOLUTT
N0079Ø	RICHARD
F0101NK	RICHARD J
F0028SV	RIDDU
F0022P	RIINAKAISA
N0075A	RIKARDSON
T0027K	RIKKE
N0018BL	RIKO
M0016EE	RINGO
ST0007R	RINGSKJÆR
N0203F	RINGSKJÆR NORD
TR0023F	ROYSEN
F0348NK	ROY-TONY
F0075HV	RUBICON

F0053LB	RISVIK
F0153LB	RISVIK
N0349V	RISVÆR
VA0015M	RISØY
ST0033T	RITA MARIE
R0021ES	RITA S
F0012H	ROALD JR.
N0004SO	ROALD SENIOR
M0037G	ROALDNES
M0011GS	ROAR
F0042V	ROBIN
T0130T	ROBIN
F0004A	ROBINE
N0023B	ROCKHOPPER
F0168NK	RODIAN
T0021H	ROGLAVÆRING
	ROGNAN JR
M0071HØ	ROGNEGUTT
T0227K	ROHIT
N0105VV	ROHOLMEN
	ROJOMA
N0123VV	ROKKAN
T0002LK	ROLF ASBJØRN
	ROLF JH
T0198K	ROLF-ÅGE
M0019HD	ROLLO
TF0200M	ROLLON
F0059M	ROLVSØYHAV
F0033M	ROLVSØYVÆRING
F0019TN	RONJA
F0036NK	RONJA
	RONJA
F0020BD	RONJA-MATHEA
N0061F	RONNY N
F0067B	ROSA JADE
T0030T	ROSKJÆR
F0126NK	ROSVIK
N0071RT	ROSØY
R0059K	ROSØY
SF0025S	ROSØY
N0014BR	ROTNESFJORD
N0014VN	ROTNESFJORD
R0055SO	ROTTFISK
N0066MS	ROWENTA
N0666VV	ROWENTA
T0017TK	ROWENTA
N0470B	RUBICON
F0003BD	RUBIN
N0011R	RUBIN
T0139L	RUBIN
F0271V	RUBY
F0124LB	RUDOLF SEN.
TF0084LB	RULY
N0004NA	RUNA ELIDA
T0089LK	RUNDSKJÆR
F0011V	RUNE
M0121A	RUNING
M0119AE	RUSKEN
F0182NK	RUTH
H0027BN	RUTH
N0064N	RUTHA
ST0002OL	RYDNINGEN
F0038H	RYPEFJORD
N0260Ø	RYVARDEN
N0240Ø	RYVINGEN
VA0010FS	RØDLAND
N0030R	RØDØYVÆRING
N0014BL	RØINGEN
H0002B	RØKSUND
N0061ME	RØNVIKBUEN
M0134H	RØRSTAD
T0134T	RØSNES
N0007H	RØSNESVÅG
N0085Ø	RØSTAD
N0018A	RØSTBANKEN VEST
N0067RT	RØSTHAVET
T0024KN	RØSTJENTA
N0026BØ	RØSTVÆR
N0055RT	RØSTVÆRING
A0001V	RØSTØY
N0004VN	RØY
T0006B	RÅHOLM
TF0013NK	RÅHOLM
N0080B	RÅNES
N0300B	RÅNES VIKING
F0044HV	RÅSA
NT0338V	RÅSAGUTT
N0025HR	RÅTASSEN
N0450V	S JOHANSEN
TF0111V	SABINE
F0020A	SAFIR
M0004A	SAFIR

SF0001FD	ROXY
F0057NK	ROY MAGNE
M0004K	ROYAL
F0017M	ROY-ANETT
N0097VV	ROY-MAGNE
N0001BR	SAGA PIONER
SF0230V	SAGABRIS
N0077SG	SAGAGUTT
F0052BD	SAIBMA
F0039L	SAILOR
T0007B	SAILOR
N0027V	SAKE
F0081P	SAKURA
F0125NK	SALARFISK
TF0077T	SALARØY
N0040BR	SALHUSVÆRING
TF0005HV	SALLAN
F0059P	SALT
T0999T	SALTBÅEN
F0112LB	SALTIND
F0039P	SAMANTA
F0050V	SAMANTA
M0112G	SAMHALD
N0106Ø	SAN MIDTBU
M0494HØ	SANDER
N0007DA	SANDER
N0012F	SANDER
N0040V	SANDER
N0063VV	SANDER
NT0016V	SANDER
NT0019NR	SANDER
N0244MS	SANDER ANDRE
F0046KD	SANDERGUTT
T0056LK	SANDERMAN
F0136V	SANDFJORD JENTA
N0079TN	SANDFLÆSA
TF0002K	SANDHOLM
N0170VV	SANDHOLMEN
F0007M	SANDNES
T0132K	SANDNES
F0084P	SANDNESBUEN
F0067P	SANDNESBUEN JR
N0030F	SANDNESGUTT
N0033SO	SANDRA
ST0039H	SANDRA MERETHE
N0099V	SANDRA-AMALIE
NT0040F	SAFIR
N0007N	SAGA
N0020ME	SAGA INEZ
N0099ME	SAGA INEZ
F0777NK	SAGA K
AA0003T	SANDØYJENTA
M0020AV	SANDØYSUND
H0058S	SANGOLT
F0044LB	SANNA
N0043TN	SANNAGUTT
NT0129V	SANNAJENTA
TK0025BL	SANTOS
F0061LB	SARA
T0020L	SARA KARIN
H0057AV	SARAH
N0197V	SARAH
T0037K	SARAH
LK3110	SARAH THERESE
TR0014NR	SARE
T0015LK	SARI
T0044BG	SARI
T0007TN	SARNES
F0027V	SARTE
F0028L	SATURN
NT0138V	SATURN
F0009HV	SAVANNAH
F0043TN	SAVE K
N0066F	SCHELDRUPSON
R0001H	SCOMBRUS
N0063AH	SEA-LADY
N0260VV	SEBASTIAN
T0063T	SEDNA
T0050LK	SEGLA
T0019L	SEGLNES
F0038M	SEGLSTEIN
T0003S	SEGLVIK
N0068VV	SEIBUEN
F0044TN	SEIDA
M0026EE	SEIFLU
M0025EE	SEIFLU JR
M0001SJ	SEIGUTT
F0082V	SEIKO
TF0046LB	SEIKO
F0001H	SEILAND
N0054V	SEINGEN
N0064V	SEINGEN

N0062RT	SANDRIAN
T0010L	SANDRUPSON
N0035G	SANDSØY
T0075BG	SANDVIKBUEN
F0037HV	SANDVIKNES
TF0037T	SANDVIKNES
N0165MS	SANDVÆR
N0198A	SANDVÆR
T0064T	SANDVÆR JUNIOR
F0070G	SANDØRA
F0005P	SANDØY
N0080RT	SANDØY
N0189VV	SANDØY
N0024ME	SELVÅG SENIOR
R0022ST	SELVÅGBUEN
N0191SO	SENHOLMBUEN
N0191Ø	SENHOLMBUEN
T0365T	SENIORITA
TF0001T	SENJA
TF0004SE	SENJA
F0086BD	SENJAFANGST
T0086LK	SENJAFJELL
T0115LK	SENJAFJORD
TF0159SA	SENJAGULL
T0100TN	SENJAGUTT
T0058TK	SENJAGUTTEN
T0141LK	SENJAHAV
T0035TK	SENJALAND
T0071LK	SENJALIV
T0102L	SENJALIV
T0102LK	SENJALIV
TF0022SE	SENJALIV
3YQU	SENJAPYNT
TF0044SE	SENJASUND
N0232VV	SENJATUN
T0189LK	SENJAVÆRING
N0382VR	SENNHOLMEN
NT0058V	SETTER
TR0011ND	SETTER
	SHARA
	SICO
F0174A	SIEVJAN
TF0017NK	SIEVJAN
T0006TK	SIFJORD
M0005AK	SIGGEN
H0009FJ	SIGLEVIK
N0077V	SEINGEN II
M0104H	SEIR
N0057A	SEISKJÆR
TR0043V	SEISKJÆR
F0024G	SEIVIKBUEN
N0023ME	SEKA
H0318AV	SELBJØRNSFJORD
T0146T	SELFANGST
F0004VS	SELFOSS
F0119TN	SELMA
N0043H	SELMA
F0097G	SELMA DRØFN
SF0208A	SELVIK JUNIOR
F0258NK	SILJE
NT0051NR	SILJE
M0038SM	SILJE T
F0380A	SILVER
NT0012NR	SILVER
R0009ST	SILVER II
N0177F	SIMAR
F0016B	SIMEN
N0109RT	SIMEN
M0004F	SIMEN
N0019FE	SIMEN-H
T0009SK	SIMEN-H
F0077LB	SIMON
M0026AV	SIMON SENIOR
T0068K	SIMSON
M0019K	SINDRE
N0015B	SIRENE
F0056V	SIRI ELISE
N0019AH	SIRIANNA
F0047HV	SIRIUS
N0020F	SIRIUS
N0062B	SIRIUS II
N0170V	SIRO
F0017LB	SISSEL
N0168V	SISSEL
N0035VV	SISSEL CAROLINE
N0070L	SIV
N0003F	SIVELAND
N0096MS	SIW
N0113F	SIW
M0118HØ	SIWA
N0098BØ	SJARK 1
F0048LB	SJARKE

N0026VA	SIGNAL
NT0141V	SIGNAL
SF0047SU	SIGNAL
N0043AH	SIGNE
T0014N	SIGNE
TF0001GN	SIGNE
NT0093V	SIGRID KRISTINE
N0061A	SIGURD
N0040ME	SIGURD M
N0257BØ	SIGURDSON
T0008SD	SIGVALDSON
T0078T	SIGVALDSON
N0127L	SIGVE
M0132AE	SIKA
F0095HV	SILBØEN
ST0004RS	SILDJO
F0041V	SILEGG
SF0066G	SILENE
T0030LK	SILHAV
TF0007T	SILHAV
F0047LB	SILJAN
SF0139A	SJØFLU
V0002F	SJØGLIMT
F0001KD	SJØGUTT
N0087B	SJØGUTT
F0060H	SJØGUTTEN
N0029BØ	SJØGUTTEN
N0091VV	SJØGUTTEN
N0114V	SJØLEIK
T0025K	SJØLILL
M0032SM	SJØLIV
N0006TN	SJØLIV
N0011SO	SJØLIV
H0011B	SJØLIVET
TF0106NK	SJØMANN
N0039F	SJØNAPP
F0167A	SJØPIA
N0073V	SJØPYNT
T0054N	SJØPYNT
TF0054KD	SJØPYNT
F0022SV	SJØSPRØYT
VA0008LS	SJØSPRØYT
N0010RT	SJØSTJERNA
N0023A	SJØSTJERNA
ST0009O	SJØSTJERNA
M0278SA	SJØSTJERNEN
N0109Ø	SJARKEN JUNIOR
N0142RT	SJARM
N0023F	SJARMEDES
H0260K	SJOHAV
N0067L	SJONØY
N0002G	SJØBAS
F0159A	SJØBLINK
F0135VS	SJØBLOMST
SF0016A	SJØBLOMST
LNEW	SJØBLOMSTEN
N0022AH	SJØBLOMSTEN
N0053LN	SJØBLOMSTEN
ST0234F	SJØBLOMSTEN
F0035A	SJØBRIS
N0034B	SJØBRIS
N0057VV	SJØBRIS
ST0004R	SJØBRIS
F0165NK	SJØBUEN
M0007SM	SJØBUEN
N0003RT	SJØDRØM
N0500BR	SJØFISK
N0005BG	SKARSTADVÆRING
M0071A	SKARSTEIN
T0170K	SKARSTEIN
TF0070K	SKARSTEIN
H0045AV	SKARTEN
F0008HV	SKARVEN
N0005FE	SKARVEN
N0043V	SKARVEN
N0024F	SKARVHOLMEN
N0064MS	SKARVHOLMEN
F0196A	SKARVTIND
T0024T	SKARVØY
SF0019SU	SKARØY
T0141KN	SKIMRING
N0326Ø	SKIPNES
F0081NK	SKIPPY
ST0080O	SKIPSON
T0101LK	SKJEGGESTEIN
N0077F	SKJELHOLM
T0005T	SKJERODDEN
SF0007F	SKJONGHOLM
N0568HR	SKJÆRBUEN
F0030LB	SKJÆRGRUNN
F0060BD	SKJÆRGRUNN
F0150LB	SKJÆRGRUNN

ST0012H	SJØSVANEN
N0020Ø	SJØTIND
N0054RT	SJØTUN
N0106VV	SJØTUN
T0019T	SJØTUN
F0028LB	SJØVÆR
SF0006A	SJØVÆR
N0232V	SJÅBØEN
T0129T	SJÅBÅEN
T0014SA	SJÅNES
N0015VA	SJÅVIKBUEN
N0070R	SJÅVIKNES
T0008K	SJÅVIKNES
T0023S	SK JUNIOR
T0068T	SKAGA
F0056LB	SKAGANES
N0065TN	SKAGEN
ST0018R	SKAGEN
N0107VV	SKAGODDEN
M0023SM	SKAGSUND
N0011AH	SKAGØY
T0301T	SKAGØY
T0023T	SKAGØYSUND
H0161AV	SKALAR
N0071VR	SKANTI
N0120SO	SKAR II
F0175BD	SKARBERG
N0048F	SKARE
N0053BØ	SKARHOLMEN
N0152Ø	SKUMRING
N0050V	SKUVINGEN
N0047BØ	SKYE
F0159NK	SKYTTEN
M0260HØ	SKÅRUNGEN
TR0010NR	SKÅRUNGEN
TF0022NK	SLEIPNER
T0158L	SLETTENBERG
T0027T	SLETTHAV
N0118L	SLETTHOLMEN
N0100V	SLETTIND
TF0209T	SLETTNES
F0082LB	SLETTVOLL SENIOR
N0282V	SLETTVOLL SENIOR
M0012AE	SLETTVÅG
T0218T	SLOGMÅSEN
N0030ME	SMARAGD
F0038G	SKJÅNES
TR0012V	SKLINNABUEN
T0110K	SKOGARØY
F0037SV	SKOGERØY
M0393HØ	SKOGLIGUT
M0062HØ	SKOGLIJENTA
T0085S	SKOGNES
T0242LK	SKOGNES
T0395K	SKOGNES
T0200K	SKOGSFJORDINGEN
N0270VR	SKOGSØYVÆRING
T0127T	SKOGØY
F9300NK	SKOLEBÅT
N9300VV	SKOLEBÅT
H9300AV	SKOLEFARTØY
TR9301F	SKOLEFARTØY FRU INGER
N0025VV	SKOLMEN
N0053RT	SKOMVÆRFISK
	SKOTTIND
N0150F	SKOTTIND
N0004SG	SKREIEN
N0226Ø	SKREIEN
T0515LK	SKREIGRUNN
F0026TN	SKREI-TIND
N0019VV	SKRETIND
N0114MS	SKRINE
T0111T	SKULBAREN
SF9300V	SKULEBAS
F0087V	SKUMNISSEN
N0009RT	SNØGG
N0142VV	SNØGG
T0039S	SNØGGEN
F0012NK	SOA
N0009V	SOFIE
N0019V	SOFIE
N0046SO	SOFIE
T0002K	SOFIE
T0016L	SOFUS
T0012N	SOIANA
SF0030S	SOL MAR
R0007KP	SOLAGUTT
ST0075F	SOLAN
TF0002SA	SOLBERGFJORD
N0118MS	SOLBJØRN
F0024SV	SOLBRIS
F0067M	SOLBRIS

M0080SØ	SMIHAV
SF0052B	SMØYSUND
F0025VS	SMÅBAKKEN
T0002S	SMÅBAS I
LG9426	SMÅBÅT
LK3209	SMÅBÅT
LK5390	SMÅBÅT
LK6722	SMÅBÅT
LN5427	SMÅBÅT
RBA219	SMÅBÅT
TAG825	SMÅBÅT
TAN634	SMÅBÅT
TAQ658	SMÅBÅT
TAV790	SMÅBÅT
TAX573	SMÅBÅT
TAY108	SMÅBÅT
TAZ319	SMÅBÅT
TAZ396	SMÅBÅT
TBA258	SMÅBÅT
TBA554	SMÅBÅT
N0126R	SMÅEN
N0080VR	SMÅHAUG SENIOR
M0038VN	SMÅSKJER
SF0100B	SMÅSUND
T0015T	SMÅVÆR
T0149LK	SMÅVÆR
N0200BØ	SNARSETVÆRING
T0036KN	SNEBERG 2
NT0169V	SNEFJELL
N0005N	SNEGGLA
T0002B	SNETIND
TF0009S	SNETIND
T0175T	SNIPA
T0111K	SNOKEN
N0025F	SNOP
F0086V	SNUSKEN
	SNUTAN
F0003H	SOLVÆRSKJÆR
N0096HR	SOLVÆRØY
SF0038SU	SOLYS
F0018LB	SOLØY
F0021VS	SOLØY
F0042BD	SOLØY
F0157LB	SOLØY
N0030Ø	SOMMARØY
T0090T	SOMMARØYBUEN
SF0044SU	SOLBRIS
T0080H	SOLBRIS
N0236Ø	SOLBU
N0067F	SOLBUEN
F0092SV	SOLENG
F0040NK	SOLENG SENIOR
N0048BØ	SOLEY
VA0076M	SOLFUGLEN
T0258K	SOLGLIMT
R0045K	SOLGLYTT
F0068N	SOLGLØTT
F0030BD	SOLHEIM
T0081K	SOLHEIM
N0018HR	SOLJA
H0012FJ	SOLMAI
F0001G	SOLRAND
F0006A	SOLRAND
F0114NK	SOLRINGEN
T0044TN	SOLSIG
F0019LB	SOLSKJÆR
N0029F	SOLSKJÆR
N0037RT	SOLSKJÆR
T0062T	SOLSKJÆR
T0033KD	SOLSTRANDJENTA
N0051TF	SOLSTRÅLEN
F0018NK	SOLTIND
N0162Ø	SOLTIND
N0164A	SOLTIND
TF0012A	SOLTIND
N0166MS	SOLVANG
T0032KD	SOLVEIG
TF0007TN	SOLVEIG
N0020V	SOLVÆR
ST0201F	SOLVÆR
T0088N	SOLVÆR
TF0015NA	SOLVÆR
F0079V	SOLVÆRGUTT
F0027VS	STEFFEN JUNIOR
F0014A	STEFJORD
T0203T	STEIN JIMMY
F0189H	STEIN O
N0086F	STEINAR
M0017SM	STEINARSON
F0089G	STEINFJORD
SF0034SU	STEINFJORD
T0004K	STEINNESVÆRING

F0026M	SONJA
TF0026M	SONJA
N0029TS	SONJA ELISABETH
F0063TN	SONJA KARINE
F0208NK	SONNY MARIE
F0010L	SOPHIA
N0113V	SOTEN
F0100B	SOYA
N0015HR	SPANSHOLMEN
N0014SG	SPANTA
TF0015NK	SPIKAREN
F0142H	SPIRA
Ø0300H	SPJÆRINGEN
N0084VV	SPLEIS
M0066F	SPRINT
F0088HV	SPRUTEN
N0046F	SPURVEN
T0007D	SPURVEN
T0016I	SPURVEN
N0443Ø	SPUTNIK
N0051Ø	STABBEN
T0098N	STABBEN
T0099N	STABBEN
N0020RT	STAMNESVÆRING
N0072VV	STAMSUNDVÆRING
R0055R	STANGHOLM
T0089K	STANGNES
T1104T	STANGNES
TF0011S	STANGNES
F0012TN	STANGNESTIND
F0069NK	STAR
N0001FE	STAR
N0118VR	STAR VIKING
ST0027H	STARFISH
H0065B	STARIS
N0009SF	START
M0052AV	STATTEGG
N0050VR	STATTEGG
Ø0005F	STAULSKJÆR
H0013K	STAUPER
N0027RT	STAVØY
F0095G	STEF
NT0052V	STEFAN
TF0052NK	STEFAN
N0040A	STEFFEN
T0029LK	STORM
N0082VV	STEINRYGGEN
NT0130NR	STEINSØY
F0101HV	STELLA POLARIS
N0096R	STEN TORE
T0163K	STENALINE
N0033V	STENSVOLD SENIOR
F0037L	STENSØ
F0107NK	STENSØY
N0059TN	STERO
ST0019O	STEVEN
N0050BR	STIAN
T0091T	STIAN JR
T0100L	STIAN-ANDRE
T0009L	STIAN-RENE
N0008R	STIG
NT0300V	STIG HARRY
N0105A	STIG INGE
N0101Ø	STIG JUNIOR
T0025H	STIG MAGNAR
F0114LB	STIG ROAR
F0063NK	STIG-RUNE
F0219NK	STILIAN
F0113NK	STINA
M0182HØ	STINA
F0011LB	STINE
N0060RT	STINE HELEN
T0507T	STINE MARLEN
N0055ME	STINE MAYA
N0127MS	STJERNEN
N0033F	STJERNTIND
N0415V	STJERNTIND
TR0001AA	STJERNTIND
TR0005B	STJØRNAFJORD
TR0069AA	STOKKØYFISK
N0004B	STORBØEN
TR0001NR	STORBÅEN
H0005FJ	STORDING
M0345A	STOREGG
T0045H	STOREGUTT
F0094M	STORENGBUEN
N0475VV	STORFJORDVÆRING
F0255M	STORHOLM
N0008VV	STORHOLM
TR0003O	STORIS
F0333A	STORM
T0207T	STUTHOLMEN

T0184T	STORM
TF0123LB	STORM RIDER
T0160LK	STORMEN SENIOR
TF0003SE	STORMEN SENIOR
F0260H	STORMFUGLEN
N0034MS	STORMFUGLEN
TF0260H	STORMFUGLEN
N0010VN	STORMGUTT
F0001HV	STORMHAV
F0133HV	STORMHAV
N0002B	STORMHAV
N0031B	STORMHAV
N0060VA	STORMLEIK
N0068VA	STORMLEIK
N0032R	STORMOJENTA
F0106G	STORMSKJÆR
T0060K	STORNES
M0010ØG	STORSEISUND
TR0096AA	STORSTEIN
H0060S	STORSTRIL
VA0081LS	STORVIG
NT0124V	STORVIK
	STORVIKBUEN
N0004L	STORØY
N0165H	STRANDEGGA
N0012VV	STRANDFLÆSA
N0158V	STRANDVÆR
N0036F	STRANDVÆRING
R0020V	STRAUMBAS
N0001LF	STRAUMBERG
N0016L	STRAUMEN
N0162VV	STRAUMEN
TF0025HD	STRAUMGULL
N0096A	STRAUMGUTT
M0003HD	STRAUMSUND
N0057L	STRAUMVANG
T0080I	STRAUMVANG
N0335VV	STRAUMVÆRING
T0055I	STRAUMVÆRING
N0098L	STRAUMØY
F0142G	STREIF
M0026HØ	STRILEN
F0201LB	STRIPTIND
F0051G	STRØMMEN
F0055P	STRØMSNES
N0372ME	STRØMTIND
F0022V	STØA
T0142LK	STØBUEN
T0234T	STØDIG
N0100B	STØTTFJORD
F0067NK	STÅL TROND
T0028L	SUKANYA
T0025TN	SULA
F0194NK	SULAGUTT
NT0070V	SULAVÅG
TR0110V	SULAVÅG
SF0100SU	SULEBAS
T0018SD	SULEGGA
SF0205SU	SULEGUTT
SF0040SU	SULINGEN
F0021H	SULVÆRING
N0016V	SULØY
ST0062F	SULØY
N0100Ø	SUNDERØY
N0200Ø	SUNDERØY
N0054F	SUNDMANN
F0182BD	SUNDSBØEN
TF0243BD	SUNDSBØEN
N0068DA	SUNDSVÆRING
F0079G	SUNNA
F0031BD	SUNNA DIS
F0049SV	SUNNIVA
F0064HV	SUNNIVA
R0013K	SUSHI
T0087K	SUTIND
N0027MS	SVABERG
N0005VV	SVANA
N0094F	SVANA
F0081TN	SVANANES
TF0081TN	SVANANES
F0004BD	SVANEN
F0018H	SVANEN
N0034H	SVANEN
N0141V	SVANEN
T0010SK	SVANEN
TF0004M	SVANEN
T0085I	SVANFJELL
TR0424V	SVANHILD
N0023AH	SVARTSKJÆR
H0031B	SVARTØY
N0253V	SVATIND
F0050LB	SVAVIK

N0078VV	STRØMØY
N0278VV	STRØMØY
T0006KN	STRØMØY
N0087ME	STRØMØYGUTT
F0010NK	STRØNSTADVÆRING
T0072KD	STRØNVIK
M0077AV	STUT
N0071BR	SVERRE-N
F0098L	SVERRESON
F0045G	SVERRIR
F0115LB	SVETA
F0012A	SVINGLA
TF0012HV	SVINGLA
M0022SM	SVINØY
N0008AH	SVINØY
TR0003IF	SWANSEA
F0062TN	SWONA
N0044BØ	SYCLON
F0066M	SYLVESTER
T0008SK	SYLVESTER
F0101BD	SYLVIA
ST0024F	SYLVIA
M0065G	SYNES
N0010TS	SYNØY
N0088RA	SYREN
F0048N	SÆTERBØEN
F0206M	SÆTERGUTT
F0157NK	SØLVFISK II
F0009G	SØLVI
T0011SA	SØRBRIS
TF0011SA	SØRBRIS
M0350SM	SØRBØEN
	SØRBÅEN
TR0002LA	SØRBÅEN
H0089K	SØRHAV
M0018F	SØRHAV
N0142L	SØRHOLMEN
T0188S	SØRHOLMEN
F0084V	SØRINGEN
	SØRINGEN
NT0401V	SØRSTEIN
H0001S	SØRVEST
N0080R	SØRVIK
T0734T	SØRVIK
N0010DA	SØRVIKING
F0040H	SØRVÆRING
F0043M	SVEA
N0023R	SVEBØEN
M0140AV	SVEGGØY
N0065Ø	SVEIN JOHAN
N0050G	SVENDSEN SENIOR
N0082V	SVERRE JUNIOR
N0182V	SVERRE JUNIOR
TF0003K	TAMIN
F0072G	TANA
F0083V	TANAFJORD
LG2701	TANITA
F0007BD	TANJA
N0028DA	TANJA KARIN
F0029NK	TANYA
F0023M	TARA
F0058G	TARDIS
TF0009LB	TARDIS
N0013L	TAREN
F0034A	TARRELUSA
TF0004BD	TARVIKBØEN
T0011H	TARZAN
F0004N	TASS
N0053VV	TATIND
ST0001AA	TAURUS
M0109F	TAYLOR
H0082S	TEINESKJÆR
T0032T	TEISTEN
ST0070F	TELLUS
H0163AV	TEMPO
F0050HV	TENNESSEE
F0151G	TENNHOLMEN
T0151T	TENNHOLMEN
N0007SF	TENNSKJÆR
F0087LB	TERESA
N0004RT	TERJE ROAR
F0046TN	TERNA
F0052G	TERNA
N0034R	TERNA
N0040H	TERNA
N0310SG	TERNA
T0152K	TERNA
T0825T	TERNA
TR0001NL	TERNA
F0049TN	TERNE
F0003V	TERNEN
TF0008V	TERNEN

N0016R	SØRVÅGSUND
N0006MS	SØRVÅGVÆRING
H0240B	SØRWAAG
H0055FE	SØRØY
NT0151V	SØRØYA
M0020A	SØRØYFISK
F0050H	T.A SENIOR
TF0002P	T.A. NORDSTJERNA
N0018VV	T.SIVERTSEN
N0049SF	TACIANE-N
F0014TN	TAIFUN
AA0021A	TALVI
ST0033H	TALYN
N0047F	TAMARA
N0050F	TAMARA
F0263L	THEA-EMILIE
	THEA-EMILIE
N0067A	THEO
N0117V	THEO
F0149NK	THEO MIKAL
A0002B	THERESE
F0021A	THERESE
TF0003T	THERESE
T0079S	THINA IRENE
TF0001S	THINA IRENE
F0103NK	THOMAS
N0104MS	THOMAS ALEXANDER
NT0016VL	THORALF
F0400NK	THOR-ARILD
M0046AE	THORBJØRN
F0225NK	THOR-MAGNAR
N0002TN	THORSHAVET
ST0036O	THORY
	TIIRA
NT0016NR	TIKA
F0140NK	TIKO
H0087BN	TIME BANDIT
M0087HØ	TIME BANDIT
F0059V	TIN
SF0011V	TIN
TF0059HV	TIN
T0195T	TINA KRISTINE
F0020LB	TINDER
N0111VR	TINDSKJÆR
N0103MS	TINDSTØ
N0045ME	TINDVÆR III
N0131TF	TERNINGEN
T0020T	TERNINGEN
M0010AV	TERNUNG
N0028F	THAIFISK
T0021TK	THALE
F0100G	THANI
M0006SA	THE FLYING DUTCHMAN
F0200VS	THEA
F0300VS	THEA
M0202AV	THEA
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10 Template information and copyright

This document was drafted using the ‘MSC Reporting Template v1.1’.

Template version control

Version	Date of publication	Description of amendment
1.0	17 December 2018	Date of first release
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